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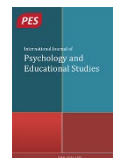
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Investigating the Factors Related to Coronavirus Disease 2019 (COVID-19) on Undergraduate Students' Interests in Coursework

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ABSTRACT

Today the world is suffering from coronavirus (COVID-19) pandemic illness, and people all around the world stay at home due to its rapid spread. People including students gather information and government instructions through TVs, social media and others around them. Since the classes were canceled in many countries, the novel coronavirus affects students' interest in coursework. The purpose of this study was to examine the effect of TV news, social media and communication with people on interest in coursework, and mediating roles of fear of contamination, depression, and anxiety on these effects. A path analysis was carried out with the data collected from 773 college students. The results showed that interest in coursework was most strongly affected by communication with people. This was due to its direct and indirect effects. Social media and TV News did not directly affect interest in coursework, but indirectly affected. The study also found that among the three mediator variables, the mediator roles of anxiety was bigger than the others. Understanding the findings of this research has become very important to us, especially at a time when face-to-face lessons have been canceled all over the world and transitioned to online education. Specific recommendations for practitioners and limitations for future research were also provided in the study.

Keywords:

COVID-19, stress, anxiety, fear, interest in coursework, path analysis

1. Introduction

Coronavirus (COVID-19) outbreak has quickly affected all over the world, and caused serious physical and mental health issues. After the first case COVID-19 illness was identified in Wuhan, China in December 2019, many people died in China and the coronavirus spread all around the world. Only 44 cases were identified in Wuhan, China on 31 December 2019. However, as of 20 January 2020, 282 cases from four countries including China, Thailand, Japan and the Republic of Korea and six deaths were reported. Then, the World Health Organization (WHO) labeled COVID-19 as the pandemic disease on March 11th, 2020 ("WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020," n.d.). In the update by 26 March 2020 from WHO (2020), for example, in more than 130 countries, 462,684 cases were confirmed, and 20,834 deaths were reported ("Novel Coronavirus situation reports," n.d.). Thus, COVID-19 has been quickly spreading all over the world, and having negative impacts on health, social, economic, politic, and education systems ("Coronavirus disease 2019," 2020; Cauchemez, Ferguson, Wachtel, Tegnell, Saour, Duncan, & Nicoll, 2009; Effler, Carcione, Giele, Dowse, Goggin, & Mak, 2010; Ingram, 2016). Similarly, the first case was observed in Turkey on March 10th, 2020, and the number of cases and deaths has increased quickly.

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Therefore, COVID-19 pandemic has caused threats to people in health, social, economic, educational areas. The literature well documented the negative impacts of pandemic diseases on society, students and education systems (e.g. Cauchemez et al., 2009; Van, McLaws, Crimmins, MacIntyre, & Seale, 2010). Even though, most patients of COVID-19 have been adults and children are less susceptible, school closures in many countries have been implemented to prevent the spreading of the virus (Wikipedia Contributors, 2020). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), governments all around the world have announced nationwide closures of schools, which affected more than 80% of the world's student population (UNESCO, n.d.). In Turkey, by 16th March 2020, Ministry of National Education announced to close the schools from kindergartens to high schools for at least until the end of April, as a proactive action. In addition, The Council of Higher Education in Turkey decided to close universities and initiate online education during the spring semester. Overall, uncertainty and school closures can have negative effects on students' interests in schools, and the factors that affect students' interests in schools should be explored in terms of minimizing the effects of a pandemic on education (Cauchemez et al., 2009).

One of those factors that can affect school interests can be information regarding COVID-19 transmitted through media and social media. As expected, the news and information related to COVID-19 have been taken huge parts in the media (e.g. TV) and social media (La et al., 2020; Roose & Gabriel, 2020; Signorini, Segre, & Polgreen, 2011). Especially after people were ordered to stay home, news and communication on social media increased by over 50 percent in many countries (Isaac & Frenkel, 2020), and, for example, exposure to social media can have negative effects on students (Maglunog & Dy, 2019). Therefore, students are exposed to a high volume of news and information about COVID-19, and this can be one of the potential reasons that can diminish their interests in the school by shifting their focus from school to concerns related to pandemic. It should also be noted that such information or news is not necessarily true, or even can be misleading. For example, Pandey, Patni, Singh, Sood, and Singh (2010) examined 142 youtube videos that had relevant information about the H1N1 Influenza Pandemic on June 26, 2009, regarding their usefulness and viewership. Results showed that 61.3% of the videos included useful information while 23% had misleading knowledge about the Influenza pandemic. In addition, viewership shared 70.5% of the useful videos, the share proportion of misleading videos was 17.5%. In conclusion, being interested in media, social media, or daily communication about COVID-19 are potential external factors reducing interest in school. However, the effects of media, social media, and communication with others on reduced school interest can be delivered through other factors. In this sense, stress, anxiety, and fear of contamination are potential mediating variables, which are underlying factors on the association between such external factors (media, social media, and daily communication) and reduced school interest.

1.1. Stress, Fear, and Anxiety Related to Pandemic

Pandemic issues can lead to emotional responses, such as higher levels of anger, stress, fear, or anxiety in society. In turn, those emotions can lead to behaviors of panic, resistance, blaming others and government, overburdening of healthcare, and abandoning responsibilities (Perrin, McCabe, Everly, & Links, 2009). Pandemics such as SARS or COVID-19 have considerable social and psychological impacts on society (Perrin et al., 2009). Although COVID-19 has been studied in terms of its physiological symptoms and effects, its' mental effects and consequences on patients and healthcare workers have not been well addressed (Xiang et al., 2020). Fear is one of those initial reactions in such pandemic (Perrin et al., 2009). Fear is defined as a negative emotional reaction to a threatening stimulus, which generally leads to defensive responses (Labar, 2016). In this regard, COVID-19 pandemic causes several threats for human health, so people can experience higher levels of fear during the outbreak. Another negative emotion that can arise from the pandemic can be anxiety. Anxiety refers to unease emotion regarding a potentially negative, unpredictable situation (Labar, 2016; Lake & Labar, 2011). COVID-19, by its nature, causes a high levels of uncertainty in terms of physical and mental health, economic, education and other areas. Therefore, it is a risk factor for escalated level of anxiety. COVID-19 outbreak induced several challenges and difficulties for the society, so stress is another negative emotion that can be resulted from the pandemic. Regarding negative emotional outcomes of COVID-19, Xiang et al. (2020) mentioned that symptoms of COVID-19 such as fever, cough, or hypoxia can lead to higher levels of anxiety and distress. If the social and psychological side of the problem cannot be addressed seriously, it can cause higher levels of concerns, and even lead to a crisis (Perrin et al., 2009).

The literature has well documented that pandemic diseases include potential threats for escalated levels of stress, fear, and worry. For example, in a study conducted with 1,000 adults in Korea during the 2015 MERS-CoV outbreak (Ro, Lee, Kang, & Jung, 2017) showed that worry levels of the participants constantly increased through the points when the first patient was diagnosed with MERS, the first patient died, and the number of cases continued to increase. However, the levels of worry significantly decreased when the MERS outbreak ended (Ro et al., 2017). In the case of the 2009 H1N1 pandemic, Taha, Matheson, Cronin, and Anisman (2014) found that greater levels of intolerance of uncertainty were related to lower levels of control, which was associated with higher levels of pandemic-related anxiety. Health anxiety, contamination fears and disgust sensitivity were found to be significant predictors of swine-flu related anxiety during the H1N1 influenza pandemic of 2009–2010 (Wheaton, Abramowitz, Berman, Fabricant, & Olatunji, 2012).

The literature has also shown that pandemic-related anxiety is especially high in the early phase of the outbreak and declines over time. For example, in a study investigating the cognitive and affective risk perceptions during the MERS-CoV outbreak in South Korea, participants' cognitive and affective risk perceptions decreased as the time passed by (Jang et al., 2020). In another study, Cowling et al. (2010) examined the psychological and behavioral responses of the community to the first wave of the Influenza A(H1N1) Pandemic in Hong Kong. Low anxiety throughout the epidemic was reported, but perceived susceptibility to infection and perceived severity were initially high but declined later. In addition, higher levels of anxiety were found to be related to greater social distancing (Cowling et al., 2010). In addition, Bults et al. (2011) found that anxiety decreased after the first phase and remained stable overtime during the early phase of the Influenza A (H1N1) pandemic in the Netherlands.

1.2. The Present Study

Thus far, we have said that COVID-19 can have considerable negative effects on education and students' interests in school ("Q&A on coronaviruses" 2020; Xiang et al., 2020). However, because there is still an absence of the data, the literature has suggested examining the effects of pandemics on students' learning process and psychological situation (e.g. Cauchemez et al., 2009). Especially, being interested in media, social media, and daily conversation has potential threats to undergraduate students' interests in school. However, we hypothesize that such effects on school interests can be delivered through fear, anxiety, and stress. For example, Remmerswaal and Muris (2011) found that children's' fear reactions to the 2009 Swine Flu pandemic in Netharlend were associated with their parents' fear of the pandemic and there was a positive association between parents' transmission of threat information and children's fear. In addition, information from the media and friends were other significant predictors of children's fear (Remmerswaal & Muris, 2011). All in all, news and conversations related to COVID-19 take a considerable place in the media, social media, and daily conversations, which can escalate undergraduate students' fear, anxiety, and stress. In turn, those feelings have potential threats for diminished interests in school and academic activities.

1.3. Research Questions

1. What are size of the direct and direct effects of social media, TV news and conversation with people on interest in coursework?
2. What are size of the direct and direct effects of social media, TV news and conversation with people on anxiety?
3. What are size of the direct and direct effects of social media, TV news and conversation with people on stress?
4. What are size of the direct and direct effects of social media, TV news and conversation with people on fear of contamination?
5. What are the mediating roles of fear of contamination, stress and anxiety in the relations between social media, TV news and conversation with people and interest in coursework?

2. Method

2.1. Participants and Procedure

The data were collected from undergraduate students currently attending a four-year college program in Turkey. There were 587 (75.9%) female and 186 (24.1%) male students from four universities in the sample, for a total of 773 students. The age of the participants was ranged from 18 to 49, with a mean of 21.63 and a standard deviation of 3.04. There were 113 (14.6%) freshman, 305 (39.5%) sophomore, 200 (25.9%) junior and 155 (20.1%) senior students.

The survey was created on Google Forms web-based application, and the electronic link was sent to about 800 students. The convenience sampling method was used in this study meaning that participation in the study was completely voluntary, and 773 of them filled the survey. The data collection process started right after the first case of coronavirus as the illness was announced by the officials on March 10th, 2020, and completed within five days. Since the classes were been canceled by the government, students filled the survey outside of regular class hours. There were seven attitude questions and three demographic items in the survey so; it took less than 60 seconds for each participant to complete the survey.

2.2. Measures

There were seven items in the survey, and each participant was asked to rate the items that best apply to them. The first item was related to social media posts on COVID-19. The item was "How much do the social media (Facebook, Twitter, WhatsApp, Instagram, etc.) posts related to coronavirus affect you?" The second item was related to TV News on COVID-19. The item was "How much do the TV News related to coronavirus affect you?" The third item was related to communication with people (CwP) around them. The item was "How much do communication on COVID-19 with relatives, friends or significant others around you affect you?" The response options for these first three items were ranged from "0= Never affecting" to "10= Affecting too much". The fourth item was perceived stress level. The item was "How much do COVID-19 illness increase your stress level?". The fifth item was perceived anxiety level. The item was "How much do COVID-19 illness increase your anxiety level?" The response options for these items (e.g., item 4 & 5) were ranged from "0= Never increasing" to "10= Increasing too much". The sixth item was the fear of contamination. The item was "How much do you fear that coronavirus would be transmitted to you?". The response options were ranged from "0= Not afraid at all" to "10= Afraid too much". The seventh item was Interest in Coursework (ICW). The item was "How much did your ICW/classes decrease after the coronavirus epidemic disease?" The response options were ranged from "0= Never decreased" to "10= Decreased too much". It should be noted that this item was negatively worded. Each student rated his/her perception or attitude about each of the survey items on a 10-point rating scale.

2.3. Data Analysis

Based on the literature, we first developed the path analysis model given in Figure 1. In the model, social media posts, TV News, and communication with people are the exogenous variables (e.g., no arrows pointing to them), and the remaining variables are endogenous variables. Based on this model, there are direct and indirect effects from the social media posts, TV News and communication with people to fear of contamination, stress and anxiety and ICW. Also, the indirect effects are mediated through communication with people to fear of contamination, stress, and anxiety. We hypothesized that there should be positive associations between exogenous variables and mediators, and negative associations between ICW and all other variables.

However, due to encountering model fit problems in the path model, we had to modify the hypothesized model by removing some of the insignificant paths. We also added a new path from anxiety to stress. We call this new model a selected path model (see Figure 2). The bivariate correlations amongst all variables are given in Table 1. In the analyses, we treated all items as continuous indicators, and the responses to the ICW was reversely coded. This means that as the score on this item decreases, the ICW decreases. We run both hypothesized and selected models in Mplus software version 7 (Muthen & Muthen, 1998-2012), and used the bootstrap with 5000 iterations to obtain 90% confidence intervals for the effects. The sizes and 90% confidence interval of the total, direct and indirect effects of exogenous variables on endogenous variables are given in Table 2.

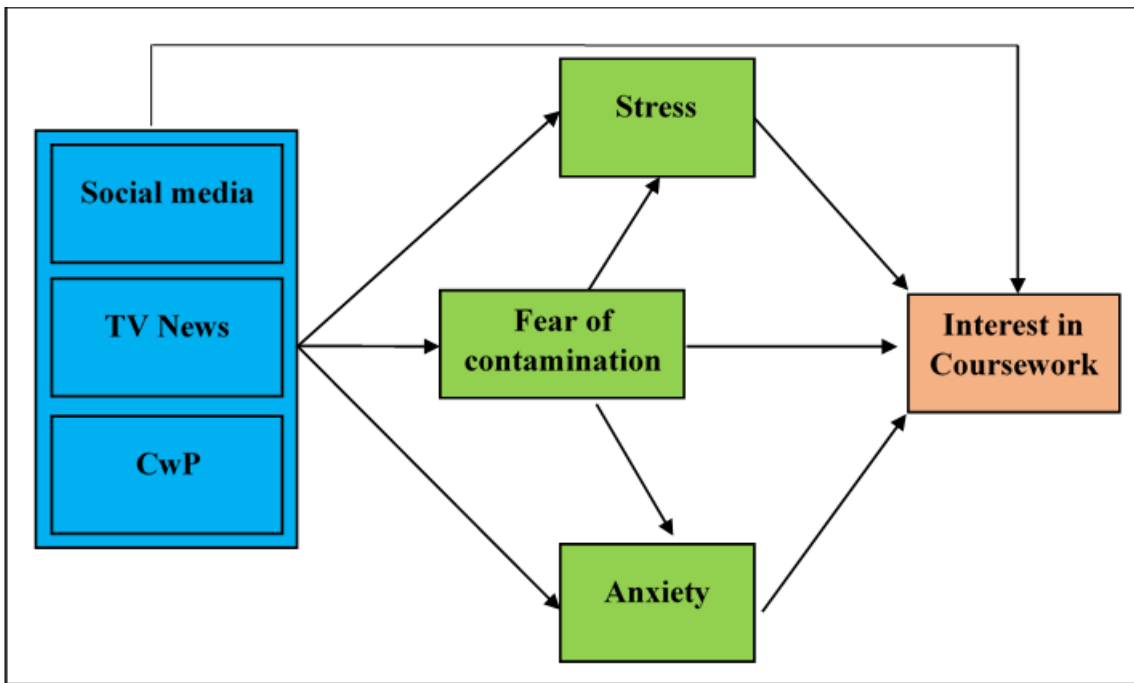


Figure 1. Hypothesized path model.

Note. CwP refers to communication with people

Table 1. Bivariate correlations, means and standard deviations amongst the observed variables.

Variable	1	2	3	4	5	6	7
1. Stress	--						
2. Anxiety	.88*	--					
3. Fear of Contamination	.71*	.70*	--				
4. Social Media	.71*	.70*	.59*	--			
5. TV News	.75*	.75*	.64*	.77*	--		
6. CwP	.77*	.75*	.62*	.74*	.79*	--	
7. Interest in Coursework	-.49*	-.48*	-.38*	-.36*	-.42*	-.45*	--
Means	6.09	6.20	6.06	5.98	6.68	6.17	5.73
SD	2.63	2.56	2.87	2.48	2.40	2.47	3.09

CwP =Communication with people, * $p < .01$

3. Results

3.1. Results of Model Fit

The fit indices of the hypothesized model were chi-square: $\chi^2(1) = 377.48$ and $p < .01$, Comparative Fit Index (CFI) = .87, Tucker-Lewis index (TLI) = -1.30, Root Mean Square Error of Approximation (RMSEA) = .70 and Standardized Root Mean Square Residual (SRMR) = .03. All of the model fit indices of the hypothesized model were not acceptable so, we removed all insignificant effects from the hypothesized model, and by looking at the modification indices, we added a path from anxiety to stress in the selected or final path model. The fit

indices of the selected path model were chi-square: $\chi^2(4) = 7.21$ and $p = .12$, Comparative Fit Index (CFI) = .99, Tucker-Lewis index (TLI) = .99, Root Mean Square Error of Approximation (RMSEA) = .03 with a 90% CI of [.00, .07] and Standardized Root Mean Square Residual (SRMR) = .00. The fit statistics of the final model indicated a very good model fit.

3.2. Effects of Exogenous Variables

Social media. Social media posts had significant total effects on stress (.24), anxiety (.21), fear of contamination (.18), and ICW (-.10) ICW. Thus, the sizes of social media's effects on endogenous variables were similar. The .24 effect on stress was partially direct ($B = .09, p < .05$) and partially indirect ($B = .15, p < .05$). There were three specific indirect effects on stress as a) social media to anxiety to stress ($B = .10, p < .05$), b) social media to fear of contamination to stress ($B = .02, p < .05$), and c) social media to fear of contamination to anxiety to stress ($B = .03, p < .05$). All specific indirect effects were significant and the highest on stress was mediated through anxiety. The .21 effect on anxiety was partially direct ($B = .16, p < .05$) and partially indirect ($B = .05, p < .05$). Both direct and indirect effects were significant. As specified in the model, the indirect effect on anxiety was mediated through fear of contamination. The .18 effect on fear of contamination was entirely direct as shown in Figure 2. Lastly, the -.10 effect on interest in coursework was entirely indirect. There were six different specific indirect effects from social media to ICW but three of them were significant only. The significant specific indirect effects were a) social media to stress to ICW ($B = -.02, p < .05$), b) social media to anxiety to ICW ($B = -.04, p < .05$), and c) social media to anxiety to stress to ICW ($B = -.02, p < .05$). The mediated effects of social media posts on ICW were similar in size and the mediated effect through anxiety was relatively higher than the other mediated effects.

TV News. The TV news had significant total effects on stress (.25), anxiety (.32), fear of contamination (.41), and ICW (-.13). The .25 effect on stress was entirely indirect, and there was no direct effect from TV News to stress. There were three specific indirect effects on stress as a) TV news to anxiety to stress ($B = .13, p < .05$), b) TV News to fear of contamination to stress ($B = .05, p < .05$), and c) TV News to fear of contamination to anxiety to stress ($B = .07, p < .05$). All specific indirect effects were significant and the highest on stress was mediated through anxiety. The .32 effect on anxiety was partially direct ($B = .21, p < .05$), and partially indirect ($B = .11, p < .05$). The indirect effect was mediated through fear of contamination. The .41 effect on fear of contamination was entirely direct as specified in the model. The -.13 effect on ICW was entirely indirect and there was no direct effect from TV News to ICW. There were five specific indirect effects but four of them were significant. The five specific indirect effects were a) TV News to anxiety to ICW ($B = -.05, p < .05$), b) TV News to anxiety to stress to ICW ($B = -.03, p > .05$), c) TV News to fear of contamination to stress to ICW ($B = -.01, p < .05$), d) TV News to fear of contamination to anxiety to ICW ($B = -.03, p < .05$), e) TV News to fear of contamination to anxiety to stress to ICW ($B = -.01, p < .05$).

Communication with people. The CwP had significant total effects stress, anxiety, fear of contamination, and ICW, with total effects of .45, .38, .26 and -.38, respectively. The .45 effect on stress was partially direct ($B = .18, p < .05$) and partially indirect ($B = .27, p < .05$). There were three specific indirect effects on stress. They were a) CwP to anxiety to stress ($B = .20, p < .05$), b) CwP to fear of contamination to stress ($B = .03, p < .05$), and c) CwP to fear of contamination to anxiety to stress ($B = .04, p < .05$). All specific indirect effects were significant and the larger effect was mediated through anxiety. The .38 effect on anxiety was partially direct ($B = .31, p < .05$) and partially indirect ($B = .07, p < .05$). The indirect effect was mediated through fear of contamination only. The .26 effect on fear of contamination was entirely direct and did not have an indirect component as specified in the model. The -.38 effect on ICW was partially direct ($B = -.19, p < .05$) and partially indirect ($B = -.19, p < .05$). There were six specific indirect effects from communication to ICW but four of them were significant. The six specific indirect effects were a) CwP to stress to ICW ($B = -.04, p < .05$), b) CwP to anxiety to ICW ($B = -.08, p < .05$), c) CwP to anxiety to stress to ICW ($B = -.04, p < .05$), d) CwP to fear of contamination to stress to ICW ($B = -.00, p > .05$), e) CwP to fear of contamination to anxiety to ICW ($B = -.01, p < .05$), f) CwP to fear of contamination to anxiety to stress to ICW ($B = -.01, p > .05$). The highest effect was mediated through anxiety but all specific indirect components were very small in size.

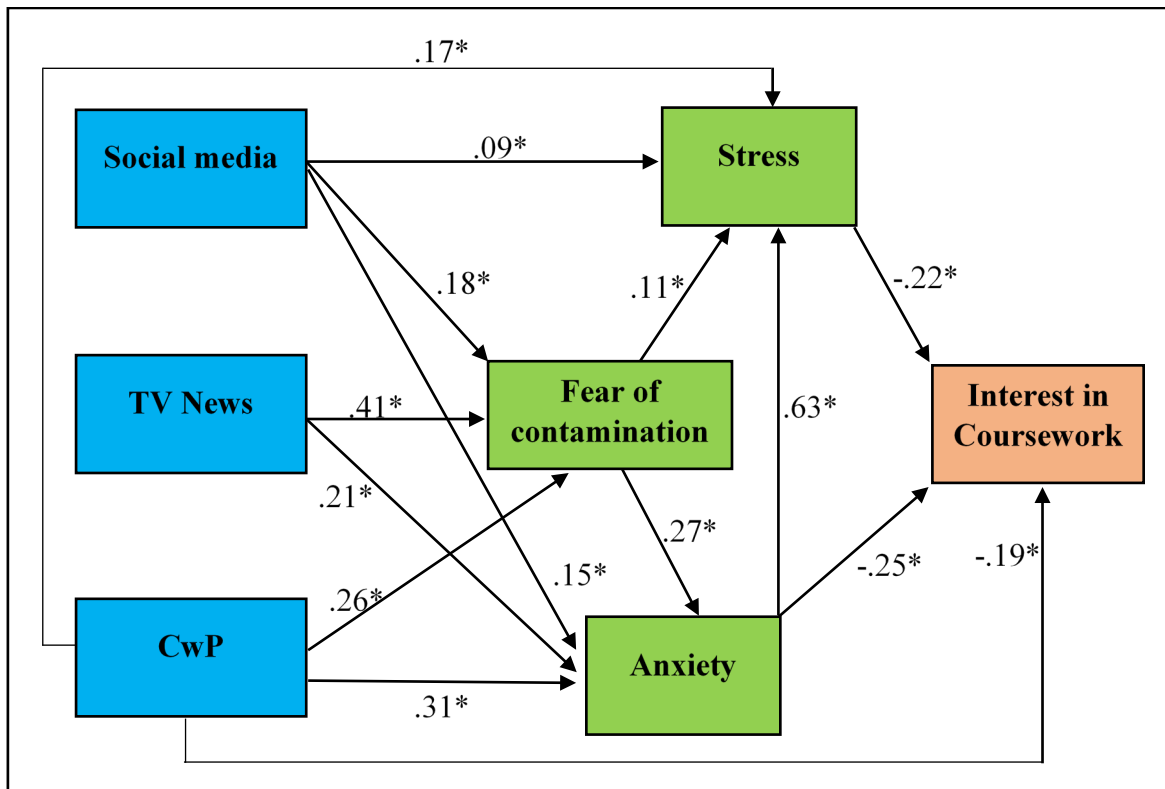


Figure 2. Final path model.

Note. CwP refers to communication with people

3.3. Effects on Endogenous Variables

Fear of contamination. The model specifies that fear of contamination was directly affected by all exogenous variables. The total effects were $.18$, $.41$ and $.26$ from social media, TV News and CwP, respectively. All effects were significant direct effects because the fear of contamination did not have indirect effects specified in the model. All effects were similar in size but fear of contamination was most strongly affected by TV News.

Table 2. The Sizes and 90% Bootstrap coefficients Confidence Intervals for Total, Direct and Indirect Effects of Variables in The Selected Path Model

Exogenous Variables	Endogenous Variables			
	Stress	Anxiety	Fear of Contamination	Interest in Coursework
Stress	--	--	--	-.22*[-.38,-.08]
	--	--	--	--
	--	--	--	-.22* [-.38,-.08]
Anxiety	<i>.63*</i> [.54, .72]	--	--	-.25*[-.40,-.09]
	--	--	--	-.14*[-.25,-.05]
	.63* [.54, .72]	--	--	-.39* [-.49,-.29]
Fear of Contamination	.11* [.07, .15]	.27* [.22, .32]	--	--
	.17* [.13, .21]	--	--	-.13*[-.17,-.09]
	.28* [.23, .33]	.27* [.22, .32]	--	-.13* [-.17,-.09]
Social Media	.09* [.04, .14]	.16* [.05, .22]	.18* [.07, .29]	--
	.15* [.10, .20]	.05* [.01, .08]	--	-.10*[-.14,-.07]
	.24* [.17, .31]	.21* [.14, .27]	.18* [.07, .29]	-.10* [-.14,-.07]
TV News	--	.21* [.13, .28]	.41* [.30, .52]	--
	.25* [.19, .31]	.11* [.07, .15]	--	-.13*[-.18,-.09]
	.25* [.19, .31]	.32* [.24, .40]	.41* [.30, .52]	-.13* [-.18,-.09]
Communication with People	.18* [.11, .24]	.31* [.24, .38]	.26* [.15, .37]	-.19*[-.30,-.08]
	.27* [.21, .34]	.07* [.04, .10]	--	-.19*[-.25,-.14]
	.45* [.37, .52]	.38* [.31, .46]	.26* [.15, .37]	-.38* [-.47,-.30]

Note. Direct effects in regular text, total *indirect* effects in italics, **total effects** in bold. The symbol -- means the effect is not in the model; * $p < .05$; all effects are unstandardized effects.

Anxiety. The model specifies that anxiety was directly affected by all exogenous variables and by fear of contamination. The total effects were .21, .32, .38 and .27 from social media, TV News, CwP and fear of contamination, respectively. The effects from the exogenous variables were partially direct and partially indirect, however, the effect from fear of contamination was entirely direct. Anxiety was most strongly affected by CwP (.38). The effect was primarily due to the direct effect of CwP on anxiety, with a direct component of .31. Secondly, the effect of CwP was mediated by its effects on fear of contamination only. The indirect effects of TV News ($B = .11, p < .05$) and social media ($B = .05, p < .05$) were also mediated by fear of contamination. The strongest indirect effect on anxiety was from TV News.

Stress. The model specifies that stress was affected by all exogenous variables and by fear of contamination and anxiety. The total effects were .24, .25, .45, .28 and .63 from social media, TV News, CwP, fear of contamination and anxiety, respectively. The proposed effects of TV News was entirely indirect but the other specified effects were both direct and indirect. The larger effects on stress were anxiety and CwP total effects of .63 and .45, respectively. Social media, TV News and fear of contamination have relatively smaller (i.e., .24, .25 and .27, respectively) but significant total effects. The effect of anxiety was entirely direct as proposed in the model. As noted earlier, the effects of TV News was entirely indirect. Its mediated effects were a) from TV news to fear of contamination to stress, with an indirect component of .05 ($p < .05$), b) from TV news to anxiety to stress, with an indirect component of .13 ($p < .05$), and c) from TV news to fear of contamination to anxiety to stress, with an indirect component of .07 ($p < .05$). Thus, the indirect effect of TV News on stress was primarily

mediated by anxiety. According to the model specification, the .24 total effect from social media to stress was both direct ($B=.09, p<.05$) and indirect ($B=.15, p<.05$). Thus, the total indirect effect was larger than the direct effect. Likewise, there were three specified indirect paths from social media to stress: a) social media to anxiety to stress ($B=.10, p<.05$), b) social media to fear of contamination to stress ($B=.02, p<.05$), and c) social media to fear of contamination to anxiety to stress ($B=.03, p<.05$). Thus, the indirect effect of social media on stress was primarily mediated by anxiety. The .45 effect from CwP was both direct ($B=.18, p<.05$) and indirect ($B=.27, p<.05$). There were three specific indirect effects from CwP. They were a) CwP to anxiety to stress ($B=.20, p<.05$), b) CwP to fear of contamination to stress ($B=.03, p<.05$), and c) CwP to fear of contamination to anxiety to stress ($B=.04, p<.05$). Thus, the indirect effect of CwP on stress was primarily mediated by anxiety. The .28 effect from fear of contamination to stress was both direct ($B=.11, p<.05$) and indirect ($B=.17, p<.05$). Thus, the effect was primarily due to the indirect effect of fear of contamination on stress. Secondly, the effect of fear of contamination was mediated by its effects on anxiety. Thus, anxiety played a very important mediator role between fear of contamination and stress.

Interest in coursework. According to the model specification, ICW was directly affected by communication with people, anxiety, and stress, and indirectly affected by all variables. The largest of the significant effects on ICW were CwP and anxiety, with total effects of -.38 and -.39, respectively. The other total effects were smaller in size but all were significant. There were four significant specific indirect effects from communication to ICW. These were a) CwP to stress to ICW ($B=-.04, p<.05$), b) CwP to anxiety to ICW ($B=-.08, p<.05$), c) CwP to anxiety to stress to ICW ($B=-.04, p<.05$), d) CwP to fear of contamination to anxiety to ICW ($B=-.01, p<.05$). Thus, anxiety played a major role in the indirect effect of CwP on ICW. The -.39 effect comes from anxiety was comprised of .25 significant direct component and .14 significant direct component. The indirect path was mediated through stress. Thus, stress played an important mediating role in the indirect path of anxiety on ICW.

The -.22 effect of stress on ICW was entirely direct as in the proposed model. According to the model specification, the effects of social media, TV News and fear of contamination were entirely indirect. The significant specific indirect effects from social media to ICW were a) social media to stress to ICW ($B=-.02, p<.05$), b) social media to anxiety to ICW ($B=-.04, p<.05$), and c) social media to anxiety to stress to ICW ($B=-.02, p<.05$). All effects were smaller in size and similar but anxiety relatively played an important mediating role in the indirect path of social media on ICW. The significant specific indirect effects from TV News to ICW were a) TV News to anxiety to ICW ($B=-.05, p<.05$), b) TV News to fear of contamination to stress to ICW ($B=-.01, p<.05$), c) TV News to fear of contamination to anxiety to ICW ($B=-.03, p<.05$), d) TV News to fear of contamination to anxiety to stress to ICW ($B=-.01, p<.05$). All effects were smaller in size and similar but the mediator role of anxiety was relatively higher than the other variables. The significant specific indirect effects from fear of contamination to ICW were a) fear of contamination to stress to ICW ($B=-.02, p<.05$), b) fear of contamination to anxiety to ICW ($B=-.07, p<.05$), c) fear of contamination to anxiety to stress to ICW ($B=-.04, p<.05$). All of the indirect effects were significant but the most powerful was through anxiety.

Discussion

The pandemic outbreaks that threaten human life, which we have encountered throughout history and will encounter in the future most likely, affect not only economic, social, and educational structures but also human behavior and emotions. Epidemic and pandemic outbreaks, such as MERS, H1N1, and SARS have also shown that people experience stress, fear and anxiety (Almutairi et al., 2015; Bults et al., 2011; Cowling et al., 2010; Maunder et al., 2006). Especially in our era, the global spread is followed as well as local ones. Not only people in China have been affected by the COVID-19 pandemic that occurred in Wuhan, but also people in India, Italy, Turkey, and many other countries have been affected biologically and psychologically. Therefore, it is crucial to understand the effects of COVID-19 outbreak on people's emotions and related consecutive outcomes such as school interests.

The current study investigated the effects of the last pandemic outbreak, COVID-19, on university students' ICW. More specifically, we examined the effects of external factors (TV news, social media, and communication with others) on undergraduate students' interests in coursework through intrinsic factors (stress, anxiety, fear of contamination, and ICW). Understanding such relationships is more important to us,

especially at a time when face-to-face lessons have been canceled all over the world and transitioned to online education.

The results of this study indicated significant direct and indirect effects of external and intrinsic factors on ICW. All correlations among the variables were significant (see Table 1). Students' ICW had the lowest relationship with social media ($r=-.36$) and the highest with stress ($r=-.49$). Contrary to our hypothesized model, there were no direct effects from social media and TV news to ICW. The only direct effect from external factors to ICW was CwP (-.19).

Communication with others had the highest total and indirect effect on ICW. This finding indicated that students were affected by the grapevine. In other words, when participants talked with their classmates, parents, roommates, or an ordinary person in their life about COVID-19, they were affected by their ideas, comments, and perspective of the pandemic. As a result, this directly decreased their interest in coursework by 19%. The decrease in ICW was doubled (-.38) as internal factors (stress, anxiety, and fear of contamination) involved and mediated into the model. Especially participants were stressed and anxious because of communication with others. Therefore, this can be concluded that participants' priorities shifted from interests in coursework to the current agenda, COVID-19. Among these priorities, courses were replaced by survival, not getting sick, and the protection of loved ones. As stated by Remmerswaal and Muris (2011), when people's closest ones they trust feel anxious and stressed, people will feel anxious and stressed as well. This finding was also consistent with Pandey and colleagues' finding (2010) indicating that there were misleading information and rumors affected people during the H1N1 influenza pandemic. Although competent bodies invite people to remain calm, sane, and disregard unscientific explanations, people can believe more of what others are saying. Thus, in order to keep school and coursework interest higher, students should be careful and selective when they are encountered with the information related to pandemic.

Another important finding was the direct and indirect effects of TV news on internal factors and ICW. TV news did not directly affect students' ICW but affected through increased stress, anxiety and fear of contamination. TV news had a moderate direct effect (.41) on fear of contamination. This finding made sense because after it was discovered that this was a rapidly transmitted epidemic, all national and international channels talked about it almost every day and in the news zone. People can develop irrational beliefs and fears when an issue is repeated too much (Timsit, 2020). For example, as in many countries, the initial reaction in Turkey was to buy and deplete antiseptic products on grocery shelves. Especially, people in Turkey bought cologne in particular because it was believed that the high alcohol content of the colony neutralizes the virus and reduces the risk of catching. Even this event showed how people were affected by the TV and fear of contamination. As students watched TV news, their fear of contamination, stress, and anxiety increased, so their ICW decreased. This finding was consistent with previous studies (de Silva Medeiros & Maasarani, 2010; Klemm, Das, & Hartmann, 2016; Van den Bulck & Custers, 2009). These researchers found that TV exposure and news were related to pandemic diseases. For example, Van den Bulck and Custers (2009) conducted a study after the H5N1 pandemic outbreak in 23 European Union states and found that mass media coverage triggered higher levels of fear.

Another finding worth discussion was the direct and indirect effects of social media on internal factors and ICW. Researchers (Balci & Baloglu, 2018; Karaman, 2020; Lin et al., 2016) indicated that the use of social media increased dramatically in the past 10 years. These studies showed when social media were used out of purpose and long hours it affected people both physically and psychologically negatively. In the current study, social media had the highest total effect on stress, anxiety, fear of contamination, and ICW respectively. Participants' levels of stress and anxiety increased when they looked at COVID-19 related posts. Consequently, social media affected ICW negatively via stress, fear, and anxiety. When especially considered that the information on the social media cannot be necessarily trustworthy, students should be additionally careful when receiving information from social media.

When we look at all these results in general, we realized that external factors were divided under two topics: 1) technological effect (social media and TV news) and 2) human effect (communication with others). Human factor had the largest effects on all variables except the fear of contamination. As Harry Stack Sullivan stated years ago "people make people sick and people make people well again" (1953, p.). Because COVID-19 outbreak threatens university students' school and coursework interest and it can lead to lower levels of school

success, the results of this study can guide practical implications. In this sense, it is important to carefully approach the information on TV news, social media, and daily communications. More importantly, the findings revealed that it is useful for students to handle negative emotions such as stress, fear, and anxiety. Educational programs, psychoeducational programs, and individual and group counseling implications can be delivered to students to help them handle negative emotional outcomes of the outbreak, so it can help them increase school interests.

The topic of this study is very important and unique in terms of conducting at pandemic times; however, the study has some limitations. First, because the classes were canceled out, we used a convenience sampling method; hence, the generalizability of the results can be limited. This study can be replicated by using a random sampling method. Second, the sample was predominantly female (3/4 female vs. 1/4 male). A further study should be conducted with a balanced sample. Third, in this study, we examined the relations among the items that intend to measure perceived psychological factors and did not use validated scales. It is recommended future research using scales such as depression or anxiety scales be conducted.

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Investigation of Smartphone Addiction Levels Among University Students

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ABSTRACT

The purpose of this study is to examine the smartphone addiction levels among university students. For this purpose, first of all, students' addiction levels were determined, and then it was examined whether these levels differed according to the gender of the students, the purpose of using the internet on the smartphone, and the usage times of smartphones. The causal comparison method was used in the research as a quantitative research method and the sampling of the research consisted of 435 students studying in the Faculty of Theology at Ondokuz Mayıs University and who were determined by the accessible sampling method. In order to determine the smartphone addiction levels of university students, the data was obtained with the Smartphone Addiction Scale. Descriptive statistics, the independent samples t-test, and one-way analysis of variance were used to analyze the obtained data. The results of the research showed that students studying in the Faculty of Theology had low levels of smartphone addiction, male students had higher levels of smartphone addiction compared to female students, the use of social media via smartphones increased the risk of addiction, and that students with a higher average daily smartphone usage also had higher levels of addiction.

Keywords:

smartphone addiction, the purpose of internet usage, duration of use

1. Introduction

Smartphones, which are one of the fastest developing and changing tools of information and communication technologies, have become more than interpersonal communication tools as they provide internet access today (Argumosa-Villar, Boada-Grau and Vigil-Colet, 2018; Gezgin and Çakır, 2016). In addition to the traditional features of mobile phones such as calls and SMS; mobile applications, which enable interactions including browsing and sharing on social networking sites, playing games, and shopping, make smartphones an indispensable technology in individuals' lives (Samaha & Hawi, 2016). Because, this technology enables individuals to perform their daily life practices more efficiently, such as shopping, socializing, and accessing the news. Besides, the fact that individuals enjoy real-life activities in a virtual environment that provides a digital identity makes this technology more widespread (Gökçearslan, Mumcu, Haşlamam and Çevik, 2016). Pew Research Center (2019) states that 94% of adults in developed economies and 83% of adults in developing countries have mobile phones. According to TSI's (Turkish Statistical Institute) (2019) Household Information Technologies Usage Survey, the present rate of the availability of mobile phones in households in Turkey is 98.7%. The intensive use of smartphones in daily life practices can turn into problematic use, effecting interpersonal communication, human health, and happiness. The problematic use of mobile phoned can be classified as harmful use (using mobile phones in traffic), improper use (using mobile phones in the classroom, in a meeting, or in the cinema) and excessive use (Walsh, White, & Young, 2007). The components of smartphone addiction that refers to excessive use of mobile phones are stated as tolerance, withdrawal,

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obsessive-compulsive symptoms, and functional disorders. (Pamuk & Kutlu, 2017; Lin et al., 2014). Smartphone addiction is defined as the case that individuals do not reduce but increase the use of smartphones in the face of disturbing situations such as psychological problems like anxiety and stress and physiological problems like hand and neck dysfunctions, headache, and poor sleep quality as they more intensely feel the need for smartphones (Padir, 2017; Torrecillas, 2007). Increased use of smartphones is seen as an impulse disorder that brings along the uncontrollable use and negative effects in other areas of life (Park & Lee, 2012; Gezgin, Hamutoğlu, Samur and Yildirim, 2018). Although smartphone addiction is similar to other technological addictions, it can be much more dangerous than others due to its unique features such as portability and ease of connection (Demirci, Orhan, Demirdaş, Akpınar and Sert, 2014).

Smartphones can be said to have a more widespread usage among today's youth thanks to their features that satisfy the users or make them feel good, as a result of increased need for communication, security, and control, instrumental functions, status and identity, the use of social networking sites, a sense of permanent accessibility, sharing feelings and thoughts, having fun, and playing games (TUİK, 2019; Aktaş & Yılmaz, 2017; Aljomaa et al., 2016; Zhitomirsky-Geffet & Blau, 2016; Corbonell, Oberst & Beranuy, 2013). However, the transformation of this widespread use of smartphones to addiction has been reported to have negative effects on the feeling of satisfaction with life, happiness levels, and subjective well-being of young people (Kozan, Kavaklı, & Cutter, 2019; Çelik, 2018; Samaha & Hawi, 2016; Lepp, Barkley and Karpinski, 2014; Park and Lee, 2012). Apart from the stated psychological problems, hand and neck dysfunctions, headache, and poor sleep quality physiological problems are also among the negative effects of smartphone addiction (Sülün, Günay, Sarman and Dertli, 2020; Günal and Pekçetin, 2019; Koças and Şaşmaz, 2019; Randjelović, Stojiljković, Radulović, Stojanović and Ilić, 2019; Keskin Ergan, Başkurt and Başkurt, 2018; Yorulmaz, Kırac and Sabırlı, 2018; Demirci, Akgönül and Akpınar, 2015).

Researches on smartphone addiction levels among young people focus on psychological variables (Pamuk and Kutlu, 2017) such smartphone usage time, gender and age (Gezgin et al., 2018; Konan, Durmuş, Ağiroğlu and Türkoğlu, 2018; Chen, Liu, Ding, Ying, Wang and Wen, 2017; Van Deursen et al., 2015), type of content engaged or the purpose of smartphone usage (Kuss et al., 2013; Salehan and Negahban, 2013), academic success (Yağın et al., 2020; Samaha and Hawi, 2016), loneliness (Aktaş and Yılmaz, 2017; Gezgin, Ümmet and Hamutoğlu, 2020), satisfaction with life (Kula, Ayhan, Kaçay and Soyer, 2020; Kuang-Tsan and Fu-Yuan, 2018; Samaha and Hawi, 2016), subjective well-being (Yıldırım and Ayas, 2020), stress and social anxiety (Enez Darcin et al., 2016; Sapacz, Rockman, & Clark, 2016; Van Deursen et al., 2015; Chiu, 2014; Lee et al., 2014). It is also stated that smartphone addiction is associated with pathological personality traits such as impulsivity and neuroticism (Carvalho, Sette and Ferrari, 2018). The research by Lopez-Fernandez et al. (2017) shows that gender, using social networking sites, and spending a long time with smartphones are among the predictor variables of young people's smartphone addiction. It is stated that online mobile games and social networking sites pose a risk factor for smartphone addiction in terms of the type of content engaged on smartphones (Lopez-Fernandez et al., 2018; Jeong et al., 2016; Lee, 2015; Kuss et al., 2013; Salehan and Negahban, 2013).

When the studies conducted are examined, it is noteworthy that smartphone addiction is significantly high among university students. This situation reveals the potential risk for university students in terms of smartphone addiction. When the literature is examined, no study was found on smartphone addiction among students studying in the Faculty of Theology. Only the nomophobia levels among the students studying in the Faculty of Theology have been examined in terms of various variables (Turan and Becit İşçitürk, 2018). Researches in the literature show that it is important to examine the level of smartphone addiction among university students in terms of gender, the purpose of internet use, and smartphone usage time. In this context, the aim of the research is to examine the smartphone addiction levels among the students studying in the Faculty of Theology. Answers to the following research questions will be sought for this purpose:

- What are the university students' smartphone addiction levels?
- Do the university students' smartphone addiction levels differ depending on their gender?
- Do the university students' smartphone addiction levels differ depending on their purpose to use the internet?
- Do the students' smartphone addiction levels differ depending on their smartphone usage time?
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2. Methodology

2.1. Research Design

This research is designed by using a causal comparison method, one of the quantitative research methods. In causal comparison studies, the causes of an existing or naturally occurring condition and the variables that affect these causes, or the results of an effect are determined (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2010).

2.2. Population and Sample of the Research

The population of this research consisted of students studying in the Faculty of Theology at Ondokuz Mayıs University in the 2018-2019 academic year. The sample of the research consisted of 435 students studying in the Faculty of Theology at Ondokuz Mayıs University in the 2018-2019 academic year, determined by the accessible (easy) sampling method. In this method, the researcher tries to achieve the sample size needed by starting from the most easily accessible responders (Büyüköztürk et al., 2010). Since the students' possession of a smartphone was deemed important for the purposes of the research, attention was paid to the voluntary participation students who have a smartphone. The demographic characteristics of the students in the sample are shown in Table 1.

Table 1. Demographic characteristics of university students

Variables	Groups	N	%
Gender	Female	293	67,4
	Male	142	32,6
Age	18-19 years	27	6,2
	20-21 years	185	42,5
	22-23 years	168	38,6
	24-25 years	34	7,8
	26 years and over	21	4,8
Class	First Grade	103	23,7
	Second Grade	119	27,4
	3rd Grade	142	32,6
	4th Grade	71	16,3

According to Table 1, 67% of the students participating in the study were female and 33% were male. In addition, it is seen that 81% of students were between the ages of 20 and 23.

2.3. Data Collection Tools

In the research, the "Smartphone Addiction Scale", developed by Kwon et al. (2013) and adapted into Turkish by Demirci et al. (2014), was used as a data collection tool to determine the smartphone addiction levels among university students. Data on students' demographic characteristics were obtained through a personal information form. The Smartphone Addiction Scale consists of 33 items and seven factors as "disturbance in daily life and tolerance" (8 items), "withdrawal symptoms" (7 items), "positive expectation" (5 items), "cyber-oriented relations" (4 items), "overuse" (4 items), "social network addiction" (2 items), and "physical symptoms" (3 items). In the adaptation study by Demirci et al. (2014), it was determined that the factor loads of the scale items ranged between 0.35 and 0.82. Cronbach's alpha internal consistency coefficient of the scale was 0.95, Guttman split halves reliability was 0.89, test-retest reliability was 0.81. Cronbach's alpha internal consistency coefficients for the factors of the scale ranged from 0.57 to 0.92. The seven factors of the scale explain 66.4% of the total variance. The grading options of the Likert type scale used are "1-Strongly Disagree 6-Strongly Agree". The scores that can be obtained from the scale vary between 33 and 198 points. The

increase in the score obtained from the scale indicates the increased risk of smartphone addiction (Demirci et al., 2014).

With the data obtained in this study, the Cronbach's alpha internal consistency coefficient of the scale was determined as 0.93. Cronbach's alpha internal consistency coefficients for the factors of the scale ranged from 0.65 to 0.88. Also, according to the results of exploratory factor analysis, it was observed that the first factor loads before the scale items were between 0.76 and 0.38. The item-total score correlation coefficients of the items varied between 0.37 and 0.74. Also, according to the results of exploratory factor analysis, it was observed that the first factor loads before the scale items were returned were between 0.76 and 0.38. The fact that the load value of each item was over 0.30 is considered sufficient in creating a factor pattern (Çokluk, Şekercioğlu & Büyüköztürk, 2012; Tavşancıl, 2010). The fact that the first-factor load values of all items were above 0.30 indicates that the scale may have a general factor (Büyüköztürk, 2018). Thus, the total score was obtained from the scale used and the analyzes were made using the total score.

2.4. Data Collection and Analysis

The data of the research were collected by the researchers during the class hours. During the data collection process, the students were first informed about the purpose of the research, the data collection tool, and that the data will be kept confidential, and then it was reminded that the participation in the research was voluntary and students were asked to answer the scale. The answering process was completed in 10-15 minutes.

Whether the data showed a normal distribution before the analysis was examined on the distribution of the total scores obtained from the scale according to the central distribution, skewness, and kurtosis values, based on the Kolmogorov-Smirnov test significance levels ($p > .05$). (Büyüköztürk, 2018; Morgan, Leech, Gloeckner and Barrett, 2004). It was determined that the data obtained according to Table 2 provided the normality assumption and there were no excessive skewness or kurtosis problems. After the normality tests, students' smartphone addiction levels were analyzed with descriptive statistics, whether the addiction scores differ according to gender was analyzed with independent samples t-test analysis, and whether the addiction scores differ according to the purpose of using the internet on the smartphone and the usage times of the smartphone were analyzed with one-way analysis of variance (ANOVA).

Since the lowest score that can be obtained from the smartphone addiction scale was 33 and the highest score was 198, the levels of smartphone addiction were defined as follows: Very low level; 33-65 points, low level; 66-98 points, medium level; 99-131 points, high level; 132-164 points, and very high level; 165-198 points. When examining the levels of smartphone addiction for the purpose of internet use, the use for gaming was not included in the analysis. Because, the number of students who stated to use the internet mostly for gaming purposes was very low ($n = 5$, 1.1%). Independent sample t-test was used in terms of students' smartphone addiction levels in terms of whether they use the internet for specific purposes (doing research, using social networking sites, playing games, having fun) or not in order to explore the findings obtained by the one-way analysis of variance. In this analysis, the data of students who stated more than one purpose of use were added to the relevant category, and recoding was performed for each purpose of use. The level of statistical significance in analyzes using SPSS software was assumed to be 0.05.

3. Findings

Findings obtained from the research are presented below in the order of the research questions. Descriptive statistics about university students' smartphone addiction levels are shown in Table 2.

Table 2. Descriptive statistics on smartphone addiction levels

	N	M	SD	Median	Mode	Min	Max	Skewness	Kurtosis
Smartphone addiction	435	83.72	25.58	81	59	33	178	.526	.440

According to Table 2, smartphone addiction levels of university students ($M = 83.72$) can be said to be low overall. An independent sample t-test was used to reveal whether university students' smartphone addiction levels differ according to gender. The results of the analysis are presented in Table 3.

Table 3. t-test results of smartphone addiction levels by gender

	Gender	N	M	SD	df	t	p
Smartphone addiction	Female	293	81.73	22.70	433	-2.54	.012
	Male	142	87.81	24.88			

As seen in Table 3, there was a significant difference between female (M = 81.73, SD = 22.70) and male students (M = 87.81, SD = 24.88) in terms of smartphone addiction levels [$t_{(433)} = -2.54, p = .01$]. According to this finding, it can be said that male students have a higher level of smartphone addiction than female students.

The one-way analysis of variance was (ANOVA) used to determine whether the level of smartphone addiction of university students differs according to the purpose (making research, using social networking sites, playing games, having fun) of using smartphones. Descriptive statistics of smartphone addiction levels according to the purpose that students use the Internet most on their smartphones are presented in Table 4 and ANOVA results are presented in Table 5.

Table 4. Descriptive statistics of smartphone addiction levels according to the main purpose of using the Internet on mobiles phones

The main purpose of using the Internet on mobile phones	N	M	SD
1. Research (academic, lesson, homework, job, profession, health etc.)	59	72.69	22.309
2. Social networks (communication and sharing)	216	88.06	23.451
3. For entertainment purposes (listening to music, watching movies and videos, etc.)	44	79.98	17.961
4. Multi-purpose use	111	82.51	23.858
Total	430	83.69	23.435

When Table 4 is examined, it is seen that the smartphone addiction levels of university students who used the internet on their smartphone mostly to communicate and share posts on social networking sites have higher than those who used them for other purposes. It is seen that the smartphone addiction levels of those who used it for research purposes are lower than those who used it for other purposes.

Table 5. ANOVA results for smartphone addiction levels according to the main purpose of using the Internet on mobile phones

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.	Scheffe
Between groups	12018.046	3	4006.015	7.633	.000	
Within groups	223587.433	426	524.853			1-2,
Total	235605.479	429				1-4

According to Table 5, in ANOVA results, a significant difference was found between smartphone addiction levels and the main purpose that university students use the internet on their smartphones. [$F_{(3,426)} = 7.633, p = .000$]. Scheffe test was used to determine among which groups there was a significance. According to the findings, it was determined that the smartphone addiction levels of those who used the internet mostly to communicate and share posts on social networking sites were higher than those who used it the most to make research on various subjects such as academic, lesson, homework, job, profession, and health. In addition, it was determined that students who used the Internet for more than one purpose had higher levels of smartphone addiction than those who used it to conduct research on subjects such as academic, lecture, homework, job, profession, and health. The findings show that those who use the internet on their smartphones to communicate and share posts on social network sites have high levels of smartphone

addiction, in other words, these students carry more risks in terms of smartphone addiction. In order to explore the findings obtained by single directional variance analysis, t-test was used to reveal whether there was a significant difference between the level of smartphone addiction among university students and their use of the internet on their smartphones for specific purposes (doing research, using social networking sites, playing games, having fun) or not. The findings are presented in Table 6:

Table 6. t-test results of smartphone addiction levels according to the purpose of using the internet on mobile phones

The purpose of using the Internet on mobile	Status	N	M	SD	df	t	p
1. Research (academic, lesson, homework, job, profession, health etc.)	Yes	142	77.17	22.62	433	4.105	.000
	No	293	86.89	23.42			
2. Social networks (communication and sharing)	Yes	316	86.41	23.73	433	-3.938	.000
	No	119	76.58	21.69			
3. Gaming (mobile games)	Yes	27	91.37	29.81	433	-1.745	.082
	No	408	83.21	23.07			
4. For entertainment purposes (listening to music, watching movies and videos, etc.)	Yes	113	83.50	21.64	433	.116	.908
	No	322	83.80	24.25			

When Table 6 is examined, it is seen that the smartphone addiction level ($M = 77.17$) of students who use the internet connection on their phones for research on academic, lesson, homework, job, profession, health, etc. ($M = 86.89$) was found to be lower than [$t_{(433)} = 4.105$, $p < .01$]. This finding can be interpreted as those who use the internet connection on the smartphone to conduct research have a lower risk of smartphone addiction. It was found that the students who use the internet connection on their phones to communicate and share posts on social network sites had a higher smartphone addiction level ($M = 86.41$) compared to those who do not use it for this purpose ($M = 76.58$) [$t_{(433)} = -3.938$, $p < .01$]. This finding can be interpreted as those who use the internet connection on the smartphone to communicate and share on social networking sites have a higher risk of smartphone addiction. No significant difference was found between the smartphone addiction levels of students who use the internet connection on their phones for gaming on mobile phones ($M = 91.37$) and those who do not use it for this purpose ($M = 83.21$) [$t_{(433)} = -1.745$, $p > .05$]. Similarly, no significant difference was found between the smartphone addiction levels of students who use the internet connection on their phones for entertainment purposes such as listening to music and watching videos or movies ($M = 83.50$) and those who do not use it for these purposes ($M = 83.80$) [$t_{(433)} = 0.116$, $p > .05$]. These findings show that university students who use the internet connection of their phones for gaming and entertainment on mobile have similar smartphone addiction levels compared to students who do not use them for these purposes.

One-way analysis of variance (ANOVA) was used to reveal whether university students' smartphone addiction levels differ according to the average daily smartphone usage time. Descriptive statistics of smartphone addiction levels by daily average smartphone usage time are presented in Table 7 and analysis results are presented in Table 8.

Table 7. Descriptive statistics of smartphone addiction levels by average daily smartphone usage time

Average daily smartphone usage time	N	M	SD
Less than 1 hour (1)	11	62.45	20.082
1-2 hours (2)	117	73.15	19.678
3-4 hours (3)	195	82.47	20.332
5-6 hours (4)	66	95.61	21.348
More than 6 hours (5)	46	103.93	28.301

Table 8. ANOVA results of smartphone addiction levels by daily average smartphone usage time

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.	Scheffe
Between groups	46485.868	4	11621.467	25.651	.000	1-4, 1-5, 2-3,
Within groups	194818.352	430	453.066			2-4, 2-5, 3-4,
Total	241304.221	434				3-5,

According to the results of the analysis, a significant difference was found between the smartphone addiction levels of university students in terms of daily average smartphone usage time [$F_{(4,430)} = 25.65$, $p = .000$]. As the group variances were not equal according to the result of the Levene test, Dunnett's C test was used to determine among which groups there was a difference. According to the findings, it was found that the level of smartphone addiction of those who used their smartphone on average 5-6 hours per day and more than 6 hours was higher than those who use it for less than 1 hour, for 1-2 hours, and for 3-4 hours. Also, it was determined that those who used their smartphone for 3-4 hours a day had higher levels of smartphone addiction than those who used it for 1-2 hours. These findings show that students with a high average of daily smartphone usage time also have high levels of smartphone addiction, in other words, those with higher smartphone usage carry more risks in this regard.

4. Conclusion and Discussion

In this study, in which university students' smartphone addiction levels were examined in terms of different variables, it was determined that students in the Faculty of Theology had low levels of smartphone addiction. The literature shows that university students' smartphone addiction levels are low and these students have moderate risk (Celikkalp et al., 2020; Sohn et al., 2019; Aljomaa et al., 2016). Moreover, meta-analysis studies indicate that smartphones pose a significant risk for children and adolescents, along with the ability to play games and use social networking sites (Fischer-Grote, Kothgassner & Felnhofer, 2019; Davey & Davey, 2014). In a study conducted by Turan and Becit İşçitürk (2018), it is stated that the nomophobia levels, described as the fear of being deprived of mobile phones, was moderate among students in the Faculty of Theology. It is also stated that nomophobia has similar characteristics with other psychosocial disorders including behavioral disorders, anxiety disorders, or variable mood experienced by smartphone addicts. These aforementioned problems negatively affect the individual's concentration and sleep patterns (Rosen et al., 2016; Dixit et al., 2010).

In the study, it was seen that male students had a higher level of smartphone addiction than female students. The studies examining the smartphone addiction of students in terms of gender state different results. Aljomaa et al. (2016) and Mohammadbeigi et al. (2016) stated that male students were addicted more, while Bal and Balcı (2020), Gündoğmuş, Taşdelen Kul and Çoban (2020) and Celikkalp et al. (2020) stated that female students were addicted more. In some studies, no significant difference was found in terms of gender (Kula et al., 2020; Yıldırım and Ayas, 2020; Minaz and Çetinkaya Bozkurt, 2017; Kumcağız and Gündüz, 2016). In the context of the sample examined, it is thought that this result stems from the fact that male students spend more time in using smartphones than female students, and differences in their intended use. Because, different results in terms of gender in the literature show that it may be appropriate to examine students' addiction levels together with gender and smartphone usage purposes (Chen et al., 2017; Cocoradă, Maican, Cazan and Maican, 2018).

The results of the research show that the use of the internet on the smartphone for research purposes does not make a significant difference in the addiction and that the use for communication and sharing posts on social network sites is effective on the addiction. In addition, the addiction levels of those who use the Internet on their smartphones to communicate and share posts on social network sites are higher than those of the students who use it mostly for research purposes. These results support many research findings in the literature. The use of social media via smartphone among university students is seen as a potential determinant of smartphone addiction (Gündoğmuş, Taşdelen Kul and Shepherd, 2020; Lopez-Fernandez et al., 2017). No difference was found between the use of the internet on the smartphone for music, film, and video viewing purposes and other purposes in terms of smartphone addiction levels. Social media, one of the most important functions of smartphones, is emphasized in the studies conducted by young users. On one hand, this

widespread use makes communication with the social environment continuous and on the other hand, it causes serious time loss (Yusufoglu, 2017).

When the smartphone addiction levels of university students were analyzed according to the average daily smartphone usage time, it was observed that the students with high smartphone usage also had high addiction levels. Researches also showed that the usage of smartphones, which covers the daily duration of smartphone use and how many times a smartphone is checked, has a significant effect on smartphone addiction (Yıldırım and Ayas, 2020; Gökçearslan et al. 2016). Students' fear of not being online and losing communication causes students to be busy with their smartphones for longer periods of time. Increasing usage time of smartphones may bring negativity in terms of academic success as it can decrease the time of studying and researching and negatively affect the interest and focus on lessons through negative stress (Erdem, Kalkın, Türen and Deniz, 2016). The literature shows that there is a negative relationship between smartphone addiction and academic performance (Rozgonjuk, Saal and Täht, 2018; Samaha and Hawi, 2016; Kibona and Mğaya, 2015). In addition, this kind of addiction increases cyberloafing behavior among young people (Gökçearslan et al. 2016). Increased usage time and cyberloafing behavior can have an impact on students' academic success. University students being busy with their smartphones during the lesson in the classroom reveal some negative situations for both the student and the lecturer. Therefore, it is recommended to take necessary measures to prevent the long-term use of smartphones by students during the course at universities.

It can be said that the purpose of using smartphones is an important factor in determining the usage conditions of smartphones more clearly. Hence, qualitative studies can be conducted that examine the purposes of smartphone usage and smartphone addiction levels together in detail. In addition, it is thought that analyzing the detailed activity data presented by smartphones about screen time together with smartphone addiction levels may be useful in achieving more descriptive results.

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Adaptation of the Short Form of the Intrinsic Motivation Inventory to Turkish

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ABSTRACT

Intrinsic motivation has a crucial role in students' learning and should therefore be taken into consideration in educational activities. In this study, the short scale of intrinsic motivation scale developed by Wilde et al. in 2009 was adapted to Turkish Culture. This is an intrinsic motivation scale, which is an adapted, time-economic version of the "Intrinsic Motivation Inventory" introduced by Deci and Ryan. The short scale has four factors, namely interest/enjoyment, perceived competence, perceived choice and pressure/tension with three items each. Data were collected from 230 high school students in two public high schools in Northwestern Turkey in order to analyze the scale's factorial and construct validity. The linguistic equivalence step was carried out by consulting expert opinion because intrinsic motivation differs from one context to another. Results from a confirmatory factor analysis, construct validity and tests for reliability showed that its version adapted to Turkish is a good and time-saving assessment tool for measuring intrinsic motivation during lessons.

Keywords:

Motivation, Intrinsic Motivation, Adaptation, Inventory.

1. Introduction

The concept of motivation derived from the word motive and can be expressed as a conation or effort that pushes a person to achieve a certain goal (Ryan & Deci, 2000a). It is possible to find the concept of motivation defined by researchers in different ways. While some researchers define motivation as an "internal power" that motivates a person to reach a goal and emphasize that this power stems from within the person (Başaran, 1982; Pintrich & Schunk, 2002), some other researchers considered it as a person's desire and consistency process in order to reach a goal and the sum of the motives in this process (Genç, 2012; Heckhausen, 1991; Snow & Farr, 1983). A number of researchers, however, have emphasized the element of continuity and argued that the motivation should be continuous, and internal, external and should be evaluated together (Ryan & Deci, 2000a; Ryan & Deci, 2000b; Gagne & Deci, 2005).

Researchers studying the concept of motivation have described the types of motivation as extrinsic and intrinsic motivation (Brophy, 1983; Moldovan, 2014; Ryan & Deci, 2000b). The desire to achieve a specific goal, the sense of enjoyment and satisfaction acquired as a result of obtaining this goal is considered personal and internal, and such a feeling is defined as intrinsic motivation (Gagne et al., 2010; Gottfried, Fleming & Gottfried, 2001). The motivation caused by a wide variety of behaviors caused by external factors such as money, praise or course grades has been defined as external motivation (Vallerand & Ratelle, 2002; Ryan & Deci, 2000a). Intrinsic motivation strengthens a person's interest in a job and ensures his or her active participation in the process since it is related to the satisfaction and enjoyment of the person in his or her own

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inner world. Intrinsic motivation ensures that a person has positive feelings towards the nature of the work being done. In the case of external motivation, unlike intrinsic motivation, activities that are carried out trigger a person and provide guidance as a result of the activities, not in terms of their structure. A person who is motivated externally maintains that behavior in order to get rewards or to get rid of punishment. Decreasing the impact of environmental factors weakens external motivation, thus negatively affecting the continuity of the individual in the process (Gagne & Deci, 2005; Ryan & Deci, 2000a). Studies show that intrinsic motivation is related to spiritual issues such as a person's inner world and spiritual satisfaction, and is personal. Extrinsic motivation, on the other hand, is related to material and environmental issues such as getting good grades, making money, securing positions, and getting promoted.

Different measurement instruments related to intrinsic motivation have been developed. One of them is the "Intrinsic Task Rewards" scale developed by Mottaz (1985). The scale consists of 3 different factors: "autonomy of the task," "significance of the task" and "commitment to the task." Another intrinsic motivation scale is the Task Reaction Questionnaire (TRQ) developed by Mayo (1976). The scale has 7-point Likert-type options. Its internal consistency is between 0.93 and 0.95. Work Preference Inventory (WPI), developed by Amabile et al. (1994), is a scale for measuring intrinsic and extrinsic motivation together. The scale, consisting of 30 items, has two sub-dimensions that measure intrinsic motivation: Interest/enjoyment and challenge.

Deci and Ryan (1985) mainly emphasized the link between intrinsic motivation and elements of interest, enjoyment, autonomy, competence and pressure. The "Intrinsic Motivation Inventory" (IMI) they developed has been used not only in research fields such as education and instruction but also in the fields of medicine, business, culture, sports and environment (Deci & Ryan, 2002). The full version of the IMI measurement instrument adapted for different purposes includes 45 items with seven sub-scales. Deci and Ryan (2003) offer a scale, a standard tool for measuring motivation for intrinsic activity, with four sub-scales and 22 items. Wilde et al. (2009) have carried out a scale adaptation study involving a 12-item scale as a short and economic version of "Intrinsic Motivation Inventory" (IMI). The four-factor model of the scales was confirmed in Germany with >1,700 secondary school students by a confirmatory factor analysis (Wüst-Ackermann et al., 2018). In the present study, this 12-item, 4-factor measurement instrument developed by Wilde et al. (2009) was adapted to Turkish.

2. Method

2.1. Research Model

This research study is a scale adaptation study. In scale adaptation studies, a scale developed in a certain language is adapted to another language and culture. In this respect, the intrinsic motivation scale developed in English was adapted to Turkish language and culture. In scale adaptation studies, a scale is first translated and back translated for its linguistic translation. For linguistic equivalence, scales in both languages are administered to those who have knowledge of both languages, and the similarity of scores is evaluated. Moreover, the scale is administered to a sampling group, and studies are carried out to examine criterion-related, factorial and construct validity and reliability (Hambelton, 2005). Such studies were carried out in the present study, as well. However, the linguistic equivalence step was carried out by consulting expert opinion because the scale measures intrinsic motivation and because intrinsic motivation differs from one context to another.

2.2. Sample

The sample in this study was a group determined to analyze criterion-related, factorial and construct validity of the scale. The sample included a total of 230 high school students studying in the second semester of the 2018–2019 academic year. This number corresponds to approximately 20 times the number of items in the scale. In scale development and adaptation studies, the number of people in a sample that is ten times or more of the number of items is considered sufficient in terms of establishing samples (Osborne and Costello, 2004). Of the students participating in the study, 140 (60.9%) were female and 90 (39.1%) were male. Of these students, 75 (32.6%) were at the 9th grade, 48 (20.9%) were at the 10th grade, 66 (28.7%) were at the 11th grade, and 41 (17.8%) were at the 12th grade. Questionnaires were administered to 107 (46.5%) of these students at

the mathematics class, 50 (21.7%) at the Turkish Language and Literature class, 25 (10.9%) at the physics class, 25 (10.9%) at the chemistry class and 23 (10%) at the biology class. The students were 14 to 18 years old. The average age of the sample was 15.98 (± 1.07).

2.3. Data Collection Instruments

The Intrinsic Motivation Scale is a short and economic scale developed by Wilde, Bätz, Kovaleva and Urhahne in 2009 by using the "Intrinsic Motivation Inventory" developed by Deci and Ryan. The scale, which consists of 12 items, has 4 factors: Interest/enjoyment, perceived competence, perceived choice, pressure/tension. Each factor in the scale has 3 items. . The internal consistency and composite reliability values of the scale were found to be .85 and .89 for "interest/enjoyment," .83 and .79 for "perceived competence," .75 and .79 for "perceived choice," and .54 and .53 for "pressure/tension," respectively.

2.4. Data Analysis

During the adaptation of the intrinsic motivation scale, first, the scale was translated into Turkish. Then it was translated back into German, and the translations were compared. Opinions were received from experts who were knowledgeable about both languages with regard to the items in the original German scale and those in the translated Turkish scale. After this process, validity and reliability analyses of the scale were carried out.

Confirmatory factor analysis was carried out first for factorial validity during the validity and reliability studies. Then, convergent and discriminant validity were examined for construct validity, correlation analysis for criterion validity, and internal consistency (Cronbach alpha) and composite reliability analysis for reliability. Correlation analyses and Cronbach alpha test for criterion-related validity were carried out using SPSS 21.0, and the confirmatory factor analysis was conducted using Lisrel 8.54 package program.

3. Results

When the intrinsic motivation scale was adapted to Turkish, first it was translated to Turkish by faculty members working in the Department of Foreign Languages Education. It was initially translated into Turkish by 2 experts. The Turkish form prepared after the translation by the experts was translated back into German by 2 other experts, and its correspondence to the original form was examined. The scale was put into a form that contained the original items, the translated items, and proposals to be made. And then, it was distributed to 2 yet other experts to get their feedback. After opinions were received from the experts, a focus group interview was carried out with the participation of the researchers and an expert to revise the scale. After these operations, the Turkish form of the scale was finalized. This form was administered to the sample to begin conducting validity and reliability studies.

3.1. CFA Findings of the Intrinsic Motivation Scale

When CFA was carried out, the compatibility of 12 items with the model of the original scale which had a four-factor structure was tested. Based on the CFA, the standard solution, T and R² values of each item are given in Table 1 in the order given, and the standard solution form for factorial validity is given in Figure 1.

Table 1. Intrinsic motivation scale CFA Results

	SS	T	R ²		SS	T	R ²		SS	T	R ²		SS	T	R ²
M1	.94	17.58	.88	M2	.58	9.24	.33	M3	.89	16.19	.79	M4	.74	12.35	.55
M5	.78	13.20	.61	M6	.83	14.47	.70	M7	.87	14.45	.76	M8	.78	12.71	.61
M9	.40	5.81	.16	M10	.79	12.88	.62	M11	.95	16.10	.91	M12	.61	9.58	.37

When Based on the CFA conducted for factorial validity of the intrinsic motivation scale, it was determined that the standard solution values of the 12 items were between .40 and .95, their t values were between 5.81 and 17.58, and their R² values were between .16 and .91. The resulting standard solution, t and R² values show that all 12 items were important and statistically significant to the 4 factors and the scale they belonged to (Jöreskog & Sörbom, 1996).

The fit indices of the intrinsic motivation scale were found to be $\chi^2(48) = 88.21$ ($p < .001$), $\chi^2/sd = 1.84$, RMSEA = 0.060, SRMR = 0.056, GFI = 0.94, AGFI = 0.90, CFI = 0.98, NFI = 0.95, and NNFI = 0.97. All fit indices of the intrinsic motivation scale showed acceptable fit values compared to the fit index values proposed by Schermelleh-Engel, Moosbrugger and Müller (2003). In this respect, it can be said that the Turkish form of the intrinsic motivation scale has factorial validity.

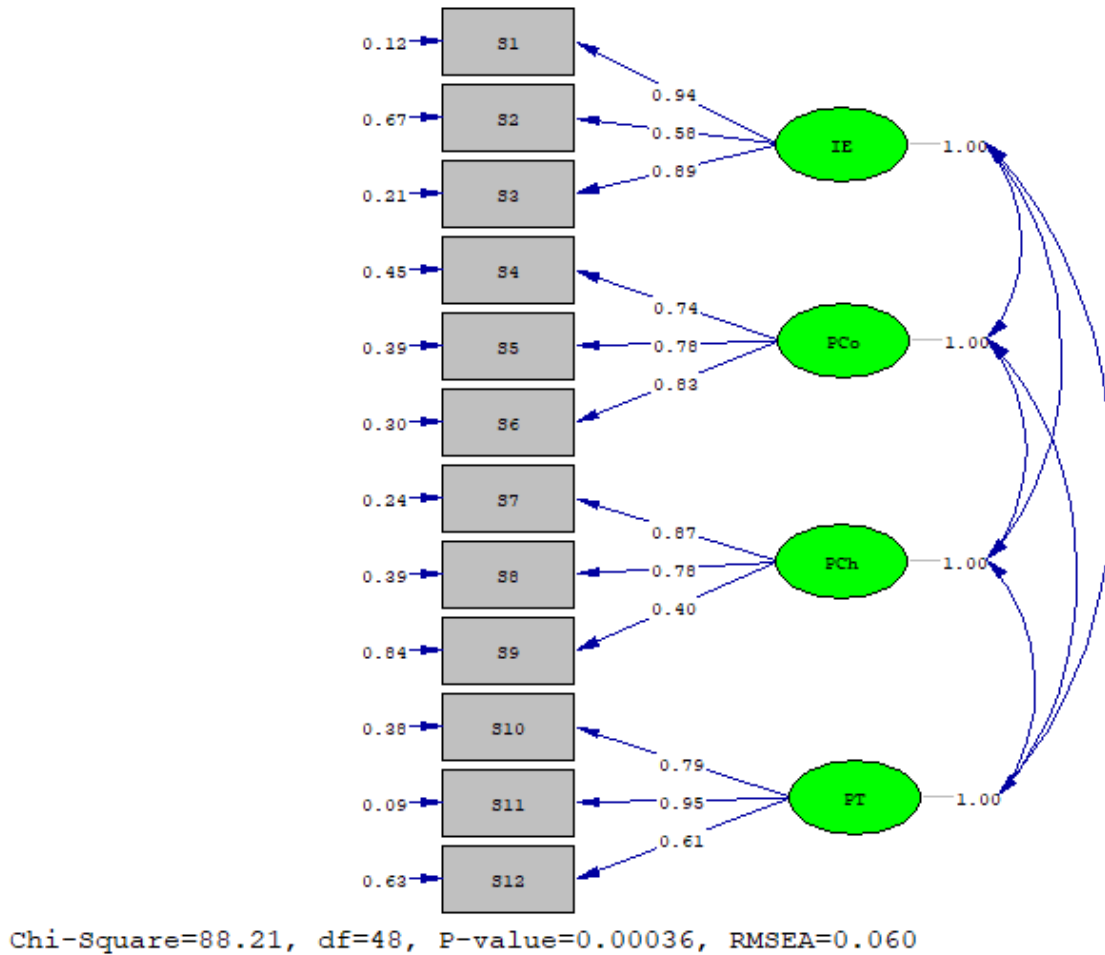


Figure 1. Factor loadings of the four-dimensional model established based on CFA

3.2. Construct Validity

Discriminant and convergent validity were examined to determine the construct validity of the intrinsic motivation scale to explore whether it measured the structure established by the factorial validity. During the testing of convergent validity, Average Variance Explained (AVE) values of the 4 factors — attention/enjoyment, perceived competence, perceived choice and pressure/tension — were found to be 0.668, 0.618, 0.509 and 0.633, respectively. These values are desired to be greater than 0.50 (Fornell & Larcker, 1981). All values in the present study were greater than 0.5. Therefore, it can be said that the intrinsic motivation scale has convergent validity. In terms of discriminant validity, the square roots of the AVE values of the scale were found to be greater than both the correlation between the structures and 0.50. Thus, it was shown that the scale had discriminant validity (Fornell & Larcker, 1981) (Table 2).

Table 2. Discriminant Validity Values for Intrinsic Motivation Scale

	Interest/Enjoyment	Perceived Competence	Perceived Choice	Pressure/Tension
Interest/Enjoyment	0.817			
Perceived Competence	0.500	0.786		
Perceived Choice	0.300	0.475	0.714	
Pressure/Tension	-0.125	-0.121	-0.167	0.796

3.3. Criterion-Related Validity

In the present study, the students' course grades and the intrinsic motivation scores were compared in terms of criterion-related validity. The course grades were found to have significantly positive correlations with the interest/enjoyment, perceived competence and perceived choice dimensions of the intrinsic motivation scale, but an insignificant negative correlation with the pressure/tension dimension. This is not a meaningful relationship. Similar results have been obtained in literature such as Akgun & Ciarrochi (2003). These findings showed that the dimensions of the intrinsic motivation scale had a positive effect on the course grades as expected (Randler et al., 2011). This can be said to provide evidence for the criterion-related validity of the scale. All results regarding the criterion-related validity are presented in Table 3.

Table 3. Correlations between dimensions of the Intrinsic Motivation scale and course grades

Criterion	Interest/ Enjoyment	Perceived Competence	Perceived Choice	Pressure/Tension
Course Grade	r = .230 (p = .001)	r = .358 (p = .000)	r = .172 (p = .017)	r = -.044 (p = .544)

3.4. Reliability Findings

The reliability of the intrinsic motivation scale was checked by Cronbach alpha internal consistency and composite reliability coefficients. The internal consistency and composite reliability values of the scale were found to be .839 and .853 for "interest/enjoyment," .829 and .829 for "perceived competence," .713 and .741 for "perceived choice," and .813 and .834 for "pressure/tension," respectively. The total value of the scale was .789. When the internal consistency and composite reliability values are examined, it can be said that the scale produces consistent and reliable data.

4. Discussion, Conclusion

The aim of this study was to adapt to the Turkish culture the twelve-item four-factor Intrinsic Motivation Scale, which was developed by Wilde, Bätz, Kovaleva and Urhahne (2009) to define intrinsic motivation (which drives people to taking action) briefly and concisely (Ryan and Deci, 2000a) in four dimensions with three items for each dimension. Because the scale measures intrinsic motivation and intrinsic motivation differs from one context to another, the linguistic equivalence step was carried out by consulting expert opinion. The findings have demonstrated that the Turkish form of the scale is equivalent to its German form.

The confirmatory factor analysis (CFA) results, construct validity results and reliability results of the scale have shown that the scale is a reliable measurement instrument in Turkish culture.

Chi-Square goodness of fit test, GFI, AGFI, CFI, NFI, RMSEA and SRMR values were examined to demonstrate the efficiency of the model which was tested through a CFA for suitability. The chi-square value was found to be significant, and considering the fit index criteria, perfect fit was obtained for the GFI, AGFI, CFI, NFI and SRMR indices (Bentler, 1980; Bentler and Bonett, 1980; Schermelleh-Engel, Moosbrugger and Müller, 2003; Marsh, Hau, Artelt, Baumert and Peschar, 2006). The RMSEA value was found to have acceptable goodness of fit (Brown and Cudeck, 1993; Byrne and Campbell, 1999). Excellent and acceptable goodness of fit values

for the criterion fit indices show that the four-factor model established in CFA has acceptable goodness of fit, and the factor structure of the original form of the scale was verified in the Turkish context.

In terms of construct validity, convergent and discriminant validity of the scale were examined to determine whether it measured intrinsic motivation. The AVE values were checked for each factor to determine convergent validity. It was found that the AVE value was 0.509 for the factor with the lowest AVE value and the AVE values of the other factors were greater than that. These values' being greater than .50 has been pointed out to provide evidence for convergent validity (Bagozzi and Youjue, 1988). In this respect, it can be said that the scale had convergent validity. In terms of discriminant validity, whether the square roots of AVEs of the scale were greater than both the correlations between the structures and 0.50 (Fornell & Larcker, 1981), and the scale was determined to have discriminant validity.

For the reliability of the scale, Cronbach alpha internal consistency and composite reliability coefficients were examined. Internal consistency values for the dimensions of the scale ranged from .713 to .839, while its composite values ranged from .73 to .85. The fact that all internal consistency and composite reliability values were greater than .70 indicates that the scale has high reliability values. In other words, it generates consistent data.

The fact that the original scale has 12 items has been emphasized. It has been pointed out that the scale with 12 items has acceptable psychometric values. It has also been indicated that this scale consists of only 12 short items, giving the opportunity for ease of use and healthier data collection (Wilde, Bätz, Kovaleva and Urhahne, 2009).

In conclusion, based on the findings of this study, it can be said that the intrinsic motivation scale is a valid and reliable measurement instrument in Turkish culture and can be used to measure personality in high school students.

4.1. Suggestions

- The introduction of a form that can be used directly for intrinsic motivation in Turkish culture can increase the use of such a form.
- The scale can be used to measure intrinsic motivation directly, to achieve clearer results with its short form, and to get results in a short time.
- Because the scale is short, it may be recommended to associate it with other variables and use it to examine inter-variable relationships.

Scale can be used in different types of courses and teaching by researchers in Turkey.

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Relationship Between Self-Control and Continuous Partial Attention: Case of Prospective Teachers

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ABSTRACT

Related literature review evidence that self-control and attention have strong relationship. Despite a rich body of literature on self-control and attention, few studies have analyzed the relationship between self-control and CPA as a new phenomenon emerging with the intensive use of technology. Relationship between CPA and self-controls has been analyzed in this study. This correlation study conducted with 55 prospective teachers, CPA Survey and BSCS have been used. Pearson correlation coefficient, t-test and descriptive statistics used in data analysis. To the results, it was determined that the self-control abilities of prospective teachers were high whereas CPA levels were low. It was found that the CPA levels of the prospective teachers decreased, and self-control abilities increased as technology use increased. Contrary to common belief, no significant relationship was found between CPA and self-control as a result of Pearson correlation.

Keywords:

Continuous partial attention, self-control, prospective teachers

1. Introduction

The entire connection providing the communication of computers on the same network with computers on different networks is called Internet. Internet, which first appeared to be used in defense industry, has been used for different fields such as education, commerce and communication in the course of time. Internet has a significant role to establish social communication and it has extended beyond the limited uses such as sharing information, sending e-mail and shopping online (Güçdemir, 2003; Lavanco, Catania, Milio, & Romano, 2008). The progress and wide use of Internet technologies are parallel to the use in educational environments. With the increase of the number of online educational environments and of the institutions with this tendency, the use of e-learning concept has become widespread (Çallı, Torkul, & Taşbaş, 2003; Al-Fraihat, Joy & Sinclair, 2020). With the opportunity to be in different environments at the same time, providing rich environments for learners in terms of learning and studying possibilities and enabling fast connections, Internet has an active role in the development of social lives of students attending in higher education (Yang & Tsai, 2008; Feng, Wong, Wong, & Hossain, 2019). Perceptions of students for Internet have a substantial influence on interest, motivation and success towards education provided (Peng, Tsai, & Wu, 2006).

The changes in online learning environments affect the relationship between instructor and learner. Investigating effectiveness of current studies in terms of interaction requires further studies to have strong implementation suggestions (Limperos, Buckner, Kaufmann, & Frisby, 2014). Achieving educational targets in Internet environments today which enables to reach information easily and provides fast access can be possible by designing effective learning environments. Having the most common influence and being easy to

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access without being limited with time or location makes it more possible to use Internet as an educational tool. Especially in Covid-19 Pandemic, most of formal education in all educational levels start to get support from the internet. Almost 4.57 billion people were active internet users as of April 2020, encompassing 59 percent of the global population (Clement, 2020).

The efforts of young individuals to create their own identities and to be accepted by a group make positive aspects of Internet more appealing for these individuals (Ođacı & Kalkan, 2010). Excessive use of Internet may be problematic for individuals; it may affect social life of individual and may cause physiological problems such as sleep problems (Flisher, 2010; Arısoy, 2009; Park et al., 2013; Shadzi, Salehi & Vardanjani, 2020). In this context, today, where Internet has become a part of our life, individuals need to be aware of negative impacts of problematic Internet use (Atwal, Klaus, & Daily, 2012). To define problematic Internet use, many terms such as Internet addiction, Internet addiction syndrome and pathological Internet use etc. have been provided in the literature (Siciliano et al., 2015). Correspondingly, many definitions for problematic Internet use are also seen in the literature. Young (1998) defined the problematic Internet use as a disorder where signs such as insomnia and short temper arise when individual cannot get online or spend more time online. Similar to this definition highlighting it as a disorder, it was stated in another definition that problematic Internet use is a multi-dimensional syndrome which has cognitive and behavioral signs and affects academic and professional life (Can, 2002). Problems arising out of problematic Internet use may have negative outcomes on business, school and personal lives of individual (Beard & Wolf, 2001; Davis, 2001; Widyanto & Griffiths, 2009). It is seen that the Internet users who neglect their daily lives are at a significant level in problematic Internet use (Siciliano et al., 2015). These individuals spare less time for actual people in their daily lives and they spend most of their times by being on the computer (Young, 1996). In their research with 60 students Mathew and Raman (2020) identified a strong negative association between problematic internet use and self-esteem. Additionally, a strong association between problematic internet use and average duration of access of internet found in this research.

There are many studies in the literature investigating the problematic Internet use of university students and prospective teachers (Erođlu, Pamuk, & Pamuk, 2013; Ođacı, 2011; Ođacı & ıkırıkı, 2014; Ođacı & elik, 2013; Kelley & Gruber, 2010; Spada, Langston, Nikevi, & Moneta, 2008; Mathew & Raman, 2020). The number of the studies increases to provide a healthy use of Internet by adults (Siciliano et al., 2015). In this context, the university prospective teachers were chosen as participants in this study.

1.1. Continuous Partial Attention

Continuous Partial Attention which is a concept quite new and open to research occupies cognitive psychology, communication and education agenda intensely today (Firat, 2013a). CPA as hyper attention is recent term that seek to characterize our attentional response to multiple and updating demands on our attentional resources in our negotiations with attention needy technologies (Hayles 2007). This concept which was suggested in 1998 by Linda Stone, who is a former Apple and Microsoft executive, is seen as one of the significant impacts created by today's information technologies on individuals. Stone explains this concept as the state of being unable to focus anything while trying to engage with and to follow everything. In other words, Continuous Partial Attention is a concept referring the state of being unable to focus literally while communicating and interacting with everything.

Despite the descriptive studies are quite rich in literature, we didn't find direct research on CPA or relation between CPA and self-control. Motivation, emotion, and attention are determined psychological mediators in the relationship between cognitive and physical self-control (Stocker, Seiler, Schmid, & Englert, 2019). As a related research on self-control and sustained attention, Harwood (2019) conducted 3 studies in his doctoral dissertation. The effect of trait self-control and self-control depletion on two types of sustained attention tasks investigated. The results of these studies showed that the effects of self-control on sustained attention task performance are inconsistent.

According to Friedman (2001), continuous partial attention can be explained as the state where you reply emails when your phone rings; also you talk to the children and be in a conversation. In this case, since individual is under overloaded interaction, it is only possible to focus each of these interactions partially. According to Small and Vorgan (2008), continuous partial attention creates high level of stress in human brain; therefore, the individual with Internet addiction has no sufficient time to react, think over or make

sophisticated decisions. Instead, individual lives in a constant crisis state, and acquires an expectation for new friends and news with an artificial sincerity. Nowadays we use multiple tabs and windows on two or more screens. To Dewan, (2019) if our attention is diverted for a moment, it is often difficult to find our place again in all our open windows, tabs, and applications. The state of being partially focused on each duty when under overloaded interaction is considered to be affected by the self-control insufficiency of CPA. Therefore, it is considered that self-control and Self-Determination Theory have great importance for CPA.

1.2. Self-Control

Self-control is a subject which is frequently studied in the related literature. Gottfredson and Hirschi (1990) defined self-control as the capacity to control emotions, behaviors and cognition. Muraven and Baumeister (2000) stated that this capacity is used to achieve targets. Duckworth (2011) described self-control as the inhibition of thoughts and desires in achieving targets. In another definition, self-control was expressed as ensuring attention control and the ability of self-adaptation in problem solving and planning (Wills, Sandy, & Yaeger, 2001; Wills, Windle, & Cleary, 1998).

While the self-control level of each individual is considered same, some individuals have difficulty in adjusting their self-control level (Baumeister & Heatherton, 1996). On the other hand, it is stated that some individuals have high levels of self-control while others have low levels of self-control (Baumeister, Gailliot, DeWall, & Oaten, 2006; Tangney, Baumeister, & Boone, 2004). Firat (2017) investigated the relationship between self-control and Facebook usage of CEIT students. CEIT students had high self-control rate in general. Students who had changed their Facebook accounts at least once were found to have used Facebook longer statistically with less self-control. The analyses indicated a statistically significant relationship between Facebook use and self-control, In this sense, it would be useful to analyze the impact of different self-control levels on problematic behaviors.

There are various studies showing that the individuals with low self-control levels exhibit problematic behaviors (Baumeister et al., 2006; Piquero & Bouffard, 2007; Sinha, 2009; Tittle, Ward & Grasmick, 2003). Also, individuals have difficulty in establishing self-control when using Internet, and psychological, academic and social problems may occur accordingly (Davis, 2001). Related with this case, problematic Internet use may be seen in individuals who lost their self-control (Kim, Namkoong, Ku, & Kim, 2008; Li, Li, Wang, Zhao, Bao, & Wen, 2013; Li, Dang, Zhang, Zhang, & Guo, 2014). In individuals with high level of self-control, it is seen that such individuals are far from negative behaviors and better in academic performance and personal relationships (Baumeister et al., 2006; Kim et al., 2008; Özdemir, Kuzucu, & Ak, 2014; Tangney et al., 2004). Individuals with high level of self-control can reach their targets by controlling their attention, behaviors and emotions (Duckworth, 2011).

There are many studies in the literature which investigate the impact of self-control on problematic Internet use and other undesired behaviors (Kim et al., 2008; Lee & Shin, 2004; Li et al., 2013; 2014; Özdemir et al., 2014). In their study, Li et al. (2013) found that self-control is effective on social relationships which affect problematic Internet use. Similarly, Lee and Shin (2004) showed that self-control is associated with addiction behaviors such as Internet addiction. In another study, the relationship between depression, loneliness, low self-control and Internet addiction was investigated based on the cognitive behavior model of problematic Internet use. Study results showed that Internet addiction with self-control is associated with loneliness (Özdemir et al., 2014). Li et al. (2014) investigated the impact of self-control and parental behaviors on Internet addiction. In the study, it was seen that men are more addicted to Internet than women. The researchers revealed that the individuals with low levels of self-control have high level of Internet addiction. Kim et al. (2008) investigated the relationship between self-control, narcissistic personality disorders, online gaming addiction and aggression. The study results showed that the individuals with high levels of self-control have low levels of addiction for especially games containing violence.

There are many studies investigating the influence of self-control levels of individuals with problematic behaviors in their daily lives on the genders (Burton, Cullen, Evans, Alarid, & Dunaway, 1998; LaGrange & Silverman, 1999; Mason & Windle, 2002; Vazsonyi, Pickering, Junger, & Hessing, 2001; Vazsonyi, Wittekind, Belliston, & Van Loh, 2004; Vazsonyi & Crosswhite, 2004). In some of these studies, it has been shown that self-control has an impact only on men (Burton et al., 1998) while there are other studies showing that self-control has an impact only on women (LaGrange & Silverman, 1999). In general, it is shown that self-control has similar effects on gender (Mason & Windle, 2002; Vazsonyi & Crosswhite, 2004).

Self-control is based on Self-Determination Theory essentially. Self-Determination Theory created by Deci and Ryan (1985) describes the needs, motivation and target-oriented behaviors of individuals. Self-Determination Theory is interested in how individuals reach the state of self-motivation based on their perceptions towards their surroundings. By Self-Determination, individuals tend towards the actions they are interested (Deci & Ryan, 1985; 2000; 2008). This makes it possible to implement self-determination theory to the activities in different fields of life such as business and entertainment (Thaggard, 2010).

According to self-determination theory, individuals have three basic psychological needs: autonomy, competence and relatedness (Deci & Ryan, 2008). With autonomy, individual makes decisions by himself/herself instead of the oppression of others. Competence is the state of competency that individual feels in order to cope with others. Relatedness with others is the requirement to feel capable for social relationships. When these three needs are met, individual feels in a well-being state and exhibits more positive behaviors (Deci & Ryan, 2000; 2008; Ryan & Deci, 2000).

According to self-determination theory, individuals have two types of motivation which are extrinsic and intrinsic motivations (Lee, Cheung, & Chen, 2005). Extrinsic motivation is the condition where individual tries to achieve something (Ryan & Deci, 2000). In the intrinsic motivation, instead of money or power to gain, individual enjoys doing something which are personally enjoyable and precious (Norman, 2008). Individuals who lose their intrinsic motivation are either motivated to their school life as an extrinsic motivation, thus become result-oriented or they lose their motivational state (Ryan & Deci, 2000). To ensure the self-determination, self-control strategies can be used (Mahon, 1994). Therefore, it would be useful to analyze self-control concept and the relationship of various undesired behaviors (i.e. problematic Internet use) with self-control.

1.3. Problem of Research

It is asserted that when individual heavily overloaded with information/interaction in every fields of daily life, CPA as the partial focus on each information/interaction is affected by the insufficiency of self-control. In this research, it is aimed to determine if there is any significant relationship between CPA and self-control levels of CEIT (Computer Education and Instructional Technology) prospective teachers, and to identify the degree of this relationship, if any. In this context, the questions sought for an answer in the study are: For CEIT prospective teachers:

1. How are the CPA and self-control of CEIT prospective teachers?
2. Do CPA conditions of CEIT prospective teachers exhibit any significant difference according to their genders and technology use levels?
3. Do self-controls of CEIT prospective teachers exhibit any significant difference according to their genders and technology use levels?
4. Is there any significant relationship between CPA and self-controls? If any, how strong is this relationship at what level?

2. Methodology of Research

The participants, data collection tools and information regarding to the data analysis of this study designed as a correlation study are provided under this title.

2.1. Participants

Purposeful sampling method used in this research. Purposeful sampling is widely used for the identification and selection of information-rich cases related to the phenomenon of interest (Palinkas et al., 2015). The participants of this study consist of 55 CEIT prospective teachers attending Operating Systems and Applications lesson during 2014-2015 fall semester at Department of Computer and Instruction Technology Education, Faculty of Education, Anadolu University. Data of participants regarding to their genders and the levels of technology use are provided in the Table 1 below.

Table 1. Demographics of participants

Demographics	f	%
Gender		
Female	22	40.0
Male	33	60.0
Technology Use		
Normal	36	65.5
Advance	19	34.5

Considering the characteristics of research participants, it is seen that they are mostly male. It was also seen that the prospective teachers who participated in the study showed their levels of technology use as at normal level. It is determined that CEIT prospective teachers who are interested in technology continuously due to their study fields are sufficient in technology use.

2.2. Data Collection Tools

In this study, Continuous Partial Attention Survey and Brief Self-Control Scale have been used as data collection tools. The information about data collection tools was provided under two titles.

2.2.1. Brief self-control scale. In the study, Brief Self-Control Scale developed by Tangney et al. (2004) and translated into Turkish by Nebioglu, Konuk, Akbaba and Eroglu (2012) was used to identify self-control abilities of the participants. In the study carried out by Nebioglu et al. (2012), it was aimed to adapt Brief Self-Control Scale into Turkish. Validity and reliability studies of the scale were carried out with 523 participants. The relationship between Turkish and English versions of the scale was analyzed with Pearson correlation and it was found as $r=0.72$ for impulsivity sub-dimension, $r=0.76$ for self-discipline and as $r=0.73$ for the entire scale. Principal components method and Varimax rotation was used to determine the factors, and a structure with two factors which are impulsivity and self-discipline was obtained, and it was seen that the structure was verified with confirmatory factor analysis. The Brief Self-Control Scale (Tangney et al., 2004) includes 13 items endorsed on a 5-point scale where 1= not like me at all and 5= very much like me (e.g. "I do certain things that are bad for me, if they are fun").

2.2.2. Continious partial attention survey. In this study, Continuous Partial Attention Survey was used as a data collection tool for CPA. The survey has two sections and five questions. There are two questions with multiple choices for demographics in the first section and three questions in 10 likert answer structure about "continuous partial attention" in the second section. The structure for 10 responses is provided in the Fig. 1.

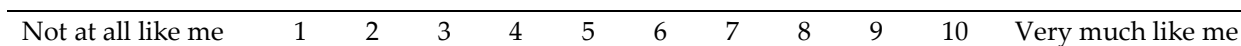


Fig. 1. 10 likert answer structure

When preparing survey items, the studies in the literature and expert opinions were referred. First, by using related literature, an item pool including seven items was created. From the item pool, in accordance with the opinions and suggestions of two doctorate academicians who are expert on Educational Technologies, three items were chosen. These three items were restructured as including other items in the item pool. The survey form, where items for demographics were also added, was submitted to the opinions of field experts for appearance and content validity. In accordance with the opinions and suggestions of five doctorate academicians, three experts from educational technologies and two experts from distance education, two items of the survey were modified. The pilot version of the survey form which was reached with expert opinions was applied to five CEIT prospective teachers from the Faculty of Education, Anadolu University. It was seen that it took about six minutes to complete the survey. As a result of the pilot application, final version of Continuous Partial Attention Survey was reached.

2.3. Data Analysis

In the analysis of quantitative data obtained from the study, percentage (%), frequency (f), standard deviation (Sd) and mean (\bar{X}) descriptive statistics were used as well as independent two-sample t-test and Pearson correlation coefficient as the parametric tests. In order to compare CPA and self-control levels of CEIT prospective teachers in terms of gender and technology use capabilities, independent two-sample t-test among parametric tests was used. Pearson correlation coefficient was used to determine if there is any significant relationship between CPA and self-control abilities of CEIT prospective teachers. Correlation coefficient is considered as the coefficient indicating the direction and size of the relationship among independent variables. This coefficient has a value between (-1) and (+1).

3. Results

Under this title, the results of the study were provided. The results obtained were provided under related titles as responding to the research questions.

3.1. CPA and Self-Control Descriptive

For identifying CPA levels and self-control states of CEIT prospective teachers in the first question of the study, descriptive results obtained from data collection tools were analyzed. The results obtained from Continuous Partial Attention Survey and Brief Self-Control Scale for both variables are provided in the Table 2 below.

Table 2. CPA and self-control levels of the prospective teachers

	N	Mean	Std. Deviation
Self-control score	55	44.6000	7.45753
CPA score	55	18.5636	5.13436

When the results provided in the table were evaluated, it was seen that CPA scores of CEIT prospective teachers who participated in the study were \bar{X} =18.56 over 30. This score which is very close to the mean value shows that CEIT prospective teachers in the study are affected from CPA at a medium level. The reason may be that CEIT prospective teachers are experienced for using technology due to their fields. Considering the self-control of the participants, their score was \bar{X} =44.6 over 65. This score above the average shows that self-control levels of CEIT prospective teachers are high.

3.2. CPA, Genders and Technology Use

In this second question of the study, it was tried to determine whether CPA conditions of CEIT prospective teachers exhibit any significant difference according to their genders and technology use levels or not. For this purpose, independent two-sample t-test was used. The results of independent two-sample t-test are provided in Table 3.

Table 3. Results of Two-Sample T-Test for CPA status

Variable	Groups	N	Mean	t	df	Sig. (2-tailed)
CPA score	Female	22	18.9091	.404	53	.688
	Male	33	18.3333			
	Medium Level	36	19.8889	2.796	53	.007*
	Advanced Level	19	16.0526			

*All regression coefficients are statistically significant when $\alpha = 0,05$

As a result of the independent two-sample t-test, CPA levels of CEIT prospective teachers showed no significant difference in terms of their genders [$t_{(53)}=.404$, $p=.688>.05$]. On the other hand, CPA levels of CEIT prospective teachers showed significant difference in terms of their levels of technology use [$t_{(53)}=2.796$,

$p=.007<.05$]. According to this result, those who consider themselves at medium level for technology use ($\bar{X}=19.88$) expose more CPA significantly than those who consider themselves at advanced level for technology use ($\bar{X}=16.05$). This result shows that CPA level decreases as the level of technology use increases.

3.3. Self-Control, Genders and Technology Use

To answer the third question of the study, it was tested whether self-control levels of CEIT prospective teachers exhibit a significant difference in terms of their genders and technology use capabilities or not. For that purpose, independent two-sample t-test was used. The results of independent two-sample t-test are provided in Table 4.

Table 4. Results of Two-Sample T-Test for Self-control

Variable	Groups	N	Mean	t	df	Sig. (2-tailed)
Self-control score	Medium Level	36	43.3056	-1.809	53	.076
	Advanced Level	19	47.0526			
	Female	22	46.0455	1.178	53	.224
	Male	33	43.6364			

All regression coefficients are statistically significant when $\alpha = 0,05$

As seen in Table 4, as a result of the independent two-sample t-test, self-control levels of CEIT prospective teachers determined by Brief Self-Control Scale exhibited no significant difference according to their genders [$t_{(53)}=1.178, p=.224>.05$] and technology use levels [$t_{(53)}=-1.809, p=.07>.05$]. This result seems parallel to the literature which asserts that self-control has similar effects on gender (Mason & Windle, 2002; Vazsonyi & Crosswhite, 2004). On the other hand, it was seen that the self-control levels of prospective teachers with advanced level of technology use were higher than those with medium level of technology use ($\bar{X}_{\text{advance}}=47.05>\bar{X}_{\text{Average}}=43.30$). Also, self-control levels of female prospective teachers were higher than the self-control levels of male prospective teachers ($\bar{X}_{\text{female}}=46.04>\bar{X}_{\text{male}}=43.63$). The reason for these differences not being statistically significant may be the relatively low numbers of participants.

3.4. Relationship Between CPA and Self-Control

The basic question of this study is to find out if there is a relationship between CPA and self-control. In this regard, Pearson correlation coefficient was used to determine if there is any significant relationship between CPA levels of CEIT prospective teachers determined by Continuous Partial Attention survey and self-control levels determined by Brief Self-Control Scale. As a result of the analysis, it was found that there was statistically no significant relationship between CPA levels and self-control of CEIT prospective teachers (Pearson's $r = -.087, p=.526>.05$). It was found that there was a reverse relationship between variables; however, it was not significant.

4. Discussion

CPA levels and self-control states of CEIT prospective teachers identified in accordance with the first question of the study. The findings of the research show that CEIT prospective teachers are affected from CPA at a medium level and have high self-control levels. This finding support the finding of Firat (2017) that CEIT students have high self-control level above average.

For the second question of the research, CPA levels of CEIT prospective teachers showed no significant difference in terms of their genders. But, CPA levels of CEIT prospective teachers showed significant difference in terms of their levels of technology use. CPA level decreases as the level of technology use increases. The reason may be that CEIT prospective teachers who use technology at an advanced level professionally are more controlled for using technology.

The main purpose of this research was to to find out if there is a relationship between CPA and self-control. The results show that, contrary to common belief, no significant relationship was found between CPA and self-control as a result of Pearson correlation. Interestingly this result support the findings of Harwood (2019)

that the effects of self-control on sustained attention task performance are inconsistent. Future studies may extend the number of participant in similar research.

In our findings, there was a reverse relationship between variables; not significant. The reason may be that the number of participants is not at a sufficient level. Reverse relationship between variables shows that CPA levels of prospective teachers decrease while their self-control levels are high. On the contrary, prospective teachers with low self-control levels are exposed CPA more. This result obtained support the studies showing that the individuals with low self-control levels exhibit problematic behaviors (Baumeister et al., 2006; Piquero & Bouffard, 2007; Sinha, 2009; Tittle et al., 2003). Similarly, according to Li, Dang, Zhang, Zhang and Guo (2014), problematic Internet use may be seen in those who lose their control.

5. Conclusion and Suggestions

The trend of information and communication technologies started with computer and Internet technologies and moved on with mobile technologies has made these technologies to be a part of daily lives. These technologies being used in all fields intensely were also used widely in education and training fields. CPA, which is referred as the state of being unable to focus anything while trying to engage with and to follow everything, seems to be one of the significant problems encountered by today's learners. It is asserted that when individual heavily overloaded with information/interaction in every fields of daily life, CPA as the partial focus on each information/interaction is affected by the insufficiency of self-control. In this regard, the relationship between CPA and self-controls of participant CEIT prospective teachers has been analyzed in this study.

The study was conducted with 55 CEIT prospective teachers attending Operating Systems and Applications lesson during 2014-2015 fall semester at Faculty of Education, Anadolu University. As data collection tools, Continuous Partial Attention Survey and Brief Self-Control Scale have been used. In the analysis of the data, percentage, frequency, standard deviation and mean descriptive statistics were used as well as independent two-sample t-test and Pearson correlation coefficient as the parametric tests. As a result of the analyses carried out, it was seen that CEIT prospective teachers participated in the study were affected at a medium level by CPA. It can be said that the reason for CEIT prospective teachers not being affected from CPA much may be their experienced levels of technology use. Considering the self-control of the participants, it was seen that their scores were higher than the average values. This result shows that CEIT prospective teachers have high levels of self-control.

In the demographic analyses of CEIT prospective teachers who participated in the study, it was found that there was no significant difference between CPA levels of CEIT prospective teachers in terms of their genders. On the other hand, it was observed that their CPA levels decreased as their levels of technology use increased. The reason may be that CEIT prospective teachers who use technology at an advanced level professionally are more controlled for using technology. It was found that self-control levels of CEIT prospective teachers exhibited no significant difference according to their genders and technology use levels. On the other hand, it was seen that the self-control levels of prospective teachers who have advanced levels of technology use were higher. This finding supports the result that self-controls of CEIT prospective teachers who participated in this study are beyond the average generally.

The basic question of this study is to find out if there is a significant relationship between self-control and CPA. To answer this question, Pearson correlation coefficient was used. As a result of Pearson correlation analysis, it was found that there was statistically no significant relationship between CPA levels and self-control of CEIT prospective teachers who participated in this study. On the other hand, a reverse relationship was observed between the variables. This reverse relationship shows that CPA levels of prospective teachers with high self-control decreases and CPA levels of prospective teachers with low self-control increases. Based on the results of this study, it is determined that the self-control levels of CEIT prospective teachers should be increased for being affected from CPA less. Digital natives should enhance their multitasking experiences instead of continuous partial attention regarding technology use by developing their self-control (Firat, 2013b). To that end, self-control strategies can be engaged actively in the classes of CEIT prospective teachers.

With higher number of participants in the further studies, the relationship between CPA and self-control can be questioned in groups with different demographics. As a broader study, a structural equation modeling can

be carried out to assert factors affecting CPA state. Qualitative studies can also be conducted by using interview technique in order to assess the relationship between self-control and CPA in the eyes of participants and to support the findings obtained statistically by qualitative data. Finally, causal studies, which question the reasons of significant difference between self-control levels of CEIT prospective teachers according to the level of technology use, can be conducted.

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Analysis of Motivational Action Conflict Frequency of Turkish High School Students in Terms of Value Orientation*

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ABSTRACT

This study was designed to investigate to association between motivational action conflict frequency and value orientation as well as sociodemographic correlates of value orientation among Turkish high school students. Participants consisted of 846 students in different high schools from Marmara Region of Turkey and completed Motivational Action Conflict Frequency Survey and Value Orientation Scale. Results of this study suggested that students have average well-being value orientation and low achievement value orientation. There was no significant association between achievement and well-being value orientation and school-leisure time conflict; however, a weak and positive significant relationship exist between achievement value orientation and school time-school time conflict and leisure time-leisure time conflict, and there was a negative low-level significant relationship between well-being value orientation and school time-school time conflict and leisure time-leisure time conflict. The students' achievement and well-being value orientation were significantly different based on gender and daily studying times. Well-being value orientation associated with high school type, but no significant difference found in achievement value orientation. Lastly, there was no significant difference in value orientation in terms of grade level. The results of this study may also help to understand the correlates of value orientation and motivational conflict frequency in Turkish literature where a very limited number of studies have been conducted.

Keywords:

motivational action conflict, value orientation, adolescence

1. Introduction

Values reflect individuals' desires, tendencies, and choices and related to the goals of individuals and the behaviour styles required to reach these objectives (Schwartz, 2007). Values are also serving as mechanisms that shape the attitudes of an individual towards the outside world. They enable people to form assumptions about how an idea, object, status, or individual will positively or negatively affect them (Schwartz, 2012). For example, if an individual care about freedom, that individual cannot value authoritarianism at the same level. If values are cognitively active and central to quality, they organize and stimulate behaviour compliant with a subject or situation. For example, intense self-sacrifice values may lead to forgiveness (Verplanken & Holland, 2002).

Values are used for identifying the properties of groups, societies, and individuals, as well as to monitor changes over time and explain the motivational basis for attitudes and behaviors (Schwartz, 2012). From the moment the socialization process begins for a person, while the socio-cultural structure transfers its own values to individual, the individual filters these values with his/her own cognitive and affective properties

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and forms a unique system of values (Schwartz, 2007). Studies related to values among students mainly approach this topic from Rokeach's values system approach (1973) and Schwarz's value theory (1996). Fries, Schmid, Dietz, and Hofer (2005) developed value change theory, which inspired political scientist Ronald Inglehart (1997), (2015) to identify which values primarily affect students' lives and decisions. According to Inglehart (1997), (2015) modern values, such as hard work, safety, and well-being, are conflicting with post-modern values, such as compassion, spending time with friends, and self-actualization. Fries et al. (2005) entitled Inglehart's modern values as "achievement values" and post-modern values as "well-being values." Achievement values relates to the importance of effort and achievement, appreciation of school-related topics, and desire to reach objectives for the future and work. Well-being values relates to preferring social activities (e.g., leisure time activities), spending more time with friends, loving activities that are fun, and wanting to enjoy life (2005).

Since achievement and well-being value orientation occupies two important aspects of students' lives including school and leisure time, researchers also suggested that students can experience conflict in these values (Lens, Lacante, Vansteenkiste & Herrera, 2005) as school encourages achievement and well-being is dominant in leisure time (Schmid, Hofer, Dietz, Reinders & Fries, 2005).

Because behaviors judged based on complying or not complying with the value systems of individuals (Schwartz, 1992), values enable individuals to decide what to choose and what to avoid. In terms of achievement values, individuals should put more effort into better grades in school. On the other hand, in terms of well-being values, leisure time activities might play a role in hindering school-related work (Fries, Schmid, Dietz & Hofer, 2005). In daily life, individuals have choices between a wide variety of behaviors that will affect whether they reach their objectives. When individuals face conflict in decision making process both in the social and education environment, values generally act as directive. However, when students experience conflict between two desirable outcomes, it is also possible occur a conflict between achievement and well-being related value orientation known as motivational action conflict (Fries, Schmid, Dietz & Hofer, 2005).

Motivation is a directing force for an organism to act to reach a certain object or event (Budak, 2005). Motivational action conflict is defined as a conflict with two or more action options with positive external stimulants, but when these action options do not occur simultaneously (Schmid, Hofer, Dietz, Reinders & Fries, 2005). Individuals can face motivational action conflicts during the decision-making process as a result of the interaction of certain factors surrounding an individual and his/her environment (Schmid, Hofer, Dietz, Reinders & Fries, 2005). Motivational action conflict is caused by two or more behavioral paths related to mutually interconnected objectives. Although students have been free to decide how long they will study and when they will have leisure time, they can still experience motivational action conflicts. This occurs especially when making decisions between school and leisure time activities, as well as making decisions related to school (school-school conflict) and leisure time (leisure time-leisure time conflict) (Fries, Schmid, Dietz & Hofer, 2005). In other words, motivational action conflict is an intellectual, behavioural, and cognitive state experienced as a result of the negative effects of attractive alternatives when there is a need to choose between two opposite objectives related to school and leisure time (Hofer, Schmid, Fries, Dietz, Clausen & Reinders, 2007).

A student being called by a close friend to do something else while studying for an important exam the next day is an example of motivational action conflict. If both action alternatives offer positive incentives to the student (who wants a high grade but also to have fun), it is possible that this student will experience motivational action conflict. If the student decides to stay home and study, he will be less interested in studying, possibility increase the ease with which he is distracted as well as the number of distractions, his motivation will decrease, and his studying capacity will lessen based on the positive incentives offered by his friend. On the other hand, if he decides to meet with his friend, he will be distracted and feel guilty because of the importance he gives to studying and the results he wants to achieve. Among these two simultaneously occurring action alternatives, the unselected action alternative and incentivizing aspects of this alternative might conflict with desired choices and prevent existing action (Kilian, Hofer & Kuhnle, 2010).

Fries et al. (2005) assumes that the likelihood of experiencing motivation action conflict is determined by individual value orientation; therefore, the motivational action conflict concept is explained through its connection with individual value orientation. The difference between achievement and well-being value orientation is used to account for individual differences in motivational action conflicts. Individual differences related to motivational action conflict decisions affect individual differences in value orientation (Kilian, Hofer & Kuhnle, 2010). Conflicts between achievement and well-being value orientation are visible as conflicts between school and leisure time-related activities (Schmid, Hofer, Dietz, Reinders & Fries, 2005). Students' value orientation is related to systematic decisions made when they are forced to decide between school and leisure time-related activities (Fries, Schmid, Dietz & Hofer, 2005). In the case of a conflict between school and leisure time, value orientation affects students' decisions, not just in terms of motivational action conflict, but also how students handle these conflicts can change their values over time (Kilian, Hofer & Kuhnle, 2010).

A student cannot comply with two values (achievement and well-being) within the same action. He or she acts based on the relative importance of each value type on his/her own. When high achievement and high well-being value orientation are considered, and a student decides on an action plan, the student might experience doubt about whether the decision was correct after the decision or during action. For example, "Should I go out with my friends instead of studying for the mathematics exam next week?" or "Should I study for the mathematics exam next week instead of going out with my friends?" Conflicts after decisions that follows such events might be misleading. Regardless of which action is selected, the student will always have doubt, and this might lead to negative results in terms of the student's action performance (Schmid, Hofer, Dietz, Reinders & Fries, 2005).

In a semi-structured interview study with 25 high school students in Germany, Schmid et al. (2005) found that young German students failed to successfully connect achievement and well-being values, and these two values can conflict in daily life. The results of this study also showed that participants found both the success and well-being value orientations to be highly important, and the participants experienced conflict between school and leisure time. When the students were forced to decide between school and leisure time activities, they reported behavioral, cognitive, and emotional conflicts.

In a survey study with 184 secondary school and high school students, Fries et al. (2005) found that students frequently experienced conflict between both school related work and leisure time activities, and they had high scores in both achievement and well-being values. Researchers also found that students with high achievement value orientation cared about school-related tasks more than students with high well-being value orientation and value orientation is related to allocating time for learning and grade level.

In a sample of 704 secondary school students, Hofer et al. (2007) examined the relationship between individual value orientation, motivational action conflicts, and successful self-regulation, and time investment for learning. The results of this study showed that students tend to choose the action that is more compliant with dominant value orientation in motivational action conflicts. While students with high achievement value orientation tend to decide more frequently for the school-related alternative, students with high well-being value orientation tend to choose leisure time-related alternatives. Additionally, achievement value orientation and successful self-regulation predicted time investment for academic learning.

In a multi-cultural study from five countries, Hofer, Schmid, Fries, Zivkovic, and Dietz (2009) examined the relationship between students' value orientation and motivational deformation due to conflicts between learning and leisure time activities. Researchers found that well-being value orientation positively correlated with experience of motivational interference during learning and conflict frequency and negatively correlated with allocating time to school-related activities (homework, general preparation, etc.). Relationships related to achievement value orientation also showed almost opposite results.

In a sample of 817 eighth grade German students, Kuhnle, Hofer, and Kilian (2010) investigated whether the objective conflict frequency between school and leisure time acted as a mediator between students' value orientation and the effect of self-control capacity on balanced life experience. The researchers defined life balance as allocating satisfactory time for different life fields. The adolescents were pursuing a wide range of activities, interest areas, and duties, and they were forced to choose certain objectives under certain

conditions. If there was a conflict between the different objectives for the adolescents and if one pursued objective caused that individual to pay the price of not putting effort into other objectives, this could endanger life balance. The researchers argued that the general structure of value orientation is related to the frequency of objective conflict and life balance. As a result of descriptive analysis, it was determined that the students in the highest-level school (Gymnasium) were more controlled and balanced, as well as experienced less conflict. It was also found that high achievement and well-being value orientation results caused both a positive relationship between the two value orientations and conflict frequency and an indirect negative relationship with life balance due to time resource constraints. Researchers argued that life balance is an important structure for adolescents and a high level of self-control can act as a resource to effectively manage life. Thus, it is important to identify the value orientation of today's youth and the conflict frequency between school and leisure time activities, which cover an important part of their lives, to determine precautions on this area. The purpose of this study is to investigate the relationship between motivational action conflict frequency and value orientation, as well as to examine correlates of value orientations among high school students.

2. Methodology

2.1. Research Design

A cross-sectional research design was used to investigate the association between motivational action conflict frequency and value orientation as well as sociodemographic correlates of value orientation among Turkish high school students (Cohen, Manion & Morrison, 2018).

2.2. Participants

Participants consisted of 846 high school students in four different high school types in Kocaeli province, Turkey. Kocaeli is a highly populated and industrialized city which is located in the Marmara Region of Turkey. These students were selected among different school types to ensure maximum diversity in the sample. There were 281 Science High School students (33.2%), 283 Anatolian High School students (33.5%), 112 High School students (13.2%), and 170 Technical High School students (20.1%). Among the participating students, 49.3% ($n=417$) were girls, 50.7% ($n=429$) were boys; 34.3% ($n=290$) were in the ninth grade, 34.4% ($n=291$) were in the tenth grade, and 31.3% ($n=265$) were in the eleventh grade. Students' ages ranged from 14–19 years old ($M=15.99$, $SD=.88$). Lastly, students' daily study time varied between less than 30 minutes to 120 minutes or more, and most of the students worked from 31 to 60 minutes ($n=271$), followed by between 61 minutes to 119 minutes ($n=241$), less than 30 minutes ($n=233$), and 120 minutes or more ($n=101$).

2.3. Measures

2.3.1. Motivational action conflict frequency survey. In order to measure motivational action conflict frequency, students were asked to evaluate how frequently they experienced conflict among daily life activities. For this purpose, questions created by Fries et al. (2005) were used. The questions were translated into Turkish by the researchers using the translation and back-translation method as suggested by Brislin (1980). Three questions were used for school and leisure time conflicts (school–school, leisure time–leisure time, and school–leisure time). Before these questions were asked, students were given a description phrase: *“Some young people say their schedule is full in the afternoon. While they want to do a lot of things related to school, they also say they want to attend different leisure time activities. Therefore, it is sometimes hard to decide on what they want to do.”* Next, they were asked the following three questions: *“1. How frequently do you experience indecisiveness about doing something for school in the afternoon or on the weekend (homework, studying for exams, etc.) or spending time on leisure time activities (meeting with friends, sports, watching television, etc.)? 2. How frequently do you want to do multiple activities in your leisure time (for example, sports, meeting with friends, etc.)? 3. When you have to do multiple things related to school (for example, studying for an exam and doing homework for a couple of classes), how frequently do you get confused about where to start?”*. Each student provided answers based on a five-point Likert type scale ranging from *Never* (1) to *Always* (5). Possible scores ranged from 1 to 5. Higher scores indicated higher school–school, leisure time–leisure time, and school–leisure time conflict in each question, respectively.

2.3.2. Value orientation scale. In order to measure value orientation of high school students, the Value Orientation Scale (VOS) developed by Fries et al. (2005) and adapted into Turkish by Çalışkan and Karademir (2014) was used. The scale consists of two subscales and four items each subscale had two items for measuring achievement and well-being value orientation. The items for identifying achievement value orientation describes a student with open objectives, who tolerates boring tasks, and wants to achieve something in his/her life. The items for identifying well-being value orientation describes a student who wants to spend most of his/her time with friends, who loves having fun and unplanned activities, and who wants to have fun in his/her life (Fries, Schmid, Dietz & Hofer, 2005). Students were asked to answer each item on a six-point scale. To ascertain the linguistic validity of the Turkish adaptation of this scale, both its Turkish and English forms were applied to 46 students in the English Teaching department, and significant correlations ranging from .60 to .79 was found between original and translated items. To determine underlying factor structure of the scale, exploratory and confirmatory factor analyses were conducted. After the analyses, consistent with the conceptualization of Fries et al. (2005) a factor structure that measures two different value orientations (well-being and achievement value orientation) was obtained. The factor loadings of well-being value orientation were .60 and .80, and the factor loadings for achievement value orientation were .32 and .75 (Çalışkan & Karademir, 2014). In the original scale, Hofer et al. (2007) found test-retest reliability to be .71 for well-being value orientation and .58 for achievement value orientation. Four-week stability coefficient of well-being value orientation of the scale was .86, and achievement value orientation was .83 in Turkish version (Çalışkan & Karademir, 2014). Items are summed then averaged to obtain a scale score for well-being value orientation and achievement value orientation. Possible scores range from 1 to 5, and higher scores indicate higher well-being and achievement value orientation in each subscale.

2.4. Procedure

The data were collected from the high students between February 2017 and April 2017. Data collection process conducted by the first and second researcher in the classroom environment during lesson times. Before the students proceeding to answer the questionnaire, researchers informed to students about ethics of the study and stated that the participation in the research was voluntary, that the answers given would remain confidential, that the data would not be used for any purpose other than the research and that they could withdraw from the study without any sanction at the beginning, middle or end of the research. All students voluntarily participated to study. Students completed the questionnaire approximately in twenty minutes.

2.5. Statistical Analyses

Statistical analyses were performed using the IBM SPSS 23 for Windows. Descriptive statistics including frequencies, percentages, means, and standard deviations were used to give information about study participants and the levels of achievement value orientation and well-being value orientation, and different types of motivational action conflict frequency. Pearson product moment correlation coefficients were calculated to examine the strength and direction of associations between value orientations and different types of motivational action conflict frequency. Independent samples t-tests used to compare the differences in mean scores of achievement value orientation and well-being value orientation between males and females. One-way analyses of variance (ANOVAs) were conducted to examine the differences in mean scores of achievement value orientation and well-being value orientation across high school type, grade level, and daily study time. In case of one-way ANOVA is significant, a post-hoc Tukey HSD test performed to determine the source of mean differences across different groups. Preliminary analyses were conducted to examine the assumptions of normality, homogeneity of variance, or linearity in relevant analyses and no violation of assumptions were found. The level of statistical significance was set at $p < .05$ in all inferential statistics.

4. Results

Descriptive statistics for value orientation levels and motivational action conflict frequency level of high school students presented in Table 1.

Table 1. Descriptive statistics for value orientations and different motivational action conflicts

	<i>M</i>	<i>SD</i>	Minimum	Maximum
Value Orientation				
Achievement	2.74	1.19	1.00	6.00
Well-being	3.25	1.22	1.00	6.00
Type of Motivational Action Conflict				
School–leisure time	3.01	1.12	1.00	5.00
School–School time	3.45	1.14	1.00	5.00
Leisure time–leisure time	2.91	1.19	1.00	5.00

Note: $N=846$.

As seen in Table 1, the well-being value orientation ($M=3.25$) and achievement value orientation ($M=2.74$) of high school students were in the “low” range; however, the average well-being value orientation scores of high school students were slightly higher than the average achievement value orientation scores. In the school–leisure time conflict, the mean was at the “sometimes” ($M=3.01$) level. In students’ conflicts in school time and school time, the average was at the “mostly” ($M=3.45$) level. In students’ conflicts in leisure time–leisure time activities, the average was at the “sometimes” ($M=2.91$).

Pearson product moment correlation coefficients were calculated to examine the strength and direction of associations between value orientations and different types of motivational action conflict frequency and results of Pearson product moment correlation coefficient analyses presented in Table 2.

Table 2. Results of Pearson product moment correlation coefficients

Type of motivational action conflict	Value Orientations	
	Achievement	Well-being
	<i>r</i>	<i>r</i>
School time–leisure time	-.01	-.06
School time–School time	.10**	-.20**
Leisure time–leisure time	.24**	-.22**

Note: ** $p<.01$.

As seen in Table 2, there was no significant relationship between achievement and well-being value orientation ($r= -.01$, $p>.05$) and between well-being and school time–leisure time conflict ($r= -.06$, $p>.05$). However, there was a weak and positive correlation between achievement value orientation and school time–school time conflict ($r= .10$, $p<.01$), and between achievement value orientation and leisure time–leisure time conflict ($r= .22$, $p<.01$). Results of Pearson product moment correlation analyses also showed that there was a weak and negative association between well-being value orientation and school time–school time conflict ($r= -.20$, $p<.01$), and well-being value orientation and leisure time–leisure time conflict ($r= -.22$, $p<.01$). Independent-samples t tests conducted to compare the mean scores of the male and female high school students in achievement and well-being value orientation presented in Table 3.

Table 3. Results of independent samples t -tests for achievement and well-being value orientation

	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
Achievement						
Female	2.93	1.31	844	4.74	.001***	.32
Male	2.55	1.02				
Well-being						
Female	3.13	1.26	844	2.80	.005**	-.20
Male	3.37	1.17				

Note: d = Cohen d effect size measure, Males used as reference category in calculation of Cohen’s d , ** $p<.01$, *** $p<.001$.

Results of independent samples t -test suggested that there was a significant difference between the means of the two groups in achievement ($t(844)= 4.74$, $p<.001$, $d= .32$) and well-being value orientations ($t(844)= 2.80$,

$p < .001$, $d = -.20$). The effect sizes for achievement and well-being value orientations differences between females and males were small. As seen in Table 3, the mean achievement value orientation of the female high school students ($M = 2.93$) was significantly higher than the mean achievement value orientation of male high school students ($M = 2.55$). However, the mean well-being value orientation of male high school students ($M = 3.37$) was significantly higher than the mean well-being value orientation of female high school students ($M = 3.13$).

One-way ANOVAs conducted to compare the mean scores of high school students with respect to high school type in achievement and well-being value orientation presented in Table 4.

Table 4. Results of one-way ANOVA for high-school type

	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>	η^2	Post-Hoc Tukey
Achievement							
1. Science High School	2.81	1.07	3, 842	.78	.508	.00	-
2. Anatolian High School	2.74	1.18					
3. High School	2.62	1.36					
4. Technical High School	2.70	1.27					
Well-Being							
1. Science High School	3.15	1.09	3, 842	3.96	.008**	.01	1-4, 2-4
2. Anatolian High School	3.16	1.18					
3. High School	3.41	1.37					
4. Technical High School	3.49	1.35					

Note: $p < .01$ **.

As seen in Table 4, there was no significant difference in students' achievement value orientation level based on high school type ($F(3, 842) = .78$, $p > .05$, $\eta^2 = .00$). However, result of one-way ANOVA was significant for well-being value orientation ($F(3, 842) = 3.96$; $p < .01$, $\eta^2 = .01$). The effect size was small, such that high school type explains approximately 1% of changes in well-being value orientation scores. A Tukey HSD post hoc test showed that regular high school students ($M = 3.41$) significantly higher well-being value orientation scores than Science high school students ($M = 3.15$) or Anatolian high school students ($M = 3.16$). Other groups did not significantly differ from each other.

One-way ANOVAs conducted to compare the mean scores of high school students with respect to grade level in achievement and well-being value orientation presented in Table 5.

Table 5. Results of one-way ANOVA for grade level

	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>	η^2
Achievement						
1. 9 th grade	2.79	1.24	2, 843	.77	.462	.00
2. 10 th grade	2.74	1.17				
3. 11 th grade	2.67	1.15				
Well-being						
1. 9 th grade	3.22	1.22	2, 843	.78	.460	.00
2. 10 th grade	3.33	1.31				
3. 11 th grade	3.21	1.12				

As seen in Table 5, there was no significant difference in achievement value orientation level ($F(2, 843) = .77$, $p > .05$, $\eta^2 = .00$) or well-being value orientation level ($F(2, 843) = .78$, $p > .05$, $\eta^2 = .00$) with respect to grade level.

One-way ANOVAs conducted to compare the mean scores of high school students with respect to daily studying time in achievement and well-being value orientation presented in Table 6.

Table 6. Results of one-way ANOVA for daily study time

	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>	η^2	Post-Hoc Tukey
Achievement							
1. Less than 30 minutes	3.14	1.36	3, 842	14.82	.001***	.05	1-2
2. From 31–60 minutes	2.67	1.15					1-3
3. From 61–119 minutes	2.58	1.03					1-4
4. 120 minutes or more	2.35	.96					
Well-Being							
1. Less than 30 minutes	2.91	1.30	3, 842	11.65	.001***	.04	1-2
2. From 31–60 minutes	3.25	1.19					1-3
3. From 61–119 minutes	3.43	1.13					1-4
4. 120 minutes or more	3.64	1.15					2-4

Note: $p < .001$ ***.

As seen in Table 6, result of one-way ANOVA was significant for achievement value orientation ($F(3, 842) = 14.82, p < .001, \eta^2 = .05$), and well-being value orientation ($F(3, 842) = 11.65, p < .001, \eta^2 = .04$). The effect sizes were small, such that daily study time explains approximately 4% of changes in achievement value orientation scores and 4% of well-being value orientation scores. Results of post-hoc Tukey HSD test showed that students who studied less than 30 minutes in a day ($M = 3.14$) significantly higher achievement value orientation scores than students who studied between 61-119 minutes ($M = 2.67$), students who studied between 120 or higher minutes ($M = 2.35$). Moreover, results of post-hoc Tukey HSD test also showed that students who studied less than 30 minutes in a day ($M = 2.91$) significantly lower well-being value orientation scores than students who studied between 31-60 minutes ($M = 3.25$), 61-119 minutes ($M = 3.43$), or students who studied between 120 or higher minutes ($M = 3.64$). Lastly, students who studied between 31-60 minutes ($M = 3.25$) significantly lower well-being value orientation scores than students who studied between 120 or higher minutes ($M = 3.64$). There was no difference in other groups in achievement value orientation or well-being value orientation scores.

4. Discussion

This study investigated to association between motivational action conflict frequency and value orientation as well as sociodemographic correlates of value orientation among Turkish high school students. Results of this study suggested that achievement value orientation and well-being value orientation was at a low level in Turkish high school students. These findings are not in line with previous studies conducted by Fries et al. (2005) and Kilian et al. (2010) who reported that moderate levels for students' achievement and well-being value orientations. Students with high achievement value orientation tend to choose school-related activities, while students with high well-being value orientation tend to choose leisure time-related alternatives. Students with high well-being value orientation experience higher performance and mood disorders while imagining themselves in a learning activity, whereas students with high achievement value orientation experience performance and mood disorders related to leisure time-related activities. Since high achievement value orientation fundamentally offers incentives for achievement, those with this orientation are often more likely to choose learning alternatives. On the other hand, as high well-being value orientation fundamentally offers incentives for well-being, students with this orientation are more likely to decide on leisure time-alternatives (Schmid, Hofer, Dietz, Reinders & Fries, 2005). Therefore, it can be stated that students tend to choose leisure time- and social activity-related alternatives rather than school-related activities.

Students with high achievement and well-being value orientations experience more school-leisure time conflict than other students (Fries, Schmid, Dietz & Hofer, 2005). Since the participants did not have high level achievement and leisure time value orientations, school-leisure time action conflicts might be at the "sometimes" level. High achievement value orientation does not automatically mean lower well-being value orientation. Achievement and well-being value orientations explain students' school-leisure time conflict because these form part of the two main areas of students' lives (Kilian, Hofer & Kuhnle, 2010).

When the results are evaluated in terms of the relationship between students' value orientations and action conflict, no significant relationship between achievement and well-being value orientations and school-leisure time conflict is apparent. However, there is a positive low-level significant relationship between achievement value orientation and school conflict and leisure time conflict; and there is negative low-level significant relationship between well-being value orientation and school conflict and leisure time. Fries et al. (2005) identified a positive low-level significant relationship between students' well-being value orientation and leisure time conflict. According to Hofer et al. (2009), there is positive relationship between value orientation and school-leisure time conflict and a negative relationship between value orientation and studying time. While well-being and achievement values are important for students, the study participants did not have high-level value orientations. Additionally, achievement and well-being value orientations are not independent; instead, these two show a high negative correlation (2009). This might cause conflict between school-leisure time to frequently occur in students with both achievement and well-being value orientations.

The participants demonstrated a significant relationship between the two value orientations and school and leisure time conflicts. There was a meaningful association between students' school learning activities and learning program and decisions in the conflict state (Dietz, Hofer & Fries, 2007). The amount of value conflict is related to mandatory decision making between school and leisure time activities. This conflict is not only characterized by decision making situations related to school and leisure time, but also the difficulty of those decisions (Fries, Schmid, Dietz & Hofer, 2005). Individual differences related to motivational action conflict decisions may affect individual differences in value orientation (Kilian, Hofer & Kuhnle, 2010). There was a positive low-level significant relationship between participating students' achievement value orientation and leisure time conflicts. A study by Hofer et al. (2009) found that students with high achievement value orientation have fewer problems with leisure time thoughts occurring while they are engaged in academic activities.

Additionally, there was a significant difference in the achievement and well-being value orientations of the participants with respect to gender, which was similar to the results of other studies. It has been found that female students have significantly different achievement value orientations compared to male students. Uncu (2008) determined that the difference for the achievement dimension in terms of gender is in favor of girls in a sample of teachers and administrators. Similarly, Uyguç (2003) discovered a difference in terms of the importance levels of values based on students' gender in a sample of college students. Thus, results of this study also support and extend previous studies in a high school student sample. According to Güngör (2000), the different values that females and males have are related to cultural rather than biological factors, and these differences form society. Society cannot create intelligence differences between genders; however, living a different life is due to the different interests and expectations imposed by societal norms. For example, while academic interest was previously low for Turkish women, it is currently at a high level (Güngör, 2000). Thus, the life experiences and expectations placed on men and women may lead these groups to develop different values.

In this study, the well-being value orientation showed meaningful difference for high school type. Karaca (2008) also found that certain values in value orientation showed differences based on high school type in a divinity college student sample. In terms of well-being value orientation, Technical High School students significantly higher well-being orientation than Science High School students, and Anatolian High School students. These findings may be related to selection of Technical High Schools in Turkey. Generally, students in Technical High Schools have low grades, and parents sending students to these schools to learn an occupation, and students with relatively good grades in Turkey selecting Science High Schools and Anatolian High Schools. Thus, students with high achievement and well-being value orientations experience more school-leisure time conflict than other students. On the other hand, students with a well-being value orientation, who often attend Technical High Schools, tend to choose leisure time alternatives over schoolwork (Fries, Schmid, Dietz & Hofer, 2005).

Additionally, there was no significant difference for either value orientation in terms of grade level in this study, a finding similar to that Yalmanç (2009) found in preservice teachers. In Turkey, students' choices about their future occupations shape their expectations in high school. Thus, students generally study in an exam-oriented way and have achievement expectations not based on learning but rather on acquiring an

education for a particular purpose. As a result, the meaning of achievement for high school level students is to receive an education based on employment and solve the maximum number of questions on their exams. Students' desire to learn or understand high school classes is more important to them than socio-cultural, artistic, mental, and thought development. As a result, the students who participated in this study generally did not show different value orientations at the class level since all students at every class level were focused on their anxiety about the future and desire to achieve certain grades.

Lastly, it was determined that the achievement and well-being value orientations of the participants differed significantly based on daily studying hours. Students' achievement value orientation levels showed a significant difference in favor of students studying less than 30 minutes among those who studied less than 30 minutes, 61 minutes to 119 minutes, and 120 minutes or more. According to Hofer et al. (2009), value orientations are determinants of studying time. Additionally, achievement indicators can vary between individuals, education systems, and environmental conditions. When students are free to decide on their own studying timing, their academic procrastination tendency tend to be higher. There is a relationship between students' academic studying procrastination and conflict decisions. As the academic procrastination tendency increases, it is more likely for students to choose leisure time activities over the learning alternative (Dietz, Hofer & Fries, 2007). In this study, it can be stated that in terms of studying less than 30 minutes per day, students have more leisure time activity orientation.

This study has certain limitations. Firstly, this study conducted on a limited number of Turkish high school students from Marmara Region of Turkey. Thus, the external validity of this study is low. Secondly, this study used a cross-sectional research design that prevent causal relationships between independent and dependent variables. Lastly, this study collected information from students using self-report scales.

Although this limitations, findings of this study have several important implications for research and practice in high school students. In a study that examined the relationship between post-modern value orientations and procrastination and academic performance, it was found that daily planning and conflict situations might prevent procrastination and lead students to positive learning and studying-related decisions (Dietz, Hofer & Fries, 2007). At this point, based on students' achievement and well-being value orientations, possible action conflicts might be prevented with the help of environmental changes. Participation in structured leisure time activities is also positively correlated with academic success (Eccles & Barber, 1999). Therefore, a largely structured environment offers lower potential for action conflict and might lead to lower possible negative results. Additionally, while studying, certain students' value orientations and motivational action conflicts might change. Hofer et al. (2009) showed that while students' achievement value orientation decreased over time, well-being value orientation increased. Since this study was conducted in a limited environment, different studies with intercultural comparisons could also be conducted for different political, economic, and social orders. Motivation to learn is an important factor in shaping students learning activities (Tentama, Subardjo & Abdillah, 2019). Further studies can examine the association between motivation to learn and value orientations.

5. Conclusion

Consequently, results of this study suggested that achievement value orientation and well-being value orientation of Turkish high school students were low. Results of this study also suggested that some sociodemographics also correlated with high school student's achievement value orientation and well-being value orientation. Specifically, achievement goal orientations of high school students positively associated with being female but not correlated with grade level and school type. Moreover, students with low study time tend to be more achievement value oriented than students with high study time. Students with high achievement value orientation also more likely to experience school time-school time and leisure time-leisure time conflict. With respect to well-being value orientation, study results suggested that being male, being Science or Anatolian high school students and having high study time positively associated with well-being value orientation. Moreover, students with high well-being value orientation also less likely to experience school time-school time and leisure time-leisure time conflict. The results of this study may help to understand the correlates of value orientations of high school students in Turkish psychology literature where a very limited number of studies have been conducted.

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The Effect of Counseling on Anxiety Level from the Perspective of Ecological Systems Theory: A Quasi-experimental Pre-test - Post-test Control Group Study

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ABSTRACT

In this study, we aimed to examine how counseling service provided to college students, through a contextual clinical counseling model, affects the anxiety level of college students at a university in the east of Turkey. We followed a quasi-experimental with pretest-posttest and with control group design method. The experimental group comprised 205 and the control group comprised 75 college students. Seven supervisors with Ph.D. or MD degree in mental health professions provided weekly supervision to 120 counselors-in-training who provided individual counseling services to the participants. Each client in the experimental group received in average five sessions, each for 45-55 minutes. We have used an adapted version of Beck Anxiety Inventory for Turkey to examine the clients' anxiety levels. Throughout the counseling process, we have collaborated with the psychiatry department at the university when it was necessary. Additionally, in order to conduct the complex quasi-experimental study in a smooth process, we utilized the contextual clinical counseling model developed by the first author; as such models are utilized in some of the best counseling departments in the USA. The model facilitated to conduct the complex and dynamic research and providing the services with limited resources. That means optimized the resources through the model and got significant results. As a result, receiving counseling service seems significantly decreasing anxiety level for this sample. The current study meets some important gaps in mental health. We discussed the findings from an ecological systems theory perspective and suggested some implications in mental health.

Keywords:¹

Counseling, anxiety, college, ecological systems theory, wellbeing

1. Introduction

College students spend an important part of their life time at college while getting a degree for their professional life. It is a critical period because they meet new cultures, gain individual independence, develop personal, social and emotional well-being, and experience biopsychosocial spiritual and economic changes. They are then in a transition period from adolescence to young adulthood, which may also lead to a separation from family and the necessity to balance their economic resources and needs. Uncertainties about the future, stress and problems in interpersonal relationships may cause mental health disorders such as anxiety and depression (Arslan, Mergen, Mergen Erdoğan, Arslan, & Ayyıldız, 2016; Deniz & Sümer, 2010; Günay et al., 2008, Özhan & Boyacı, 2018; Tanhan, 2020; Yılmaz & Ocağcı, 2010).

Moreover, the Ecological Systems Theory (EST) examines a person from a contextual perspective that is need in mental health (Arslan & Tanhan, 2019; Bostan & Duru, 2019; Eslek & Irmak, 2018; Kaynakçı & Mesutoğlu,

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2018; Tanhan, 2019). In addition to having significant effects on human psychology, contextual factors also have an impact on the process and outcome of mental health services (Brofenbrenner, 1977; Doyumğaç, Tanhan, & Kıymaz, 2020; Fikry et al., 2020; Tanhan, 2019; Tanhan & Francisco, 2019). In their study, Tanhan and Francisco (2019) and Tanhan (2020) argue that they have improved their clients' quality of life in different dimensions (e.g., individual, family, group, community) using the EST. Likewise, contextual conditions can reduce or increase the impact of mental health services (Arslan & Çoşkun, 2020; Arslan, Yıldırım, Tanhan, Buluş, & Allen, 2020) Tanhan & Strack, 2020). In other words, the impact of a psychological counselling service in a context where there are no major crises in social life may not be very visible, but the same service can be very effective in the contexts of major crises (e.g. earthquakes, economic crisis).

Major crises can appear as psychological symptoms, such as anxiety and depression. Anxiety is a condition that results in physical reactions such as chest tightness, heart palpitations, tremor, headache, or sweating caused by emotions of fear, anxiety and stress arising from an individual's feeling of being threatened in various situations (Günay et al., 2008; Tekin & Tekin, 2014; Türkçapar, 2004; Yılmaz & Ocağcı, 2010). DSM-5 (American Psychiatric Association, 2013) collected the types of anxiety under 12 headings, namely, separation anxiety disorder, selective mutism, specific phobia, social anxiety disorder (also called social phobia), panic disorder, predictors of panic attack, agoraphobia, generalized anxiety disorder, substance/medication-induced anxiety disorder, anxiety disorder due to another medical condition, defined anxiety disorder and undefined anxiety disorder.

Recent research (Dilbaz, 2000; Gazelle & Rubin, 2019; Koçak & Ertuğrul, 2012; Nelemans et al, 2019; Sevinçok, 2007; Spence & Rapee, 2016; Van Oudenhove et al., 2016) has been based on epigenetics, genetics and effects of the ecological factors interacting with these two on anxiety. In scientific studies, environmental and genetic factors have been found to be effective at different rates. For example, the effect of genetic factors in different anxiety disorders varies between 25-60% (McGrath, Weill, Robinson, MacRae & Smoller, 2012). On the other hand, genetic factors for panic disorder, for which the effect of heredity is considered the highest, account for generally between 3% and 48% (Öztürk & Uluşahin, 2014), while familial genetic effect is found to be 30-40% in generalized anxiety disorder (Fisher, 2007).

Anxiety disorders usually begin at an early age. The riskiest period for emergence is between 10-25 years. Symptoms occur before the age of 35 in 80-90% of the cases (Öztürk & Uluşahin, 2014). For university students, this is a very important period, when levels and symptoms of anxiety are observed to be high. For instance, in a study conducted by Deniz and Sümer (2010), the anxiety levels of students were found to be 35%.

While reviewing the literature, a limited number of studies were found having effect of various therapy interventions on the anxiety level of individuals. The most commonly used psychotherapy methods are cognitive behavioural therapy, group therapy, and behavioural therapy (Üneri, Yıldırım, Tanıdır, & Aytemiz, 2016). In addition, Demir and Yıldırım (2017) found that the art therapy program in young adults had a significant positive effect on mental disorders as well as anxiety and depression levels. Another experimental study investigated the effect of mindfulness-based cognitive therapy Program on anxiety levels of university students. The results of the study showed that the applied therapy model significantly reduces the anxiety levels of university students (Demir & Yıldırım, 2017; Demir, 2017). Therapy programs applied in similar studies have been helpful in reducing anxiety levels in individuals (Saatçioğlu, 2001; Tanhan, 2019; Tekinsav-Sütçü & Sorias, 2010). A few researchers recommended utilizing Acceptance and Commitment Therapy (ACT) with people in Turkey (Tanhan, 2019; Tanhan et al., 2020) and especially college students in Turkey (Uğur, Kaya, & Tanhan, 2020).

There are two important aims of the current study. First, we aimed to apply and test the contextual clinical counseling model, which was developed by the first author, to see how it is effective considering limited resources in the context of Turkey. Our second purpose was to examine the effect of psychological counselling services given under supervision that consist of five sessions in average on the anxiety levels of the clients who applied to the psychological counselling unit at the university where the study was carried out. The procedures explained in details in the following sections (e.g., utilizing counselors-in-training,

supervision, matching clients and counselors) are steps of the proposed contextual clinical counseling model for Turkey.

2. Method

A pre-test and post-test (2x2) design with a quasi-experimental control group was utilized to examine the effects of individual counselling service on the college students' anxiety.

2.1. Participants

The universe of this research is composed of 350 clients studying at a university in the east of Turkey and who applied to the counseling department at the university to receive individual counseling service. The sample of the study consisted of 300 clients who voluntarily agreed to participate in the study. For the research, the pre-tests and post-tests were given to the clients, and the total number of 280 clients who completed them formed the final number of participants. The participants were studying at 20 different departments at the university. The main demographic information about the participants included the following: The experimental group consisted of 205 students (104 females and 101 males). Of these, 140 participants were studying in the fourth (final) year of the university, while the remaining were studying in the first, second and third years of university. In the control group, there were 75 students (55 females and 20 males) who did not receive psychological counselling; and 30 of them stated that they were in the fourth (last) year of university while the remaining stated that they were studying in the first, second and third years of university. In this study, 110 CPCs, who were in the last year of the Department of PCG, provided psychological counselling service. In this process, seven supervisors with Ph.D. or MD degree in mental health professions provided weekly supervision to 120 counselors-in-training who provided individual counseling services to the participants.

2.2. Ethical Approval Prior to Implementation

Participants were given a consent form and written information about the research. In addition, all persons, units and institutions participating in the process as counselors-in-training and supervisors, etc. were informed besides obtaining application and research approvals. Both at the beginning of the research and during the process, it was emphasized that participation in the research was on a voluntary basis and ethical rules were regularly mentioned.

2.3. Measures

In this study, the Beck Anxiety Scale was used to measure the anxiety level, and a demographic form was used to obtain information about the participants (e.g., gender, year, department of study).

2.4. Beck anxiety scale. The measure was developed by Epstein, Brown and Steer (1988) in order to determine the frequency and intensity of anxiety symptoms of individuals. Ulusoy, Şahin and Erkmen (1998) confirmed the validity and reliability of the Turkish version of the scale. The scale consists of 21 items, and each item has a score of 0-3, and the highest score one can get from the instruments is 63. The score of 0-7 indicates minimal, 8-15 mild, 16-25 moderate, while 26-63 indicates high level of anxiety. The high total score indicates the intensity of anxiety experienced by the individual. Cronbach's alpha internal consistency score is 0.93 (Ulusoy et al., 1998). Cronbach Alpha reliability scores obtained in the present study were 0.96 for the pre-test and 0.94 for the post-test. Since the number of people in the control group was small, the values were calculated together for the experimental and control groups.

2.5. Experimental and Control Groups

The applicants were able to apply to the counseling department for the counselling service and they were informed about the research, service, counseling process, and the proposed contextual clinical counseling model. Normally, we started providing the service to those who applied earlier. However, the clients who applied and yet were in risk (e.g., clients who were suicidal or had self-mutilating behaviour, or those in severe cases of crisis for some other reasons, or similar emergencies) whether we recognized through pre-tests or the clients verbally expressed were matched with a counselor-in-training regardless of the client's order of application. We did not put these clients in the waiting list meaning in the control group. The main reason for giving priority to these clients and not including them in the control group was that it would not be ethical to keep them waiting.

The practice continued during one school semester, during which the control group received five sessions (45-55 minutes each) of psychological counselling service with an average of one- or two-weeks intervals. The sessions were held utilizing the university counseling center. By the end of the term, 75 clients had not yet received the counselling service, forming the control group in the study. The clients in the control group were informed that they could receive psychological counselling during the break or the next term. Whether these clients later benefited from this service was not followed because it was beyond the scope of this study.

In addition, we worked in coordination with the department of psychiatry at the university from the beginning of the research design process, and in particular, a psychiatrist visited the unit on certain days to follow the study. During this process, approximately 28 clients, who were suicidal or who could not make good use of psychological counselling sessions because of their high level of anxiety, were referred to the psychiatrist. Taking the psychological counselling service into account, the psychiatrist implemented an appropriate treatment plan, talked to the clients about the psychological counselling service and encouraged them to continue receiving the service.

2.6. Counselling Sessions

The first researcher explained the proposed contextual clinical model to the counsellors-in-training that means how services, research, matching client and counselors, counselors' role, counseling department's faculty role, supervision process etc. are working and flowing. Following that, the first researcher matched each client with a counselor based on some principles (e.g., not being familiar, not living at the same addresses, clients' preferences to see a male or female counselor). The seven supervisors gave theoretical courses to the counselors in their own group for two to three weeks on psychological counselling practices (e.g., theories, basic skills, content-emotion reflection, goal-setting). Each candidate then called his/her own client on the phone to make an appointment for the appropriate time and room in the university counselling center. Each client was interviewed for an average of five sessions (each session consisted of 45-55 minutes). The first session usually included informing the client about the process and the explanation of the client about the reason for applying to the unit. Based on the client's voluntariness, the candidate psychological counsellors recorded each session on video or audio, and shared it with the supervisor. Accordingly, each counsellor received feedback from his supervisor on his/her session and prepared for the next session.

2.6.1. Supervision Process

Supervision process was carried out by the seven supervisors. The counsellors were equally distributed to these seven supervisors, and supervisors regularly interviewed with the candidate counsellors individually or in groups after each session. Different approaches (transcripts, groups, summary forms) were used in the supervision process, though not very different from each other. The most important common feature of the supervisors is that they emphasized the importance of the counselors following a person centered approach (e.g., reflections of feelings, content, giving space to the clients, facilitate the process so that the clients decide in the process). Weekly supervision was provided to the counselors for each of their clients during the entire counselling session.

2.7. Data Collection

An ID number was assigned to each client by the unit to compare the anxiety scores of the clients and to keep the identity of the clients confidential. That number was generated from ordinary numbers (between 500 and 1000), which were in no way associated with them, and the clients used this ID number instead of their full name when filling the pre-test and post-test. The pre-test and post-test links were completed by the clients in three different ways: (1) requesting the center to send the link as an email or message to their phone, and thus answering the scale from their personal electronic device; (2) filling the scale by clicking on the link on the desktop of one of the three computers set aside with internet connection in the unit for the purposes of the research; (3) finally, filling out printed forms at the center or taking it home to fill and return them at an appropriate time. Most clients chose to complete the form on the computers at the unit, while others completed the paper form. Pre-test scores were collected before the first session. Post-test scores were collected for 15 days after the last session. The responses of the clients who had used the paper form were recorded into the electronic system as they arrived the unit so that the answers did not get lost.

2.8. Data Analysis

Whether or not the data was filled in completely was checked, and the data of the clients who did not complete the pre-test and post-test were excluded from the study. The subsequent analysis process was carried out in two stages. Firstly, the assumptions regarding loss and extreme values and analyses were examined. By means of the frequency values of the variables, the data set was cleared of incorrect and missing data. In order to examine the extreme values, the pre-test and post-test scores of the clients were converted to z values. The values were found to be within the range of ± 3.19 and acceptable (Tabachnick & Fidell, 2007). The normality hypothesis was tested via the Kolmogorov-Smirnov test. Finally, descriptive statistics regarding pre-test and post-test scores were examined. In the next stage, covariance analysis (ANCOVA) was performed to test the effectiveness of the counselling service on anxiety scores, provided that assumptions were met.

3. Results

In this study, the change in anxiety symptoms of the clients after taking the counselling service was investigated. ANCOVA was used to detect the differences in response variables. Assumptions were examined before proceeding with the analysis process. Firstly, it was examined whether the measures relating to anxiety variable showed normal distribution for the pre-test and post-test scores of the experimental and control groups. The results of the analysis conducted on the assumption of normality are given in Table 1.

Table 1. The Results on the Assumption of Normality

	Group	Kolmogorov-Smirnov			Shapiro-Wilk		
		Z	SD	p	Z	SD	p
Pre-test	Experimental	.136	165	.000	.915	165	.000
	Control	.260	73	.000	.820	73	.000
Post-test	Experimental	.286	165	.000	.649	165	.000
	Control	.268	73	.000	.800	73	.000

The findings about normality showed that Kolmogorov-Smirnov z values of experimental and control group pre-test and post-test scores were significant at .05 level. These results showed that the anxiety pre-test and post-test scores of the experimental and control groups did not meet the assumption of normality. Although one of the important assumptions about the analyses was normality, Green, Salkind and Akey (2000) stated that if the number of participants is 15 and above, the assumption of normality can be ignored and the analysis process can be continued. Participants' pre-test scores for the control and experimental groups were included in the analysis as covariate variable. Considering the number of participants in the study groups, the analysis process continued. A linear regression slope and variance equation are important assumptions about covariance analysis (Tabachnick & Fidell, 2007). The results of the regression slope and variance equation showed that the p-values were not statistically significant, thus the slope of the regression lines ($F_{1-138} = 3.452, p = .065$) and the assumptions of variance equation were met ($Levene F_{1-140} = .533, p = .467$). After testing the necessary assumptions, covariance analysis process was initiated.

Table 2. ANCOVA Results for Repeated Measurements

Source	Sum of Squares	SD	Mean of Squares	F	p	η^2
Model	2995.702	1	2995.702	42.361	.000**	.234
Anxiety	1172.688	1	1172.688	16.583	.000**	.107
Group	1379.211	1	1379.211	19.503	.000**	.123
Error	9829.790	139	70.718			
Total	22590.000	142				

** $p < .001$

Table 2 shows the findings related to covariance analysis. The results of the analysis showed that the process used for anxiety symptoms of the participants in the experimental group receiving psychological counselling service had a significant effect ($F_{1-139} = 19.503$, $p = .000$). Furthermore, it was found that there was a significant decrease after the procedure in the anxiety symptoms of the individuals who were in the experimental group, that is, those who received psychological counselling. Additionally, post-test mean scores of the experimental group were significantly lower than the participants in the untreated control group (see Table 3). These results suggest that the psychological counselling service creates a significant differentiation on the anxiety symptoms of the clients. In addition, the results of the analysis showed that being in the experimental group or in the control group accounted for 12% ($\eta^2 = .123$) of the variability in anxiety post-test score. According to Cohen (1988; 2013), this value indicates a moderate effect size.

Descriptive statistics showed that the mean anxiety score in the experimental group was 20.279 for the pre-test and 7.468 for the post-test. On the other hand, the mean pre-test anxiety score for the control group was found to be 9.451 and the mean score for the post-test was 13.193. The adjusted mean post-test scores for anxiety level were 6.992 for the experimental group and 14.899 for the control group. Figure 1 shows the line graph for the change of anxiety based on pre-test and post-test scores of the experimental and control groups.

Table 3. Descriptive Statistics of Experimental and Control Groups

	Pre-test		Post-test		Adjusted Mean
Group		SD		SD	
Experimental	20.279	15.420	7.468	9.052	6.992
Control	9.451	9.545	13.193	8.142	14.899

Figure 1 shows that the pre-treatment anxiety symptom level of the participants in the experimental group receiving psychological counselling decreased significantly after the treatment. When the control group is examined, the mean scores of pre-treatment anxiety levels do not seem to decrease significantly and tend to increase after the treatment. These results show that the psychological counselling service is effective in reducing anxiety symptoms.

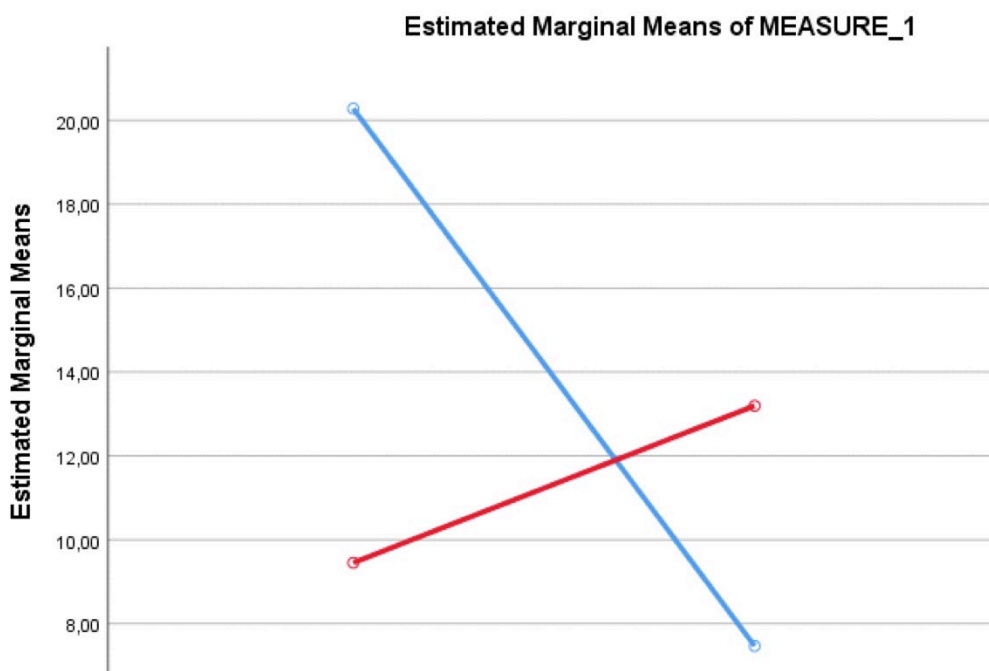


Figure 1. Variations in the Mean Pre-test and Post-test Scores on Anxiety Levels: Red line represents the control group and the blue line represents the experimental group.

4. Discussion

College students in Turkey experience mental health issues (Altun, 2020; Doyumğaç et al., 2020; Tanhan, 2020; Tanhan et al., 2020; Uğur et., 2020). Therefore, mental health professionals should collaborate from a comprehensive perspective to understand the students from a psychopathology and positive psychology perspective. According to the results of our study, the individual psychological counselling reduces the anxiety levels of the clients and related literature supports our study. The literature shows that there are almost no studies conducted with similar quasi-experimental pre-test and post-test control groups among university students. For example, a study by Demir and Yildirim (2017) consisted of eight sessions including conscious awareness, art and therapy using a semi-experimental design in a single group, without pre-test and post-test control groups. The positive effect on reducing anxiety levels observed on nine high school students participating in the study supports our study. The limited number of similar studies is restricting the comparison of our results with those found in the literature. On the other hand, psychological counselling is believed to create positive results as stated in a variety of studies conducted with different samples, approaches and techniques, though not quasi-experimental (Altıparmak, 2007; Aydın, Tekinsav-Sütcü & Sorias, 2010; Cenkseven Önder & Sarı, 2012; Demir, 2018; Gülcan & Nedim Bal, 2014; Öngider, 2013; Receptoğlu, 2013; Tanhan, 2019). These studies support our study as far as their results are concerned. Nevertheless, our study is comparable to the studies conducted according to different variables, but it should be remembered that although there is psychological support at the basis of the described studies, the sample / methods are different.

Tanhan & Francisco (2019) argue that contextual incidents (e.g., social, economic and political) in such environments where individuals, groups, and large societies affect man, if not more, than internal processes, but are generally ignored in mental health services all around the world. In other words, contextual factors affect individuals, groups and societies positively or negatively at least as much as their internal processes (e.g., genetic, emotional and intellectual processes). Therefore, it is important how the intervention used in this present study (i.e. the weekly psychological sessions) is influenced by contextual factors present in the study environment, and better results will be obtained if the findings are interpreted accordingly.

Although it is impossible to include all; anxiety related to both education and future (as most of the 280 clients, both in the experimental group and the control group were in the final year), relationship problems among peers, economic stress and local incidents might function as possible contextual factors. When these contextual factors are considered, the fact that the anxiety scores of individuals in the control group have increased and the anxiety scores of the participants in the experimental group decreased, have revealed the effect of contextual factors and mental health services on anxiety scores experienced and reported by clients. Future research that investigating these contextual factors will be helpful to better understand the relation between psychological counselling and contextual factor related anxiety.

In the literature review, as we have observed in the present study as well, there are counseling departments with resources (e.g., counselors-in-training, faculty members, clients seeking services), and yet there is lack of models or systems to run all these together to maximize the resources (Tanhan, 2018, 2020; Tanhan et al., 2020). This seems to contribute to lack of empirical studies on anxiety in mental health. The main reasons for this may be listed as the lack of attention paid to the counseling departments and the fact that there is too much workload on faculty members working in this field as well as the inadequate supervision provided for the counselors (Pamuk & Yildirim, 2016; Tanhan, 2018). In particular, the fact that clinical applications are almost never performed, and that conducting such clinical studies as in the present study are sometimes criticized even by counseling departments' faculty (Tanhan, 2018). Tanhan stresses that this situation prevents the counselors and the counseling departments from developing and progressing in Turkey. This might contribute the counselors, in particular, lag behind with respect to clinical practices and research, and, ultimately, it affects large masses of people in need of counselling services. Tanhan also stated that because of all these factors, the counsellors should receive more effective theoretical and practical training, and provide counselling services to larger masses of people, and that all of these should be followed by empirical studies and models as in this present study.

From a more contextual and recent perspective with COVID-19 pandemic, the researchers found college students facing many biopsychosocial spiritual and economic issues while having some strengths as well

(Tanhan, 2020; Tanhan et al., 2020). The researchers found their counseling clinic, which the current study was conducted in, served many people, primarily the college students through online or phone-based mental health services. The researchers utilized the contextual counseling clinic model used in this current study during the pandemic. Therefore, the model seems to promise even more robust evidence that it can be utilized both during crisis (e.g., pandemics, endemics, wars, conflict, natural disasters) when it is relatively very difficult to meet people in face.

Limitations

We have some limitations in this study. First, the sample of study consists of a total of 280 university students and generalization may be limited to similar samples. In addition, the age and education levels of the sample are similar, but the effects of variables such as gender, socio-economic levels, living conditions, family education levels and homelands have not been statistically assessed. The participants received five counselling sessions in average and monitoring sessions were not conducted.

Implications

The findings from the present study have implications for four main areas: research, practice, supervision in mental health education, and active social advocacy. First, future researchers could expand the sample and apply it to different age groups in order to evaluate the effectiveness of the counseling. Second, mental health providers who provide counseling sessions might collaborate with other mental health providers like psychiatrists to increase the effectiveness of the services. Third, mental health educators could focus on the utilized contextual clinical counseling model to train their students, enhance quality of clinical supervision, provide more comprehensive services, and conduct more thorough research. Fourth, mental health professionals as providers, educators and/or researchers can use the results to have an active social advocacy at all levels of EST as other researchers stressed (Tanhan, 2020; Tanhan & Strack, 2020). They suggested utilizing innovative research methods including online photovoice to conduct more effective research and improve mental health and other educational services. Related to that, Tanhan (2019, 2020) suggested utilizing Acceptance and Commitment Therapy (ACT) from a contextual perspective to serve people during normal and difficult (e.g., pandemic, endemic) times. Finally, the number of experimental studies in the mental health field is so few in Turkey (Buluş & Şahin, 2019; Tanhan, 2020; Tanhan et al., 2020) that the current study could be repeated utilizing the contextual clinical model utilized in the quasi-experimental study. Therefore, it is worth to conduct similar studies online or phone-based utilizing the clinic model.

Conclusion

This study includes the students as clients who study at a university located in the eastern part of Turkey and who have applied to the psychological counselling unit at the same university to receive psychological counselling service. The clients have been provided with psychological counselling services by the counselors-in-training at the counseling department at the same university. The study analyses the impact of the counselling service provided on the anxiety levels of clients by utilizing a pre-test - post-test design (2x2) along with the contribution of a quasi-experimental control group. This study can be considered to fill an important gap in the national literature. When the results obtained are evaluated from a contextual perspective, it is visible that the psychological counselling service provides a statistically significant decrease in anxiety symptoms for the clients in the experimental group. Since there are not very similar studies in the literature, it is consistent with other similar studies (Bilici et al., 2013; Demir, 2017) and this comparison is limited. This quasi-experimental study seems to add a significant value in the field of mental health for future research, practice, and education when some specific factors are considered such as the need for more mental health services in Turkey, the lack of mental health professionals and the fact that the counseling departments has so far been neglected (e.g., the number of candidate psychological counsellors), despite having a great potential, besides the underutilization of the counselors-in-training in the field of mental health. Finally, this present research indicates that the contextual clinical model can be utilized during normal and other difficult (e.g., wars, conflicts, natural disasters, pandemic, endemic) times because other researchers utilized it from an interdisciplinary and from a contextual perspective during COVID-19 providing mental health services to many people and founding significant and meaningful results (Tanhan, 2020; Tanhan et al., 2020).

Notes:

1) The authors translated this manuscript to Turkish considering the context of the country. The primary results of this study were presented at 9th international congress on psychological counseling and guidance in higher education. Istanbul, Turkey, 15-17 November 2019.

2) The Turkish version of this manuscript is available through the first authors' research platforms, e.g., Google Scholar <https://scholar.google.com/citations?user=N3zDgFOAAAAJ&hl=en> ResearchGate: https://www.researchgate.net/profile/Ahmet_Tanhan/contributions and Academia <https://adiyaman.academia.edu/AhmetTanhan>

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Identity Centrality and Well-being in Lesbian and Bisexual Women College Students

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ABSTRACT

Identity centrality and well-being may hold relevance to lesbian and bisexual women college students as they navigate emerging adulthood, develop their identities, and work towards greater authenticity and self-acceptance. This study sought to investigate identity centrality clusters in a sample of lesbian and bisexual identified college students. Drawing upon extant literature, we hypothesized that lesbian and bisexual women would have profiles of identity centrality that emphasize different aspects of identity and that balanced identity centrality profiles would be associated with higher eudaimonic well-being. Six profiles (or clusters) of identity centrality were found. Interestingly, obtained profiles differed between the group of lesbian and the group of bisexual-identified women. Identity centrality profiles, which demonstrated high centrality across all components (engaged/public) and those that deemphasized collective identity (low collective) profiles, were associated with higher eudaimonic well-being among both participant groups.

Keywords:

identity centrality, lesbian women, bisexual women, eudaimonic well-being

1. Introduction

Understanding the sexual identity development processes of sexual minority women has been a focus of researchers for decades. However, identity centrality, or the idea that some components of self-concept are more central than others in one's overall sense of self, remains largely understudied amongst sexual minorities (Settles, 2004; Stryker & Serpe, 1994; Quinn & Earnshaw, 2011). Current research suggests that while having several important personal identities may promote positive psychosocial functioning, there may also be a risk of incongruence between different aspects of the self, which may be problematic for the individual (Settles, 2004). This may be particularly relevant to lesbian and bisexual women college students as different aspects of their identities (i.e., individual, interpersonal, cultural, and social identities) may conflict as they progress through various stages of identity development and work to synthesize who they understand themselves to be with cultural and societal norms and expectations.

Interest in eudaimonic well-being has increased in the previous two decades in conjunction with the rise of the positive psychology movement (Huta & Waterman, 2014; McNulty & Fincham, 2012). Eudaimonic well-being may be particularly salient for lesbian and bisexual women college students. This is due to their likely engagement in processes of exploring their identity; discovering, developing, and implementing their potentials; resolving internal conflicts; and moving towards identity synthesis and self-actualization (Cass, 1979; Macapagal, Greene, Rivera, & Mustanski, 2015; Waterman, 2011). Furthermore, obstacles such as stigma, discrimination, and minority stress may present a significant obstacle to the attainment of eudaimonic well-

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being for sexual minority women (Riggle, Rostosky, & Danner, 2009). Previous research suggests that identifying as female or as a sexual minority is negatively associated with eudaimonic well-being, possibly due to minority stress or the stigmatization of these identities (Meyer, 2003; Riggle et al., 2009). However, there is limited research that examines the intersection of identity centrality and eudaimonic well-being in lesbian and bisexual women. As such, the purpose of the present study is to 1) examine whether aspects of identity cluster to form distinct identity centrality profiles, and 2) assess the relationship between identity centrality profiles and eudaimonic well-being for lesbian and bisexual college students.

1.1. Identity Centrality

Identity centrality (the varying degrees of importance or prominence of certain aspects of one's personal identities) has been shown to significantly impact several areas of individual experience (Quinn & Chaudoir, 2009). When certain identities become more salient, an individual's actions and experience will be more in keeping with those relevant identities (Stryker & Serpe, 1994). The impact of one's central identity is also apparent in terms of the depth of processing these identities. This processing can be complicated by how "visible" this identity is to others. For example, if a concealable identity (e.g., sexual orientation) is also a stigmatized one, it can have a negative impact on the individual's mental and physical well-being (Quinn & Chaudoir, 2009). This negative impact is especially pronounced if the concealable identity is central to the individual's overall self-concept.

Identity centrality is multidimensional. In a national study of college students, Meca et al. (2015) found four components of identity centrality: personal, relational, collective, and public identity. They also discovered that within each of these components are six possible profiles: (1) *fully engaged* (moderately high levels of personal, relational, and collective identity centrality and low levels of public identity centrality); (2) *low collective/public* (moderate levels of personal and relational centrality and low levels of collective and public centrality); (3) *engaged/public* (high centrality across all components); (4) *disengaged* (low centrality across all components); (5) *low collective* (moderately high centrality across all components less collective identity); (6) *low personal/relational* (low centrality across personal and relational identity and moderate centrality across collective and public identity).

Meca et al. noted that participants with balanced identity configurations (i.e., those which were distinguished by high centrality across components or by moderate centrality across personal, relational, and collective identity and low centrality of public identity) possessed higher levels of positive psychosocial functioning. Although identity centrality was found to be related to positive psychosocial functioning, identity centrality and its impact on eudaimonic well-being in sexual minority women college students have been studied less extensively.

1.2. Eudaimonic Well-Being and Sexual Minority Identity

Eudaimonic well-being is defined as happiness resulting from the pursuit of self-realization, living in accordance with one's true self, and the identification and pursuit of self-concordant goals and potentials (Waterman, 2007; Waterman, Schwartz, Zamboanga, Ravert, Williams, Agocha, Kim, & Donnellan, 2010). It may be particularly relevant to emerging adults as they explore and resolve questions of identity, the definition of self, and personal values or ethics. Research suggests that eudaimonic well-being and positive psychosocial functioning are associated with identities that emphasize personal values and beliefs, relationships with others, and identification with groups and which place less emphasis on a public self (Meca et al., 2015).

Eudaimonic well-being may also be of significance to lesbian and bisexual women college students as they traverse through stages of sexual minority identity development and face obstacles to achieving their goals and living in accord with their true selves. Ultimately, personal, relational, and public identities are synthesized, and the sexual minority identity is integrated into the self. Due to stigmatization, lower levels of connectedness to community, and perceived and experienced discrimination, extant research has shown self-identification as a bisexual to be associated with lower levels social well-being and the combination of self-

identification as a sexual minority and being female to predict lower levels of eudaimonic well-being (Kertzner, Meyer, Stirratt, & Frost, 2009; Riggle et al., 2009).

Research suggests that having a positive sexual minority identity contributes to well-being (Rostosky, Cardom, Hammer, & Riggle, 2018; Kranz & Pierrard, 2018). In a study of lesbian, gay, and bisexual (LGB) identity, Rostosky et al. (2018) found that having a positive identity and connection with the LGB community was significantly associated with well-being. Furthermore, participants with positive LGB identity reported having a positive relationship with others and purpose in life. Similarly, in a study of general well-being, Kranz and Pierrard (2018) found that participants who reported a positive sexual minority identity scored higher on well-being.

1.3. Hypothesis

Previous research has demonstrated that different configurations of identity differentially predict psychosocial functioning (Meca et al., 2015) and that self-identification as a lesbian and bisexual and being female are predictors of lower eudaimonic well-being (Riggle et al., 2009). However, no studies have directly examined identity centrality and eudaimonic well-being in lesbian and bisexual women. Since identity centrality and eudaimonic well-being may hold relevance to college-age lesbian and bisexual women as they navigate emerging adulthood, develop their identities, and journey towards their authentic selves and self-acceptance, these may be important constructs to consider. As such, we extend Meca et al.'s (2015) study by examining whether: (a) the six identity centrality clusters identified by Meca and colleagues could be replicated in a sample of lesbian and bisexual college students; (b) profiles differ between lesbian and bisexual participants; and, (c) profiles differ regarding eudaimonic well-being. We hypothesized that study participants will (1) have profiles of identity centrality that emphasize different components of identity, (2) have different profiles of identity centrality, and (3) balanced identity centrality profiles, which place less emphasis on the public or social self, will be associated with higher eudaimonic well-being.

2. Methods

2.1. Sample

Data used for this study was from a larger study on identity and culture (Castillo & Schwartz, 2013). The sample in the parent study included a sample of 10,573 undergraduate students from 29 colleges and universities in 20 states across the United States. Data were collected between September 2008 and October 2009. Details on the parent study's sampling procedures are reported by Castillo and Schwartz (2013). Parent study data has not been used to examine lesbian or bisexual women; this study contributes uniquely to the literature.

In the parent study, students were recruited with paper recruitment materials and electronic announcements. Students who were recruited attended classes in the fields of sociology, psychology, business, education, family studies, and nutrition. Interested students were instructed to access a website to participate. They completed a consent form and continued forward with the study. All survey scales were provided in English. Institutional Review Board approval was received at each of the participating colleges and universities.

Given the focus on the current study, the working sample consisted of participants who self-identified as lesbian ($n = 82$) and bisexual ($n = 98$). Ages ranged from 18 to 35 years old ($M = 20.74$; $SD = 3.26$). Approximately, 57.9% of respondents self-identified as White, 12.6% as Black, 14.8% as Hispanic, 10.9% as East Asian, 2.2% as South Asian, and .5% as Middle Eastern. Two individuals did not provide information regarding their ethnicity.

2.2. Measures

2.2.1. Sexual Orientation. Using a Likert-type scale, participants self-selected their identified sexual orientation from the following: completely heterosexual, mostly heterosexual, bisexual, mostly homosexual, completely homosexual, and not sure. Those individuals who identified as female and either completely homosexual or bisexual were selected for inclusion in this study.

2.2.2. Identity Centrality. The Aspects of Identity Questionnaire (AIQ-IV: Cheek & Briggs, 2013) was utilized to measure identity centrality. Participants responded to each of the 45 items on a Likert-type scale that ranged from 1 (*not important to my sense of who I am*) to 5 (*extremely important to my sense of who I am*). The AIQ-IV is comprised of four subscales that represent four identity orientations: personal identity orientation, relational identity orientation, social identity orientation, and collective identity orientation. Scores on these subscales are obtained by summing scores on items within the subscale. Higher scores indicate greater relevance of the identity orientation to an individual's sense of self. Cronbach's Alpha estimates for the four identity orientations were as follows: .84 (personal identity orientation), .91 (relational identity orientation), .80 (social identity orientation), and .77 (collective identity orientation).

2.2.3. Eudaimonic Well-being. Questionnaire on Eudaimonic Well-Being (QEWB: Waterman, Schwartz, Zamboanga, Ravert, Williams, Agocha, Kim, & Donnellan, 2010) was utilized to measure eudaimonic well-being. Participants responded to each of the 21 items on a five-point Likert-type scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate greater eudaimonic well-being. Cronbach's alpha estimates for the QEWB was .87.

2.3. Data Analysis

Descriptive statistics and cluster ANOVA's were analyzed using IBM SPSS Statistics v22.0. The cluster analysis on the AIQ, yielding the identity centrality clusters, was conducted in Ginkgo Software (version 1.4; De Caceres, Oliva, Font, & Vives, 2007). Analyses were partly replicated from Meca et al. (2015). A two-step cluster procedure was utilized to obtain the identity centrality clusters (Gore, 2000). In Ginkgo, the following specification is made simultaneously in its k-means cluster analysis procedure; however, theoretically, it is broken down into two steps. The first step consisted of running a hierarchical cluster analysis specifying squared euclidean distances and using Ward's method (Steinley & Brusco, 2007). The cluster centers from the previous hierarchical cluster analyses were then used as nonrandom starting points in a k-means cluster analysis (Breckenridge, 2000). The number of means in the k-means analysis was set to 6, as 6 was the chosen cluster count in Meca et al. (2015).

3. Results

3.1. Cluster Analysis

The AIQ subscale total scores relating to Personal Identity Orientation, Relational Identity Orientation, Social Identity Orientation, and Collective Identity Orientation were used to create the identity centrality clusters. They were first standardized into z-score form and screened for univariate outliers. Any cases with scores over +/- 3 on a subscale were removed from the analysis; three cases were dropped at this stage. The standardized scores were run in the cluster analysis. Z-scores for the AIQ subscales for each cluster for lesbian and bisexual women are presented in Tables 1 and 2, respectively.

Table 1. Mean Z-Scores for the Six Clusters on the Subscale Scores of the Aspects of Identity Questionnaire for Lesbian Women

Cluster	Meca et al. (2015) Cluster Membership	Personal Identity	Relational Identity	Social/Public Identity	Collective Identity
1	Engaged/Public	1.27	1.19	1.59	1.82
2	Not Replicated	0.43	0.51	0.60	0.23
3	Fully Engaged	0.51	0.44	-1.05	0.85
4	Low Collective/Public	0.41	0.24	-0.81	-0.98
5	Not Replicated	-0.91	-0.05	0.03	-0.49
6	Disengaged	-1.33	-1.27	-0.67	-0.37

Table 2. Mean Z-Scores for the Six Clusters on the Subscale Scores of the Aspects of Identity Questionnaire for Bisexual Women

Cluster	Meca et al. (2015) Cluster Membership	Personal Identity	Relational Identity	Social/Public Identity	Collective Identity
1	Low Personal/Relational	-0.19	-0.55	0.09	0.70
2	Low Collective/Public	0.11	0.50	-1.12	-0.68
3	Engaged/Public	1.04	1.04	1.41	1.12
4	Low Collective	0.73	0.70	0.86	-0.53
5	Not Replicated	-0.46	-0.83	-0.22	-1.01
6	Disengaged	-1.70	-1.94	-0.78	-0.61

Once the six clusters were established from the cluster analysis, eudaimonic well-being mean differences were investigated. Levene’s test was statistically significant leading to the use of Welch ANOVA’s and Games-Howell post-hoc comparisons. Descriptive statistics for eudaimonic well-being are presented in Tables 3 and 4.

Table 3. Descriptive Statistics for Eudaimonic Well-Being by Cluster for Lesbian Women

Cluster	N	Mean	Standard Deviation	Minimum	Maximum
1	4	84.00	5.60	79	92
2	23	73.22	6.22	61	85
3	12	78.00	15.14	54	104
4	8	82.75	4.89	76	93
5	12	73.17	8.19	57	84
6	13	71.85	8.60	60	88
Total	72	75.42	9.50	54	104

Table 4. Descriptive Statistics for Eudaimonic Well-Being by Cluster for Bisexual Women

Cluster	N	Mean	Standard Deviation	Minimum	Maximum
1	21	72.62	11.00	49	88
2	17	80.35	8.76	65	92
3	13	76.85	8.66	63	92
4	16	75.75	11.60	57	95
5	12	65.92	15.16	35	85
6	9	66.33	4.53	59	73
Total	88	73.75	11.47	35	95

For lesbian women, the means of eudaimonic well-being differed statistically significantly by cluster, $F(5, 19.52) = 5.72, p = .002, \text{est. } \omega^2 = .25$. Table 5 presents the post-hoc comparisons. There were three statistically significant mean differences between clusters. There was a statistically significant difference between Cluster 2 ($M = 73.22, SD = 6.22$) and Cluster 4 ($M = 82.75, SD = 4.89$), $SE = 2.16, p = .005$, Hedges’s $g = -1.61$. There was a statistically significant difference between Cluster 4 ($M = 82.75, SD = 4.89$) and Cluster 5 ($M = 73.17, SD = 8.19$), $SE = 2.93, p = .042$, Hedges’s $g = 1.35$. Lastly, there was a statistically significant difference between Cluster 4 ($M = 82.75, SD = 4.89$) and Cluster 6 ($M = 71.85, SD = 8.60$), $SE = 2.95, p = .016$, Hedges’s $g = 1.46$. Generally,

the clusters representing lack of focus upon any identity component (i.e., clusters 5 and 6), had lower mean eudaimonic well-being scores while those that demonstrated focus upon all identity components (i.e., clusters 1 and 3) had higher eudaimonic well-being scores. Interestingly, clusters demonstrating relatively low focus upon collective identity (i.e., clusters 2 and 4) also demonstrated higher eudaimonic well-being scores. The major differences existed between clusters 2, 5 and 6 and cluster 4 (low collective/public).

Table 5. Games-Howell Post-hoc Comparisons Between Clusters on Eudaimonic Well-Being for Lesbian and Bisexual Women

Lesbian - Cluster Membership					
(I)	(J)	Mean Difference		Standard Error	Hedges's g^a
		(I-J)			
1	2	10.78		3.08	1.75
	3	6.00		5.19	.44
	4	1.25		3.29	.24
	5	10.83		3.66	1.41
	6	12.15		3.68	1.50
2	3	-4.78		4.56	-.47
	4	-9.53*		2.16	-1.61
	5	.05		2.70	.01
	6	1.37		2.72	.19
3	4	-4.75		4.70	-.39
	5	4.83		4.97	.40
	6	6.15		4.98	.51
4	5	9.58*		2.93	1.35
	6	10.90*		2.95	1.46
5	6	1.32		3.36	.16
Bisexual - Cluster Membership					
1	2	-7.73		3.21	-.77
	3	-4.23		3.40	-.41
	4	-3.13		3.77	-.28
	5	6.70		4.99	.53
	6	6.29		2.84	.65
2	3	3.51		3.21	.40
	4	4.60		3.60	.45
	5	14.44		4.87	1.22
	6	14.02*		2.61	1.84
3	4	1.10		3.77	.11
	5	10.93		4.99	.90
	6	10.51*		2.84	1.44
4	5	9.83		5.25	.74
	6	9.42		3.27	.97
5	6	-.42		4.63	-.03

Note. (I) is the first mean in the comparison, and (J) is the second mean. (I-J) is the direction of the mean difference. * $p < .05$. a. Corrected Hedges's g for uneven groups.

For bisexual women, the means of eudaimonic well-being differed statistically significantly by cluster, $F(5, 35.91) = 6.91, p < .001$, est. $\omega^2 = .25$. For bisexual women, there were two statistically significant mean differences between clusters. There was a statistically significant difference between Cluster 2 ($M = 80.35, SD = 8.76$) and Cluster 6 ($M = 66.33, SD = 4.53$), $SE = 2.61, p < .001$, Hedges's $g = 1.84$. There was a statistically significant difference between Cluster 3 ($M = 82.75, SD = 4.89$) and Cluster 6 ($M = 66.33, SD = 4.53$), $SE = 2.84, p = .016$, Hedges's $g = 1.44$. As with lesbian women, the lack of focus upon any identity component (i.e., clusters 5 and 6), had lower mean eudaimonic well-being scores while those that demonstrated focus upon all identity

components (i.e., Cluster 3) had higher eudaimonic well-being scores. Interestingly, those clusters which demonstrated relatively low focus upon collective identity (i.e., clusters 2 and 4) also demonstrated higher eudaimonic well-being scores. The major differences existed between cluster 6 (disengaged) with the lowest eudaimonic well-being score and clusters 2 and 4 (low collective/public and low collective, respectively).

4. Discussion and Recommendations

The present study examined how different aspects of identity cluster together to form distinct identity centrality profiles in sexual minority women, and whether these identity centrality profiles differ in terms of eudaimonic well-being. Findings from this study support and extend research on the identity development processes of lesbian and bisexual women by providing an alternative perspective on previously established models of identity development. Further, by examining the relationship between clusters of identity centrality and eudaimonic well-being, this study extends research on eudaimonic well-being and offers novel information on the well-being of lesbian and bisexual women at different stages of identity development.

For lesbian-identified participants, identity centrality clusters identified partially replicated Meca et al.'s (2015) findings. Cluster 3 (moderately high levels of personal, relational, and collective identity centrality and low levels of public identity centrality) also appear to coincide with Meca et al.'s *fully engaged* cluster. Cluster 4 (moderately high centrality across personal and relational identity and low levels of public/social and collective identity) appears to align with Meca and colleague's *low collective/public* cluster. Finally, Cluster 1 aligned with the *engaged/public* cluster and Cluster 6 with the *disengaged* cluster.

Notably, Meca and colleagues' (2015) *low personal/relational* and *low collective* clusters were not replicated in this sample of lesbian-identified women; rather, a cluster depicting moderately high levels of all aspects of identity (i.e., *moderately engaged*) and a cluster comprised of low personal, relational, and collective aspects of identity and a moderately high social/public identity emerged. This cluster (i.e., *social/public*) appears distinct from Meca and colleagues' *disengaged* cluster and instead reflects a group of individuals who have relatively low self-concept clarity or esteem, whose self-concept is not strongly defined by or derived from relationships or identified social groups, and who place some focus upon their public/social identity (Sedikides et al., 2013). These individuals may focus on monitoring their verbal and nonverbal communication and display and shape their presentations to align with their social environments (Cheek & Briggs, 2013; Snyder, 1979).

For bisexual-identified participants, findings partially replicated those depicted by Meca et al. (2015). Furthermore, identified clusters diverged from lesbian-identified participants. For example, Cluster 4 (moderately high centrality across personal, relational, and public and low levels of collective centrality) aligns with Meca et al.'s *low collective* cluster. Meca and colleagues' *low personal/relational* cluster appears to align with Cluster 1 and their *disengaged* cluster aligns with Cluster 6. Finally, clusters 2 and 3 appear to align with Meca et al.'s *low collective/public* and *engaged/public* clusters, respectively.

Interestingly, Meca et al.'s *fully engaged* cluster was not replicated. The failure of the *fully engaged* cluster to replicate in a sample in bisexual-identified women as it did a sample of lesbian-identified women may depict divergent experiences within the LGBT community within these groups of women. Additionally, an additional disengaged cluster in which there were comparatively moderately low levels of personal, relational, and social identity and a low level of collective identity emerged. Individuals within this cluster reported less emphasis on membership in or identification within social groups and may have less defined roles within personal relationships (Sedikides et al., 2013). This cluster may depict experiences of heightened marginalization within this community. That is, it may reflect decreased social well-being and integration into communities due to negative attitudes towards bisexuals from within and outside the LGBTQ community, the questioning of the authenticity of their identity or the legitimacy of bisexuality by others, stigmatization, biphobia, and difficulty finding or forming a strong social support system or community (Dodge & Sandfort, 2006; Herek, 2002; Kertzner et al., 2009).

Results of the study suggest the presence of individuals across the spectrum of the identity development process in a sample of lesbian and bisexual-identified college students. These findings further provide a snapshot of the varied and diverse identity development processes extant within this population.

Drawing upon extant literature, we hypothesized that lesbian and bisexual women would have profiles of identity centrality that emphasize different aspects of identity and that balanced identity centrality profiles would be associated with higher eudaimonic well-being. In alignment with present hypotheses, but departing from the results of Meca and colleagues (2015), the engaged/public cluster demonstrated the highest reported eudaimonic well-being in the sample of lesbian women and the second highest level of eudaimonic well-being in the sample of bisexual women. In the sample of lesbian women, the fully engaged cluster reported the third highest eudaimonic well-being.

Interestingly, lesbian and bisexual women who placed less focus upon collective and public/social identity components endorsed the high eudaimonic well-being. Lesbian women in the low collective/public cluster who reported the least focus upon collective identity reported the second highest eudaimonic well-being while bisexual women in the low collective/public cluster reported the highest eudaimonic well-being. Further, bisexual women participants who placed less emphasis on collective identity, relative to other aspects of identity, also reported a high level of eudaimonic well-being. It may be that participant's lower identity in a community is made up for by their other aspects of identity, including their emphasis upon personal and relational components. These results may demonstrate alignment with eudaimonic identity theory and an associated emphasis upon self-realization, personal expression, and finding opportunities to act in alignment with personally identified values and purpose (Waterman, 2011).

In alignment with the results of Meca and colleagues (2015), lesbian and bisexual women who endorsed the lowest eudaimonic well-being demonstrated a lack of attention or focus upon any identity component (i.e., Clusters 5 and 6 in both samples of lesbian and bisexual women). These results highlight the meaning of the self in the human experience. Without a motivationally primary self, an individual may struggle to formulate an understanding of who they are in relation to others and to define roles in or attain esteem from valued groups. Because of this, an individual may struggle to attain happiness derived from living one's true self (Sedikides et al., 2013; Waterman, 2007; Waterman et al., 2010).

Several limitations may restrict the generalizability of these findings. First, there is a diversity of sexual identities and orientations encapsulated by the umbrella term "sexual minority women." Sexual minority women who do not specifically identify as lesbian or bisexual were *not* identified in the sample. The lack of this data limits the generalizability of the results to all sexual minority women. Future research should consider differences in identity centrality within sexual minority women and within women with unlabeled identities or nonexclusive attractions (i.e., lesbian, bisexual, pansexual, asexual, and queer-identified women) (see Diamond, 2006). The relatively low sample size and subsequent reduction in power may restrict the generalizability of the obtained results to other samples of sexual minority women. The limited range of education level and age (i.e., largely college-educated and young adult) may further hinder the generalizability of these results to non-college educated or older lesbian and bisexual groups.

Further, this study provides a snapshot of reported identity development processes; it is, therefore, unable to assess sexual identity development over time, as suggested by Diamond (2006). Future research would benefit from the administration of measures of identity centrality and eudaimonic well-being across several developmental periods. Finally, with a majority (57.9%) of participants self-identifying as White, the generalizability of the present findings to ethnically diverse sexual minority women is limited.

The present study has several implications for clinical practice, particularly in work with lesbian and bisexual college-aged women and within university counseling centers. This developmental period marks an ideal time in which lesbian and bisexual college-aged women would benefit from thoughtful, affirming therapeutic interventions that meaningfully link their presenting mental health concerns and their identity development. This research further supports the formation and implementation of sexual minority women inclusive

psychoeducational or process groups that provide space for dialogue and about multiple aspects of identity and process how stigma, discrimination, and lack of community may impact eudaimonic well-being.

The study also implies the importance of clinicians' acknowledgment and work within a developmental model of identity with lesbian and bisexual women clientele. Developmental models (e.g., Meca et. al, 2015; Cass, 1979) allow for greater complexity and specificity in clinical conceptualization lesbian and bisexual women in emerging adulthood. Greater conceptual complexity in clinical practice would mean both clinicians and clientele could utilize a more specific vocabulary in service of more efficacious therapeutic work. Additionally, this study lends further support for the connection between lesbian and bisexual identity development and eudaimonic well-being. Psychoeducation with clients about these models of identity development and their own experiences in the different developmental stages could be an important part of empowering lesbian and bisexual women clients to more fully understand the complexity of their sexual orientation identity and how it may impact their eudaimonic well-being. This psychoeducational approach, whether deployed via individual therapy, group therapy, or workshops, would lay a strong foundation for self-understanding and self-acceptance that would serve further therapeutic endeavors.

Additionally, this study suggests clinical connections between positive psychology and identity theory. Specifically, this study highlights the unique relationship between eudaimonic well-being and identity centrality of lesbian and bisexual identity development. The results indicate that both lesbian and bisexual women with identity profiles that either balance all aspects of identity or deemphasize collective or public identity meaning and promote a balance between personal meaning and meaning generated via relational connections exhibited the highest levels of eudaimonic well-being. Clinically, this would suggest that aiding lesbian and bisexual college students in identifying core values and purpose, recognizing personal potentials, and working towards the expression of or meaningful action toward their values and true selves may facilitate their ability to increase eudaimonic well-being. It should be considered that based on different regions, cultures, or a client's sense of safety, being open about one's sexual orientation may not be an option for some clients. This should be thoroughly discussed with clients on an individual basis, as a "blanket approach" may alienate some clients.

Despite the aforementioned limitations, to our knowledge, this study is the first to examine profiles of identity centrality in lesbian and bisexual women and to investigate differences in eudaimonic well-being based upon these clusters of identity centrality. Therefore, this study represents an extension of the field's empirical base in its provision of a more nuanced perspective of lesbian and bisexual identity and its relation to eudaimonic well-being. As they may be of particular relevance to sexual minorities, it is hoped that this study will inspire continued conversation and research on identity centrality and eudaimonic well-being as well as the examination of these constructs for sexual minorities at the intersection of other identities. Future research should consider examining identity centrality and eudaimonic well-being in lesbian and bisexual women across the spectrum of sexual identity, racial and ethnic identity, religious identification, geographic locale, age, and education level.

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The relationship between the quality of school life perceptions of the secondary school students and their lifelong learning tendencies*

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ABSTRACT

The aim of this study is to examine the perceptions of the quality of school life and lifelong learning tendencies of secondary school students in terms of gender, grade level and school type variables. The population of the research is the fifth, sixth, seventh and eighth graders studying at secondary schools in Hendek district of Sakarya province in 2017-2018 academic year. In this context, the sample of the study consists of a total of 640 students, 287 boys and 353 girls studying at 9 different schools in the same district. The thirty-five item Quality of School Life Scale developed by Sarı (2007) was used to measure the quality of school life of the participants, and 17-item Lifelong Learning Tendencies Scale developed by Gür-Erdoğan and Aرسال (2016) was used to measure the lifelong learning levels in the study which was conducted in the relational screening model. The research found a moderate positive and significant relationship between the quality of school life and lifelong learning.

Keywords:

The Quality of School Life, Lifelong Learning, Secondary School.

1. Introduction

Schools are institutions that prepare individuals for the real life and are responsible for their development as a whole (Marks,1998). Schools are places where individuals complete their academic, social and personal development (Marks,1998; Ryan, 1993). It was revealed that parents, teachers, school administrators and students agree that schools should be the places that maximize students' learning, make the students feel happy and safe, let them be satisfied with their teachers and get them enjoy learning (Marks, 1998). Bourke and Smith (1989) stated that a better school life helps the academic development of students. Weston (1998) emphasized that academic success is not the only indication of a 'good school' but a good school is a school which can facilitate the development of individuals' abilities and their social and personal development as well as their academic success. For this reason, the quality of schools, where individuals spend most of their time and have a great importance in their lives, has been one of the subjects that attracted educators in recent years (Leonard, 2002).

When the definitions for the quality of school life are studied; the quality of school life is defined as that students, teachers, administrators and other contributors feel happy and safe in schools that develop individuals academically, socially and personally according to the needs of the society (Mok and Flynn, 2002). Sarı (2007), on the other hand, regards the quality of school life as individuals' education according to the expectations of the society, and their levels of satisfaction with the schools in which they spend most of

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their time. Based on these definitions, it is possible to say that students' happiness at schools, feeling safe and satisfied with their environment will make them happy individuals and help them feel as a part of the school both in and out of school time. This will affect other individuals in school and society indirectly as well as the outcomes of education positively (Arıkan and Sarı, 2016).

In the definitions above, it was emphasized that one of the aims of the schools was to educate individuals in accordance with the expectations of the society (Marks, 1998; Ryan, 1993 and Weston, 1998). Bourke and Smith (1989) revealed that the quality of school life has an effect on students' academic success and students with a good school life continue their education after compulsory education and are willing to continue their education. The quality of the schools that are suitable for the needs of the current age, know where and how to use the information, can benefit from the opportunities offered by the age and ensure the continuity of their education, in other words, their ability to educate individuals who are lifelong learners is an important factor (İzci and Koç, 2012).

Rapid globalization of the world has made it compulsory to raise individuals who are suitable for the conditions of the age and can meet the needs of the society (Alpkaya, 2000). In order for the individuals in the information age to adapt to the age, they must grow up as individuals who consciously acquire knowledge, use the acquired knowledge, follow the technological developments required by the age and learn to learn (Çetin, 2008). For this reason, the concept of lifelong learning has been one of the important concepts of the 21st century, in which knowledge has rapidly developed and changed and has been put on the agenda of many educational researchers. It has been added to the agenda of Turkey, become a topic recognized by educators and researchers since the 2000s. In this regard, it is aimed to determine whether there is a relationship between the perceptions of quality of school life and lifelong learning tendencies of the secondary school students in this study, which is expected to make a significant contribution to the literature on the concepts of perception of quality of school life as well as lifelong learning tendency and the two concepts were examined in terms of gender, grade level and school type variables.

2. Method

This study was designed with a correlational survey model since it sought an answer for the question whether there is a relationship between the life-long learning tendencies of the secondary school students and the quality of school life. Fifth, sixth, seventh and eighth graders studying at secondary schools in Hendek district of Sakarya province in 2017-2018 academic year compose the population of the study. The sample consists of 640 students who are selected by the disproportional cluster sampling method. 353 (%55.2) of the students in the sample are girls and 287 (%44.8) are boys. 404 (%63.1) of the students study at general secondary school and 236 (%36.9) at Imam Hatip secondary school. There are 150 (%23.4) students in the 5th grade, 206 (%32.2) in the 6th grade, 182 (%28.4) in the 7th grade, and 102 (%15.9) in the 8th grade. Along with a personal information form consisting of 3 questions, 5 point likert type 17-item Lifelong Learning Tendencies Scale developed by Gür-Erdoğan and Arsal (2016) and 5 point likert type 35-item Quality of School Life Scale developed by Sarı (2007) were used as data collection tools in the study. Confirmatory Factor Analysis was performed to test the construct validity of the scales on the applied group. According to Confirmatory Factory Analysis, it was concluded that, Lifelong Learning Tendencies Scale and Quality of School Life Scale were valid measurement tools for the sample in this study. The normality of the data was analysed first at the stage of data analysis. It was determined that the data was non-normally distributed and Mann-Whitney U test was used in the research problems because "Lifelong Learning Tendency" and "Quality of School Life " were compared according to gender and school type variables and these variables have two categories. Since the grade level variable has more than two categories, Kruskal-Wallis test was used in the research problems comparing these variables. The relationship between the variables "Lifelong Learning Tendency" and "Quality of School Life" was analysed by using Spearman Rho coefficient due to the non-normal distribution of data.

3. Findings

The first of the findings reached through the analysis of the data obtained from the study is about The level of students' perceptions of the quality of school life and their lifelong learning tendencies. Descriptive statistics were calculated for the total scores obtained from Quality of School Life Scale and Lifelong Learning Tendencies Scale and presented in Table 1.

Table 1. Descriptive Statistics on Students' Perceptions of Quality of School Life and Lifelong Learning Tendencies

	Min.	Maks.	Median	Art. Mean	Item Art. Mean.	Standard deviation
Perception of Quality of School Life	51.00	175.00	122.00	121.477	3.471	23.096
Lifelong Learning Tendency	18.00	85.00	67.00	65.472	3.851	12.623

When the descriptive statistics calculated in Table 1 are examined, it has been calculated that the median is 122.00, the arithmetic average is 121.477 and the standard deviation is 23.096 for the "Perception of Quality of School Life". It has been calculated that the median is 67.00, the arithmetic average 65.472 and the standard deviation is 12.623 for the "Lifelong Learning Tendency". The median values were found to be greater than the arithmetic average in the findings obtained from both scales. It was determined that the arithmetic mean of the items calculated for the total score was close to the answer "I am neutral" for Quality of School Life Scale and "I agree" for Lifelong Learning Tendencies Scale.

This study has tried to determine whether different variables affect students' perceptions of quality of school life and lifelong learning tendencies. Firstly, the study sought an answer for the question of "Do students' perceptions of quality of school life and lifelong learning tendencies differ significantly by gender?" In this context, the scores of female and male students were compared with the Mann-Whitney U test and the results related to this test are presented in Table 2.

Table 2. Comparison of Students' Perceptions of Quality of School Life and Lifelong Learning Tendencies in Terms of Gender

	Sex	N	Rank ave.	Rank sum.	U	P
Perception of Quality of School Life	Female	353	342.08	120754.00	43038.000	0.001*
	Male	287	293.96	84366.00		
Lifelong Learning Tendency	Female	353	346,44	122292,00	41500,000	0.000*
	Male	287	288,60	82828,00		

* $p < 0.05$

According to Table 2, there is a significant difference in terms of gender in "Perception of Quality of School Life" ($U = 43038$, $p < 0.05$) and "Lifelong Learning Tendencies" ($U = 41500$, $p < 0.05$). This differentiation has been in favour of female students on both scales.

Another question the study sought an answer for is the question of: "Do students' perceptions of quality of school life and lifelong learning tendencies differ significantly in terms of grade level?" In this context, the scores of 5th, 6th, 7th and 8th graders were compared with the Kruskal-Wallis test and the results related to this test are presented in Table 3.

Table 3. Comparison of Students' Perceptions of Quality of School Life and Lifelong Learning Tendencies in Terms of Grade Level

	Class	N	Rank ave.	S.d.	χ^2	p	Difference
Perception of Quality of School Life	5	150	399.07	3	38.446	0.000*	5-6, 5-7, 5-8
	6	206	313.00				
	7	182	280.63				
	8	102	291.26				
Lifelong Learning Tendency	5	150	365,37	3	14.564	0.002*	5-7, 5-8
	6	206	322,88				
	7	182	299,67				

8 102 286,87

* $p < 0.05$

There is a significant difference in "Perception of Quality of School Life" ($\chi^2_{(3)} = 34.586$, $p < 0.05$; $\chi^2_{(3)} = 48.519$, $p < 0.05$, $\chi^2_{(3)} = 40.670$, $p < 0.05$, and $\chi^2_{(3)} = 38.446$, $p < 0.05$ respectively) as seen in Table 3. It has been observed with the multiple comparisons made for situations with significant differences that the significant difference in "Perception of Quality of School Life" is between 5th grade and 6th grade, 5th grade and 7th grade as well as 5th grade and 8th grade and the difference is in favour of 5th grade in each comparison. There is also a significant difference ($\chi^2_{(3)} = 22.616$, $p < 0.05$ and $\chi^2_{(3)} = 14.564$, $p < 0.05$) in "Lifelong Learning Tendency". The difference found in "Lifelong Learning Tendency" with the multiple comparisons made for situations with significant differences was in favour of 5th grade in the comparisons between 5th and 7th grade and between 5th and 8th grade.

The study sought an answer also for the question of "Do students' perceptions of quality of school life and lifelong learning tendencies differ significantly according to the school type?" In this context, the scores of secondary school and Imam Hatip secondary school students were compared with the Mann-Whitney U test and the results related to this test are presented in Table 4.

Table 4. Comparison of Students' Perceptions of Quality of School Life and Lifelong Learning Tendencies in Terms of School Type

	School Type	N	Rank ave.	Rank sum.	U	p
Perception of Quality of School Life	Secondary School	404	287.42	116117.50	45624.500	0.000*
	Imam Hatip	236	377.13	89002.50		
Lifelong Learning Tendency	Secondary School	404	318,73	128766,00	46956,000	0.751
	Imam Hatip	236	323,53	76354,00		
	Secondary School					

* $p < 0.05$

As it can be seen in Table 4, there is a significant difference between the answers of Imam Hatip secondary school students and the answers of secondary school students in "Perception of Quality of School Life". When the mean ranks are examined, it is determined that the value of Imam Hatip secondary school students is higher than the value of secondary school students. This is a proof that the differentiation occurred in favour of students of the Imam Hatip school. However, there is no significant difference between Imam Hatip secondary school students and secondary school students in "Lifelong Learning Tendency" ($U = 46956$, $p > 0.05$).

The main problem for which this study seeks an answer is "Is there a significant relationship between students' lifelong learning tendencies and quality of school life?" In this context, the Spearman Rho correlation coefficient between students' perceptions of quality of school life and lifelong learning tendencies was calculated and presented in Table 5.

Table 5. The Relationship between Students' Lifelong Learning Tendencies and their Perceptions of Quality of School Life

	Perception of Quality of School Life	Lifelong Learning Tendency
Lifelong Learning Tendency	0.481**	1
Perception of Quality of School Life	1	0.481**

** $p < 0.001$

When Table 5 is examined, it is seen that there is a moderate positive and significant ($r_s = 0.481$, $p < 0.01$) relationship between "Lifelong Learning Tendency" and "Perception of Quality of School Life" which are the main variables of the research problem.

4. Conclusion, Discussion and Recommendations

The average score of secondary school students on the perception of quality of school life scale was found to be 3.47. As a result of the literature review, it was seen that the scores obtained in the studies were converted to 1-5 points and the averages such as 3.47, 3.27 and 3.15 were interpreted as moderate. It can be said that the scores obtained are moderate and based on this result, students' perceptions of quality of school life are moderate as a result of the literature review. The lowest score was 18 and the highest score was 85 as a result of the calculation of students' lifelong learning tendency scores. The average of the total scores obtained from the lifelong learning tendency scale was found to be 65.472, the scores obtained were converted to 1-5 points and the result was found as 3.85. Accordingly, it can be said that the lifelong learning tendencies of the students are moderate. The obtained data are similar to the numerical data of other academic studies. In the study of Sarı (2007) on the secondary school students' perceptions of quality of school life, Sarı (2007) found the average score of the students on quality of school life scale as 3.47 and interpreted them as moderate. Karalar (2017) stated that the students' mean score on the scale is 3.27 and that students have moderate quality of school life in the study. Bilgiç (2009) found the quality of school life scores of the students as 3.15 in a study working with secondary school students, and this result and the current research support each other. Studies with identical results to this study were not reported due to the limited research of secondary school students' lifelong learning tendencies in the literature review of the related field. However, Şahin and Arcagök (2014) found in a study performed with teachers that teachers' lifelong learning tendencies were high. Diker Coşkun and Demirel (2012) stated that lifelong learning tendencies of university students were moderate. Kozikoğlu and Altunova (2018) stated in their study that prospective teachers have a very high level of lifelong learning tendency.

When students' quality of school life scale scores are examined in terms of gender, it can be said that the school life quality of female students is higher than that of male students. Studies showing similarities and differences to the current research results both in Turkey and abroad were found in the literature. Önder and Sarı (2012), Alaca (2011), Karalar (2017), Durmaz (2008), Demir, Kaya and Metin (2012), Marks (1998), Mok and Flynn (2002) and Karatzias, Papadioti-Athanasiou, Power and Swanson (2002) found similar results in favour of female students in researches on quality of school life. However, Tunç and Beşaltı (2012) stated that the gender variable did not predict the perception of quality of school life. Gedik (2009) stated in a study that there was no significant difference in favour of any group in students' perceptions of quality of school life in terms of gender. When the lifelong learning tendencies of the students in terms of gender variable were examined, a significant difference was found between the average scores of the male and female students. Akçaalan (2016), who conducted research on the relationship between university students' lifelong and social emotional learning, and Yurdakul (2016), who examined the relationship between autonomous learning and lifelong learning of secondary school students, obtained the results that lifelong learning tendency was in favour of girls. In studies abroad which examined the lifelong learning tendency in terms of gender variable, it was observed that female students' lifelong learning tendencies were high (Goodrich, 2015 and Jansen-Simmermon 2005). Tunca, Şahin and Aydın (2015) and Savuran (2014) stated in their studies that the gender variable didn't differentiate lifelong learning tendency, contrary to the findings obtained in this study,

Within the scope of the research, the relationship between quality of school life and grade level variable was examined and according to the findings obtained, there was a significant difference between the 5th and 6th grades, 5th and 7th grades and 5th and 8th grades in the perceptions of quality of school life and it was observed that this difference was in favour of 5th grade in each of them. Studies similar to the current research results as well as differing findings and interpretations were found in the literature. Kong (2008) studied the quality of school life perceptions of elementary school students and secondary school students and stated that elementary school students had higher quality of school life. Bilgiç (2009) who worked with secondary school students, stated that the quality of school life of 6th graders is higher than that of 7th and 8th graders. Within the scope of the research, the relationship between the life-long learning tendency and

the grade level variable was also examined, and according to the findings obtained, a significant difference was found in the lifelong learning tendencies of the students in favour of 5th grade in the comparisons between the 5th and 7th grades and between the 5th and 8th grades. Significant difference was found between lifelong learning and grade level in a study conducted by Goodrich (2015), supporting the findings in this study. However, it was assumed that there would be a difference in favour of lower classes, but a significant difference was found in favour of upper classes unlike this study. In the study conducted by Akçaalan (2016), it was stated that there was no significant difference between lifelong learning and grade level.

When the students' perceptions of quality of school life were analysed by school type, it was observed that there was a difference in favour of Imam Hatip secondary school students between the answers given by Imam Hatip secondary school students and those of secondary school students. As a result, it can be said that the quality of school life of Imam Hatip secondary school students is more positive. When the literature was reviewed, no research studying the same parameters was found. On the other hand, researches in which the location of the schools were evaluated in terms of socio-economic aspects or the researches in which the schools were evaluated in terms of successes were studied. In the study of Dönmez (2016) analysed in this context, it was seen that the school type variable did not make a significant difference on the quality of school life. It was also examined whether the lifelong learning tendencies of the students differ according to the type of school within the scope of the research. There was no significant difference in the total scores of lifelong learning tendencies of secondary school students scale according to the type of school. When the relevant literature is reviewed, no studies that overlap with this subject and analyse the relationship between the two variables have been found.

It was determined that there is a moderate positive and significant relationship between the students' perceptions of quality of school life and lifelong learning tendencies, which are the main variables of the research problem in this study. According to this result, it can be interpreted that as the quality of school life increases, the lifelong learning tendency will also increase. Although this result obtained from the research is an expected result, no comparison could be made since no similar studies investigating the relationship between these two variables were reported in the literature. However, interpretations regarding that lifelong learning constitutes an important step in the self-realization phase and that an aim of lifelong learning is to increase the quality of life of the individual (Gününcü, Odabaşı and Kuzu 2012) were found in the literature review. Considering the results of the research, it can be said that students with high school life quality will turn into lifelong learner individuals that the information age and the society need.

In the light of the results obtained from the study, the following can be suggested:

As a result of the findings obtained from the research, it is seen that quality of school life and lifelong learning are related to each other and that the high school life quality of individuals plays an important role in making them lifelong learners. In this context, more studies and planning can be made to increase the awareness of the importance of the concept of lifelong learning, to popularize it and to help the individuals acquire it in school age.

This research was carried out in Hendek district of Sakarya province. Studies to determine the lifelong learning tendencies of the students in different districts of Sakarya as well as in different provinces of Turkey and their perceptions of quality of school life can be performed.

As a result of the findings obtained in the current research, it was seen that the gender variable created a significant difference in favour of female students in terms of both quality of school life and lifelong learning. Since many studies in the literature support this result, different methods and approaches can be researched to increase the perceptions of male students' quality of school life and their lifelong learning tendencies.

It was stated in this study that there is a significant difference in student's perceptions of quality of school life according to their school type. In other studies, in-depth researches can be conducted to investigate the reason for this difference by focusing on the type of school variable.

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The Predictor Role of the Search for Meaning in Life in the Determination of High School Students' Lifelong Learning Tendencies

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ABSTRACT

The current study aims to determine the extent to which high school students' lifelong learning tendencies are predicted by their search for meaning in life. The study was conducted on a total of 352 senior high school students (165 females, 187 males) attending high schools located in the Bodrum District of the city of Muğla. The data of the study was collected by using a personal information form developed by the researchers, The Lifelong Learning Tendencies Scale developed by Diker-Coşkun (2009) and the sub-dimension of the search for meaning in life in the Meaning in Life Scale High School Form adapted to Turkish by Demirbaş-Çelik and İşmen-Gazioğlu (2015). In the analysis of the collected data, Pearson correlation coefficient and simple linear regression analysis were used to determine the relationship between the variables and in relation to the differences, independent samples t-test and one-way variance analysis were employed. All the analyses were conducted in SPSS 20.0 program package. At the end of the study, it was found that the high school students' lifelong learning tendencies are positively and significantly predicted by their search for meaning in life. Moreover, the high school students' lifelong learning tendencies were found to be varying significantly depending on gender and the type of the school attended. The findings of the study are discussed in light of the literature.

Keywords:

Lifelong learning, search for meaning, high school student, adolescents

1. Introduction

Learning is an indispensable part of our life. Learning is the natural outcome of the sense of curiosity in humans. This sense of curiosity leads people to the pursuit of new ways until the end of their lives. Changing living conditions motivate people to learn new things each day. Fear of being lost in the order of the Changing World, the war of survival against rapidly passing time and developing technology cause people to strictly adhere to lifelong learning activities (Wagner, 2015). This has increased the popularity of the concept of lifelong learning and has made it a term everyone, from 7 to 70, is familiar with (Asiloğulları, 2020).

The concept of lifelong learning can basically be defined as learning activities that the individual continues to be engaged in throughout his/her life including learning at school. Individuals' learning processes often emerge as a result of need and curiosity. In the learning processes that emerge as a result of need, the individual either escapes from the new situation or meets this need by bringing new learning to his/her life. Today, problems encountered by the individual in real life are too complex to be solved only with the knowledge and experience gained at school (Bağcı, 2011). At this point, the concept of lifelong learning reminds us once again its importance. When the literature is examined, it is seen that various definitions of the concept of lifelong learning, which is frequently used in our daily life, have been made. According to

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Ersoy and Yılmaz (2009), lifelong learning is all purposeful and random learning activities carried out throughout life to develop knowledge and skills on an individual or social basis, whether formal or not. According to the Ministry of National Education, lifelong learning is all learning activities that the individual participates in throughout his/her life in order to develop his/her knowledge, skills, interests and abilities for individual, social and employment-related purposes (MNE, 2009).

The cumulative progress of knowledge and the individual's need for self-renewal and uninterrupted self-improvement are seen as the main reasons behind the technological developments and new structures and formations emerging in our age (Asiloğulları, 2020). The necessity of fulfilling the constantly updated requirements of human life in our age and of keeping up with newly emerging information and developments each day makes lifelong learning a priority. At this stage, it is very important for individuals to be aware and improve their lifelong learning skills in order to keep up with the world they live in (Topakkaya, 2013). However, in the present age, it is clear that the current formal education system cannot fully meet the needs of the individual for him/her to improve his/her skills.

When the budgets allocated to education in the world are analyzed, it is seen that the resources allocated in the 1990s tend to increase compared to the 1980s. In this trend, lifelong learning is thought to have a significant impact. In this period, it is seen that many countries have made legal arrangements in order to reconstruct their education systems within the framework of the conception of lifelong learning (Karakaya, 2010). In this context, it can be said that both the renewal of the current education policies of countries to keep up with the age and the individual's ability to stay in life by renewing himself/herself constitute the mission of the concept of lifelong learning.

Adult individuals continue their lives with a tendency to leave a permanent mark in life. In this regard, it is of great importance for individuals to have a meaning in their lives (Frankl, 2014). Humans are creatures who think differently from other living creatures, try to understand, question, and continue their lives by making decisions with their free will. In a sense, meaning is the fate of humanity; man is born into it and lives by making choices accordingly or unknowingly in search for it (Göka, 2014). For this reason, humans have tried to add meaning to their existence and to the existence of the world since the day they came into being. The fact that "existence" brings "why" question to the mind is of great importance in terms of showing that man's pursuit of meaning is as old as the history of humanity (Sezer, 2012).

Many psychologists, philosophers and theologians have put forward different views on the meaning of life (Adler, 2011; Frankl, 2014; May, 2019; Yalom, 2018). In his response to the meaning of life, Frankl (2014) defined the meaning of life as encountering questions, answering questions, taking responsibility for one's own now-here existence. According to him, the biggest conflict for someone who regards his/her life as meaningless arises either from the absence of a meaningful purpose or his/her not being aware of his/her achievable goal (A. Bahadır, 2018). In another definition, Yalom (2018) expresses the meaning of life with the concepts of sense or coherence. According to him, the search for meaning is the search for coherence.

Although the search for meaning in life seems more like an adult's effort, in fact, the first pains of this search mostly coincide with adolescence (Asiloğulları, 2020). In terms of personality development, adolescence is an important process affecting living style in the rest of one's life. This important process is considered one of the most basic life periods that permanently lay the groundwork for personality. At the end of this period, the choices, intentions and goals of the person regarding himself/herself and his/her environment have become largely evident (Işılak & Durmuş, 2004). Although adolescence is important in terms of personality development, personality development never ends; because the personality development of the individual is a lifelong process (A. Bahadır, 2018). With the expansion of the individual's sphere of influence during adolescence, individuals seeking value continue to shape their personalities based on the values they have acquired.

The adolescent, who seeks to mature his/her personality and finds answers to the concept of responsibility by constantly searching for new values around them, tries to build his/her changing and developing self. In their study investigating the relationship between the meaning of life and value tendencies in high school students, Tanrıverdi and Ulu (2018) emphasized that Turkey had experienced quite a number of profound social and cultural changes. They argued that this change created significant differences in the expectations of social roles, and this situation led to a spiritual tension and search among young people (Tanrıverdi &

Ulu, 2018). In this context, it can be said that changing social paradigms are a motivating or driving factor for adolescents to find new meanings. Thus, adolescence becomes a period of searching for meaning in life.

Evaluating the meaning of life on the basis of a single definition means ignoring the meaning of people who fall outside this definition, which is far from being the right approach. Instead, it would be better to say that the number of meanings is as much as the number of individuals in the world (Frankl, 2014). Individuals who think that their life should have a meaning have the freedom to choose whatever they want from the world of meanings provided to them. Different fields such as sports, art, religion or philosophy can be attractive for different people. Thus, it is not possible to talk about a standard meaning of life for everyone (Dursun, 2019). In addition, whether his/her life has a meaning also changes the individual's attitude towards life. Individuals who continue their lives by displaying actions that they consider meaningful are expected to be self-confident, persistent and to use creative coping strategies in face of challenging events of life. No matter how hard conditions a person lives in, he/she can find strength to live as long as he can add meaning to his/her life (Yüksel, 2013). In this context, the individual, who will continue his/her search for meaning throughout his/her life, is expected to need a dynamic concept in order to renew the meaning of his/her life according to the conditions of the age.

It is thought that the search for meaning in life by high school students who are in the adolescence period of their life is important in the formation of their lifelong learning motivation (Asiloğulları, 2020). When studies conducted on different age groups are examined in the literature, it is seen that the effects of many variables on individuals' lifelong learning tendencies are discussed. However, there are very few studies examining the effect of the search for meaning in life, which is one of the main sources of motivation in life (Z. Bahadır, 2019), on lifelong learning tendency. There is only one study in the literature in which these two concepts were studied together on adolescents (Asiloğulları, 2020). A meaningful relationship to be found between lifelong learning tendency and the search for meaning in life will contribute to the comprehension of the complex structure of lifelong learning tendency and to the existing body of knowledge and shed light for future research. If high school students' lifelong learning tendencies are found to be varying significantly depending on gender and the type of school attended, then some insights can be provided for future studies.

1.1. Research Problem

When national (Adabaş, 2019; Akyol, Başaran, & Yeşilbaş, 2018) and international research (Castleberry, Ward, & Stein, 2019; Sullivan, Fulcher-Rood, Kruger, Siple, & van-Putten, 2019) on lifelong learning are reviewed, it is seen that these studies largely focus on the investigation of lifelong learning skills in adults. There are many national studies investigating lifelong learning tendencies of university students (Arslan, Bıçakçıl-Özsoy, & Aslan, 2019; Denat, Dikmen, Filiz, & Başaran, 2016; Yıldız-Durak & Sarıtepeci, 2019), teachers (Aydoğan, 2019; Gökyer, 2019; Tanatar & Alpaydın, 2019), pre-service teachers (Bulaç & Kurt, 2019; İlic & Haseski, 2019; Yenice & Tunç, 2019) and trainees in different institutions (Adabaş, 2019; Akyol et al., 2018). However, the number of studies conducted to determine young individuals' lifelong learning tendencies is very small in both national literature (Asiloğulları, 2020; Güzel, 2017) and international literature (Brooks, 2006). Moreover, in the literature, there are some studies investigating the relationship of high school students' lifelong learning tendencies with a limited number of variables such as series in television (Kalçık, 2017; Semerci & Kalçık, 2017; Ünal & Kalçık, 2017), questioning the purpose and meaning of life (Asiloğulları, 2020) and different demographic variables (Asiloğulları, 2020; Güzel, 2017). In this context, it can be said that most of the variables that affect the lifelong learning tendencies of high school students have not been identified yet and thus the precise structure of lifelong learning tendencies in young individuals has not been elicited yet. Different from the previous studies, the current study also aims to investigate the effect of the search for meaning in life on high school students' lifelong learning tendencies. This study is important in terms of revealing the factors that should be taken into consideration in future research related to explaining and strengthening lifelong learning tendencies of high school students. In addition, a limited number of studies investigating the relationship between high school students' lifelong learning tendencies and gender (Asiloğulları, 2020; Güzel, 2017) and the type of school attended (Asiloğulları, 2020) have been reached in the literature. Investigation of whether high school students' lifelong learning tendencies vary significantly depending on these demographic variables can contribute to reaching an agreement on the subject in the literature, to better understanding of the concept of lifelong learning tendency and to the body of knowledge in the literature.

1.2. Purpose of the Study

The purpose of the current study is to determine whether high school students' lifelong learning tendencies are predicted by the search for meaning in life and whether high school students' lifelong learning tendencies vary significantly depending on gender and the type of school attended. To this end, answers to the following questions were sought.

- 1) Is there a significant relationship between high school students' lifelong learning tendencies and their search for meaning in life?
- 2) Is high school students' search for meaning in life a significant predictor of their lifelong learning tendencies?
- 3) Do high school students' lifelong learning tendency scores vary significantly depending on gender and the type of school attended?

2. Method

2.1. Research Model

The current study has employed the relational survey model to examine the lifelong learning tendencies of high school students attending high schools located in the Bodrum District of the city of Muğla in relation to their search for meaning in life. The relational survey model is a research model that aims to determine whether there is a covariance between two or more variables and the degree of this covariance (Karasar, 2012). In addition, the causal-comparative research model has been used to determine whether the high school students' lifelong learning tendency scores vary significantly depending on the demographic variables. Research has aimed at determining the causes and consequences of differences between groups of people without any intervention on conditions and participants is called causal-comparative research (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2016). Variety of methods have been used to strengthen the research design.

2.2. Study Group

The study group is comprised of 352 senior high school students attending high schools in the Bodrum District of the city of Muğla in the 2019-2020 school year. The mean age of the study group is 15.26. In the selection of the study group, the stratified sampling method, one of the random sampling methods, has been used. Stratified sampling is a sampling method that aims to identify subgroups in the population and to represent them in the sample in the same proportions as in the population (Büyüköztürk et al., 2016). The students participated in the study on a volunteer basis. Demographic information about the study group is given in Table 1.

Table 1. Descriptive statistics for the study group

Factor	Variable	n	%
Gender	Female	165	46.90
	Male	187	53.10
School Type	Anatolian High School	147	41.76
	Vocational High School	93	26.42
	Religious High School	112	32.82
Total Number of Students		352	100.00

As seen in Table 1, 46.90% (n=165) of the participants are females and 53.10% (n=187) of them are males. Of the participating students, 41.76% (n=147) are from Anatolian High School, 26.42% (n=93) are from Vocational High School and 32.82% (n=112) are from Religious High School.

2.3. Data Collection Tools

In the study as the data collection tools, a personal information form to obtain the high school students' demographics and The Lifelong Learning Tendencies Scale and The Meaning in Life Scale High School Form were used. Copyright permissions have been obtained to use the scales in the current study by e-mail. All these permissions obtained before starting the study have been added to the application file when applying for the Ethics Committee Approval. Throughout the research process, which started from the receipt of the Ethics Committee Approval, there was absolutely no concession from the publication ethics.

2.3.1. Personal information form. The researchers have developed a personal information form to obtain information about the participating students' demographic features. In this form, there are items to obtain information about gender and the type of school attended.

2.3.2. Lifelong learning tendencies scale. The Lifelong Learning Tendencies Scale was developed by Diker-Coşkun (2009) to measure students' lifelong learning tendencies specifically in Turkish culture. In the scale, there are 27 items, 15 of which are reverse phrased. The scale is a six-point Likert scale. The lowest score to be taken from the scale is 27 while the highest score is 162. A high score taken from the scale indicates a high level of lifelong learning tendency while a low score indicates a low level of lifelong learning tendency. The scale consists of the following four sub-dimensions: motivation (6 items), persistence (6 items), deficiency in organizing learning (6 items) and lack of curiosity (9 items) and a total score can be taken from the scale. The general internal consistency calculated for the Lifelong Learning Tendencies Scale was found to be .89 (Diker-Coşkun, 2009). In the current study, the Cronbach Alpha internal consistency coefficient has been found to be .91 for the whole scale.

2.3.3. Meaning in life scale high school form. The Meaning in Life Scale was developed by Steger, Frazier, Oishi and Kaler (2006) to measure the existence of meaning in students' life and their search for meaning in life. The reliability and validity studies of the scale for high school students were conducted by Demirbaş-Çelik and İşmen-Gazıoğlu (2015). In the scale, there are a total of 10 items, 1 of which is reverse phrased. The scale is a seven-point Likert scale. The Meaning in Life Scale High School Form has two sub-dimensions independent of each other: existence of meaning in life (5 items) and the search for meaning in life (5 items). From each dimension of the scale, the lowest score to be taken is 5 while the highest score is 35. High scores taken from the sub-dimensions indicate that high levels of the features included in these sub-dimensions are possessed by participants. The scale explains 59.30% of the total variance. The Cronbach Alpha internal consistency coefficient for the sub-dimension of existence of meaning in life was found to be .79 while it was found to be .84 for the sub-dimension of the search for meaning in life (Demirbaş-Çelik & İşmen-Gazıoğlu, 2015). In the current study, only the sub-dimension of the search for meaning in life of the Meaning in Life Scale High School Form has been used. In the current study, the Cronbach alpha internal consistency coefficient calculated for the sub-dimension of the search for meaning in life has been found to be .88.

2.4. Data Collection

First of all, in order to start the study, the researchers received approval from the Mehmet Akif Ersoy University Non-Interventional Clinical Research Ethics Committee for the ethical suitability of the study. Later, necessary official permissions were obtained by submitting Ethics Committee Approval in order to carry out the study in secondary education institutions in Muğla/Bodrum. In order to collect the data, the researchers personally went to the schools in the sample. The researchers entered each class where the data would be collected and made the necessary explanations to the students about the content and scales of the research. After students were informed that the participation would be on a volunteer basis, consent forms signed by the students were taken. Then the scales were completed by the students. The application lasted for 15 minutes on average. Completed scales were examined and the scales that were found to be incomplete were not included in the study.

2.5. Data Analysis

First, the collected data were entered into SPSS 20.0 program package. Later, outliers were examined in the data set, but no value was found outside the specified possible value range.

Then, the distribution and ratios of missing values in the data set were examined. As a result of the examination, it was determined that the missing values are randomly distributed and the total missing data ratio is less than 5% (Little, 1988). After the satisfaction of the required assumptions, missing value assignment was made by the Expectation Maximization (EM) method (Tabachnick, Fidell, & Ullman, 2007).

For univariate outlier analysis in the data set, Z-score was examined and for multivariate outlier analysis, Mahalanobis distance coefficients were examined and as a result, it was found that the values in the data set on their own or together do not indicate an outlier (Tabachnick et al., 2007).

In order to check whether the data satisfy the normal distribution assumption, skewness and Kurtosis values were examined. The Skewness and Kurtosis coefficients of all the data were found to be varying between -1.00 and +1.00. Thus, it was concluded that the data are distributed normally and thus parametric techniques could be used in the analysis of the data (Çokluk, Şekercioğlu, & Büyüköztürk, 2014).

In order to determine whether there is a multicollinearity problem in the data set, simple (binary) correlation between the variables was checked. As a result of this analysis, the binary correlation between the variables was found to be lower than .90 (Çokluk et al., 2014). Thus, it can be argued that there is no multicollinearity problem between the variables.

As a result, it was determined that the data met the parametric properties required for the regression analysis. Then, in order to find answers to the research questions, Pearson correlation coefficient analysis was performed to determine the relationships between the variables; simple linear regression analysis was conducted to determine the extent to which the high school students' search for meaning in life predict their lifelong learning tendencies. Moreover, in relation to the differences, independent samples t-test and one way variance analysis (ANOVA) were conducted and in order to find the source of the difference, Tukey test was used (Büyüköztürk, 2014). In all these statistical analyses, SPSS 20.0 program package was used and .05 was taken as the level of significance.

2.6. Information about the Ethics Committee Approval

This study was reviewed by the Burdur Mehmet Akif Ersoy University Non-Invasive Clinical Research Ethics Committee at the meeting number 2020/4 on 15/04/2020 in terms of justification, purpose, approach and method and was found ethically appropriate (Decision Number: GO 2020/87).

3. Findings

Simple linear regression analysis was carried out to understand the extent to which high school students' search for meaning in life predict their lifelong learning tendencies. Before conducting the regression analysis, in order to determine whether there is multicollinearity between the dependent and independent variables, binary correlation coefficients between the dependent and independent variables were calculated and the results are presented in Table 2.

Table 2. Pearson product-moment correlation coefficients between variables

Variables	\bar{X}	S	1	2
1. Lifelong Learning Tendency	104.07	8.66	-	
2. Search for Meaning in Life	23.86	8.14	.448**	-

**p<.01

As can be seen in Table 2, the participants' lifelong learning tendency mean score is 104.07 and its standard deviation is 8.66. In addition, there is a positive and significant correlation between the high school students' lifelong learning tendencies and search for meaning in life ($r=.448$, $p<.01$). It is also understood from the analyses conducted for the regression assumption given in the data analysis section that the level of this correlation (lower than .90) is not high enough to cause a multicollinearity problem in the created model (Çokluk et al., 2014).

Results of the simple linear regression analysis conducted to determine whether the high school students' search for meaning in life significantly predicts their lifelong learning tendencies are given in Table 3.

Table 3. Results of the simple linear regression analysis conducted to determine whether the high school students' search for meaning in life predicts their lifelong learning tendencies

Variables	R	R ²	R ² _{ch}	F	df	B	β	t	p
Constant						26.086	-	9.255**	.000
Search for Meaning in Life	.448	.213	.210	31.634	1/350	.430	.448	5.624**	.000

**p<.01

As can be seen in Table 3, the search for meaning in life significantly predicts the high school students' lifelong learning tendency scores and the model constructed for the regression is significant ($R=.448$, $R^2=.213$, $F_{(1,350)}=31.634$, $p<.01$). The search for meaning in life variable explains 21.30% of the high school students' lifelong tendencies. The search for meaning in life in the formulated regression model have a medium level effect on the high school students' lifelong learning tendency ($.13<R^2<.26$) (Cohen, 1988). When the result of the t-test regarding the significance of the regression coefficient is examined, it is seen that the search for meaning in life is a positive and significant predictor of the students' lifelong learning tendencies.

Independent samples t-test analysis was conducted to determine whether the high school students' lifelong learning tendency scores vary significantly depending on gender and the results are given in Table 4.

Table 4. Results of the independent sample t-test conducted to determine the relationship between the high school students' lifelong learning tendencies and gender

Variable	Gender	n	\bar{X}	S	df	t	p
Lifelong Learning Tendency	Female	165	107.41	7.53	350	2.928**	.004
	Male	187	101.13	8.49			

**p<.01

As can be seen in Table 4, there is a significant difference between the male students' lifelong learning tendency mean score and that of the female students ($t_{(350)}=2.928$, $p<.01$).

One-way variance analysis was conducted to determine whether the high school students' lifelong learning tendency scores vary significantly depending on the type of school attended and the results are given in Table 5.

Table 5. Results of one-way variance analysis conducted to determine the relationship between the high school students' lifelong learning tendencies and the type of school attended

Variable	Type of School	n	\bar{X}	S	F	p	Significant Difference
Lifelong Learning Tendency	Anatolian High School (A)	147	109.11	7.34	13.528**	.000	A-B B-C
	Vocational High School (B)	93	91.54	8.60			
	Religious High School (C)	112	105.34	7.84			

**p<.01

As can be seen in Table 5, the high school students' lifelong learning tendency scores vary significantly depending on the type of school attended ($F_{(2,349)}=13.528$, $p<.01$). In this regard, the Anatolian High School students can be said to have stronger lifelong learning tendency than the Vocational and Religious High School students.

4. Discussion and Results

In the current study aiming to investigate the extent to which the high school students' lifelong learning tendencies are predicted by their search for meaning in life, it was found that the search for meaning in life positively and significantly predicts lifelong learning tendency. The findings of the study show that the search for meaning in life is an important source of motivation for lifelong learning tendency. Moreover, it was understood that an increase in the scores taken from the search for meaning in life also increased the lifelong learning tendency scores; that is, positively affected them. In this regard, it can be said that the students are in the pursuit of meaning in their lives, that this pursuit of meaning in life renews itself depending on changing conditions and time and that students' efforts made in their search for meaning in life serve a motivational function of fostering their lifelong learning tendencies. This might be because in the period of adolescence when personality is strongly shaped, individuals want to make their lives meaningful and thus they feel more motivated to invest efforts to learn new things.

As there is no study examining the predictive role of the search for meaning in life in explaining the lifelong learning tendencies of high school students or adolescents was found in Turkey and abroad, the findings of the current study cannot be compared with those of a similar study. In this regard, the current study is original. Moreover, when the relevant literature is examined, it is seen that there is a very little research on high school students' or adolescents' lifelong learning tendencies (Asiloğulları, 2020; Brooks, 2006; Güzel, 2017; Kalçık, 2017; Semerci & Kalçık, 2017; Ünal & Kalçık, 2017). The studies conducted in the field of lifelong learning tendency were found to be largely focused on teachers (Gökkyer, 2019; Tanatar & Alpaydın, 2019), pre-service teachers (İlic & Haseski, 2019; Yenice & Tunç, 2019), university students (Arslan et al., 2019; Denat et al., 2016) and trainees in different institutions (Adabaş, 2019; Akyol et al., 2018) while high school students or adolescents were not much preferred in these studies.

Parallel to the findings of the current study, the existence of a relationship between lifelong learning tendency and the search for meaning in life can also be seen in the career definition of Savickas (2002). According to Savickas, career is a result of people's search for meaning and efforts to direct their lives. This process of searching for meaning does not end when the individual starts a job rather continues with lifelong learning and development. In this definition, it is clearly emphasized that for whatever reason (career, religion, etc.), the search for meaning leads to lifelong learning and development. One of the most important sources of motivation for people is their being in a quest of meaning in their lives. In this respect, many philosophers and psychologists frequently mentioned people's desire to know and understand while explaining the concept of searching for meaning in life (Spilka, Shaver, & Kirpatrick, 2001). In this context, it can be said that the people's desire to know that arises from the search for meaning can motivate them throughout their lives. In addition, Asiloğulları (2020), in her study on high school students, found a moderately positive significant relationship between students' lifelong learning tendencies and their behaviors of questioning the meaning and purpose of life. In contrast to the findings of the current study, Z. Bahadır (2019) did not find a significant relationship between university students' lifelong learning tendencies and search for meaning in life. More research is needed to obtain more conclusive results on this issue.

Another finding of the current study is that the high school students' lifelong learning tendencies vary significantly depending on gender. The female students' lifelong learning tendency mean score was found to be higher than that of the male students. Jenkins (2004) also emphasized that the concept of lifelong learning is more needed by women because women may have to leave their job, change it or give a long break due to their roles and responsibilities in their social and family lives. He stated that even if women were as qualified as men, they would always remain disadvantaged in career advancement; thus, they needed to gain more qualifications than men. Thus, lifelong learning plays a key role for women. In addition, Jenkins stressed that in general, women cannot benefit from the education system as much as men and that they attach more importance to lifelong learning activities to cover basic education gaps. Parallel to the findings of the current study, Diker-Coşkun and Demirel (2012), İzci and Koç (2012), Evin-Gencil (2013), Diker-Coşkun (2009), Gür-Erdoğan (2014) found that lifelong learning tendency scores taken by different samples are significantly higher in favour of female participants. In addition, Asiloğulları (2020) found in his study on a sample of high school students that the scores of female students' lifelong learning tendency were significantly higher than that of male students. Contrary to the findings of the current study, Oral and Yazar

(2015) determined that male pre-service teachers have stronger lifelong learning tendencies than female pre-service teachers. Moreover, Güzel (2017) found that the high school students' lifelong learning tendency mean scores vary significantly by gender only in the sub-dimension of lack of curiosity. In the study, male students showed a less curious attitude than female students in terms of lifelong learning tendency. Although Güzel found gender-based differences in lifelong learning tendency and deficiency in organizing learning sub-dimension in favour of the male participants and in the motivation and perseverance sub-dimensions in favour of the female participants, these differences are not statistically significant. Oral and Yazar (2015), Şahin, Akbaşlı and Yanpar-Yelken (2010), Tunca, Alkın-Şahin and Aydın (2015), Yaman and Yazar (2015) found that gender did not have any effect on lifelong learning tendency. This controversy in the literature can be eliminated by future qualitative and quantitative research.

According to another finding obtained in the current study, lifelong learning tendencies of high school students vary significantly depending on the type of high school attended. In this regard, the Anatolian High School students were found to have a higher lifelong learning tendency mean score than the Vocational High School students and the Religious High School students were found to have a higher lifelong learning tendency mean score than the Vocational High School students. In this context, it can be said that the students attending school requiring higher school acceptance scores and having higher academic achievement levels have higher lifelong learning tendencies. This may indicate that students' having characteristics positively affecting academic achievement such as learning skill, study strategies can lead to more developed lifelong learning tendencies. Parallel to this finding of the current study, in the study of Asiloğulları (2020), it was found that Anatolian High School and Religious High School students have a significantly higher lifelong learning tendency than Vocational High School students. Diker-Coşkun (2009) reported that the university students viewing themselves successful have a higher lifelong learning tendency mean score than the university students viewing themselves unsuccessful. Furthermore, Evin-Gencil (2013) conducted a study on university students and found that the students attending departments requiring higher acceptance scores (e.g. English Language Teaching, German Language Teaching, Turkish) have higher lifelong learning self-efficacy perception scores than the students attending other departments. Contrary to this finding of the current study, in a study conducted by Tunca, Alkın-Şahin and Aydın (2015) on university students, the lifelong learning tendency of the students having a grade point average in the range between 2.00 and 2.99 was found to be higher than that of the students having a grade point average in the range between 3.00 and 4.00. This controversy seen in the literature shows the complex structure of the concept of lifelong learning affected by many variables.

5. Suggestions

In light of the findings of the current study, following suggestions can be made;

In the current study, the female students' lifelong learning tendency mean score was found to be higher than that of the male students and the lifelong learning tendency mean score of the students attending high schools with higher acceptance scores was found to be higher than that of the students attending high school with lower acceptance scores; thus, psycho educational programs can be developed for male students and for students attending high schools having relatively lower achievement scores. While developing the content of such programs, activities that will promote the search for meaning in life and increase the sources of motivation can be included.

Similar research can be designed by using qualitative approach. In this way, in-depth interviews and focus-group interviews can be conducted with students to enhance the findings obtained in relation to the relationship between lifelong learning tendency and the search for meaning in life.

When the literature is reviewed, it is seen that there is very little research investigating lifelong learning tendencies of high school students or adolescents. The current study focused on the search for meaning in life as a predictor of the high school students' lifelong learning tendencies. Future research may focus on different variables (academic self-efficacy, psychological mentality, etc.), which may contribute to better understanding of lifelong learning tendencies.

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Attitudes of Secondary School Students towards Refugee Students

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ABSTRACT

Although the refugee problem has been on the agenda of the world for centuries, it has increased its influence gradually due to the conflicts and wars in the Middle East especially after the 2000s. In this sense, after the civil war that erupted in Syria in 2011, there has been an influx of refugees into Turkey, and today millions of Syrians are forced to emigrate to Turkey. Most of the refugees coming through migration are under the age of 18, defined as "school age". Therefore, one of the basic problems faced by the school-age refugees, who had to come to Turkey from Syria, is access to education. Thanks to immediate actualization of the efforts of the Republic of Turkey, immigrant students were placed in public schools to achieve necessary orientation. The aim of this research is to determine the attitudes of secondary school students towards refugee students. The study was attended by 5, 6, 7 and 8th grade students studying in schools affiliated to the Ministry of National Education in Keçiören district of Ankara, in the 2018-2019 academic year. In the research, quantitative research method was used to collect data. "Attitude Scale towards Refugee Students" developed by Kılcan, Çepni and Kılınç (2017) was used as data collection tool. Within the framework of the purpose of the research, SPSS (Statistical Package for Social Sciences) program was used for the necessary statistical analyses of the collected data regarding students' responses to the attitude scale. It was revealed that the attitudes of the participants towards refugee students showed a significant difference according to the variables of gender, grade, having a refugee neighbor and refugee friends. Based on these results, it is recommended to provide awareness training for students studying in the same environment with refugee students to prevent secondary school students from developing negative attitudes towards refugees. Based on the positive attitude of secondary school students who have both a refugee neighbor and a refugee friend, it is suggested that different studies, especially cultural adaptation trainings, should be conducted for the social acceptance of Syrians who are in a sense guests in our country due to immigration.

Keywords:

Refugee, Secondary School Student, Syria, Attitude

1. Introduction

Conflicts and wars between people are almost as old as human history. Especially the start of production and the formation of property and ownership concepts in the Neolithic Age led to an increase in ambition of human beings and accelerated the conflict and thus wars. These conflicts and wars turned into "World wars" in a way that affects masses at the turn of the 20th century. In the 21st century, wars break out both due to conflicts between states and as the internal conflict in many countries- especially in the Middle East. In the case of war and conflict, refugees or asylum seekers² are inevitable. Although the concept of asylum seeker and refugee is often used in the same sentence to correspond to the same meaning, these terms have different meanings and legal consequences. From this point of view, a brief discussion of the concepts of asylum seeker and refugee will be helpful. Refugee means someone who has a well-founded fear of violence or life-threatening situation due to torture or armed conflict in their homeland and who, therefore, seeks

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*Although the concepts of asylum seekers and refugees have different meanings and status, the term "refugee" will be used in this research.

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refugee in another country (United Nations High Commissioner for Refugees, 1997). In this sense, asylum is accepted as one of the basic human right, based on the statement that everyone has the right to seek asylum in the face of the persecution as written in Article 14 of the Universal Declaration of Human Rights (Kartal & Başcı, 2014). An asylum seeker briefly means a person who has not yet obtained their refugee rights and status. The refugee has a legal status and the term is used refer to immigrants defined in international law with certain criteria (Erten Özalp, 2019).

In the 1951 Geneva Convention, a refugee is defined as someone who has been forced to flee his or her country with a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership in a particular social group and who cannot or does not benefit from the protection of his original country because of the mentioned fears; or as a stateless person who resides in a different country other than his/her previous country of residence as a result of such cases mentioned above and who cannot return or does not want to return because of the fears mentioned (Geneva Convention, 1951). In other words, s/he is a person who has left his/her country of residence for different reasons and asked for asylum in another country, and whose request to live in the host country has been evaluated and accepted by the relevant country (Acer, Kaya & Gümüş, 2010; Demir & Erdal, 2012; Güroğlu Alanyalı, 2014; Bozbeyoğlu, 2015; Tunç, 2015). When the concepts of asylum seekers and refugees are examined by definition, it is understood that the refugees are different from the refugees in terms of their asylum demand and form (Aybay, 2005). The mentioned contract also aims to determine how people with this status should be treated as well as the terms asylum seekers and refugees.

Both the asylum seeker and the hosting country are affected by population mobility due to forced migration. Undoubtedly, people who migrate to another country-region from the country-regions where they previously resided as refugees or as asylum seekers have a desire to reach a more prosperous life. The desire of people who escape from civil war or war between countries to another country to have minimum living conditions, especially security, is obvious.

The "Jasmine Revolution", which first started in Tunisia after Muhammed Buazizi, a university graduate who was a peddler in Tunisia burned himself after his mobile counter was seized on 17 December 2010, turned into an internal conflict in the country in a short time. Due to reasons such as income unfairness, oppressive administrations and inequality of opportunity, this chaos environment has quickly evolved into a movement called the "Arab Spring" in the Middle East, especially in Egypt, Syria, Yemen and Libya (Sayın, Usanmaz, Aslangiri, 2016). While thousands of people lost their lives in this conflict, tens of thousands of people were injured. The inevitable growth of events has turned into a civil war in many countries in the Middle East; therefore, millions of people have had to migrate from their region or countries (Sayın, 2016). Syria is undoubtedly one of the countries where this internal turmoil is experienced. The civil war, which erupted on 15 March 2011 in Syria, still goes on at the same level of severity.

Shortly after the start of the civil war in Syria, a mandatory influx of migration has started towards Turkey (Ağır & Sezik 2015; Çetin & Uzman, 2012). The first movement that started with 252 people immigrating to Turkey from Syria on 29 April 2011 has continued at intervals (Akpınar, 2017; Erdogan, 2015). Immigration from Syria to Turkey has gained speed with "open door policy" of Turkey. As a result of its open-door policy, Turkey has accepted every Syrian who came to the country, directed them to shelter centres as early as the first arrivals, and when it ultimately turned into mass immigration, it allowed them to settle in the places they wanted in the country (Tunca & Karadağ, 2018). The status of those who came with these migrations was different because Turkey is a party to the 1951 Geneva Convention. However, the Republic of Turkey stated that refugees from the east will not be accepted as refugees with the "geographical reservation" note it has glossed on the convention (Tunca & Montenegro, 2018). Accordingly, Turkey only accepts those from European countries as refugees, while those coming from a country outside Europe are not accepted as refugees. Accordingly, those coming to Turkey with forced migration wave from Syria were accepted under "temporary protection status" (Özdemir, 2017; Şimşek, 2018).

The civil war in Syria that has continued for a long time with no sign of ending and failure to achieve peace conditions has caused refugees in Turkey to start to settle in Turkey (Kılcan, Çepni & Kilinc, 2017). The number of Syrians in Turkey under temporary protection has been registered as a total of 3 million 571 thousand 175 people as of January 24, 2020. This number increases, even more, when we include

unregistered Syrian immigrants. 1 million 652 thousand 377 (46.26%) of these people are children between the ages of 0 and 18. The total number of children and women aged between 0 and 18 is 2 million 504 thousand 199. This figure constitutes 70.1% of the total migration movement (Refugees Association, 2020).

Syrian immigration due to the civil war brought with it separate problems both for migrants and for regions migrated. The troubles caused by the need for security, health, nutrition and shelter troubled the migrants in particular and for Turkey creating the necessary financial resources, and achieving the integration of immigrants in the local area have caused long-term problems. On the other hand, attitudes of people towards Syrians migrating to Turkey and their unacceptance continue to create a big problem. One of the factors underlying the reactive approach of the local population towards the Syrian refugees is the problems stemming from different languages, cultures and lifestyles (Oytun and Gündoğar, 2015). The cultural differences of Syrians, in particular, lead local people to think that immigrants will experience difficulties in adapting to Turkish society (Ekici, 2019).

Considering the figures of those migrating and of those who have already migrated, it is seen that most of the Syrian refugees in Turkey are school-age children. From this point of view, it is seen that education is one of the problems that will be experienced and has been experienced due to migration. "The fact that the living conditions of Syrians are harsh and that they do not benefit from education provide a suitable ground for some social problems, including the increase in crime rates in the long run" (Oytun and Gündoğar, 2015). Turkey obviously takes the necessary steps to meet the educational needs of Syrians. The first concrete indicator of this was "Temporary Training Centres" (TEC). TECs aims to help immigrants to continue their education without interruption, and prevent them from falling behind in their grades when they returned to their country or when they want to continue their education in Turkey. To this end, TECs have been put into service as institutions that cover both primary and secondary education and provide education in Arabic inside or outside the camps (MEB, 2014). However, the lack of teachers and the insufficiency of schools that will particularly serve Syrians made it necessary for Syrian immigrant students to receive education in the same schools and classrooms as Turkish students. With the circular no. 2014/21 issued by the Ministry of National Education, Syrian refugees of school-age are allowed to receive education in public schools affiliated to National Education (MEB, 2014).

Education is one of the most important steps to find a remedy to social problems that are experienced or likely to be experienced. It is thought that the elimination of the education problem experienced by the Syrian refugees will help overcome the problem of adaptation and the Syrian children of school age will contribute to the national economy. Therefore, "*to transform the crisis caused by Syrian refugees into opportunities*" (Oytun & Gündoğar, 2015) education is of great importance. For this reason, Syrian refugee students are required to receive education according to the Turkish education system and the Turkish curriculum. For this reason, it is very important to eliminate problems such as language and cultural differences, insufficient physical conditions, and lack of teachers in a short time. In addition, the attitudes of the students who will receive education in the same environment as Syrian refugee students - in the classroom - towards refugee students are also of great importance. When the literature is examined, it is seen that many studies have been conducted on refugees (Ardıç-Çobaner, 2015; Başar, Akan & Çiftçi, 2018; Cengiz, 2015; Emin, 2016; Kağnıcı, 2017; Kara, Yiğit & Ağırman, 2016; İmamoğlu & Çalışkan, 2017; Erdem, 2017; Kolukıncı, 2009; Mercan-Uzun & Tüm, 2016; Palaz, Çepni & Kılcan, 2019; Şeker & Aslan, 2015; Topkaya & Akdağ, 2016; Yaşar Can, Aktulun Awake, Karacan Hamiden & Teke, 2018; Yılmaz, 2015, Yurdakul & Tok, 2018; Zaimoğlu-Öztürk, 2018). This study aimed to determine the attitudes of secondary school students who are educated in the same environment and the same school with Syrian refugee students towards refugees.

2. Method

In this section, information about the design of the research, study group, data collection tools and data analysis is included.

a. Research Design

In this study, a quantitative survey model was used to determine the attitudes of secondary school students towards Syrian refugee students. Survey research is a study aimed at collecting data to determine certain

characteristics of a group (Büyüköztürk et al., 2009). According to Karasar (2010), survey models are research approaches aiming at describing a situation that exists in the past or still as it existed or exists. The descriptive-scan design provides quantitative or numerical description of trends, attitudes or views through studies on a selected sample (Creswell, 2013).

b. Sample

The study group of the research consists of a total of 485 secondary school students, 205 male and 280 female students studying at the 5th, 6th, 7th and 8th grade in 3 state secondary schools affiliated to the Ministry of National Education in Keçiören district of Ankara province in the spring term of 2017-2018 academic year.

c. Instruments

The data collection tool consists of two parts: (1) personal information and (2) attitude scale items for refugee students. While writing the questions in the personal information section, the literature was scanned and variables that could influence the attitude towards refugee students were determined. Accordingly, questions asking the participants their gender, classes, parental education level, family income status, whether they have a refugee neighbour and finally whether they have a refugee friend were included. In the second part of the scale, "Attitude Scale for Refugee Students" developed by Kılcan, Çepni and Kılınc (2017) was used. Cronbach's Alpha coefficient for the single factor of the scale consisting of 24 items was determined as .92. The scale has 3-point Likert type items, which include "I disagree", "I am indecisive" and "I agree" options. In this study, Cronbach's Alpha (a) coefficient was calculated as .89.

d. Data Analysis

In the study, the scores of secondary school students about their attitudes towards refugee students were analysed on the computer with SPSS 22 statistical package program. Frequency (f), percentage (%) distributions related to the general distribution of variable values from the personal information section, which is the first part of the scale, were examined. In the second part of the scale, while the t-test was used to test the significance between a variable and the total score obtained from the scale items aimed at determining the attitudes of secondary school students towards the refugee students, ANOVA test was used to test the significance of the values obtained between more than two variables. The degree of significance between more than two variables was analysed with the Scheffe test, which is generally preferred due to the equality of variances. For data analysis, .05 was used as the level of significance.

3. Findings

In this part of the research, the tables and comments of the findings obtained from the analyses of the attitudes of secondary school students towards refugee students in terms of different variables are included.

Table 1. Participants' Attitude towards Refugee Students t-Test Results of Total Scores According to the Gender Variable

Gender	N	\bar{X}	SD	df	t	p
Male	205	48.32	8.44	483	2.095	.037
Female	280	49.88	7.81			

According to the analysis results in Table 1, it is seen that there is a significant difference in participants' total scores on the attitude towards refugee students scale in terms of gender [$t_{(483)}=2,095$; $p<.05$]. While the arithmetic means of the total scores of female students on the attitude scale is ($\bar{x} = 49.88$), arithmetic means of total scores of male students' on the scale is ($\bar{x} = 48.32$). The numerical difference between the mean scores is significant. This finding can be interpreted as the gender of the participants caused a differentiation in their attitudes towards refugee students.

Table 2. One-Way Analysis of Variance (ANOVA) Results for the Difference of Participants' Attitudes towards Refugee Students in terms of Variable of Grade Level

Variable		N	\bar{X}	SD			
Grade	(1) 5th grade	53	49.25	6.69			
	(2) 6th grade	172	47.53	8.13			
	(3) 7th grade	135	49.90	8.18			
	(4) 8th grade	125	50.79	8.22			
	Source of Variance	SS	df	Mean Square	F	p	Difference
	Between groups	860.452	3	286.817	4.454	.004	2-4
	Within-group	30976.942	481	64.401			
	Total	31837.394	484				

According to the analysis results in Table 2, it is seen that there is a significant difference in participants' total scores on the attitude towards refugee students scale in terms of gender [$F_{(3-481)}= 4,454$; $p<.05$]. To see the source of difference, the Scheffe multiple comparison test was used. As a result of multiple comparisons test, there is a significant difference between the arithmetic means of the students at grade 6 ($\bar{X}=47,53$) and that of grade 8 on the attitude towards refugee children scale ($\bar{X}=50,79$). This finding can be interpreted to mean that the attitude of the students studying in the 8th grade towards the refugee students is more positive than that of the 6th grade students.

Table 3. One-Way Analysis of Variance (ANOVA) Results for the Difference of Participants' Attitudes towards Refugee Students in terms of Variable of Mother Education Level

Variable		N	\bar{X}	SD			
Mother Education	Primary school	146	49.49	8.10			
	Secondary School	179	48.59	8.33			
	High school	126	49.60	7.96			
	University	26	48.58	6.99			
	Postgraduate Degree	8	54.38	8.43			
	Source of Variance	SS	df	Mean Square	F	p	Difference
	Between groups	323.292	4	80.823	1.231	.297	---
	Within-group	31514.102	480	65.654			
	Total	31837.394	484				

According to the analysis results in Table 3, total scores of the participants' attitude towards refugee students do not show significant difference in terms of maternal education level variable [$F_{(4-480)}= 1.231$; $p> 0.5$]. This finding can be interpreted to mean that the variable of mother education level does not cause a significant difference in the attitudes of the participants towards refugee students.

Table 4. One-Way Analysis of Variance (ANOVA) Results for the Difference of Participants' Attitudes towards Refugee Students in terms of Variable of Father Education Level

Variable	N	\bar{X}	SD			
Primary school	66	48.51	9.06			
Secondary School	172	49.10	7.92			
High school	170	49.40	7.87			
University	62	49.53	8.16			
Postgraduate Degree	15	50.33	9.18			
Source of Variance	SS	Df	Mean Square	F	p	Difference
Between groups	65.224	4	16.306	.246	.912	----
Within-group	31772.170	480	66.192			
Total	31837.394	484				

According to the analysis results in Table 4, participants' total scores on attitude towards refugee students scale do not show significant difference in terms of father education level variable [$F_{(4-480)} = 2.46$; $p > 0.5$]. This finding can be interpreted to mean that the variable of father education level does not cause a significant difference in the attitudes of the participants towards refugee students.

Table 5. One-Way Analysis of Variance (ANOVA) Results for the Difference of Participants' Attitudes towards Refugee Students in terms of Variable of Income

Variable	N	\bar{X}	SD			
0-2100	61	46.87	8.38			
2101-3000	173	49.40	7.69			
3001-4000	168	49.95	7.97			
4001-above	83	49.10	8.83			
Source of Variance	SS	Df	Mean Square	F	p	Difference
Between groups	433.020	3	144.340	2.211	.086	
Within-group	31404.374	481	65.290			
Total	31837.394	484				

According to the analysis results in Table 5, participants' total scores on attitude towards refugee students scale do not show significant difference in terms of income level [$F_{(3-481)} = 2,211$; $p > .05$]. This finding can be interpreted to mean that the variable of income level does not cause a significant difference in the attitudes of the participants towards refugee students.

Table 6. t-Test Results of Total Scores of Participants' on Attitude towards Refugee Students Scale in terms of Variable of Having a Refugee Neighbour

Having a Refugee Neighbour	N	\bar{X}	SD	df	t	p
Yes	93	50.99	7.88	483	2.350	.019
No	392	48.80	8.12			

According to the analysis results in Table 6, participants' total scores on attitude towards refugee students scale show significant difference in terms of the variable of having a refugee neighbour [$t_{(483)}=2,350$; $p<,05$]. While the arithmetic means of the total scores of students having a refugee neighbour on the attitude scale is ($\bar{x} = 50.99$), arithmetic means of total scores of students' not having a refugee neighbour is ($\bar{x} = 48.80$). The numerical difference between the mean scores is significant. This finding can be interpreted as the fact that the participants' having a refugee neighbour caused a differentiation in their attitudes towards refugee students.

Table 7. T-Test Results of Total Scores of Participants' on Attitude towards Refugee Students Scale in terms of the Variable of Having a Refugee Neighbour

Having a Refugee Friend	N	\bar{X}	SD	df	t	p
Yes	82	51.17	9.36	483	2.400	.017
No	403	48.82	7,78			

According to the analysis results in Table 7, participants' total scores on attitude towards refugee students scale show significant difference in terms of the variable of having a refugee friend [$t_{(483)}=2,400$; $p<,05$]. While the arithmetic means of the total scores of students having a refugee friend on the attitude scale is ($\bar{x} = 51.17$), arithmetic means of total scores of students' not having a refugee friend is ($\bar{x} = 48.82$). The numerical difference between the mean scores is significant. This finding can be interpreted as the fact that the participants' having a refugee friend caused a differentiation in their attitudes towards refugee students.

4. Conclusion, Discussion and Suggestions

Considering the results obtained in the research, total scores of the participants 'on the attitude towards refugee students scale differed in terms of the gender variable. Accordingly, the arithmetic mean of the total scores of the female students on attitude towards refugee students scale is higher that of male students. In the study titled "Investigation of Classroom Teachers' Attitudes towards Refugee Students in Terms of Various Variables" by Köse, Bülbül & Uluman (2019), it was concluded that female classroom teachers have higher attitude scores towards refugee students than male classroom teachers. Similarly, in the study conducted by Koçoğlu & Salur (2018), the attitudes of female teacher candidates towards economic migration and refugee issues were more positive than male teacher candidates. These results are in line with the results obtained in the current research. In the study conducted by Çifçi, Arseven, Arseven & Orhan (2019), it was concluded that the attitude towards refugees was higher in favour of male teachers in the study group. On the other hand, in a study by Kabaklı-Çimen & Ersoy-Quadır (2018), it was concluded that the gender variable did not make a significant difference in the attitude towards Syrian refugees.

Another conclusion reached in the current study is that a significant difference was observed in total scores of participants' attitude towards refugee students scale in terms of grade variable. Accordingly, it was concluded that the attitudes of the students studying in the 8th grade towards the refugee students were more positive than those of the students in the 6th grade. In the study conducted by Kabaklı-Çimen & Ersoy-Quadır (2018), it was concluded that the students in the upper classes display a more sensitive attitude towards Syrian refugees. However, their study group was composed of university students. From this point

of view, it can be assumed that as the grade level increases, a more positive attitude towards Syrian refugees is developed.

Another conclusion of the study is the education level of both the mother and father of the participants does not make a significant difference in the participants' attitudes. Accordingly, it can be said that the variable of mother or father education level does not cause a significant difference in the attitudes of the participants towards refugee students.

Total scores of the participants on the attitudes towards refugee students do not show a significant difference in terms of family income. In the study conducted by Kabaklı-Çimen & Ersoy-Quadır (2018), it was concluded that the family income status variable did not make a significant difference in the attitudes towards Syrian refugees. This result supports the conclusion reached in the current research. From this point of view, it can be said that the family income status does not affect the attitude towards refugees.

It is seen that there is a significant difference between participants' total scores on attitude towards refugee students scale differed in terms of having a refugee neighbour variable. The arithmetic mean of the total scores of students who have refugee neighbours on attitude towards refugee students scale is higher than that of students who do not have a refugee neighbour. Accordingly, it can be said that the students who have a refugee neighbour know them better and have a better understanding of their living standards, which affect their perceptions of refugees.

It is seen that there is a significant difference between participants' total scores on attitude towards refugee students scale differed in terms of having a refugee friend variable. The arithmetic mean of the total scores of students who have refugee friends on attitude towards refugee students scale is higher than that of students who do not have a refugee friend. Based on this result, it can be said that secondary school students who have refugee friends have better attitudes towards refugees and that their attitudes are higher; they get to know them more closely and develop their perspectives accordingly.

Based on these results, it is recommended to give awareness-raising training for students studying in the same environment with refugee students to prevent secondary school students from developing negative attitudes towards refugees. On the other hand, it is recommended to carry out studies that will eliminate the language problem between the refugee students and host students who share their classrooms or schools. Based on the positive attitude of secondary school students who have both a refugee neighbour and a refugee friend, it is suggested that different studies, especially cultural adaptation training, should be conducted for the social acceptance of Syrians who are in the position of guest in our country due to immigration. This study was carried out by using a quantitative research method at the secondary school level in Keçiören district of Ankara Province. It is recommended to conduct more in-depth studies with different study groups or with participants at different educational levels.

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Science Teachers' Opinions about 5th grade students and their science teaching experiences after 4+4+4 System

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ABSTRACT

With the introduction of the 4+4+4 education system in 2012, the school starting age has been reduced to 60 months and branch teachers started to attend classes starting from 5th grade. Therefore, in the current study, there are two aims. Firstly it is aimed to determine the opinions and experiences of science teachers having started to teach the 5th graders for the first time in the new education system. Secondly, it is aimed to determine the opinions and experiences of science teachers having started to teach the 5th grader students (including 9 years old) who started school in the 2012-2013 academic year and ranked 5th in 2016-2017. The current research study is a phenomenological study conducted on 22 teachers who taught to 5th graders in the 2016-2017 academic year and also had taught to 5th graders in the previous academic year. The data of the study were collected through semi-structured interviews. As a result of the study, it was determined that science teachers confront a number of difficulties in terms of teaching to 5th graders, and these difficulties increase with the number of students who started to school at an early age in a classroom. The teachers noted that students who start school at an early age are not ready to school both from affective and cognitive aspects. They also stated that they are required to deliver courses by making more activities and concretizing the subjects. As the teachers participating in the study also highlighted, regulating the school starting age to 72 months is important and necessary for both primary and middle school levels.

Keywords:

4+4+4 education system, science teachers, school starting age, teachers' opinions, teachers' experience

1. Introduction

School starting age varies from country to country. While discussions on the ideal school starting age still continue (Buldu and Er, 2016; Sharp, 1998; Sharp, 2002), the generally agreed school starting age in the world seems to be 6 years old (72 months) (Ari, 2014; Keith, 2013). When the countries in the world are examined in this regard, it is seen that children start school at the age of 4 in one country, at the age of 5 in 19 countries, at the age of 6 in 119 countries, at the age of 7 in 47 countries and at the age of 8 in one country (Kapçı, Artar, Avar, Daşçı and Çelik, 2013). On the other hand, in recent years, though the school starting age is reduced to earlier ages in European countries up to 4 years old (Eu, 2016), this is protested in England with the slogan "Too Much, Too Early" (URL 1). While in some countries the pre-school education is included within the compulsory education, leading to smaller school starting age, in some others, compulsory education starts with the primary education.

While debates for and against the reduction of the school starting age still continue in the world (Kail, 2017), in Turkey with the amendment made in the education system in 2012, the eight-year compulsory education

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was increased to 12-year compulsory education with the introduction of the 4+4+4 education system. This sudden change has also brought about discussions. Academicians, civil society organizations etc. criticized the change and serious criticisms were levelled against the school starting age (Boğaziçi University Faculty of Education, Faculty Committee Decision 2012; Education Reform Initiative, 2012; Hacettepe University, 2012; ODTÜ Faculty of Education Faculty Committee, 2012; Turkish Medical Association, 2012).

The sudden change in the school starting age caused many children to start primary school unpreparedly. In the first year of the implementation, children were registered to the first grade starting from 60 months old. The physical conditions of schools were not ready for 5-year-old children, and also teachers did not have the experience of working with such young children. Despite the fact that the first week was determined as the orientation week, it did not make the expected impact due to the unreadiness of both children and teachers (Buldu & Er, 2016; Eğitim Bir Sen, 2012; Sahin & Guzel, 2018; Şentürk, 2016).

Many research studies revealed that children who start school at an early age have orientation problems, and are not physically, affectively and cognitively ready for such kind of an implementation (Cerit, Akgün, Yıldız & Soysal, 2014; Doğan, Demir & Pınar, 2014; Epçaçan, 2014; Kahramanoğlu, Tiryaki & Canpolat, 2014; Şentürk, 2016; Uzun & Alat, 2014). The review of the research studies conducted on the issue demonstrates that the problem has been addressed only from the 1st grade perspective, and there is no broader perspective which addresses the long terms impacts of early schooling. However, early schooling is not only a first-year problem as education life is a long process. The impacts of early schooling should be discussed not only in terms of short-term impacts, but also in terms of the long-term impacts (Bedard & Duhey, 2006), and the situation should be addressed from the perspective of skills that are required for learning. Particularly, the courses that a student will be taught in upper grades and the skills which are necessary for meaningful learning should be taken into consideration.

In the first years of the school, courses such as reading-writing, basic mathematics and social studies are taught to students and starting from the 3rd grade students are taught the science course. Students' cognitive development levels appear as an important factor in terms of the science course, particularly starting from the 5th grade. The underlying reason for this situation is the content of the science course which includes phenomena that cannot be observed directly in daily life. Furthermore, many concepts provided in this course are interrelated, and the relation between the concepts should be understood by students. The comprehension of this relation requires high-level skills such as identifying the relations between problematic variables, rationalizing through deduction and induction, integrative thinking, problem-solving by including multiple problems, and analytic thinking (Bacanlı, 2005; Senemoğlu, 2011). Most of these skills are included in the 'formal operational stage' period. The formal operational stage period starts from the age 11 (Charles, 1999) according to Piaget's classification. Piaget provided the features of the operational stage period under six headings as; hypothetical thinking, combined thinking, probabilistic thinking, identifying and controlling variables, correlational thinking, and rational thinking (Çepni, 2011; Piaget, 2007). Despite the recent research studies which argue that students can acquire these skills earlier (Cited from Houde, 2004 by Gunes, 2013), Piaget's classification provides an insight about the average cognitive development of children. The impact of early schooling on the following years should be taken into account.

Students who started primary school in the 2012-2013 academic year as 60-66 months old (5-5.5 years old) started 5th grade in the 2016-2017 academic year as 108 months old (9 years old). With the 4+4+4 system, 5th graders become middle school students. The progression from primary school to middle school brings about many differences for students. In middle school, students start to receive courses from branch teachers. Furthermore, contents of courses intensify, and accordingly, students need more cognitive skills. Science course is one of the courses requiring these skills from students. However, the readiness of students who started primary school at the age of 60 months with the 4+4+4 system to the science course appears as an important problem. In this context, the present study aimed to investigate experiences of teachers on the status of students, who started primary school in 2012 and became 5th grade in 2017, in terms of the science course from both teachers' and students' perspective. Previous studies in the literature have almost exclusively focused on 1st grade teachers (Aykaç, Kabaran, Atar & Bilgin, 2014; Kutluca Canbulat & Yildizbas, 2014; Ozden, Kilic & Aksu, 2014; Ozenc & Cekirdekci, 2013). It is seen that there is a limited number of studies on branch teachers (Aytaçlı & Gündoğdu, 2018; Karadeniz & Ulusoy, 2015; Demir, Dogan & Pinar, 2013; Zayimoglu Ozturk, 2015) and they mainly focus on the elicitation of opinions (Ciray, Kucukyilmaz & Guven, 2015;

Memisoglu & Ismetoglu, 2013; Uzun & Alat, 2014; Unisen & Kaya, 2015). However, students who start school at an early age should be evaluated not only in relation to classroom teachers but also branch teachers in middle school. Therefore, in this study, it was aimed to investigate the experiences and opinions of science teachers after the 4 + 4 + 4 education system change. Determination of the experiences and opinions of science teachers about teaching 5th graders for the first time and children starting school at an early age is believed to be important.

Purpose of the study

The purpose of the current study is to determine the opinions and experiences of science teachers' about students and courses after the 4+4+4 education system. With the 4 + 4 + 4 education system that started to be implemented in 2012-2013, science teachers faced two different situations. Firstly, before the 2012-2013 academic year, science teachers were teaching from the 6th grade. With the 4 + 4 + 4 education system, teachers started to take science lessons from 5th grade. The following sub-problems were created regarding the opinions and experiences of teachers about this new situation:

1. After 4+4+4 education system, what are the opinions and experiences of the science teachers' who started to teach science course to 5th graders (students started school after 72 month old) for the first time, on the students in this age group and courses?
2. After 4+4+4 education system, what are science teachers' comparisons with respect to teaching 5th graders and teaching to upper grades?

Secondly, with the 4 + 4 + 4 education system, students started school from 60 months in the 2012-2013 academic year, and in the 2016-2017 academic year, these students became 5th grade. Therefore, teachers have come across classes with students with younger age group. Related to this, the following sub-problems were asked:

3. What are the opinions and experiences of the science teachers having started to teach science to 5th graders who started primary school after the 4+4+4 education system in 2012-2013 and became 5th graders in the 2016-2017 academic year?
4. After 4+4+4 education system, what are the opinions and experiences of teachers about teaching science to 5th graders in 2016-2017 education year with students who started school at an early age (after 60 month old) and to 5th graders in previous years (2012-2013, 2013-2014, 2015-2016, 2016-2017 education years)?

2. Method

The phenomenological approach was employed in the current study in the framework of the qualitative research design. Phenomenological approach is a process which is used to reveal a complex problem that does not come to light straightforwardly, in other words, it is a process which is used to reveal the 'truth'. Investigation of the individual universes forms the object of phenomenology, and individual experiences are at the center of the process. A researcher is interested in the subjective experiences of participants and analyzes the perceptions of individuals on the issue, and the meanings they attribute to events (Baş & Akturan, 2008). In this way, it is possible to acquire profound information on phenomena that we are not well-informed about (Creswell, 2013; Holstein, Gubrium, 1996; Yıldırım & Şimşek, 2006). In this study, the phenomenological approach was preferred to reveal the opinions of science teachers', who have experienced teaching 5th grade students (starting by 72 months old) for the first time after the implementation of the 4+4+4 system, on their teaching experiences and on the status of students who started to school younger than 72 months old in terms of the science course.

2.1. Participants

The sample of the study was specified through the criterion sampling method which is a purposeful sampling technique. In criterion sampling, units that fulfill the requirements specified for the study group (objects, events etc.) are included in the sample (Büyüköztürk et al., 2012). In this context, it was determined as a criterion that science teachers had taught science to 5th grades students in 2015-2016 and 2016-2017 academic years to select the participants of the study. For the selection of teachers, an announcement was published on

the social media, and interviews were conducted with teachers who volunteered and met the criteria. Thus, a total of 22 teachers participated in the study. The characteristics of teachers are presented in Table 1.

Table 1. Demographics of Teachers who Participated in the Study

Demographics of the Study Group		Frequency
Gender	Female	16
	Male	6
Age	21-30	9
	31-40	12
	41-50	1
Professional Experience	0-5 years	7
	6-10 years	9
	11-15 years	5
	16 years and more	1
Cities where teachers working	Sakarya	13
	İstanbul	4
	Mersin	4
	Van	1
Educational Status	Bachelor’s degree	17
	Master’s Degree	-
	Master’s Degree cont.	4
	PhD	-
	PhD cont.	1

2.2. Data Collection Tools

Study data were collected via semi-structured interviews. In the semi-structured interviews, primarily the objectives and goals of the study were determined to decide which questions to ask. The questions were shaped on the basis of two main problems. The first one included the opinions and experiences of science teachers’ who had started science teaching to 5th grade students in 4+4+4 education system. The second one included the experiences about teaching science to students who had started school as from the 60th months old in the school year of 2012-2013 and were 5th grade in the school year of 2016-2017. The interview questions were prepared on the basis of these two main questions. Two science teachers were interviewed in term of the comprehensibility and utility of the questions and the questions were arranged in a simple and comprehensible way according to the feedback. During the semi-structured interviews, firstly demographic characteristics (year of seniority, school) were elicited and then the following questions were asked:

1. Science teachers have been teaching to 5th grade students since the year 2012-2013 education year. How can you describe your experience? Can you share your opinions and experience with us?
2. In comparison to your teaching experience with upper grades (6th, 7th and 8th grades) and 5th grade, what kind of differences have you observed? What are your experiences?
3. As a result of the 4+4+4 system, this year you are teaching to younger children. Do you see a difference between these students and 5th grade students that you taught in previous years? If yes, can you describe these differences?
4. Do you need special activities while teaching? Can you provide an example?

2.3. Data Analysis

The data collected through the semi-structured interviews were analysed with the content analysis method. For the contents analysis, first of all, the transcription of the recorded interviews was made. Afterwards,

transcriptions were read without marking. In the second reading, important expressions were underlined. The underlined expressions were examined and codes were created. In the final reading, the frequency of the codes was determined. These processes were carried out by two researchers independently. Later on, the researchers compared the codes, and identified the expressions that they agreed and disagreed. The codes that they reached a consensus on were included exactly, and the codes that the researchers had disagreement on were reviewed and discussed, and a consensus was sought. The codes which were reviewed for the last time were then put into the final form.

In order to increase the reliability of the study, a sample expression was provided for each code. While providing these expressions, codes were used instead of the real names of the individuals. These codes were created with the information based on the gender and information provided during the interviews. For instance, the male teacher who was interviewed in the second place was described as M2. Sample expressions were written in italics and provided in inverted commas.

3. Findings

The findings obtained as a result of the semi-structured interviews are presented under two main headings.

1. Opinions and experiences of science teachers' having started to teach 5th graders in the implementation of the 4+4+4 education system in the 2012-2013 academic year.
2. Science teachers' opinions and experiences about teaching science to students who started to primary education (by 60 months old) in the 2012-2013 academic year and became 5th graders in the 2016-2017 academic year.

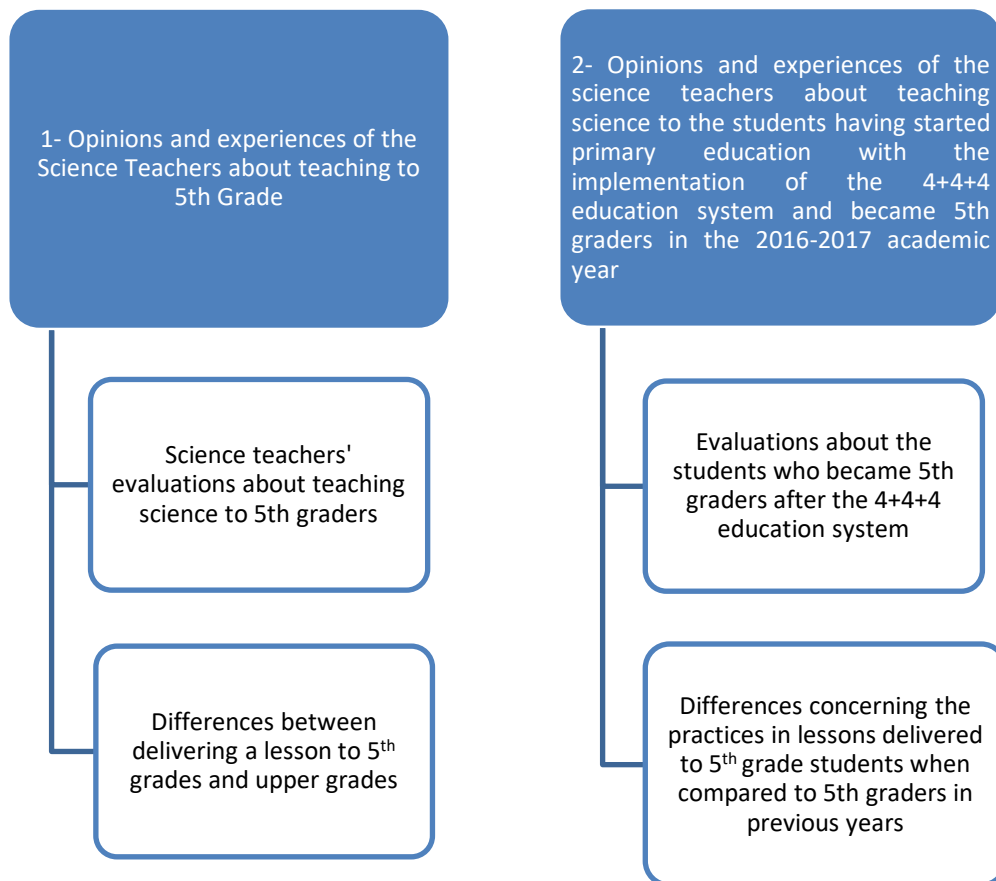


Figure 1. Design of findings

3.1. Science Teachers' Evaluations about Teaching Science to 5th Grade Students

In findings related to science teachers' opinions about teaching science lessons to 5th grade students showed that out of 22 teachers, 16 of them positive, 6 of them negative opinions expressed.

The teacher coded F12 who found teaching to 5th grade students positive stated that *“The good part of this situation is that we start to educate students well-equipped before a child starts to 6th grade. We can differentiate between students who are educated by primary school teachers who put attention on the science course, they are well-equipped. However, a teacher who does not put enough attention to the science course also teaches superficially.”* In a similar way, the teacher coded F15 stated that *“...From which perspectives is it defined as good? I think that we are able to eliminate many misconceptions. For example, primary school teachers did not put an emphasis on the heat-temperature unit, and frankly, there were many misconceptions in upper -grades.”* As it is understood from these statements; that findings showed that teachers find the delivery of lessons by branch teachers positive.

However, besides these positive opinions teachers mentioned negative situations as well. They expressed the negative aspects in term of the teacher and student perspective. The related codes are provided in Table 2.

Table 2. Findings on negative aspects of delivering lessons to 5th grade students by science teachers

Themes	Codes	Frequency
Negative aspects from teachers' perspective	Continuation of primary school behaviors	15
	Incapacity to lower themselves to students' level	8
	Childish behavior of students	4
	Lack of experience in this age group	4
Negative aspects about students	Cognitively unreadiness	10
	Affectively unreadiness	3
	Physically unreadiness	3

As presented in Table 2, the negative opinions of teachers on teaching 5th grade students by branch teachers were grouped under two themes. Teachers described the continuation of primary school behaviors, childish behavior of students, incapacity to lower themselves to students' level and their lack of experience in this age group as negative aspects from teachers' perspective; and cognitive, affective and physical unreadiness was regarded as the negative aspect from students' perspective. The sample teacher expressions are presented below:

The teachers often expressed negativities concerning teaching to 5th graders such as students' continuation of their primary school habits and cognitive unreadiness the teacher coded F14 expressed her experiences on the continuation of primary school behaviors, childish behavior of students as; *“It was difficult for me. Because 5th grade students seemed childish to me as we teach to 6th, 7th and 8th grade students. I could not get used to the situation. Students could not get used to us as well. They consider us as a primary school teacher. For example, they were all standing when we entered the classroom, they needed to come close to us, touch us or give us hugs, and they were complaining constantly. They were also touching to our belongings, as they had such kind of close relationships with their primary school teachers they also expected the same from us. It took a lot of time to teach them the rules and that they are middle school students now. Believe me, the first one or two months were about teaching behaviors. However, in terms of the courses, they told us that they enjoy classes more...”*

The teacher coded F12 stated her opinions on the continuation of primary school behaviors, childish behavior of students, incapacity to lower themselves to students' level and lack of experience in this age group as; *“... I mean it in terms of the age group, not by including this year, even they seem childish to us. We did not receive any education on lowering ourselves to students' level, but the only problem is the age. The negative aspects are their childish behavior, they want to treat us as they did to their primary school teachers.”*

The teacher coded F5 expressed her opinions on cognitive and affective unreadiness and incapacity to lower themselves to students' level as; *“They might be at an appropriate level by age in our field, however, they are not emotionally competent as well. In this sense, as teachers, we face serious difficulties with children. We face problems in*

terms of communicating with them. There is a problem in this sense. And also, they have more concrete expectations. We expect them to think more concretely, yet something happens at that point, and we have difficulties in terms of lowering ourselves to students' level. In terms of thinking, we face difficulties in terms of their comprehension of the content. As I say, they are not competent emotionally, and also in terms of their cognitive development levels."

3.2. Opinions and experiences of the teachers about the differences between teaching to 5th grade students and teaching to students from upper grades

The answers provided by teachers to the question about the differences between lessons delivered to 5th grade students and students from upper grades are presented in Table 3.

Table 3. Findings on the differences between lessons delivered to 5th grade students and students from upper grades

Differences between lessons delivered to 5 th grade students and students from upper grades	Frequency
Designing activity-based lessons	10
Easiness of the curriculum	10
Students' eagerness to participate in lessons.	6
Need for visual support	5
Cognitive Readiness	5
Absence of exam anxiety	3
Changing the communication style	2
Repeating	2

In terms of the differences between teaching to 5th grade students and students from upper grades, the teachers stated that they can design activity-based lessons most frequently in 5th grade classrooms, as it can be seen in Table 3. Moreover, they indicated that they need to teach courses with visual support as students are not cognitively ready to understand certain subjects. In addition to the given differences, teachers considered the easiness of the 5th grade curriculum and the absence of TEOG exam (Transition from Primary to Secondary Education Exam) anxiety as positive aspects. Teachers noted that they are content with students' eagerness to participate in lessons.

The teacher coded F9 expressed her views on delivering activity-based lessons as; *"I mean, the subjects of 6th, 7th and 8th grades are more difficult. They are easier in the 5th grade as we consider this period as a transition period. It is more convenient for us. The curriculums of 6th, 7th and 8th grades are more intensive. That's why we don't have the problem of covering the subjects on time. The time of the course is enough ... students do lot of experiments..."*

The teacher coded M2 stated his opinions on students' eagerness to participate in lessons as; *"The subjects of the 5th grade curriculum is more based on experiments, more from daily life, so they draw more attention and students are eager to learn. However, in upper grades this eagerness and excitement diminish."*

The teacher coded F14 indicated her opinions on students' eagerness to participate in lessons and revising as; *"5th graders need to participate in lessons more in comparison to 8th graders and eager to be active. 8th grade students can alienate themselves from the lecture as they are teenagers, they get bored and think like "we are doing the same thing or how many times we need to do this etc. However, 5th grade students want to do the same experiments for 5-6 times without getting bored. They all want to participate in the lesson."*

The teacher coded F13 specified her opinions on students' cognitive readiness as *"... and their cognitive readiness is certainly notable. They are definitely not ready for the subjects."*

The teacher coded F8 expresses her views on changing the communication style as; *"They are more childish, and you approach them nicely, by considering that they are children, or in exams the roots of the questions need to be clearer and supported by images, but upper-grade students can understand better in comparison to them."*

As is seen in the sample statements above, teachers need to concretize and frequently repeat the subjects while delivering lessons to 5th graders. It is possible to associate this condition with cognitive inadequacy of students, which is also mentioned in the teachers' statements. The students who were in the primary school period and continued their primary school habits became a new, different and compelling experience for the teachers who were not acquainted with that age group. On the other hand, the fact that the aforementioned age group challenging the teachers was eager to attend the class and wanted to perform experiments over and over made the lessons more entertaining and fun. Besides, the teachers evaluated the lightened 5th grade curriculum as a positive feature

3.3. Opinions and experiences of the science teachers about the students who had started school younger than 72 months and were 5th grade in the school year of 2016-2017

The findings concerning the differences of students who started primary school when they were at least 60 months old with the implementation of 4+4+4 system and started 5th grade in the 2016-2017 academic year are presented in Table 4.

Table 4. Differences from 5th grade students in the 2016-2017 academic year

Differences from 5 th grade students in the 2016-2017 academic year	Frequency
Cognitive readiness	12
Physical readiness	9
Behavioral problem	6
Desire to play games	6
Discipline problem	3
Short attention span	2
Seeking special attention	2
Falling short of the activity goals	2
Other	2

As is seen in Table 4; the teachers frequently stated that they found the 5th grade students to whom they had taught in the school year of 2016-2017 to be different from the students in the previous years in terms of cognitive (12) and physical (9) readiness. That was followed by displaying childish behaviors (6), desire to play (6) and discipline problem (3).

The teacher coded F11 indicated her opinions on students' display of childish behavior/ behavioral problem, desire to play games, seeking special attention, and falling short of the activity goals as; *"I am teaching to one 5th grade classroom this year. I have 2 students who are 9.5 – 10 years old. There are ones who are younger than others. There are big differences in terms of months. There are such kinds of differences, they can be very stubborn, and they repeat what they continuously say like a stubborn pre-school student, and they are close to communication and do not hear what I try to say. They only say what they want to say and this may take 15 minutes of a lesson. They might have uncontrollable crying sometimes it is too much for them. A class period is 40 minutes, and if we use 30 minutes of the lesson, they want it to continue for 10 minutes, they want to leave after 10 minutes. For example, we make activities, they are interested in the design of the activity, they are curious, but they do not think about the purpose of the activity, about the reason of doing it. They only see that they jump up and down there; let's suppose we make a sound experiment, we will spill the salt on a balloon, and put the balloon on a speaker so the salt will get into motion. They need to see the vibration of the sound, but they only see the jumping, and they might listen to the rhythm of the music and daydream, and do not listen to anything about the salt or sound..."*

The teacher coded F8 expressed her opinions on students' cognitive and physical readiness as; *"Indeed, there are great differences in an academic sense. Older students or students who are older in months can understand and grasp our initial sentences instantly. But the younger students have difficulties in terms of orientation and getting used to the teacher. Their academic success is also lower. Additionally, children are physically different from each other. There are students in the classroom who are 1.50, 1.60 m, and also children who look like 3rd grade students. This situation causes problems in the classroom, and it is important"*

The teacher coded M2 stated his opinions on students' desire to play games as; "...they bring their toys to the classroom". The teacher coded K15 maintained that "I can tell you that I have one student who wants to drive cars all the time... unfortunately... Iuum uuum uuum. For example, I was teaching the frictional force and conducted experiments on the issue... They are based on observation, you set the environments, and need to make comparisons. So you use a car, a toy car."

The teacher coded F5 remarked her opinions on seeking special attention as "So I could give more attention to the children. That's what I could have done. In addition, I have tried to talk to them in a different way; I've tried to be closer to them. We are normally treating them like this but I've tried to internalize it with these students more because your words and expressions impact this age group much more. When I've realized it, I've started to pay more attention. Normally I try to put.. [boundaries].. I try not to act like a mother, but I try to make them feel this. Because they are more.. fragile."

As is seen in the teachers' statements; the students who were 5th grade in the school year of 2016-2017 had cognitive, affective and physical inadequacies compared to the students in the previous years and continued to display childish behaviors, which brought along discipline problems. In addition, it was indicated that the students faced problems such as being unable to understand the purpose of activities and having a shorter attention span.

3.4. Experiences of the science teachers in teaching to 5th graders in the school year of 2016-2017

Table 5 shows findings concerning the differences between teaching to 5th graders having started primary school younger than 72 months old and students from upper-grade students.

Table 5. Teaching differences between 5th graders (including 60 month old) and upper grades

Teaching differences between lectures delivered 5 th grades and to upper grades	Frequency
Benefitting from visual support	14
Using smart boards most frequently	11
Making plenty of activities	8
Conducting experiments	8
Playing games	5
Teaching subjects simpler	5
Making plenty of repetitions	4
Showing special attention	3
Making the lecture entertaining	2

In terms of the differences between lessons delivered to 5th graders and lessons delivered to students from upper grades in the 2016-2017 academic year, teachers expressed that they benefitted from visual support and used smart boards most frequently.

The teacher coded F13 states her opinions on using a smart board, making plenty of activities, benefitting from visual support and conducting experiments as; "They do not understand the questions by any means. Therefore, I make plenty of experiments, and we already have a smart board. I use every kind of image there. They make teaching more effective" The teacher maintained "I definitely need images (visual support). I need to provide them with everything in a concrete way. I have to show them in a concrete manner" and added that "It is impossible without experiments"

The teacher coded F16 shared her opinions on playing games as "In terms of visuality, as science course includes abstract concepts, straightforward teaching is not possible at the 5th-grade level. After a certain point, you give up concerning about the classroom management. I particularly benefit from the smart board. I try to deliver classes on EBA via animations. We already deliver lessons through games. I mean, when you enter a classroom with a small experiment material, you find shining eyes to learn about it. That's to say, you can adapt them to lessons easily. They can also be alienated from the lessons very easily, they lose their attention quickly. Therefore, I try to use visuality while I am delivering my lessons"

The teacher coded F14 shared her opinions on showing special attention as; *“Yes yes, it is definitely like that... In the simplest term, you can caress their heads and say, ‘You can do it, I trust you’. I need to show a bit more attention by sitting next to the students and say you can do it in this way while his/her friends are solving problems of course”*.

As is seen in the teachers’ statements; the teachers need to make the science lessons more concretize and visualize in 5th grades including the students who had started school younger than 72 months, they have a higher tendency to use the board and conducted more activities. They associated students’ inadequacy of achieving with abstract thinking.

4. Results and Discussion

In the current study investigating the opinions and experiences of science teachers about teaching science to 5th graders and to students who started to school by 60 month old, it was revealed that the teachers found this process as challenging and demanding for both themselves and children.

The participants evaluated the teaching science lessons to 5th grade students by science teachers from two different perspectives: being field specialist and recognizing the characteristics of students. Majority of the teachers participating in the current study consider the delivery of lessons to 5th grade students by branch teachers positive as they are expert of their field. The findings of the research studies conducted by Demir, Doğan & Pınar (2013), Epçaçan (2014) and Aytaçlı & Gündoğdu (2018) revealed that majority of the teachers find the delivery of lessons by branch teachers positive. Also, in the study conducted by Ozden, Kilic & Aksu (2014), the primary school teacher indicated that it would be useful for students to meet their branch teachers in the 5th grade in terms of revealing their interests and talents. However, teachers indicated that they had difficulties as they were not informed about the characteristics of 5th grade students who they taught for the first time. Behaviors such as students’ continuing displaying their primary school behaviors, expecting the attention that they received from primary school teachers, seeking for approval for everything they do and keeping complaining are new for teachers, and this situation was expressed as a problem in terms of delivery of lessons and classroom management. Similar findings were also expressed by the social studies teachers in the study conducted by Zayimoglu Ozturk (2015) and mathematic teachers in the study conducted by Aytaçlı & Gündoğdu (2018). The childish behavior of students’ and teachers’ incapacity to lower themselves to students’ level were indicated as another kind of difficulty. This situation stems from the lack of information of science teachers on the characteristics of this special age group and the presence of very young children among the students. Indeed, this was expressed by some of the teachers. The findings of the research studies carried out by Buldu & Er (2016) and Şentürk (2016) which demonstrated that even the primary school teachers are unprepared to teach children who start school at an early age and need support show the importance of this problem once again. In a similar way, the study conducted by Arı (2014) demonstrated that early schooling has a negative impact both on primary school teachers and students, teachers are discontented with this situation and demand the withdrawal of this implementation. Furthermore, Epçaçan (2014) also stated that the majority of the primary school teachers who participated in the study expressed that they face difficulties in terms of the application of the 4+4+4 system.

The teachers noted that they deliver more activity-based lessons to 5th grade students, and they need to use more images. The teachers maintained that they find the easiness of the 5th grade curriculum, absence of the TEOG Exam anxiety, and eagerness of students to participate in lessons positive. Also, in the study conducted by Ciray, Kucukyilmaz & Guven (2015), a part of the science teachers stated that the content was alleviated, which they found to be positive.

In terms of the comparison between 5th grade students in the 2016-2017 academic year and in previous years, the teachers pointed out that students face difficulties in terms of cognitive, emotional and physical readiness for the 5th grade, and this situation is more obvious in younger children. Moreover, they mentioned that these children have a short attention span and seek for special attention. They expressed that they need to use images in lessons and support the lecture with smart boards, they teach the subjects with plenty of activities, deliver the lessons through experiments, and that they play games. Taking these statements into consideration, it is possible to suggest that majority of the students are still in the concrete operational stage. The given situation is supported by the teachers who expressed that they need to concretize subjects, teach them with games, make

activities and frequent revisions. When the fact that there is a presence of 9-9.5 year-old children among the students is considered, these results should not be surprising. Similarly, in the studies by Karadeniz & Ulusoy (2015) and Zayimoglu Ozturk (2015), the social studies teachers stated that they had a difficulty in teaching students' abstract concepts. Considering that there were 9-9.5 year-old children among the students, this is not so surprising. Because although Piaget suggests that children go into the abstract operational stage at around the age of 11 (Charles, 1999), there are some studies asserting that children cannot display the features of the abstract operational stage at that age even though they are accepted to be in it. For example, the research study carried out by Çepni, Özsevgeç & Cerrah (2004) addressed 7th and 8th grade students. The findings of the study revealed that most of these students are not at the operational stage. Another research study conducted by Demirbaş & Ertuğrul (2012) with a total of 300 students from 4th, 5th, 6th, 7th, and 8th grades to determine the degree of operational skills of students revealed that students' realization of skills regarding the operational stage was low. When the fact that in the period when the two aforementioned studies were conducted children started school when they were 72 months old (6 years old) on average, the seriousness of the current situation can be better understood because, a 5th grade student was 120 months old on average in the year 2012. However, there were students who started primary school in 2012 and became 5th grade in the 2016-2017 when they were just 108 months old (9 years old). This 12 month-difference is considerable for this age range. Moreover, the findings of the studies conducted in the years 2004 and 2012 revealed that secondary school students' skills regarding the operational stage were low despite the fact that students were one age older. A number of previous studies determined that secondary school students do not acquire most of the abstract thinking skills (Adey & Shayer, 1990, 1994; Aktaran Çepni, Özsevgeç & Cerrah, 2004).

During the interviews conducted with the teachers, findings concerning different situations were encountered besides the research questions. One of these findings is that there were teachers who stated that there are classrooms with an age difference up to 1.5 years. The previous research studies showed that there is a major difference between age averages in classrooms (Arı, 2014; Doğan, Demir & Pınar, 2014; Cerit et al., 2014; Uzun & Alat, 2014), and there are classrooms which have age differences up to two years (Akbaşlı and Üredi, 2014; Sahin & Guzel, 2018). In many studies, it has been argued that even the age difference spanning up to 12 months can be a serious problem for children (Bedard & Duhey, 2006; Crawford, Dearden & Meghir, 2017; Googlad & Anderson, 1987; Puhani ve Weber, 2005; Sahin & Guzel). Thus, a 1.5 year difference (18 months) can cause very important problems. This is a problematic situation both for teachers and students. When the differences among children who are born in the same year are considered (Kaila, 2017), the importance of 1.5-2 years of age difference can be understood because this age difference leads to cognitive differences and cognitive differences can vary even depending on the month of birth (Crawford, Dearden and Meghir, 2017). Crawford et al. (2017) conducted a study in England and found that the children one year older than the younger children have higher academic scores. Teaching to students with different cognitive skills in the same classroom can be challenging for cognitively less developed students (Bedard & Duhey, 2006) and can slow down the cognitive development of cognitively more developed students because this age difference brings about cognitive differences. As a matter of fact, the findings acquired from the study conducted by Unver, Dikbayir and Yurdakul (2015) with the first-grade teachers support that claim. The teachers indicated that it was necessary to take more care of children younger than 72 months and it was possible that children older than 72 months were neglected.

A delay in children's school starting age results in children's being more mature when they start school (Dee & Sievertsen, 2015; McEwan & Shapiro, 2008); thus, children who start school without reaching the required maturity confront problems in many areas. Similarly, in studies conducted in Britain, Norway, Belgium and America, it was found that children starting school relatively earlier are confronted with more difficulties (Navarro, Garcia-Rubio, Olivares, 2015). These findings also support the finding of the current study. The problem that is most frequently expressed by teachers is the cognitive and physical incompetency of children who are younger than 72 months. Several research studies conducted with primary school teachers showed that children who are younger than 72 months experience the orientation problem more intensively (Cerit et al, 2014). Eğitim Bir Sen (Education Union) (2012) indicated in their study conducted with teachers and parents that children who start primary school at an early age learn more slowly than children who are older than 69 months and face great difficulties in courses. The interviews conducted with teachers regarding the 2016-2017 academic year showed that there are only two teachers who stated that they did not have any difficulties. In response to this finding, their students' birthdates were examined, and it was seen that all of the students were

older than 70 months when they started primary school. On the other hand, one teacher stated that he/she faced great difficulties due to the fact that two-thirds of the classrooms consisted of early age group students. As the findings demonstrate, teachers' problems increase with the increase in the number of children who started primary school at an early age. Similar findings were also obtained in the research study conducted by Arı (2014).

Both national and international arguments are continuing on the school starting age and its effects. Yet, no study focusing on the problems experienced by the children starting school relatively earlier in the upper grades has been detected. In addition, there are some studies exploring the relationship between the early school starting age and academic achievement. For instance, Bedard & Duhey (2006) made comparisons on the children taking TIMSS exam and found that the children starting school relatively earlier have lower math and science scores in the 4th and 8th grades. Arnold & Depew (2018) reported that early school starting age has negative effects on the male students' rate of graduation from high school but did not affect that of the female students. Puhani and Weber (2005) and Fredriksson & Öckert (2005) found that educational gains of the children starting school when they were 7 years old instead of 6 years old are more. Dee & Sievertsen (2015) noted that starting school relatively later positively affects mental health.

As is seen, it is considered an important problem for children who start school at a younger age to take lessons that require abstract operational skills without having sufficient cognitive development. Because abstract thinking skills have an important role in terms of succeeding in the science course (Lawson, 1982 cited in Çepni, Özsevgeç & Cerrah, 2004), for students who start primary school at an early age without developed abstract thinking skills, science courses could be considerably challenging. This situation gives rise to the development of negative attitudes towards the course and damages one's self-confidence (Sharp, 2002; Sharp & Hutchison, 1997; Çepni, Özsevgeç & Cerrah, 2004). However, in Turkey does not have the luxury to lose these children. The question of which courses should be given at which developmental stage is of great importance. Early experiences of children have an important role in terms of their future cognitive, social and physical development (Baber, 2016). There is a positive correlation between schooling age and educational outcomes (Bedard & Duhey, 2006; Kaili, 2017) and cognitive development (Dhuey, Figlio, Karbovnik & Roth, 2017). Therefore, schooling age and curriculums should be regulated by taking these facts into consideration. Similar to the current study, in many other studies, it has been reported that starting school at an early age is a problem (Crawford, Dearden and Meghir, 2017) and it has been suggested that the school starting age should be increased (Bedard & Duhey, 2006; Dee & Sievertsen, 2015). Thus, it is believed to be necessary to review and rearrange the school starting age. In addition, although the school starting age was rearranged and removed to 66 months were in the 2019-2020 academic year, it is still a problem that students can start school from 60 months depending on the parents' preference. School starting age should be determined as 72 months and the contents of courses should be determined on the basis of children's cognitive, affective and kinesthetic characteristics. In addition to this, it is necessary to raise teachers' awareness of developmental features of students from different age groups and provide trainings in this respect.

One of the most important factors determining the quality of an education system is the effective planning of curriculums, age groups and levels of schooling from the beginning of the pre-school period to the end of the secondary school period. Elementary and secondary education not structured in compliance with the developmental characteristics and needs of students will not yield the anticipated outcomes even if it is supported with quality equipments, qualified human power and high budgets (Akbaşlı and Üredi, 2014). Early childhood experiences will have significant impacts on children's affective, cognitive and physical development. Thus, all the levels of schooling and course contents in different levels should be taken into consideration while deciding on the school starting age for children.

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Teacher Candidates Achievements from The ADHD Vocational Elective Course

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ABSTRACT

ADHD- Attention Deficit Hyperactivity Disorder is one of the most common neurodevelopmental disorders in childhood. The number of children with ADHD increases every year. Most of the teachers working in schools and kindergartens are not educated enough to use appropriate methods while working with these students. That is the reason why some Universities included the ADHD as vocational elective course in their programs. The aim of this research is to ensure and increase the knowledge and information's of teacher's candidates about ADHD before their work with children. In this research we decided to analyze the effects of the ADHD as vocational elective course for the students from Çanakkale 18 Mart University in Turkey. Questionnaire before and after taking the course was applied on students who attended it, in a period of three months. The group consisted 20 females, from two different departments at the Faculty of Education: Pre-school Teachers and Primary School Teachers. The implemented pre and post questionnaire contained four questions. The data were analyzed using the content analysis method and the questions were analyzed with the MAXQDA Analytics Pro 2020 program. Codes and sub-codes were created with purpose to analyze and interpret the answers given to each question through content analysis. In the research, it was seen that the conceptual learning about ADHD was increased and the teacher candidates learned what should be done about children with ADHD. Within the framework of the research results, it is recommended to make observations during the diagnosis process of the ADHD student, and to conduct practical studies for functional measures for ADHD in the classroom.

Keywords:

Teacher candidates, ADHD course, teacher education, vocational elective course

1. Introduction

Attention Deficit Hyperactivity Disorder (ADHD), which is characterized with problems in attention, concentration, movements, and impulsiveness control, is the most common childhood psychiatric disorder (Kayaalp, 2008).

According to World Health Organization (WHO), the International Classification of Diseases (ICD 10), hyperkinetic disorder occurs in early childhood, significantly disrupting academic, social and working performances in different environments (e.g. home and school) is a psychiatric syndrome with a persistent model of severe, developmental inappropriate inattention, hyperactivity, and impulsivity (WHO, 2001).

The American Psychiatric Association (APA) defines ADHD as one of the most common mental disorders affecting children. Symptoms of ADHD include inattention (not being able to keep focus), hyperactivity (excess movement that is not fitting to the setting) and impulsivity (hasty acts that occur in the moment without thought), (APA, DSM V, 2013).

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The American Psychological Association states that ADHD is a behavioral condition that makes focusing on everyday requests and routines challenging. Children with ADHD typically have trouble getting organized, staying focused, making realistic plans, and thinking before acting. They may be fidgety, noisy, and unable to adapt to changing situations. Children with ADHD can be defiant, socially inept, or aggressive (Kazdin, 2000).

Proper diagnosis is very important because it dictates the approach to therapy. The diagnostic process includes a detailed overview of children's behavior, school, and psychosocial, developmental, medical, and family history. This information is primarily obtained from conversations with parents, medical and school records, and from standardized scales designed to enable parents, teachers, and children to complete it (Trajkovski, 2008).

Difficulties in maintaining attention, hyperactivity, and impulsivity also include reactions that are often not recognized or considered as part of ADHD, which is why the environment places too many and inadequate demands on the person. These are: poor ability to solve problems, inconsistent behavior, mood swings, emotional hypersensitivity, low tolerance threshold and difficulty in achieving long-term goals (Jurin & Sekušak-Galešev, 2008).

It is suggested that the worldwide prevalence of ADHD is 5-12% in children and 4.4% in adults (APA, 2013). In this context, considering the class sizes in our country, the probability of 2-3 students with ADHD in each class is quite high. For this reason, teachers need to acquire various knowledge and skills in diagnosing ADHD and planning teaching services. The Higher Education Council (YÖK- Yüksek Öğretim Kurumu, 2018) has updated the 25 teacher undergraduate programs as "New Teacher Training Undergraduate Programs" giving importance to include the ADHD course within the scope of "Vocational Elective Course". The content of the course includes the subjects: ADHD definition and characteristics; The main symptoms of ADHD (attention deficit, hyperactivity and impulsivity); The effects of ADHD on the child in terms of social, emotional and school success; Causes of ADHD; Risk factors in ADHD; ADHD types; Approaches to children with ADHD; Guiding students with ADHD; Education of children with ADHD; Ensuring school-family cooperation for students with ADHD (YOK, 2018).

The subject of adaptation of ADHD in the school system is the primary concern of the pre-school teachers and primary school teachers, while the competencies for ADHD behaviour development knowledge base is not enough on a national level (Kılıç & Şener, 2003; Şenol, İşeri & Koçkar, 2005). With this research, it is thought that drawing attention to the deficiencies in this field and making teacher candidates training programs functional with elective courses will constitute an important basis in recognizing these individuals and eliminating their difficulties.

With the process of inclusion, the children with special educational needs can attend classes in regular schools. Most of the children with ADHD are also part of the inclusion process, which is the reason why Primary School teachers are responsible for their education. For this reason, it is very important for these teachers to gain appropriate knowledge about ADHD in order to be able to work with students with ADHD in future.

When the studies in the literature in our country are examined, it is seen that researches conducted on children with ADHD are generally medical based. For example, Aydın, Diler, Yurdagül, Uğuz & Seydaoğlu (2006) examined the ADHD rates in parents of children with ADHD and concluded that ADHD in childhood and adulthood has been more prevalent in parents of children with ADHD. Aysev and Öner (2002), examined the psychiatric morbidity of cases that were diagnosed with ADHD during their childhood. Their results indicated that ADHD group has received significantly more psychiatric diagnoses than control group in adolescence. In 2004, Ölmez and Öncü, examined the Neuropsychological Findings in Adults with ADHD. The aim of their study has been assessing neuropsychological functions of adults with ADHD compared to healthy controls. Delic, (2001), found that schools in Croatia need multidimensional model that brings together the positive effects of the medicines, working with the child, his family, his environment, and the wider community. Klock (2017) examined the children with ADHD in the primary schools concluding that it is important to sensitize the general public to these children and their problems. When it comes to researches created for teachers, Kehonjic (2006) made the research Teachers' opinions on students with ADHD. The results indicated under level knowledge about characteristics of those students and insufficient evaluation of teacher's personal competences for teaching those students. Another research, made in 2006, (Mugnaini et al., 2006) examined

the Teacher reports of ADHD symptoms in Italian children at the end of first grade. The results have shown that Comorbid symptoms have been 10 times more frequent than in subjects without ADHD symptoms.

When the ADHD studies are examined, it is noted that there are limited number of studies in the fields of Education and Psychology in Turkey. This situation can be described as a significant obstacle in determining and meeting the educational needs of children with ADHD. Studies related to teachers' candidates were not found. This research aims to ensure that it will contribute to other vocational elective courses that will be held in the field of ADHD by revealing the opinions of teacher candidates before taking the course.

1.1. Purpose of the research

In the traditional education system, the teachers are expected to possess enough knowledge and information's in order to enable students with ADHD to actively participate in inclusion process. It is very important for teachers working with students with ADHD, to have enough knowledge in this field, be able to regulate the physical environments, know how to focus attention in the presentations during the classes, use interesting materials and adapt the teaching materials according to student's needs (Gümüş, 2015; Özmen, 2010). Therefore, teacher candidates need to be able to identify the learning problems experienced by these students and implement solutions related to these learning problems (reading, writing, mathematics, language, visual perception, auditory perception, memory etc.) (Aktaş, 2000; Kanay, 2006). Preschool and primary school teacher candidates who are able to recognize children with ADHD, and know the strengths and weaknesses of ADHD within the scope of vocational elective course, will increase the efficiency of children with ADHD in the teaching process (Göl & Bayık, 2013)

It is of utmost importance to realize the administrative arrangements in the classroom environment by resolving them in the treatment and by applying behavior development method (Göl & Bayık, 2013). In this context, it is necessary to implement vocational elective courses for students with special needs including ADHD in the education programs. It should not be forgotten that the consciousness of teachers is the biggest factor that will bring students to society. Because the support provided by teachers to students with special needs is extremely important in preparing students for life.

2. Methodology

2.1. Research Design

Qualitative research model was used in this research. Qualitative research approaches focus on evaluating individuals' experiences (Jasper, 1994; Miller, 2003). Phenomenology, as one of the qualitative research approaches, was used in the research. The purpose of the phenomenology, which is one of the qualitative research methods, is to reveal individuals' experiences about a case, their perceptions about these experiences and the meanings they have acknowledged (Ersoy, 2016). As a descriptive research method, phenomenology focuses on identifying facts, not generalization (Baş & Akturan, 2008). In the research, we tried to reveal the concepts that teacher candidates have about ADHD. Phenomenology pattern was preferred in this research since we tried to understand and interpret the opinions of teacher candidates before and after taking the ADHD course, as vocational elective course.

2.2. Participants

The participants of this research consist of 20 female teacher candidates studying at Çanakkale Onsekiz Mart University, Faculty of Education, from two Departments of Education- Preschool Teachers and Primary Education Teachers. The research was conducted in the 2019-2020 academic year. Purposeful sampling approach was used in the selection of the teacher candidates. It is a purposeful selection of individuals and situations related to this qualitative research selected by the researchers. With the purposeful sampling it is possible to provide rich information's in order to understand the research problem and the case examined (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel 2014; Maxwell, 2012). In this research, teacher candidates who choose the ADHD course, as a vocational elective course were determined as research group. The selected department of teacher candidates participating in the questionnaires conducted in the research are given in Table 1.

Table 1. Department of Teacher Candidates Participating in The Research

Department of Teacher Candidates	Preschool teachers	Primary school teachers
	f	f
	10	10
Total	20	

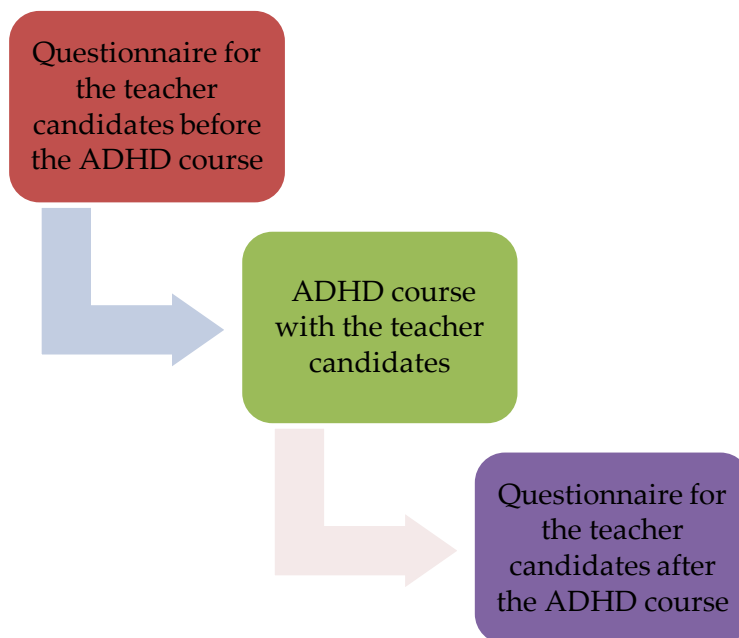
When Table 1 is analyzed, it is seen that 10 of the pre-school teacher candidates participated in the research, and 10 participants are primary school teacher candidates. Questionnaires with 20 teacher candidates were implemented before and after ADHD course.

2.3. Data Collection Tool

In the research, a questionnaire with semi-structured and non-directing questions was used as qualitative data collection tool. While preparing the questionnaire used in the research, the literature from the topic area was used. First, a draft questionnaire form was created, and the questions were presented to two faculty members in order to obtain expert opinion. After the expert opinions, the questionnaire form was reviewed and finalized. In the first part of the prepared questionnaire form, there are questions related to teacher candidate's general information (department), and in the second part, there are semi-structured and non-directing questions about ADHD. By obtaining the necessary ethical and administrative permissions, the research was carried out on a voluntary basis with teacher candidates. It was stated to the teacher candidates that the data obtained from the questionnaire would be stored within the framework of ethical rules. Answering the questionnaire with teacher candidates took about 20 minutes.

2.4. Procedure of the Research

The lessons for the vocational elective course ADHD, needed for this research, were held twice a week, lasting total 14 weeks. The course was held in the fall semester of the 2019-2020 academic year, and the questionnaires were implemented with the teacher candidates on the first and the last week. In Figure 1, data collection process is given schematically.

**Figure 1.** Data Collection Process

Teacher candidates' opinion before and after taking the ADHD course was examined. Within the scope of this vocational elective course, it is thought that this research will contribute to the field in defining what kind of teacher qualifications they need to support the students with ADHD and determining their conceptual

changes. For this purpose, the following questions were prepared for the teacher candidates before and after taking the ADHD course.

The questions for teacher candidates before the ADHD course are as follows.

As a teacher candidate;

1. What do you know about ADHD?
2. What are the first concepts that associate you with ADHD?
3. What are your expectations? What do you expect to learn within the scope of ADHD course?
4. Why did you select ADHD course?

The questions for teacher candidates after taking the ADHD course are as follows:

As a teacher candidate;

1. What did you learn about ADHD?
2. What are the last concepts that associate you with ADHD?
3. Were your expectations about the ADHD course met? What else would you expect to learn from this course?
4. What will you do for the student with ADHD is in your class?

ADHD course conducted with teacher candidates in the research continued for 13 weeks, 2 lessons per week. Implementation of the ADHD course for this research and the information about the content of the course are shown in Table 2.

Table 2. Content of ADHD Course

Weeks	Subject content of the vocational elective ADHD course
1. Week	Definition and Characteristics of ADHD
2. Week	Attention Deficit
3. Week	Hyperactivity Disorder
4. Week	Impulsiveness
5. Week	Causes and Diagnose of ADHD
6. Week	Psychiatric Disorders and other conditions linked with ADHD
7. Week	ADHD Therapy
8. Week	Effects of ADHD on the family
9. Week	Educating the parents of children with ADHD
10. Week	Education of Children with ADHD
11. Week	ADHD during lifetime – Infancy and pre-school period
12. Week	ADHD during lifetime – Primary and Secondary School Period
13. Week	ADHD during lifetime – Adolescents and Adults with ADHD

When Table 2 is analyzed, ADHD course content included the subjects: Definition and Characteristics of ADH, Attention Deficit, Hyperactivity Disorder, Impulsiveness, Causes and Diagnose of ADHD, Psychiatric Disorders and other conditions linked with ADHD, ADHD Therapy, Effects of ADHD on the family, Educating the parents of children with ADHD, Education of Children with ADHD, ADHD during lifetime – Infancy and pre-school period, ADHD during lifetime – Primary and Secondary School Period, ADHD during lifetime – Adolescents and Adults with ADHD.

2.5. Data Analysis

Qualitative data obtained in the research were subject for content analysis. The main purpose in content analysis is to reach concepts that can explain the collected data (Yıldırım & Şimşek, 2013). For the data analysis, the records obtained from the anonymous questionnaire were written in the computer environment without any changes. The data were analyzed using the content analysis method and the questions were analyzed with the MAXQDA Analytics Pro 2020 program. Codes and sub-codes were created with purpose to analyze and interpret the answers given to each question through content analysis. Similar codes were collected under the

same theme and the research subject was categorized under the factors depending on its structure. In order to ensure the reliability of the research, the teacher candidates were filling the questionnaire anonymously and two researchers analyzed the data of the research separately. In the research, coding reliability was calculated according to the formula $[\text{Consensus} / (\text{Consensus} + \text{Disagreement})]$ (Miles & Huberman, 2015) and the consensus (reliability) was found as % 89.

In qualitative research, more credibility, reliability, verifiability, and transferability criteria are used instead of the expressions of validity and reliability used in quantitative research, (Merriam, 2013; Whittemore, Chase & Mandle, 2001). In qualitative research, it is also important to get the opinion of an independent researcher or expert colleague who has little or no contact with the participants, who can make sufficient judgments about the participants' comments, and who knows the method of the study (Holloway & Wheeler, 1996; Merriam, & Tisdell, 2015).

In this framework, confirmation from the participants was provided for this research and direct quotations are made from the participants' opinion. The names of the teacher candidates who participated in the study were not asked within the framework of ethical principles, and the answers of the participants were coded in alphabetical order. The answers and the direct quotations of the Preschool teacher candidates were included in the form of PST (PST₁, PST₂... PST₁₀), while the primary school teacher candidates were coded as PT (PT₁, PT₂... PT₁₀).

3.Findings

In this section, qualitative findings obtained from the teacher candidates' answers are given. The themes and codes obtained from the questionnaires with pre-school and primary school teacher candidates were made with the MAXQDA Analytics Pro 2020 program and the findings were presented. The codes stated most by the teacher candidates are indicated in dark colors in the model.

Findings from Pre-Questionnaires with Teacher Candidates

3.1. Teacher Candidates Opinions for What They Know About ADHD

In the preliminary questionnaire with teacher candidates, the themes, and codes that teacher candidates know about ADHD were modelled and presented. The model of teacher candidates' knowledge about ADHD is given in Figure 2.

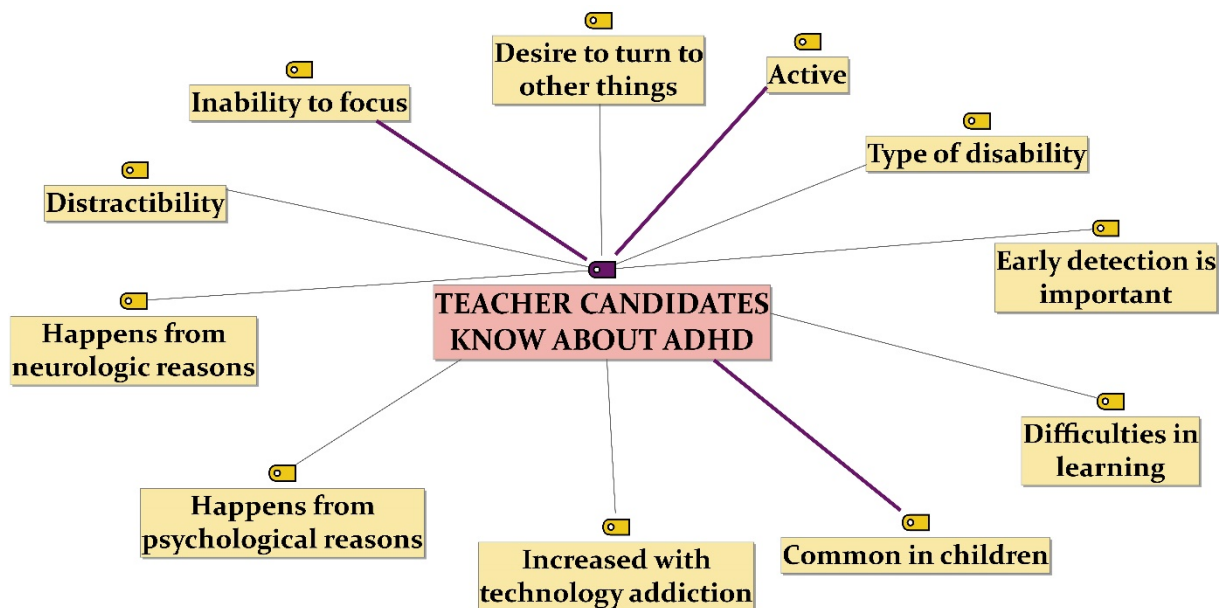


Figure 2. What the teacher candidates know about ADHD

When Figure 2 is analyzed, the codes of what preschool and primary school teacher candidates know about ADHD, can be seen. Teacher candidates stated "Active", "Inability to focus", "Common in children" codes more about ADHD. Examples of direct quotes taken from the teacher candidates' opinions are presented below:

PST1: "Actually, I don't know much about ADHD... What I know about ADHD is that it is a kind of disability and these people have difficulties focusing especially when doing something. As far as I know, it is common in children..."

PT2: "...The main point I know about ADHD is the state of activeness. In other words, I know that individuals with ADHD have a desire to move constantly with their inexhaustible energies. I think this is a type of neural condition that is mostly seen in children."

3.2. Teacher Candidates Opinion About First Conceptual Associations for ADHD

In the preliminary questionnaire with teacher candidates, the first conceptual associations of teacher candidates related to ADHD were presented by modelling themes and codes. The model of the teacher candidates' conceptual associations about ADHD is presented in Figure 3.

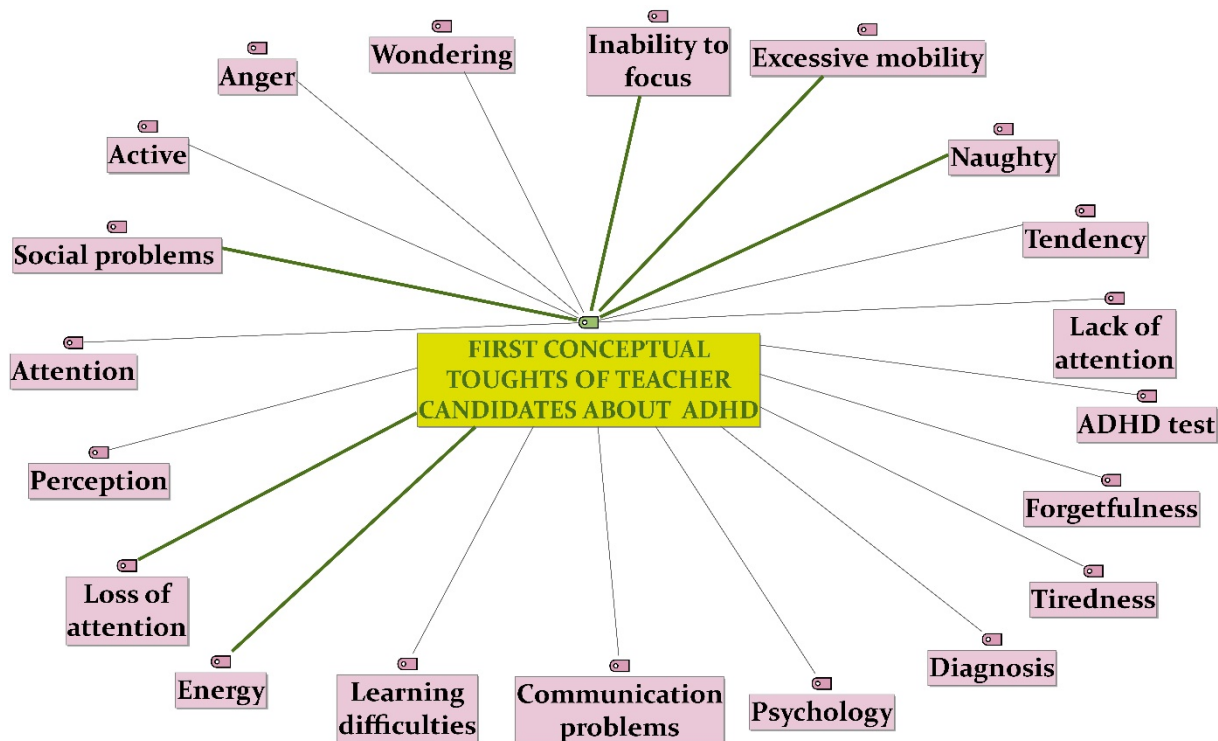


Figure 3. The first conceptual association of prospective teachers about ADHD

Looking at Figure 3, the first conceptual association of pre-school and primary school teacher candidates related to ADHD are shown in codes. It is seen that teacher candidates stated "Energy", "Lack of attention", "Inability to focus", "Social problems", "Excessive mobility", "Naughty" codes in their conceptual associations. Examples of direct quotes taken from the statements of teacher candidates are presented below:

PST3: "When ADHD is mentioned, the concept that comes to my mind first is inability to focus, tend to move constantly with high energy. In fact, the first thing that comes to my mind is that they are naughty students who are in movement all the time, and who cannot stand still in the classroom. I think the concept that occurs most in my mind when ADHD is mentioned is naughty..."

PT4: "The concept that first associates me with ADHD is social problems... I think there are very few concepts about ADHD because I do not have any idea and knowledge about it. But besides the social problem, I can say anger and psychology. I can also say the lack of attention, which is hidden in the name of the disorder".

In the research, the word cloud consisting of the first conceptual association of teacher candidates about ADHD was also created through MAXQDA Analytics Pro 2020 program and presented in Figure 4. In this context, "Naughty" concept, as one of the most frequently used associations of teacher candidates in relation to ADHD, can be seen remarkably.

PST₆: “My expectation from ADHD course is to be able to help a student with ADHD in my classroom when I will be a teacher in future. I want to learn this. Or how can I recognize ADHD, how can I deal with it when I face such a situation... This is what I expect from this course.”

PT₅: “My expectation from ADHD course is to learn how to apply ADHD tests. If I have enough knowledge about ADHD from this course, I can correctly observe the students with special educational needs in my class and effectively guide their diagnostic process. My other important expectation is to learn the positive or negative factors for ADHD since there will be many stimuli in the class. I think if I know these, I can pay attention to it while planning my teaching process. This is perhaps my most important expectation from this course...”

3.4. Teacher Candidates Opinion on the Reasons for Choosing ADHD Course

In the preliminary questionnaire with teacher candidates, their reasons for choosing the ADHD course are presented by modelling themes and codes. The answers given by teacher candidates before ADHD course are interpreted including direct citations. The model of the teacher candidates’ reasons for choosing the ADHD course is presented in Figure 6.

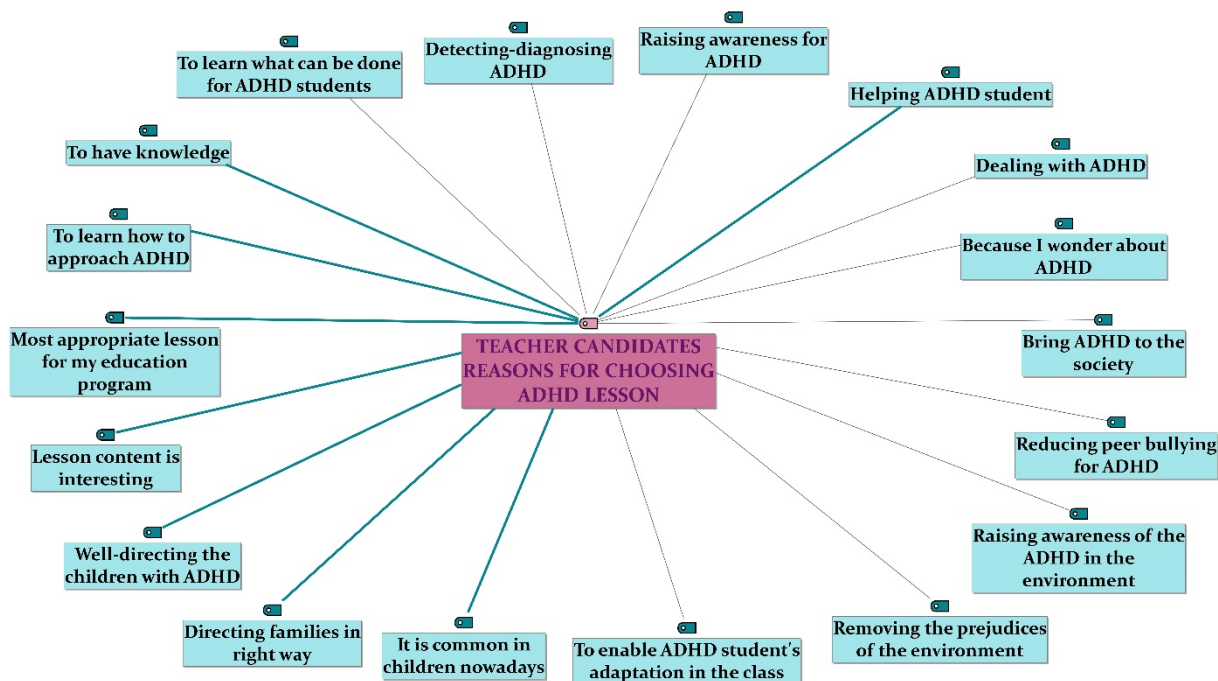


Figure 6. Teacher candidates’ reasons for choosing ADHD course

When Figure 6 is examined, it is notable that the pre-school and primary school teacher candidates’ selected this course for: “Helping ADHD students”, “To have knowledge”, “To learn how to approach ADHD”, “Most appropriate course form my education program”, “Course content is interesting”, “Well-directing the children with ADHD”, “ Directing families in right way”. Examples of direct quotes taken from the opinions of teacher candidates belonging to the prominent codes are presented below:

PST₉: “I want to learn how to treat my student with ADHD. When I will be a teacher, I may have students with special needs in my classroom. This is an issue that we face and hear frequently. I chose this course to learn what can I do for them when I have such students in my class.... I really want to have knowledge for this subject. Because when I become a teacher, I will deal with children whose developmental age is between 0-6. I think this course is suitable for my undergraduate degree. I chose this lesson for these reasons”.

PT₁₀: “When I saw this course in the vocational elective course list, I chose it because I thought it was the most necessary course for my future profession. This is a course I am really interested in. I want to know what should I do when I have a student with ADHD in my course; I chose this course because I wanted to learn how to help them, and how to guide their family effectively ”.

Results from Last Questionnaire with Teacher Candidates

3.5. Teacher Candidates Opinion for What They Have Learned About ADHD

From the last questionnaire with teacher candidates, the themes, and codes about what teacher candidates have learned from the ADHD course were modelled with the MAXQDA program. The model of teacher candidates learning from ADHD course is given in Figure 7.

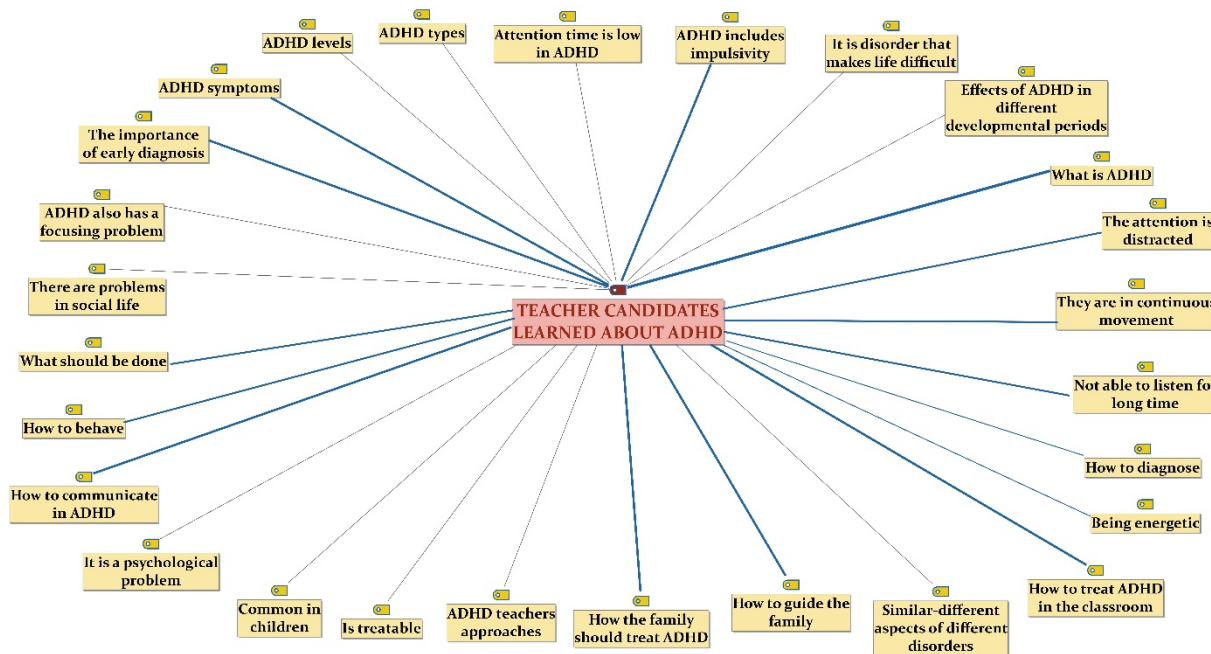


Figure 7. Teacher candidates learned from ADHD course

With Figure 7 analyze, it is presented in the codes what preschool and primary school teacher candidates learned in ADHD course. Teacher candidates specified the codes: "How the family should treat ADHD", "How to guide the family", "How to treat ADHD in the classroom", "What is ADHD", "ADHD includes impulsivity", "ADHD levels", "ADHD symptoms", "How to behave", "How to communicate in ADHD", "What should be done". After taking the ADHD course, it is notable that teacher candidates are including more codes in relation to the content of the subject. Examples of direct quotes taken from the opinions of teacher candidates are presented below:

PST₂: "I learned exactly what ADHD is. I also learned the main symptoms I need to know in determining ADHD during the diagnosis process. Again, it was very meaningful for me to learn how important early diagnosis is, and how the early intervention can change an individual's life. At the last lesson, learning how to make arrangements in the classroom for a student with ADHD will be very useful for me when I will start my profession"

PT₃: "ADHD was actually a concept we always heard, but instead of hearing something superficially, now I can say that I know the many underlying causes and the symptoms, and most importantly I can say that I know how to help a student with ADHD. Another important point is that I learned what I can do for the person with ADHD and his family".

3.6. Teacher Candidates Opinion About Last Conceptual Associations for ADHD

The themes and codes related to the last conceptual associations of teacher candidates, related to ADHD, from the last questionnaire were modelled with the MAXQDA program Citations from the answers given by the teacher candidates after the ADHD course, were interpreted including direct citations. The model of the teacher candidates' conceptual associations about ADHD is given in Figure 8.

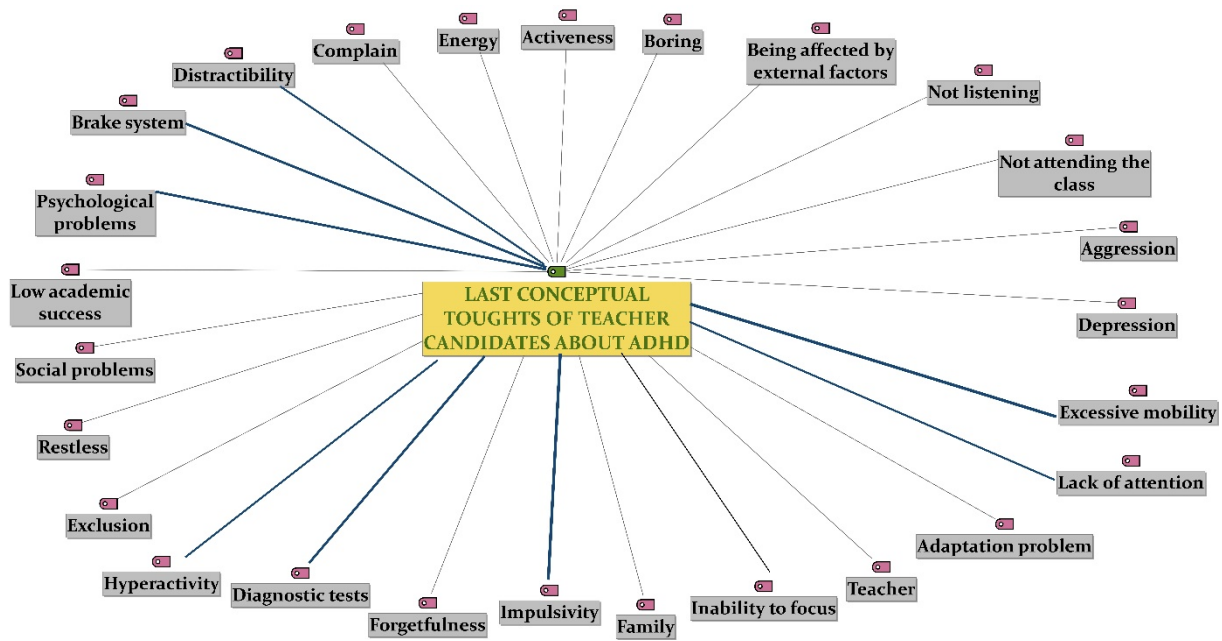


Figure 8. Teacher candidates last conceptual association about ADHD

Looking at Figure 8, the last conceptual association of pre-school and primary school teacher candidates about ADHD are presented in codes. It is seen that the teacher candidates wrote the: "Distractibility", "Brake system", "Psychological problems", "Hyperactivity", "Diagnostic tests", "Impulsivity", "Excessive mobility" codes. It was observed that teacher candidates were more able to make conceptual associations after ADHD course. Examples of direct quotes taken from the teacher candidates' opinions are presented below:

PST4: "If I think of the concepts that are associated with ADHD in my mind, I can say impulsivity, excessive movement and distraction. From everything I learned in this course, I can think of ADHD with more general structure, features, or terms related to ADHD... like the brake system, for example".

PT6: "...For me, words that are conceptually associated with ADHD are mostly about what ADHD is, and what can I do about it...For example, I can say ADHD diagnostic tests, focusing problems or social problems, as first words that come to my mind...".

The word cloud consisting the last conceptual associations of teacher candidates about ADHD is given in Figure 9. While the most frequently used association to ADHD is "Excessive mobility", it is notable that some concepts including the basic components of ADHD are also included.



Figure 9. Teacher candidates last conceptual association about ADHD word cloud

3.7. Teacher Candidates Opinion About Different Learning Expectations from ADHD Course

The themes and codes related to different learning expectations than the ADHD course were modelled with the MAXQDA program. Citations were interpreted including direct citations from the answers given by teacher candidates. The model of teacher candidates' learning expectations from ADHD course is given in Figure 10.

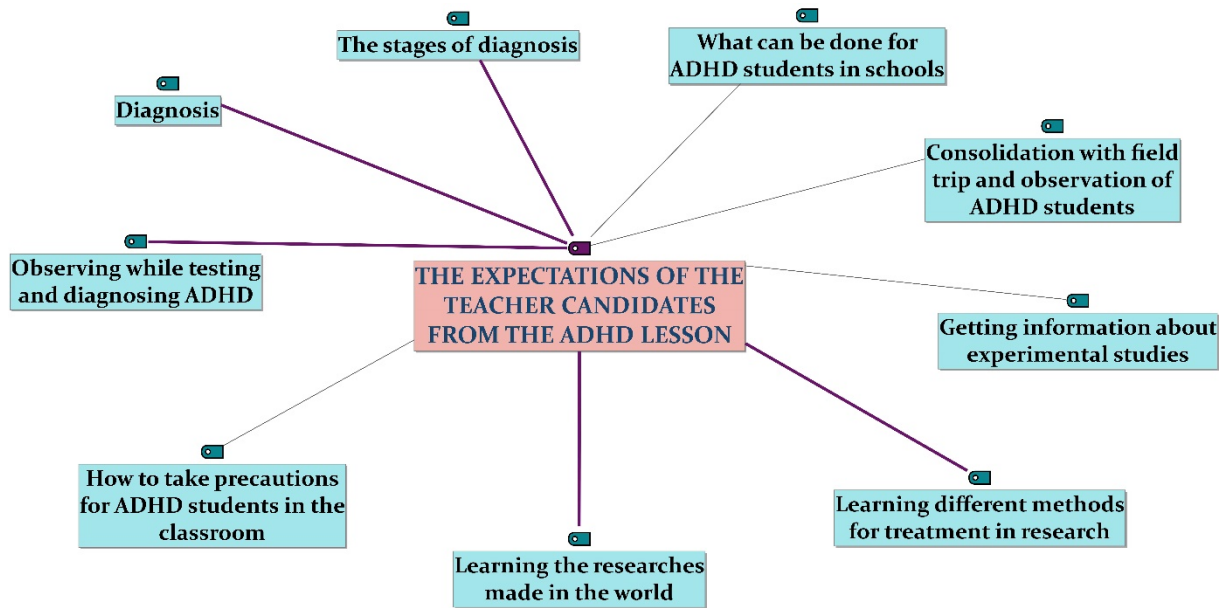


Figure 10. Teacher candidates' different learning expectations from the ADHD course

When Figure 10 is examined, what the pre-school and primary school teacher candidates want to learn differently from the ADHD course is presented in codes. It is seen that the teacher candidates stated, "The stages of diagnosis", "Diagnosis", "Observing while testing and diagnosing ADHD", "Learning the researches made in the world", "Learning different methods for treatment in research". It was notable that the teacher candidates want to observe during examining and diagnosing ADHD in children, and during the stages of giving diagnosis within the scope of ADHD course. Examples of direct quotes taken from the opinions of teacher candidates are presented below:

PST₁₀: "...I think I have learned many things that I expected to learn within the scope of ADHD course. However, we could observe students with ADHD, on organized trip, for example...even for a short time. When you learn something, you know it.... but it is hard to make that knowledge permanent if you did not have a chance to directly observe and live in that environment, before. Therefore, I would like to be an observer especially in the diagnosis stage, and in the test application stage of ADHD students, during this course".

PT₈: "As part of the ADHD course, we learned about the characteristics of ADHD, symptoms and basic concepts. I would especially like to know the diagnosis process, the content of ADHD tests and how these tests are applied. I would like to learn about the studies conducted in Guidance and Research Centers in our country or the practices in our education system, as well as the studies on ADHD in the world and what different methods can be used for ADHD in schools".

3.8. Teacher Candidates Opinion on What can be done for a Student with ADHD

In the last questionnaire for teacher candidates, the themes, and codes about what teacher candidates can do for their students with ADHD are modelled with the MAXQDA program. These citations were interpreted by including direct citations in the answers given by teacher candidates. The model of what teacher candidates can do for their ADHD students is given in Figure 11.

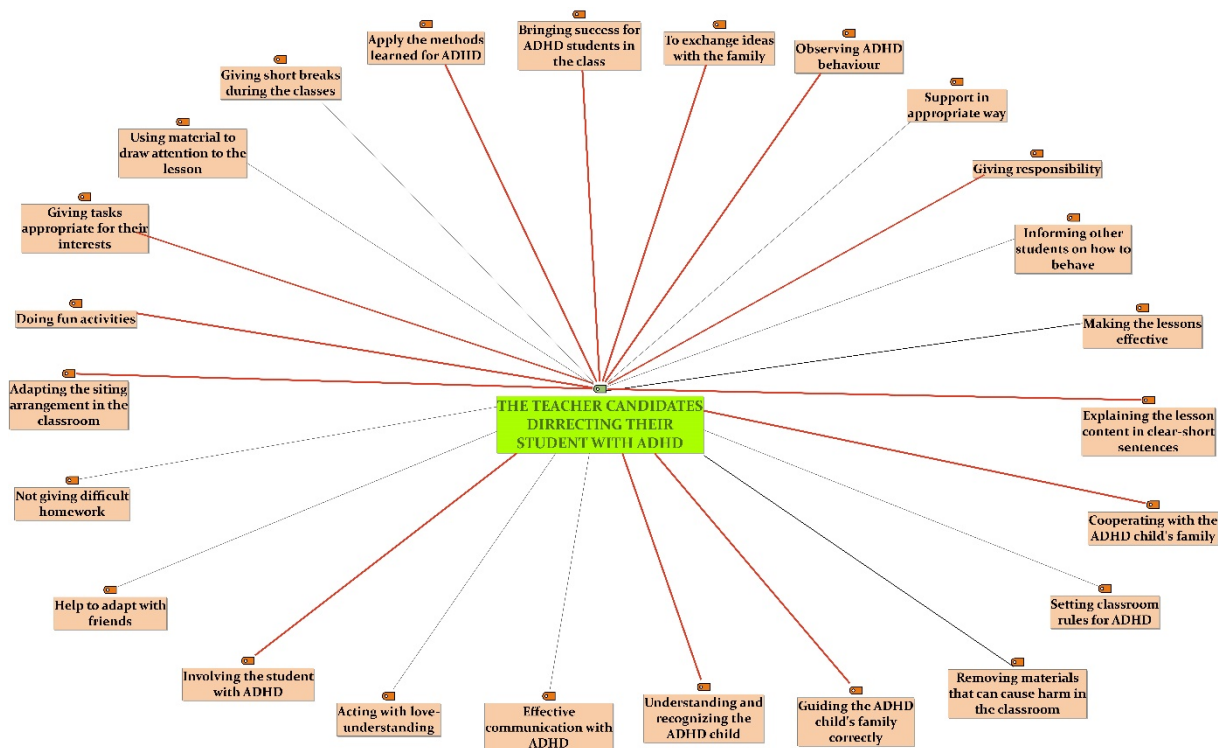


Figure 11. What prospective teachers can do for their ADHD students.

In Figure 11, teacher candidates often indicate the codes: “Bringing success for ADHD students in the class”, “Apply the methods learned for ADHD”, “Observing ADHD behavior”, “To exchange ideas with the family”, “Giving responsibility”, “Cooperating with the ADHD child’s family” “Explaining the class content in clear-short sentences”, “Understanding and recognizing the ADHD child”, “Guiding the ADHD child’s family correctly”, “Adapting the siting arrangement in the classroom”, “Involving the student with ADHD”, “Apply the methods learned for ADHD”, “Giving short breaks during the classes”, “Doing fun activities”. Examples of direct quotes taken from the opinions of teacher candidates belonging to the prominent codes are presented below:

PST7: “...First, I know that I should be a very good observer for my ADHD student. I should carefully monitor the behavior of my student with ADHD and try to assign tasks appropriate to his interests. In short, I will always make additional plan for including the student with ADHD during the classes”.

PT1: “For the student with ADHD, I will direct his family and exchange ideas with his family. I can make the student with ADHD feel successful in the course, especially in order to be understandable when I am teaching the lesson, and because it is immediately distracted, I can make clear sentences. I can use the methods of teaching the ADHD student I learned within the scope of this vocational elective course”.

4. Discussion and Conclusion

The questionnaire prepared for the purpose of the research, showed noticeable results. If we compare the teacher candidates’ answers before and after taking the ADHD course, we can notice the improvement they showed. For example, if we analyze teacher candidates answers on the first question ‘what you do know/ have learn about ADHD’ before and after taking the ADHD course, we can see that their answers have changed with time. Before the course, most of the teacher candidates explained the ADHD as a ‘type of disability’, ‘common for children’, ‘active’ and ‘inability to focus’. They started giving more precise and accurate answers after visiting the ADHD course, explaining the ADHD as a problem that needs to be ‘diagnosed’, has ‘symptoms’, ‘levels’, ‘types’, needs ‘early intervention’ and other important information’s they had learn in the course.

The same results showed during the examination of the second question, asking the teacher candidates to write a concept they associate with ADHD. Surprisingly, in the first stage of the research, they had mostly negative associations for students with ADHD. using words as: ‘naughty’, ‘loss of attention’, ‘anger’, ‘energy’, ‘forgetfulness’ etc. Their association concept drastically changed after the course, they started using appropriate terms as ‘excessive mobility’, ‘hyperactivity’, ‘inability to focus’ etc. Additionally, the teacher

candidates started associating ADHD as a 'problem'- 'adaptation problem', 'social problem', 'psychological problem', 'low academic success'... referring to the solution as 'diagnostic tools', 'family support' or even using professional terms as the 'brake system'. The knowledge they gain during the ADHD course clearly changed their concept of associating ADHD in children. They went from 'being naughty' to a 'child with problem that needs diagnose and support'.

The results from the third question about teacher candidates' expectations from this course mostly showed that their expectations were met. They all wanted to learn how to identify ADHD in children; they wanted to learn the symptoms, characteristics, and mostly how to work with a child with ADHD in their classroom. Most of the subjects they expected were already included in the curricula. After the course most of the teacher candidates noted that observation of diagnosing a child with ADHD should be planned, too which shows that they had more interest for ADHD, especially because as teachers they are not able to diagnose ADHD and use diagnostic tools. Some students noted that visiting institution for children with special educational needs would help them memorize what they have learned during the courses by seeing in practice everything they know.

With the last question in the questionnaire, we examined why teacher candidates selected this course, and since most of the answers referred to 'learning what can be done for ADHD students' or 'learning how to deal with ADHD' we asked them what they can do about a student with ADHD in their classroom after they finished the course. They explained in details how they would monitor the child behavior, how they are able to recognize and understand ADHD, how they will adapt and arrange the classroom, how they will provide support for the family, how they will apply the methods of work they learned for ADHD etc.

When the research results are analyzed, it was seen that the definition of ADHD differs in terms of the features included in the last questionnaire with teacher candidates. While teacher candidates before taking the course define ADHD as a kind of disability; after the course, they stated that ADHD has different disorders than a single type with symptoms such as attention problems, hyperactivity, and impulsivity. This conclusion has similarities with the definitions that emphasize this aspect of ADHD in the literature (Gümüş, 2015; Rider, 2015). The teacher candidates also emphasized the cooperation with the family of the child with ADHD and the exchange of ideas, after the ADHD course. Family is an important data source in every process, starting with the diagnosis phase of a child with ADHD, since the family has the chance to observe the child's behavior more than the teachers (Sürücü, 2015). Within the scope of accurate and effective communication with families with children with ADHD, teacher candidates expressed the importance for giving various trainings to the family and sharing information with them. Under the headings of introducing families to ADHD and behavioral problems and informing them about the reasons for their occurrence, applying special time, showing interest in the positive behavior of the child and increasing compliance, providing effective instructions, ensuring the child's self-distraction without disturbing the environment, points system, and other useful methods should be provided with various training, as it is also stated in the literature (Gümüş, 2015; Stein, 2002). Teacher candidates stated that individuals with ADHD are having social problems, difficulties in communication, and low academic success, especially in the focus of psychological problems. When the literature is examined, the most important issue in the child's life is whether ADHD is treated or not. When ADHD is not treated, child shows lack of self-esteem, inability to reveal their capacity, academic failure, deterioration of school and teacher relations, deterioration in parents and family relations, deterioration of friend relations, restriction of social activities, and behavior problems (Abalı, 2012).

5.Recommendations

The analysis of the research results leads to two groups of recommendations; the first group is linked with the ADHD course improvements and the second group is linked with the improvement of the education of future teachers for working with children with ADHD.

The first group of recommendations linked with the subjects that can be added in the ADHD course curricula:

- include more experiential studies,
- plan observation of students with ADHD,
- observation while testing and diagnosing ADHD,

- observation of diagnosing stages,
- practical example of precautions needed for child with ADHD in the course
- include different research is with learning methods.

The second group of recommendations includes:

-Since the results in this study showed that teacher candidates' concept of association changed after the course, it is clear that the ADHD course should be obligatory in the program for preschool and primary school teachers for two reasons. First, none of the future teachers should stay with a negative opinion about ADHD even before they have an opportunity to work with it. Second, ADHD in children is common condition and since most of the teachers will have at least one student with ADHD in their classroom, they should be well prepared with knowledge.

-The processes of teacher candidates gaining experience in practice schools are important part of the profession. The effectiveness of teacher candidates increases with experiences they have demonstrated during the teaching process. In this context, within the scope of teacher education, observations in schools should be provided for teacher candidates, making the observation of students with special educational needs, including ADHD, available.

-Most of the ADHD researches are medical based. We need more studies about ADHD in schools, and the teachers experience with ADHD. We also hope that this research will be the basis for much other research examining the teacher candidates as a group, which will work with these children in future.

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Social Media Addiction and Academic Adjustment: The Mediating or Moderating Effect of Grit Personality

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ABSTRACT

The high attrition rate among Malaysian tertiary students have drawn the attention of educators and policy makers, and poor academic adjustment is regarded as one of the factors. Therefore, it is important to find out factors that are relevant to their poor academic adjustment so that intervention programs can be designed to improve their adjustment. Social media addiction and the grit personality have found to be significant factors that affect academic performance. However, it is not clear how the three variables interact with each other. Accordingly, this study adopts the essentialist and contextual perspectives to examine the relationships among these three variables, especially whether grit is a mediator or moderate for the relationship. 210 undergraduates were recruited by using the purposive sampling method and were asked to fill in a questionnaire. Partial Least Squares Structural Equation Modelling was used to analyze the data. The results showed that social media addiction is negatively associated with grit personality and academic adjustment, and grit is positively associated with academic adjustment. In addition, grit is a statistical mediator rather than a statistical moderator for the effect of social media addiction on academic lifestyle. The findings support the contextual perspective on personality that grit personality is a state that can be changed by certain social context. The findings reveal the importance of providing a positive social context for tertiary students who are undergoing a transition period, so that their grit personality can be developed and thus enhance their academic adjustment.

Keywords:

academic adjustment, social media addiction, grit, tertiary education, Malaysia

1. Introduction

Poor academic adjustment has been found to be an important factor that is relevant to the high attrition rate among Malaysian tertiary students, and poor academic adjustment is also found to be relevant to the social media addiction and grit personality. However, it is not clear whether the relationship between social media addiction and academic adjustment are moderated or mediated by grit personality. If grit is a mediator, it indicates the grit level can be affected by the external environment. Therefore, it will be important to create a supportive environment to improve the grit level of tertiary students, so that their academic adjustment can be improved. If grit is a moderator, it indicates different levels of grit personality can be interacted with social media addiction. Therefore, it is important to focus on students with lower levels of grit to assist them to reduce their addiction on social media, so that their academic adjustment can be improved.

The number of students enrolled in tertiary education in Malaysia has increased from 277 185 in 2003 to 373 209 in 2013 (Malaysia Ministry of Higher Education, 2015). Nonetheless, it is estimated that 3000 out of 168 000 college students who pursued their studies for certificate and diploma would not be able to graduate, and only 83000 out of 100000 students who went for their degree program are able to finish their program (Lajjun,

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2012). In other words, the dropout rate of tertiary undergraduates in Malaysia is about 17.5% (Govindarajo & Kumar, as cited in Ang, Lee, & Dipolog-Ubanan, 2019) and thus drawn the attention from educators and policy makers.

The high attrition rate among tertiary students can be attributed to their problems in academic adjustment (Baker, 2004). Academic adjustment is known as the ability of an individual to maintain positive interactions with an academic setting, as well as being able to cope with the requirements and demands of the academic setting to achieve academic success (van Rooij, Jansen, & van de Grift, 2018). Academic adjustment involves three dimensions: academic lifestyle, academic motivation and academic achievement. The academic lifestyle is about the discrepancy between the role as a student and individual, the academic achievement is about the level of satisfaction on academic progress and performance, and academic motivation is the strength of motivation to continue and complete the academic study (Anderson, Guan, & Koc, 2016).

Studies have been conducted to find out the factors that are associated with poor academic adjustment. Van Rooij et al. (2018) proposed a conceptual framework to examine the effects of motivation and behavioral factors on academic adjustment. They recruit 243 first year undergraduates in the Netherlands to fill in a questionnaire, and they found that intrinsic motivation, degree program satisfaction and self-regulatory study behaviors are positively associated with academic adjustment.

Similar to self-regulation, grit personality has also found to be a factor that relevant to academic adjustment in university. Duckworth, Peterson, Matthews and Kelly (2007) define grit as a positive personality that is based upon an individual's passion for his or her long-term goals and perseverance. They characterize gritty individuals by their capacity to withhold against challenges and to put in as much effort as possible to overcome different challenges, but still able to maintain interests, passion and the amount of effort into a task despite failing many times.

Studies found that grittier students are more likely to remain successfully in school, to have higher academic performance and academic satisfaction, and graduate from their high school (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Siah, Ong, Tan, Sim, & Thoo, 2018). Eskreis-Winkler et al. (2014) conducted a study by recruiting 4813 high school juniors from public schools in Chicago to fill in a self-report questionnaire. They found that grit is a significant predictor for the retention in high schools, even after controlling the school motivation, academic conscientiousness perceived supports from schools, teachers, parents and peers, standardized achievement tests, and some demographic information. Siah et al., (2018) conducted a survey by recruiting 400 undergraduates from Malaysia. Their results also found that grit is positively associated with Grade point average and Cumulative Grade point average. In addition, Siah et al (2019) recruit 430 undergraduates from Malaysia also found that grit is negatively associated with academic procrastination.

Besides personality, addiction on the internet has also been found to be associated with poor academic adjustment and performance (Lepp, Barkley, & Karpinski, 2014). Social media or social networks are websites or software where people create profiles and can access through various platforms and devices for various social activities such as file sharing, chatting, online gaming, etc. (Bányai et al., 2017). According to a report from Malaysian Communications and Multimedia Commission (2018), visiting social networking platforms were the most common activities for Internet users, and the most popular communication and social networking platforms are WhatsApp and Facebook. In addition, about half of internet users are adults in their 20's and 30's. Among full time students, 70.7% currently enrolled in college.

The reasons that undergraduates are more likely to become addicted to social media can be because the internet offers users high autonomy, opportunities for identity exploration, and a space free of parental control, and thus undergraduates found that the internet is highly appealing (Reinecke et al., 2018). In addition, undergraduates are under the transition period that they need to explore and develop their own identity, and they are more likely to be attracted by pleasurable experience brought by the social media that provides immediate gratifications, such as playing games and watching videos (Thatcher, Wretschko, & Fridjhon, 2008).

Studies found that social media addiction is related to the personality of undergraduates. Social media addiction is an addiction that stems from the excessive usage of social media websites like Facebook, Instagram and Twitter, and people with this addiction is hard to control their urge to use the social media (Hou, Xiong,

Jiang, Song, & Wang, 2019). Adolescents and young adults who are high in self-control are less vulnerable to the risk of addiction while compared to other age groups (Ni, Qian, & Wang, 2017). Similar to self-control, grittier individuals have also found to be less addicted to internet and mobile phone addiction (Maddi et al., 2013; Siah, 2016; Siah et al., 2019). Maddi et al. (2013) recruited 425 undergraduates at a public university in California to complete a survey study, they found that grit is negative correlated with problematic internet usage. Also, Siah (2016) recruited 214 undergraduates at a university in Malaysia to complete a survey study. He also found a negative association between grit and mobile phone addiction. Moreover, Siah et al. (2019) recruited 430 undergraduates at a university in Malaysia to complete a survey study, they also found a negative association between grit and internet addiction.

1.1 Research Aims

Even though studies have shown the associations among grit, internet addiction and academic adjustment, in our knowledge, no study has been conducted to examine the mechanism among these three variables. Chaplin (2007) proposed a mediator and moderator model to understand the possible roles played by personality in a relationship, whether personality is a mediator or a moderator for the relationship between variables. The mediator and moderator models are conceptually similar to the essentialist and contextualist perspectives on personality that proposed by Caspi et al. and Specht et al. (Caspi, Roberts, & Shiner, 2005; Specht, Egloff, & Schmukle, 2011).

The essentialist perspective on personality claims that personality is a genetic trait that is stable and difficult to be changed, so personality is more likely to play the role as a moderator, and thus studies adopt this perspective concern on how different personalities interact with each other or how personality and situation interact with each other and thus create certain psychological outcomes (Caspi et al., 2005; Chaplin, 2007; Specht et al., 2011). Based on this perspective, we expected that grit is a moderator for the effects on social media addiction on academic adjustment.

However, the contextualist perspective on personality claims that personality is a state that is possible to change due to the rapid physical, cognitive, and social changes, so personality is more likely to play the role as a mediator, and thus studies adopt this perspective concerns on the issue of why a relationship occurs (Caspi et al., 2005; Chaplin, 2007; Specht et al., 2011). Based on this perspective, we expected that social media addiction among undergraduates would affect their grit level and thus affect their academic adjustment.

The hypotheses of this study are as follows:

H1: social media addiction is negatively associated with academic adjustment

H2: grit is positively associated with academic adjustment

H3: social media addiction is negatively associated with grit

H4: grit is a moderator for the effect of social media addiction on academic adjustment.

H5: grit is a mediator for the effect of social media addiction on academic adjustment.

The conceptual framework is shown in Fig 1.

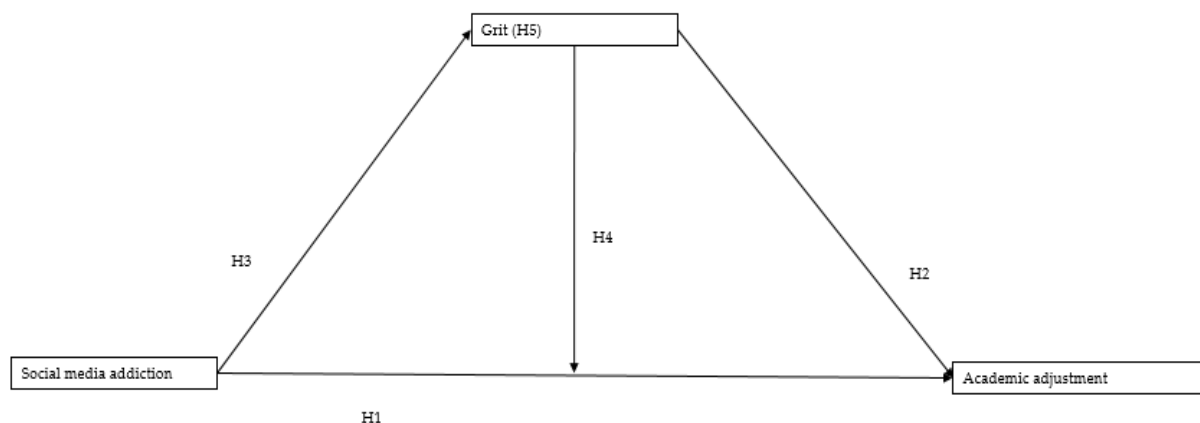


Fig 1. Conceptual framework

2. Method

2.1. Participants

A total of 225 questionnaires were distributed to undergraduates at a university. As 15 questionnaires are incomplete, so the valid questionnaire is 210 and the response rate is 93.33%. This sample size is larger than the priori power analysis by G*power program which indicates that a sample size of 77 would be sufficient when there are three predictors, with a power of 0.8, an alpha of 0.05 and a medium effect size. Among the participants, 60.95% were females and their mean of age was 15.09 (SD = 1.65).

2.2. Instruments

A questionnaire was designed. On the cover page: an introduction of the purpose of the study, information about confidentiality, and their right of not participating was given. After that, participants were asked to fill in their demographic information and three measurements.

2.2.1. Demographic Information

In this section, participants were asked to fill in their gender and age.

2.2.2. Academic Adjustment Scale

This academic adjustment scale consists of nine items (Anderson et al., 2016). Participants were asked to tick a number to indicate the extent that each item applies to them (1 = rarely applies to me to 5 = always applies to me). The sample items are 'I am enjoying the lifestyle of being a university student' and 'I am satisfied with my ability to learn at university'. The test-retest reliability is .72, and the academic adjustment scale is also found to be significant correlated with the college adjustment test and the academic motivation scale.

2.2.3. Social Media Addiction Scale (SMAS) – Student Form (SF)

This SMAS-SF consists of 29 items (Sahin, 2018). Participants were asked to tick a box to indicate the extent that they agreed with each item (1= strongly disagree to 5 = strongly agree). Examples of the items are "A life without social media becomes meaningless for me" and "I notice that my productivity has diminished due to social media". The internal consistency coefficient was .93 and the construct validity was also supported by the confirmatory factor analysis.

2.2.4. Short Grit Scale (Grit-S)

This scale consists of eight items (Duckworth & Quinn, 2009). Four items are reversed. Participants were asked to tick a box to indicate the extent that each item describes them well (1 = very much like me and 5 = not like me at all). Sample items are 'I have achieved a goal that took years of work' and "my interests change from

year to year". The internal consistency ranges from .73 to .83 across four different samples, and the construct validity was also supported by the confirmatory factor analysis.

2.3. Procedure

After getting approval from the Ethical and Scientific Committee of the university, the questionnaires were distributed to undergraduates at a university using the purposive sampling method. Purposive sampling is a type of non-probability sampling method where the sample selection is based on the fit of the sample for the purpose of the study with special inclusion and exclusion criteria (Daniel, 2011). In this study, the criterion of sample is that the participants should be undergraduates. Undergraduates were approached at different locations at the university that most undergraduates can be found, including the library and cafeterias. Students are approached and the aims of the survey were introduced first, and then their consent to answer the questionnaire were asked. Those who agreed to fill in the questionnaire were then informed of their right of withdrawal from the study anytime they want to and the confidentiality of the data. The questionnaire was collected after they completed the survey. The whole process took about 10 to 15 minutes.

2.4. Data analysis

The data was keyed in an excel file. Partial Least Square Structural Equation Modelling was analyzed by SmartPLS program (version 3). At the first stage, the measurement model assessment was conducted to examine the reliability and validity of the measurements. The construct reliability and discriminate validity of all measurements were examined first, and followed by examining any collinearity issue among the measurements. The structural model assessment was then run to examine the path coefficients based on the conceptual framework.

3. Results

3.1. Measurement Model

3.1.1. Construct Reliability and Discriminant Validity

The composite reliability values of all the three measurements are .79 for academic adjustment, .82 for grit and .89 for social media addiction. All values are exceeded the recommended value of .7 (Hair Jr, Hult, Ringle, & Sarstedt, 2016). Accordingly, the findings suggested that the constructs reliability are acceptable. In addition, the discriminant validity of all measurements are also acceptable as the heterotrait-monotrait ratios of all results are below the critical values of .85 (Henseler, Ringle, & Sarstedt, 2015); .68 for academic adjustment and grit, .45 for academic adjustment and social media addiction, and .43 for grit and social media addiction.

3.1.2. Coefficient of Determination, Effect Size and Collinearity Statistics of Measurements

The results of the analyses were shown in Table 1. No collinearity issue was found as the variance inflation factor of all scales were also below 5 (Hadi, Abdullah, & Sentosa, 2016). Both grit and social media addiction explain 32.5% of the total variance of academic adjustment, which is a large effect size. In addition, social media addiction has a moderate effect size on grit, $f^2 = .18$, and grit has a large effect size on academic adjustment, $f^2 = .25$.

Table 1. Coefficient of Determination (r^2), Effect Size (f^2) and Collinearity Statistics (VIF) of Measurements

Dependent variables	Predictors	r^2	f^2	VIF
Grit		.15		
	Social media addiction		.18	1.00
Academic adjustment		.33		
	Social media addiction		.06	1.18
	Grit		.25	1.29
	Grit x social media addition		.02	1.09

3.2. Structure Model

As shown in Table 2, after controlling gender and age, social media addiction not only affects grit level but also academic adjustment, $ps < .01$. In addition, grit also affects academic adjustment, $p < .001$. The results failed to reject the hypotheses one, two and three.

Table 2. Path coefficients of all measurements

	Hypotheses	Beta	SE	T values	P Values
<u>Direct effect</u>					
Social media addiction → Academic adjustment	H1	-0.23	.07	3.37	.001
Grit → Academic adjustment	H2	0.47	.07	7.17	< .001
Social media addiction → Grit	H3	-0.39	.07	5.73	< .001
<u>Control variable</u>					
Age → academic adjustment		-0.06	.07	0.94	.349
Gender → academic adjustment		-0.01	.07	0.01	.990
<u>Moderating effect</u>					
Social media addiction x Grit → Academic adjustment	H4	0.09	.05	1.77	.077
<u>Mediating effect</u>					
Social media addiction → Grit → Academic adjustment	H5	-0.18	.04	4.37	< .001

3.3. Mediating and Moderating Effects

As shown in Table 2, the specific indirect effect indicated that grit is the statistical mediator for the effect of social media addiction on academic adjustment, $p < .001$. Following the decision tree from Zhao (2010), the results indicate a complementary mediation as the direct effect of social media addiction on academic adjustment is also significant, $p = .001$. Therefore, the contextualist or the mediator model is supported. However, as the interaction effect between social media addiction and grit on academic adjustment is not significant, $p = .077$, and also has a small effect size on academic adjustment ($f^2 = .02$). Therefore, the essentialist or the moderator model is not supported.

4. Discussion

Poor academic adjustment has found to be a factor that is relevant to the high attrition rate in tertiary education, it is therefore important to find out factors that are relevant to their poor academic adjustment. Studies found that both social media addiction and grit personality have a significant relationship with academic adjustment, and grit has a significant relationship with internet and mobile addiction. Nonetheless, the relationships among the three variables have not been examined. This study aims to adopt the existential and contextual approaches to examine this issue. Based on the existential approach, it is expected that grit is a moderator for the effects of social media addiction on academic adjustment. However, based on the contextualist approach, it is expected that grit is a mediator for the effects of social media addiction on academic adjustment.

Firstly, the results found that social media addiction is negatively associated with academic adjustment but grit is positively associated with academic adjustment. The results are not surprising as they are consistent with the findings from other studies which found that internet addiction and mobile phone addiction affect

academic adjustment of students (Maddi et al., 2013; Siah, 2016), and also a meta study which conclude that grit has a strong positive relationship with academic performance (Credé et al., 2017).

Secondly, the results support the mediator model rather than the moderator model to understand the roles played by grit personality in the relationships between social media addiction and academic adjustment. In other words, grit personality can be changed by the social context instead of a state that is not changeable.

It could be because undergraduates experience a transitional period and thus increase their chance of depending on social media to cope with their problems. The frequent use of social media would reduce undergraduates' grit level to pursue their long-term goal and hence create more difficulty in academic adjustment. These findings are consistent with the contextual perspective on personality that indicates that a personality is a state that can be changed in certain social context.

5. Limitation

However, the interpretation of the findings should be cautions. Since only undergraduates from a university are recruited, the findings may not be able to generalize to all undergraduates. More studies with different populations are required to examine the robustness of the finding. In addition, as cross-sectional design is used in this study and all variables are simultaneously assessed, it is important to be aware of the predictive limitations and future study may consider to use a longitudinal design to examine the cause and effect relationship.

6. Conclusion

The results are alarming as many undergraduates face the social context that make them easily be addicted to internet for the pleasure of getting immediate gratification, as many of them have just left their homes and stayed with friends or alone, so they are easily use the social media as a way to cope with their loneliness, personal relationships and stress (Reinecke et al., 2018). Accordingly, it is important for educators and policy makers to provide undergraduates a supportive ecology context to assist them to undergo a transitional period of life (Tezci, Sezer, Gurgan, & Aktan, 2015). A supportive environment in the university, such as providing university accommodation so that tertiary students can stay in the campus with proper guidance and arranging more activities for students to spend their time in, not only would enhance undergraduates' passion and motivation to study well, but also would improve the development of their positive personality. With strategies to encourage students to engage in more activities that are positive for their development may able to prevent their addiction in social media.

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Investigating the Backwash Effect of Higher Education Exam (YGS) on University Students' Attitudes

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ABSTRACT

The application of high-stakes tests to choose students for higher education in Turkey has been considered as a reliable and effective way of assessment for so long. However, the application of a multiple-choice test in testing various skills could bring a number of side-effects with itself. This study aimed to investigate the backwash effect of the university exam on university students' attitudes. To be able to collect data from participants, it was first aimed to develop an attitude scale to examine the washback effect of Higher Education Exam (YGS). Considering the views of 5 academicians from educational sciences, ELT and testing disciplines, a preliminary version of the washback scale was developed. Next, the new scale was piloted in order to do its exploratory and confirmatory factor analyses. Third, the scale's internal reliability was measured and the scale which had 3 factors and 13 items was proven to be a valid and reliable tool to collect data including university students' views towards the washback effect of the university exam on their attitudes. Data of this study were collected from 5 state universities with the contribution of 1617 students from different grades and disciplines. The results showed that YGS had negative washback effects on university students in terms of test anxiety and study habits but considering its impact on students' time management skills, YGS was reported to have a positive impact on participants.

Keywords:

High-stakes tests, scale development, university entrance exam, washback effect, YGS

1. Introduction

Among the numerous alternatives in assessment, mass-testing and particularly high-stakes tests can be considered as reliable, economic and quick ways of assessing tens of thousands of students at a time, on the same criteria, in the same conditions with minimum human interference and bias (Palmer, 1996; Wilson, 1991). From this perspective, the idea of utilizing high-stakes tests including multiple-choice items could be considered as the right path to ensure reliability and objectivity; however, if possible washback effects of such tests are taken into account, it is clear that, high-stakes tests have a number of backwash effects on learners' psychology along with their future learning habits and preferences, despite its numerous advantages (Aydn, 2009; Brown, 1999; Gardner, 1997; Green, 2007, Horwitz, 1986). In her book, Hammond (2014) criticizes the idea of high-stakes testing using multiple choice questions since students are not required to discover, appraise, synthesize, and use their background knowledge in necessary contexts, solve real problems, and produce their own research conclusions but directed to dependence on rote learning, repetitive tasks and a 'one kind fits all' philosophy of testing. On one hand, education reformists agree that no matter what grades or what schools are the students studying at, they have to be equipped with the 21 Century skills which can be listed as researching, creating, problem-solving, critical thinking, design making and communicating

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(Brown, 2004; Hughes, 2003; Linn, 2000, Palmer, 1996). On the other hand, the anxiety of fairness and potential bias in testing creative skills encourage test makers to generate controlled, basic, single-dimensional but reliable and objective tests, which are criticised harshly in terms of their validity (Brown, 1998; Cimbricz, 2002; Smith, 1987; Şenel & Tütüniş, 2011; Wall, 1993).

1.1 Higher Education Exam in Turkey

Having a complex centralized educational testing system, Turkey adopts a nation-wide exam-oriented education approach. Therefore, most schools (either state or private) aim to prepare their students to these exams and such an idea creates a number of washback effects on students and their learning habits (Karabulut, 2007; Kelecioğlu, 2002; Külekçi, 2016; Özmen, 2011; Sevimli, 2007; Yavuzer & Göver, 2012)). Since mid-1970s, almost all university student admissions in Turkey have been done according to the scores students get from ÖSYM (Student Measuring, Selection and Placement Center, which is the authorized institution responsible for designing and organizing the university entrance examination and several other large-scale tests in Turkey) exams (Hafalir et.al., 2018). Higher Education Exam (YGS) is a criterion referenced test, in which about 180 questions are asked in two sessions and each time a 3-hour-time is given to students who are allowed to take this exam only at the end of Grade 12. Although various item discrimination techniques are used in the exam to choose the most eligible students, time management and test familiarity are other important qualities that test-takers have to present. More than 2 million students take this exam every year, and unfortunately only a half of them are placed into undergraduate programs based on their scores and the preferred faculties. Since almost half of the test takers fail in this exam, students are under a great pressure to be able to perform well in a limited time and make as fewer mistakes as they could to have higher points than the others (Kelecioğlu, 2002). Stobart (2003) stated that formal testing is not a natural process and it definitely has some consequences; therefore; it would be an optimistic view to think that students take this test at the end of the 12th grade at high school and after the test everything related to it would be forgotten. Thus, as Ekici (2005) and Kelecioğlu (2002) mentioned, YGS certainly has a number of positive and negative impacts on high school students and their academic lives at university.

Studies on test impact of YGS (which are quite few in number) in Turkey have mostly focused on how students feel before the exam, what strategies they have for motivation, how much the content of the exam and students' formal education correlates. Kutlu (2001) reported that high school students are anxious about a possible failure and the criticism they would take from their neighbourhood. It was also stated that the exam was considered as a remark of academic prestige, so families encourage children to have satisfying scores not only to be placed into better academic programs but also to have some kind of social privilege in the society. Moreover, the fear of missing the test in the exam morning or having a sickness that would reduce test-takers' performance were also reported as sources of anxiety that students fear about YGS (Baran, Şimşek; 2000).

The impact of YGS content on national curriculum was another subject which researchers in the field have focused on considering the backwash effects of the exam. Firat and Yaratana (2013) studied teachers' and students' attitudes towards YGS in terms of its content and to what extent it correlates with the existing high-school syllabus and their study showed that not only the teachers but also their students observe

inconsistencies between the questions of YGS and national curricula. Sağlam (2018) made a similar study and she reported that there were both negative and positive backwash effect of YGS on teaching techniques, preferred materials, and classroom practices in state high schools in Turkey. Considering students' skill and readiness, Baştürk (2011) conducted a study to investigate how studying YGS would affect learners' way of mathematics learning and he found that the preparing for YGS had left negative impacts on student learning in mathematics. He added that students' learning was mostly based only on recalling a memorized formula or a geometry rule and surprisingly the students' mistakes studied in that research were mathematically very poor.

Only two studies, which were carried out by Ekici (2005) and Kelecioğlu (2002), focused on the effect of YGS on students' way of studying, their preferences on educational contexts and personal feelings. First, Ekici (2005) reported that high school students have positive attitudes towards YGS exam and their views do not differ according to their genders or the types of high schools they study. Secondly, Kelecioğlu (2002) concluded that YGS was considered as the main purpose of studying for high school students, therefore, most of them apt to ignore or underestimate their subjects and regular exams at high schools, which could be considered as another backwash effect of the higher education exam.

Research findings revealed that most of the attention on washback effect of YGS was directed to high -school students (Çapulcuoğlu & Gündüz, 2013) and there are few studies which focused on how YGS affect students in their university years. Considering the fact that all the freshman students in Turkey start their academic careers after spending a lot of time and effort to pass YGS, it would be wise to investigate the effects of this exam during their university education and see if this affect is positive or negative on students' learning habits.

2. The Study

2.1. Objective of the study

The main purpose of this research was twofold. First, a reliable and valid scale was designed to collect data from university students on their attitudes towards the backwash effect of YGS and to check if these attitudes are positive or negative depending on some variables including participants' gender, faculty and their classes. Based on the aims mentioned above, the study tries to answer the following research questions:

1. What are the results of the exploratory & confirmatory factor analyses of Higher Education Exam Washback Effect Scale (HEWES)?
2. What are the attitudes of undergraduate students towards the backwash effect of YGS and do they differ according to students' gender, faculties and classes?

2.2. Methodology

The research model of this study, which was carried out in 2018-2019, was the general screening model and convenience sampling method was chosen to collect the maximum amount of data from voluntary participants living in 3 different cities in Turkey.

2.3. Participants

HEWES (Higher Education Exam Washback Effect Scale) was designed with the contribution of 342 voluntary students from 5 state universities in Eskişehir, Kütahya and Ankara. The 342 students were divided into two groups to explore and confirm the factor structure of HEWES. The first group's (177 students) data were used to identify HEWES' scale & factor reliability and Exploratory Factor Analysis' results. After defining HEWES' factor structure, the second group's (165 students) data were used to confirm HEWES' factor structure and its reliability. The data gathered from the scale development process of HEWES were not used in defining students' attitudes against washback effect of YGS. After the scale was developed, the survey forms were sent via e-mail to students attending 5 state universities in Ankara, Eskişehir and Kütahya and a total of 1654 responses were received. Of all the responses, 37 forms were excluded from the analysis because some of them did not provide personal data and the others did not complete some parts of the scale.

There was a homogeneous distribution among participants according to their genders (49.2.7% were males and 50.8% were females), classes (30% freshman, 27% sophomore, 23% junior and %20 senior) and faculties (%29 social sciences, 25.4% educational sciences 22,6% Master of Sciences and 23% other faculties (fine arts, aviation, sports sciences etc.).

2.4. Instruments

Development of HEWES was carried out by following some steps suggested by the experts in the field (Büyüköztürk, 2013; Kocaman & Cumaoglu, 2014; Şeker & Gençdoğan, 2014, Vieira, 2011). First, the objectives, the participant group and the required time were defined. Before the item writing process, a group of 4 university students from different disciplines were interviewed by the researcher to gather some preliminary ideas about the possible backwash effects of YGS on students' academic lives in university. The effects of the test commonly mentioned by these students were determined and later used to gain some insights about students' feelings towards the university entrance test in item writing.

Secondly, the focus of the scale was finalized and the related items were written (initially 23 items were prepared). Thirdly, the draft was checked and revised by 5 experts in educational sciences (3 items were excluded after the expert-feedback). Next, the scale was piloted for exploratory & confirmatory factor analyses (7 items were excluded from HEWES because of overlapping in factor loads and 13 left in total) and finally, the newly developed scale HEWES with 3 separate factors and 13 items was approved as a valid, concise and reliable scale for data collection.

2.5. Data Collection & Analysis

After taking necessary official permissions from 16 faculties of 5 state universities in Ankara, Eskişehir and Kütahya, data of the study were collected from 1654 students (37 forms were excluded) via their emails by using google forms. All the responses were encoded and prepared for statistical analyses by the researcher. IBM-SPSS 22 and IBM-AMOS programs were used for data analysis purposes. Kolmogorov-Smirnov & Shapiro-Wilk and Homogeneity tests were preferred to identify the distribution (in terms of normality and homogeneity) of the data. Since it was found that the data collected from university students were not

homogeneous, non-parametric tests were used instead of parametric ones. To compare the variance of group means, Tamhane test was preferred to analyse the students' views towards the backwash effect of YGS.

3. Findings

3.1. Exploratory Factor Analysis of HEWES

The PCA (Principal Component Analysis) was used to check the construct validity of HEWES. Before the analysis, KMO (Kaiser–Meyer–Olkin) and Bartlett Sphericity Tests were conducted to identify whether the data were appropriate for factor analysis. Furthermore, to have a better view of the factor construction, varimax rotation was utilized on the data gathered from university students. KMO value was 0.763, and since it was higher than the limit 0.50 (Doğan & Doğan, 2014), the data set was proper for applying factor analysis. Moreover, the Bartlett Test result was 0,0001 [$\chi^2 = 614,570$; $df=176$, $p<0.01$] and it also proved that factor analysis could be done using the data set. In the next stage, in principal component analysis items: 4, 10, 12,15 and 19 gained lower factor loads than 0.30, and the items 11 and 17 formed in a single factor, so all these items were excluded from HEWES since Özdamar (2013) suggested that there should be at least 3 or more items in a real factor and those items must have factor loads over 0.30.

Table 1. HEWES Initial Factor Loads and Item Correlation Results

Item	Initial Factor Loads	Item Correlation	Item	Initial Factor Loads	Item Correlation
I1	0.759	0.677	I9	0.462	0.494
I2	0.642	0.624	I13	0.442	0.478
I3	0.811	0.383	I14	0.571	0.627
I5	0.581	0.549	I16	0.589	0.409
I6	0.337	0.361	I18	0.721	0.776
I7	0.513	0.451	I20	0.462	0.391
I8	0.503	0.448			

Variance (3 Factors explain) = 59.813%, Cronbach Alpha = 0.816

Table 1 shows that factor load values are between 0.337 - 0.811 and item total correlation amounts range between 0.361 and 0.776 (none was below 0.30). This 3-factor structure accounts for the views of participants towards backwash effect of YGS up to 59.813% in total and as for the reliability, the Cronbach Alpha was 0.816, which means that HEWES could be classified as a highly-reliable scale.

Next, the anti-image screening technique is used to check whether the factor loads contribute well to the factor structure over the critical limit 0.50 (Büyüköztürk, 2013).

Table 2. Anti-image Correlation Values of HEWES

Item	Anti-image	Item	Anti-image
I1	0.933	I9	0.831
I2	0.823	I13	0.742
I3	0.703	I14	0.911
I5	0.891	I16	0.816
I6	0.674	I18	0.909
I7	0.840	I20	0.812
I8	0.855		

Anti-image correlation values of all the items in Table 2 are over 0.50 (between 0.674 to 0.933), which means that the items of HEWES contribute well to the factor structure. The third step was to identify the theoretical sub-categories of the structure by using varimax rotation.

Table 3. HEWES Varimax Rotation

	1	2	3
I18	,816		
I16	,681		
I13	,670		
I8	,592		
I7	,586		
I1	,547		
I9		,815	
I6		,738	
I5		,683	
I2		,529	
I20			,809
I14			,689
I3			,597

Varimax Rotation revealed that there are 3 subcategories in HEWES. The first subcategory items 18,16,13,8,7,1 were all related to test anxiety; therefore, this factor was categorized as “Test Anxiety” and the listed items were re-coded as 1,4,7,10,12,13 respectively. The second subcategory items 9,6,5,2 were related to students’ study habits, so this factor was named as “Study Habits” and the items were renamed as 2,5,8,11. The last factor’s items 20,14,3 were related to students’ time managements skills, so the third factor was labelled as “Time Management” and its items were re-coded as 3,6,9.

3.2. Confirmatory Factor Analysis of HEWES

The final stage of developing the scale was to check its factor structure with the responses of a new participant group and compare whether the factor structure found in exploratory analysis could be confirmed by confirmatory factor analysis. The projected model of “HEWES” was given in Figure 1.

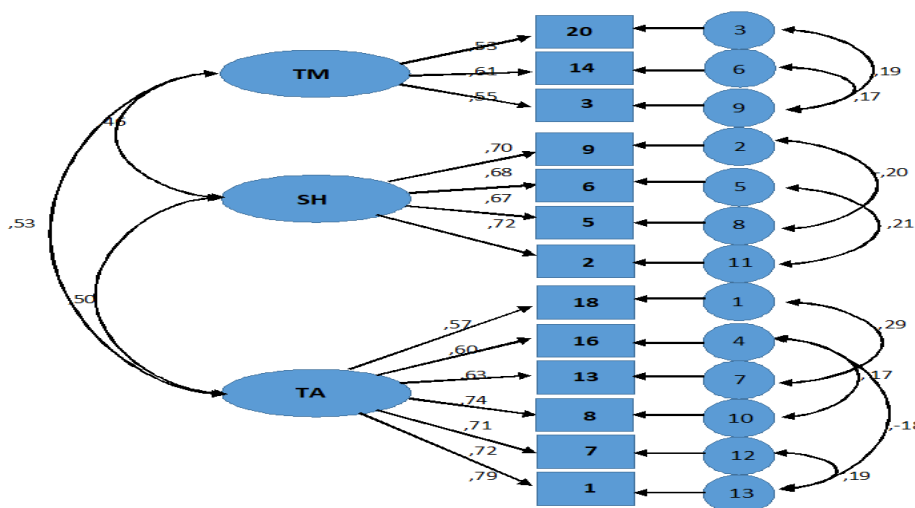


Figure 1. Confirmatory Factor Analysis Model of HEWES

(Figure 1 Abbreviations: **TM**: Time management, **SH**: Study Habits, **TA**: Test Anxiety) Confirmatory Factor Analysis (CFA) verified the factor loads of 3-factor HEWES and its corresponding items. The analysis revealed that the values gained from CPA were satisfactory ($\chi^2 = 290766$, (df=164, $p < .01$), ($\chi^2/df=1.77$)). It is known that (Kline, 2005 and Vieira, 2011) if $\chi^2/df < 3.0$, there is a good match in structures. In Table 4, other critical values in confirmatory factor analysis were presented.

Table 4. CFA HEWES Goodness of Fit Values

χ^2	Df	χ^2/Df	RMSEA	AGFI	RMR	CFI
290.766	164	1.77	0.062	0.891	0.071	0.927

First, the most important value to check the goodness of fit in CFA was RMSEA and 0.062 meant a very good match because it was smaller than 0.08 (Cole, 1987; Kline, 2005; Vieira, 2011). Next, AGFI (0.891) was bigger than 0.080 and could be adequate for the match, also RMR (0.071) was lower than 0.10, CFI which must be over 0.90 was 0.927 and showed an indication of a successful match between HEWES' data set and the obtained structure (Jöreskog & Sörbom, 1993; Kline, 2005; Vieira, 2011). Finally, the reliability of the test was checked, and Cronbach Alpha was 0.806, which meant that HEWES could be considered as a reliable tool for data collection.

3.3. Findings Related to Backwash Effect of YGS

A total of 1617 students from 5 state universities voluntarily participated in this study between 2018 and 2019. The scale (HEWES), which was developed to collect data, was designed as a 5-point Likert scale having responses ranging from 1 (Strongly disagree) to 5 (Strongly agree). The scale had 3 sub-categories as *Test Anxiety, Studying Habits and Time Management* and students' views related to each factor were presented in this part under their factor names. University students' responses to the first section of HEWES, item means and item standard deviations were presented in Table 5.

Table 5. HEWES Factor 1 Test Anxiety Item Statistics

Item	Mean	Std. Dev.	N
1. YGS was a source of stress on me	4.32	.675	1617
4. Because of YGS I hate taking tests	3.95	.882	1617
7. YGS helped me to feel comfortable to take other tests	1.22	.573	1617
10. YGS test did not make me stressful	1.08	.321	1617
12. YGS changed my ideas about exams negatively	4.03	.651	1617
13. If necessary I would like to take YGS again	1.17	.382	1617

The first factor items of HEWES related to YGS effect in terms of test anxiety revealed that university students had negative attitudes towards YGS since the exam mostly demotivates students to take tests. It should be kept in mind that HEWES had response codes ranging from 1 (Strongly disagree) to 5 (Strongly agree) and when the students' views towards YGS were checked again it is clear that according to students' views, it

could be seen that participants did not want to take YGS even they had to since the test caused stress and anxiety on them. Next, the study aimed to check if students' answers differed according to their genders, faculties and classes. According to Tamhane test results, there was no significant difference among students' views in terms of gender ($p>0.5$). Nevertheless, when other independent variables like students' faculties and classes were analysed, there were significant differences among participants' views on backwash effect of YGS in terms of test anxiety ($p<.05$). Although they had mostly negative attitudes, students from aviation faculty (mean= 1.61) and fine arts (mean=1,83) were more neutral than the others towards the backwash effect of YGS in terms of anxiety. When the other variable (students' classes) was checked, it was seen that freshman ($m=1,03$) and sophomore ($m=1,09$) students had more negative attitudes towards the washback effect of YGS compared to junior ($m=1,32$) and senior ($m=1,41$) students, thus it was found that students' views tend to be more lenient towards YGS as they got older. Fine arts and aviation faculty students had distinctive responses to most of the items in this section. Compared to the views of other faculty students, aviation and fine arts' students gave more neutral responses related to the test anxiety effect of YGS. Moreover, the responses to Item 1 and Item 10 were striking because regardless of the participants' faculties, classes or genders, almost all reported that YGS was a remarkable source of stress for them. Thus, this amount of washback effect of a single exam is worth examining since we know that this is not the final high-stakes exam students have to take in their education lives.

The second sub-category of students' views towards YGS' washback effect was its effect on their studying habits. Items of this section were prepared to check if YGS had a significant effect on participants' studying habits at university.

Table 6. HEWES Factor 2 Study Habits Item Statistics

Item	Mean	Std. Dev.	N
2. YGS has changed my way of studying positively	1.21	.335	1617
5. YGS motivates learners to study hard	1.38	.485	1617
8. YGS positively contributes to students' learning	1.23	.403	1617
11. YGS helps students feel that learning is fun	1.07	.329	1617

The items in the second section of HEWES revealed that YGS had a negative effect on students' learning habits. When this effect was checked in terms of participants' genders, there was no significant difference between females' and males' views ($p>0.5$). However, results of the Tamhane analysis revealed that participants' responses changed significantly in terms of their classes and faculties ($p<.05$). As it was observed in Test Anxiety Factor results, aviation faculty (mean= 1.63) and fine art faculty students (mean=1,85) were found to be more neutral than the others towards the backwash effect of YGS on their studying habits. Participants' class variety was another independent variable that caused significant difference among university students' views. It was found that freshman ($m=1,09$) and sophomore ($m=1,18$) students had more negative attitudes towards the washback effect of YGS on their studying habits when compared to junior ($m=1,43$) and senior

($m=1,58$) students. Item 11 in this section showed us a dramatic fact about YGS' primary impact on learners. Because of YGS, learning was considered as something compulsory and mandatory by young learners who indeed have a long way to go in education and can explore lots of new and exciting things to learn on their own instead of spending hours to develop test strategies. YGS in this sense might have demotivating effects on students self-learning and curiosity since they spend most of their study time solving multiple choice tests.

Table 7. HEWES Factor 3 Time Management Item Statistics

Item	Mean	Std. Dev.	N
3. Because of YGS I manage my time better in real life	3.36	.803	1617
6. YGS affects test takers positively in terms of planning their studies	3.68	.713	1617
9. YGS positively contributes to students' time management	3.79	.761	1617

Items of the last section of HEWES revealed that YGS had a positive effect on students' time management skills. When this effect was checked in terms of participants' genders, there was no significant difference between females' and males' views ($p>0.5$). However, Tamhane analysis' results showed that participants' responses changed significantly according to their classes and faculties ($p<.05$). Unlike the difference observed in the previous two factors, fine arts' students reported more negative views in terms of YGS' backwash effect on their time management skills (mean= 1.88). Also, in terms of participants' classes, junior (mean= 2.68) and senior students' (mean= 2.48) attitudes against the exam's effect on their time management skills were more negative than the other two groups (freshman mean scores = 4.12, sophomore mean scores = 3.98). However, when we consider the total responses and overall means, we can conclude that YGS had a positive effect on students' time management skills since it helped learners control their time wisely while doing practice for the test, plan their study schedules and act accordingly despite a limited amount of time.

4. Discussion & Conclusion

This study was carried out between 2018 and 2019 to investigate the possible washback effects of YGS on university students. 1617 students from 5 state universities in Turkey participated in the study, and their views towards the backwash effect of YGS were collected through HEWES (the newly developed scale), which was designed to collect data for the study. The findings of the study revealed that YGS had an important negative effect on university students in terms of test anxiety. An important proportion of the participants (92%) reported that YGS caused a long-lasting exam-fear and they wouldn't take this test again because of the stress they had experienced before and after taking the test. Cimbricz (2002) pointed out a similar peril and warned that the tests which make students worried, stressful and anxious could not be classified as good tests even if they provide reliable scores. The initial aim of assessment and evaluation is to measure students' achievement in the most normal and usual way which would enable learners feel comfortable and do their best. Brown (2004) pointed out the same issue and added that test anxiety could affect standardized tests' validity and reliability since students would not perform well if they are under pressure.

In terms of test anxiety, it was observed that the level of exam-fear and stress among the participants reduce as the participants grow older since the responses were significantly more negative among freshman and sophomore students when compared to juniors and seniors. Another interesting finding was that students from fine arts and aviation faculties differed significantly from the other faculty students in terms of YGS anxiety. The reason of this difference could be the multi-stage student admission systems of these faculties. Taking the necessary score from YGS is not enough to be a student in fine arts or aviation faculties in Turkey, so a student should take extra tests made by the faculty administrations to prove his/her required skills and this fact might reduce the importance of YGS in those students' minds. Therefore, those participants' views who were studying at aviation and fine arts faculties differed from the rest significantly about test anxiety. Ekici (2005) stated a similar finding in her study. She reported that the level of test anxiety might differ among students according to their goals, experience and academic disciplines. Readiness for the test is another concern and Ekici (2005) underlined the fact that the students who had private courses for the test feel less anxious than the others who did not. Moreover, exam burn-out is a critical psychological problem in academic life and students who contributed to this study showed the signs of this burn-out often through the answers they gave related to test anxiety. Hughes (2003) warned that too much testing could cause a significant amount of weariness on students and the findings of this study prove this fact. YGS is not the only and the last exam students take in their academic lives in Turkey, they will have far more exams. Thus, we should help them feel that exams are just a part of their educational measurement done not only for elimination but also for diagnosis and pace record keeping. Although they stated so, students shouldn't hate taking tests but findings of the study revealed that YGS has a rather unwanted backwash effect on them. What is more, 89% of the participants stated that YGS had a negative effect on their studying habits.

Considering the testing system in Turkey, from the early ages till their 20s, students have to prepare for high-stakes tests to study at a popular high school, university and at a promising department of that university to find a good job. Success in those exams is the mediating factor and the key issue, unfortunately the focus of all the schools in Turkey shifted to the statistics of how many of their students pass those high-stakes tests, what rankings they have in the state-wide qualifying from their initial objectives such as meaningful, real life and long-lasting learning. With their responses, students have shown that they are aware of this fact and not happy with what they have achieved so far regardless of their accomplishments in YGS. Almost all of the participants (98.2%) reported the fact that they did not study for YGS just because they wanted to but because they had to and it was understood from their views that this obligation changed the idea of studying in their minds and turned it into a task rather than a necessity. In such a case their learning habits in university years could transform into goal-oriented strategies in which they would study just to pass the classes and obtain necessary score means to take a diploma in the end and this would inevitably reduce the quality of the university graduates. Cimbricz (2002) mentioned about this washback effect and added that state-mandated tests could harm the genuine objective of education, learning the life skills. If students learn not to equip themselves with life-skills but to get ready for high-stakes tests, their learning would not be long-lasting and

meaningful. Furthermore, the testing style of YGS (including multiple-choice questions and penalizing the errors students make in the exam) could be another issue to discuss. Because of the test content, students are expected to find the correct choice to answer a question which could never be the same in real life. Nobody is given a set of choices (one is the correct option) when they encounter various problems in their lives, and this reality would be a great obstacle for students' researching, creating, problem-solving, critical thinking, design making and communicating skills which they could need a lot in their academic lives (Darling-Hammond, 2014). Seeing this fact, participants reflected their dissatisfaction through the habit they gained while studying for YGS.

The final conclusions of the study will be about the only reported positive backwash effect of YGS on university students, time management skills. Majority of the participants (79.6) stated that they improved their time management skills because of preparing for YGS. It should be remembered that all the participants of this study are university students and this means that they all passed this test since they had planned their study times, content and set up deadlines to get ready for the test. Doing these helped them systematize their studying practices and be better aware of the importance of time and be more responsible for the tasks they had to do. Since an important part of academic success lies within this kind of discipline and scheduling, YGS was considered to positively contributing and helpful in this sense.

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A Review On Solution Focused Brief Therapy Studies In Turkey

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ABSTRACT

The aim of this study is to examine experimental studies conducted with solution focused brief therapy psychological counselling in Turkey. In this study in which descriptive method was used, the data were analysed with document analysis. In this respect, a total of 26 studies, 24 graduate theses and 2 articles, which were conducted experimentally with solution focused counselling approach, were analysed. According to the results of the study, it was found that there was an increase in studies conducted with this approach in recent years, the majority of the studies were conducted in the fields of education and nursing, and the sample groups of the study were mostly secondary school, high school and university students. It was found that mostly group counselling method and semi-experimental pattern were used in studies, a great majority of the studies were conducted with 6 sessions, all of the studies except one included control group, 3 of the studies included placebo group and follow-up test was conducted in 14 of the studies. It was found that the studies were applied on very different problem areas, mainly undesired behaviours and that 4 of the studies met all the criteria determined for solution focused approach. When the studies conducted were examined, it was found that there were no studies in which solution focused approach was compared with another psychotherapy approach. As a result of the study, it was found that in all studies except one, solution focused counselling had a significant effect on the experimental group.

Keywords:

Solution focused approach, Content analysis, Turkey

1.Introduction

Solution focused brief therapy (SFBT) was developed by Insoo Kim Berg, Steve de Shazer et al. in the early 1980s as a result of the clinical studies of Milwaukie Brief Family Therapy Centre in the USA (de Shazer, 1985, 1988). As the name suggests, SFBT focuses more on producing solutions rather than solving problems and the main therapeutic task is to show clients how to be different and what to do to be happy. In this therapy, little attention is paid to diagnosing the client's problem, looking at the past or discussing the problem. Solution focused therapists presume that clients want to change, they have the capacity to predict change and they do their best to make the change happen (Gingerich and Eisingart, 2000). According to De Shazer and Berg (1997), there is no connection between the problem and the solution. In order to solve the problem, it is unnecessary to analyse the problem in detail. According to Sklare (2013) who organizes study groups about this therapy approach in America, solution focused brief psychological counselling approach is an effective and structured counselling approach which works on the solutions of the problems by making clients realize the times in which they do not have problems rather than understanding the reasons of clients' problems and emphasizes the strong aspects of the clients. In order to understand solution focused approach better, the rules and assumptions of the approach should be examined.

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Solution focused approach has three basic rules. De Shazer (1987) and Berg and Miller (1992) explained these rules as the following. The first one is *“if it ain't broke, don't fix it”*. According to this rule, an issue which is not a problem for clients is not addressed. Counsellors' search for underlying issues that the client did not mention can create additional concerns in the clients' lives. The point that counsellors who apply this rule should pay attention to is that the goals should be determined not by them, but by the clients. The second rule is *“once you know what works, do more of it”*. During the process of counselling, counsellors reach many valuable information from clients about which solutions work. Counsellors should especially pay attention to clues given by clients so that clients can replicate the correct things that work. There are certainly moments that each client can overcome the problems related to the problems they are experiencing. Counsellors who apply this rule should pay attention to this information, find the moments that work in clients' lives and encourage clients to do the solutions that work more. The third rule is *“if it doesn't work, don't do it again and do something different”*. According to this rule, if the client tries to do the things that do not work again and again, this won't help with the problem of the solution. Clients tend to try familiar coping strategies they know about with the difficulties they face; however, if they want to reach different solutions, they should use different strategies. Solution focused approach has some basic assumptions based on these rules. According to Sklare (2013), Murphy (2008), Lipchik (2002), these assumptions can be summarized as the following:

- Every client is special and unique.
- Clients have the strength, resources and capability to cope with their problems.
- Nothing is just negative. There are always moments (exceptions) when the problem is not experienced.
- Small changes expand, leading to big changes.
- The clients' expressions should be transformed into positive sentences reflecting what they want to do, rather than negative sentences including what they don't want to do.
- The past cannot be changed; thus, clients should focus on now and the future.
- Cooperative relationship between the client and the counsellor develops solutions.
- The problem and the solution do not necessarily have to be related.

As mentioned above, solution focused counselling approach is different from problem focused approaches with its specific rules, principles and assumptions. Despite problem focused approaches that focus on understanding problem patterns in clients' lives, solution focused approach focuses on how clients' lives will change and what positive possibilities for this change are (Sharry, 2016). Solution focused approach, which is different from other traditional approaches with its basic philosophy and basic concepts, has some certain techniques that can be used practically during therapy such as miracle question, scaling question, exception question, compliment, crystal ball, break and homework. Each of these techniques have been designed to assist the client and the counsellor to set behavioural clear goals and reach a solution in a short time by focusing on the solution rather than the problem in line with the basic philosophy of the solution focused approach. Solution focused counselling approach, which has attracted the attention of expert counsellors with its new perspective and techniques, has begun to be applied in schools, social services, therapy centres, child care centres and hospitals by counsellors in the last two decades and its effects have begun to be tested by researchers (Gingerich and Eisengart, 2000). When the literature is reviewed, it can be seen that there is an increase in the number of experimental studies conducted with solution focused counselling approach especially in recent years. Gingerich and Eisengart (2000) state that in less than two decades, SFBT evolved from a lesser known and uncommon therapeutic approach to an approach that has become widespread in America and other countries. Researchers who want to investigate the effectiveness of this approach, the prevalence of which is increasing day by day, have experimentally tested this therapy approach in many different types of problems.

When studies conducted in literature are reviewed, it can be seen that experimental studies have been conducted which examine the effects of solution focused brief therapy on depression (Sundstrom, 1993; Triantafyllou, 1997), parental skills (Zimmerman, Jacobsen, MacIntyre and Watson, 1996), time for

orthopaedic patients to return to work (Cockburn, Thomas and Cockburn, 1997), tendency to commit crime again in prison (Lindfors and Magnusson, 1997), decreasing antisocial thoughts and behaviours in adolescent criminals (Seagram, 1997), decreasing academic and personal worries (Littrell, Malia and Vanderwood, 1995), marital satisfaction (Zimmerman, Prest and Wetzel, 1997), alcohol problem (Polk, 1996), schizophrenia (Eakes et al., 1997), parent-adolescent conflict (Franklin, Corcoran, Nowicki and Streeter, 1997), child's welfare (Sundman, 1997), exclusive student behaviour (Geil, 1998), mood, anxiety, adjustment disorders and substance addiction in adults (Lambert, Okiishi, Finch and Johnson, 1998). Gingerich and Eisengart (2000) who critically analysed all of these experimental studies in literature stated that although the studies had some deficiencies in fulfilling experimental conditions, they were important in terms of showing the efficiency of solution focused approach.

Kim et al. (2015) who researched whether SFBT was effective on a different population examined the effect of SFBT on Chinese population with the meta-analysis they conducted. As a result of the analysis of 9 experimental studies which used SFBT on Chinese with mental and behavioural problems, it was found that SFBT had a positive effect on Chinese population. In another study, Kim and Franklin (2009) analysed the results of experimental studies which examined the effectiveness of SFBT. As a result of the study which analysed 14 experimental studies in which SFBT was applied in schools, it was found that SFBT was a very useful and effective approach especially about working with students under risk. It was found that SFBT applied in schools was effective in decreasing students' negative feelings, coping with problems and externalizing behavioural problems.

When the literature was reviewed, it was found that SFBT is a very effective approach on Europe and other populations, especially America. In addition, it was found that SFBT is a counselling approach with a proven effectiveness which can be used on different groups (adult, adolescent, child) and in different problem areas (mental health, behavioural problems, emotional problems). An increase can be seen in experimental studies conducted in Turkey on the effectiveness of SFBT approach, the use of which has increased especially in the last 20-30 years in the whole world since it is brief and provides solution quickly; however, it can be seen that there are no comprehensive analyses examining the studies conducted with this approach.

The main purpose of this study is to analyse experimental studies conducted in Turkey with solution focused brief counselling approach. In line with this purpose, the experimental studies conducted were first analysed in terms of the year they were conducted in and their fields of study. Next, the studies were analysed in terms of some predetermined variables. These variables are: 1- study group 2- number of samples, 3- problem area studied, 4- whether there is significant effect, 5- modality, 6- number of sessions applied, 7- experimental design, 8- whether there is follow-up test is conducted, 9- whether there is a comparison group with another psychotherapy approach.

Finally, it was analysed how many of the SFBT criteria the experimental studies conducted met. While determining these criteria, De Shazer and Berg (1997)'s study, Gingerich and Eisingart (2000)'s qualitative study and Kim and Franklin (2009)'s study were taken into consideration. The criteria which prove that the experimental study conducted is solution focused and which are similarly used in literature are as follows:

- 1- Use of miracle question,
- 2- Use of scaling question,
- 3- Use of counselling break technique,
- 4- Compliments to the client,
- 5- Giving homework,
- 6- Looking for strengths and solutions
- 7- Setting a goal
- 8- Looking for exceptions to the problem (times when there are no problems)

All these variables and determined criteria were analysed and a general profile of studies conducted on SFBT in Turkey was shown and whether this approach is effective on Turkey population was researched.

2. Method

2.1. Study Design

Descriptive research design was used in this study. In this study design, which aims to describe a situation that has existed in the past and still continues to exist today, the individual, event or object, which is the subject of the research is described as it is within its own conditions (Karasar, 2005).

2.2 Data Collection Process

In the study, firstly graduate theses were searched on March 20, 2020 in the National Thesis Centre data base of Higher Education Institution (YÖK) by using the key word "solution focused" and without any time limitation. At first, 31 theses were found for the key word "solution focused". Abstracts of the 31 theses were examined and three of them were eliminated because they did not have experimental design. Since 3 of the 28 remaining theses did not give permission for full access, 25 were downloaded from the data base. Since one of these 25 theses was conducted with foreign students and because of this it could not explain the effect of the approach on the population, it was excluded. For this reason, 24 graduate theses were included in the study. In addition, in order to reach articles published, Google Academic, EBSCOhost and the data bases of a university were searched, the same key words were used in the search and again no time limitation was set. The abstracts of the articles were analysed and the articles made from the theses reached first in the data collection process and those which did not have experimental design were excluded. As a result of this analysis, 2 articles which had experimental design and which were not made from the 24 theses included in the data previously were chosen for the study. As a result, the present study includes 26 studies, 24 graduate theses and 2 articles. In terms of ethical considerations, the names of the studies and authors were not included and the studies were shown with numbers.

2.3 Data Analysis

In the study, document analysis was used as data collection method. Document analysis is the systematic examination of existing documents or records as the source of data (Karadağ, 2009). In this direction, the graduate theses and articles, which make up the sample of the study, were analysed, information was given about the results of the study and suggestions were made in line with the results.

2.4 The Role of the Researcher

Unlike quantitative research, the researcher is someone who uses his/her experience in data collection and analysis in qualitative research. In the analysis of the documents which are the subject of the research, it is important for the researcher to know and understand the subject closely (Yıldırım, 1999). The present study was conducted by a researcher who had theoretical and practical experience in the field of psychological counselling and guidance. The researcher has been trained in the Solution Focused Brief Therapy approach examined in this study and has a certificate. In addition, the researcher used Solution Focused Brief Psychological Counselling in the experimental study he conducted in his doctorate thesis.

3. Results

In this section, graduate theses and articles conducted experimentally with SFBT in Turkey were analysed and evaluated. In this context, first of all the information about the year the studies were conducted and published were presented, then the studies were numbered and analysed according to the predetermined variables (study group, sample, problem area studied, modality, number of sessions applied, experimental design, whether follow-up test was conducted, whether there was a comparison group and whether there was a significant effect). Finally, all of the studies were analysed according to their states of having met SFBT criteria. The distribution of the years the studies included in the sample were published is shown in Table 1.

Table 1. Distribution of the years the studies were published in

Years	Master	Doctorate	Article
2007	1	-	-
2008	-	1	-
2012	1	-	-
2014	-	5	-
2015	1	3	1
2016	-	3	1
2018	-	2	-
2019	1	6	-
TOTAL	4	20	2

When Table 1 is examined, it can be seen that 4 of the studies conducted with SFBT is master’s thesis, while 20 are doctorate theses and 2 are articles. It was found that the majority of the studies were doctorate theses. When the distribution of the studies was examined by years, it was found that the first study was conducted in 2007 and there was an increase in the number of studies conducted over the years. The year the highest number of studies was conducted was 2019. Distribution of the fields of studies included in the sample is shown in Table 2.

Table 2. Distribution of the fields the studies were conducted in

Field of Study	f
Education (Psychological Counselling and Guidance)	13
Health (Nursing)	8
Psychology	1
Social Services	3
Family Counselling (Psychological Counselling and Guidance)	1

When Table 2 is reviewed, it can be seen that 13 of the experimental studies conducted with SFBT were conducted in the field of education (department of psychological counselling and guidance), 8 were conducted in the field of health (nursing), 1 was conducted in the field of psychology, 3 were conducted in the field of social services and 1 was conducted in the field of family counselling (department of psychological counselling and guidance). According to these results, it can be seen that the field SFBT was used in experimental studies the most was the department of psychological counselling and guidance, which was followed with the field of nursing.

In this section, in terms of ethical considerations, the names and authors were not given and the 26 studies conducted were numbered and analysed by specific variables. The findings about the groups the studies were conducted on, the number of samples, problem area and whether the application had a significant effect on the experimental group are shown in Table 3.

Table 3. Analysis of the studies included in the sample in terms of some variables

Studies	Study Group	Number of samples			Problem	Sig. Effect
		Experimental	Control	Placebo		
1	Secondary school	29	30	-	Exam anxiety- Aggression- Problem Solving	Yes (No significant effect on follow-up tests for exam anxiety and problem solving)
2	High school/adolescents	8	9	8	Anger management- Communication skills	Yes in anger management, no in communication skills
3	High school/adolescents	12	12	-	Peer bullying	Yes
4	University	12	12	-	Burnout	Yes
5	University	11	11	11	Rumination	Yes
6	Secondary school	11	11	-	Risk Taking	Yes
7	University	16	16	-	Social Phobia	Yes
8	Secondary school	10	10	-	Self-efficacy	Yes
9	High school/adolescents	24	24	-	Self-confidence	Yes
10	Secondary school	12	12	-	Social Emotional Learning Skills	Yes
11	Secondary school	9	9	-	Academic Motivation in Students with Academic Risks	No
12	Married couples	8 pairs	8 pairs	-	Marital adjustment	Yes
13	Adolescents	22	20	-	Self-efficacy and self-esteem in adolescents with attention deficit and hyperactivity	Yes
14	Adult	31	31	-	Suicide probability and social functionality in depressive individuals	Yes

15	Adolescents	16	16	-	Nutrition, exercise attitude and behaviours in obese and overweight individuals	Yes
16	Secondary school	28	30	-	Health control focus and self-efficacy	Yes
17	Adult	31	45	-	Anxiety and healthy lifestyle in individuals with nutritional disorder	Yes
18	Adolescents	21	19	-	Self-efficacy, asthma control and quality of life in individuals with asthma	Yes
19	Secondary school	34	34	-	Coping with peer bullying	Yes
20	Adult	30	30	-	Coping and disease compliance in individuals with chronic renal failure	Yes in coping, no in disease compliance
21	University	15	15	-	Assertiveness	Yes
22	University	11	11	11	Depression	Yes
23	Adult	30	55	-	Submissive behaviours and looking at future with hope in women with low socioeconomic level	Yes
24	Adult	6	6	-	Psychosocial adaptation in individuals with chronic renal failure	Yes
25	University	10	14	-	Levels of hopelessness and stress	Yes
26	Primary school	10	-	-	Destructive behaviours	Yes

When Table 3 is reviewed, it can be seen that the highest number of experimental studies conducted with SFBT was conducted on adolescents attending secondary school (7), which was followed by adolescents attending high school (6) and university students. While these groups were followed with the adult group

(5), it was found that 1 study was conducted on primary school students and 1 study was conducted on married couples within the context of family counselling. When the sample groups were analysed, it was found that all studies except 1 had control group. Of the 26 studies, only 3 were found to have a placebo group in addition to control group. When the problem areas of the studies were analysed, it was found that SFBT was applied experimentally in very different problem areas. While it was found that 7 of the studies were conducted on individuals with any health problem (for exp. chronic renal failure, obesity, etc.), it was found that most of the studies focused on problematic behaviours which negatively influence the individual's life. Another important finding of the study was that SFBT had a significant effect on the problem area in 22 of the studies conducted. Three different problem areas were analysed in one study and it was concluded that while all of these problem areas were significant in the post-test, two problem areas were not significant as a result of the follow-up test (Table 3, study 1). In 2 of the studies, while one problem area was significant, the other problem area was not found to cause a significant effect on the study group (Table 3; studies 2 and 20). In one study, it was found that SFBT did not cause a significant effect on the experimental group (Table 2; study 11). The modality of the experimental study conducted, the number of sessions, experimental design, whether there was a follow-up test, whether there was a comparison group on which experimental application was conducted with another theory are shown in Table 4.

Table 4. Analysis of the studies included in the sample in terms of some variables

	Modality	Sessions	Design	Follow-up	Comparison Group
Studies					
1	Group	7	Pre-post test semi-experimental	+	-
2	Group	10	3X2 experimental design	-	-
3	Group	6	2X3 experimental design	+	-
4	Group	6	2X3 experimental design	+	-
5	Group	6	3x4 experimental design	+	-
6	Group	6	2X3 experimental design	+	-
7	Group	6	Solomon 4 groups model	-	-
8	Group	6	2X3 experimental design	+	-
9	Group	6	2X3 experimental design	+	-
10	Group	8	2X3 experimental design	+	-
11	Group	6	Pre-post test semi-experimental	-	-
12	Family counselling	6	Pre-post test semi-experimental	+	-
13	Individual	6	Pre-post test semi-experimental	+	-
14	Individual	6-10	Pre-post test semi-experimental	+	-
15	Individual	8	Pre-post test Randomized	-	-
16	Group	9	Pre-post test semi-experimental	-	-
17	Group	8	Pre-post test Randomized	-	-
18	Group	4	Pre-post test Randomized	-	-
19	Group	8	Pre-post test semi-experimental	+	-
20	Individual	6	Pre-post test Randomized	+	-

21	Group	6	Pre-post test semi-experimental	-	-
22	Group	7	2X3 experimental design	+	-
23	Individual	4-8	Pre-post test semi-experimental	-	-
24	Individual	5-6	Pre-post test semi-experimental	-	-
25	Individual	4-8	Pre-post test semi-experimental	-	-
26	Group	6	Single group pre-post test	-	-

When Table 4 is reviewed, it can be seen that most of the experimental studies conducted were conducted with a group. While 18 of the studies were conducted as group counselling, 7 of the experimental studies were found to be conducted individually. Only 1 study was conducted on married couples in the form of family counselling. When the number of the sessions is reviewed, it can be seen that most of the studies were conducted as 6 sessions. It was found that number of sessions differed in four of the studies which were conducted on individuals. When the number of sessions is reviewed, it can be seen that the highest number of sessions is 10, while the lowest number of sessions is 4. When the experimental designs conducted are analysed, it can be seen that mostly 2X3 (experimental and control group, pre-test, post-test and follow-up test) design and pre-test-post-test control group semi-experimental design were used. When the number of follow-up tests, which show whether the experimental procedure had a significant permanent effect on the group the experiment was conducted, was analysed, it was found that follow-up test was applied in 14 studies, while it was not applied in 12 studies. Another important finding of the study is that none of the studies compared SFBT with an experimental study conducted with another theory.

Finally, within the context of the study, it was analysed how many of the solution focused criteria the experimental studies conducted in Turkey with SFBT met. In this context, 8 criteria that could indicate that the study was a SFBT study were determined. The results of how many of the SFBT criteria the studies met are shown in Table 5.

Table 5. The status of meeting solution focused counselling criteria for the studies

Studies	Miracle question	Scaling question	Break	Compliment	Homework	Strengths/solutions	Setting positive goals	Exceptions	Total
1	+	+	-	+	+	+	+	+	7
2	+	+	-	+	+	+	+	+	7
3	+	+	-	+	+	+	+	+	7
4	+	+	-	+	+	+	+	+	7
5	+	+	+	+	+	+	+	+	8
6	+	+	-	+	+	+	+	+	7
7	+	+	+	+	+	+	+	+	8
8	+	+	-	+	+	+	+	+	7
9	+	+	-	+	+	+	+	+	7
10	+	+	-	-	+	+	+	+	6
11	+	+	-	+	+	+	+	+	7

12	+	+	-	+	+	+	+	+	7
13	+	+	+	+	+	+	+	+	8
14	+	+	+	+	+	+	+	+	8
15	+	+	-	+	+	+	+	+	7
16	+	+	-	-	+	+	+	+	6
17	+	+	-	+	+	+	+	+	7
18	+	+	-	+	+	+	+	+	7
19	+	+	-	-	+	+	+	+	6
20	+	+	-	-	-	+	+	+	5
21	Not evaluated since the details about the experimental procedure were not stated in the study.								-
22	+	+	-	+	+	+	-	+	6
23	Not evaluated since the details about the experimental procedure were not stated in the study.								-
24	+	+	-	+	+	+	+	+	7
25	+	+	-	+	+	+	-	+	6
26	+	+	-	+	+	+	+	+	7

When Table 5 is examined, it can be seen that 2 of the studies were not evaluated since the details about the experimental procedure were not stated in the study. Of the remaining 24 studies, it can be seen that 4 studies meet all of the criteria of solution focused counselling. When all the studies are analysed, it can be seen that at least 5 criteria were used. It can be seen that miracle question, scaling question and exceptions, which are the most important techniques of solution focused brief therapy, were used in all of the studies. It can be seen that the least used criterion was "break". It can be seen that the break technique was used in only 4 studies. Overall, it can be seen that studies conducted with SFBT in Turkey met the solution focused criteria determined by the researchers who developed the theory.

4. Discussion and Conclusion

The aim of the present study was to analyse the experimental studies conducted in Turkey with "Solution focused brief counselling". Thus, the efficiency of this approach the use of which has been recently increasing in the whole world on studies conducted in Turkey were presented and a general profile was given. The results of the study can be summarized as follows:

- In Turkey, experimental studies conducted with SFBT approach were mostly doctorate studies and the highest number of studies was conducted in 2019.
- When the fields of the studies conducted were examined, it was found that the highest number of studies were conducted in the field of education (department of psychological counselling and guidance), followed by the fields of nursing and social services.
- When the sample groups the studies were conducted on were examined, it was found that the highest number of studies was conducted on secondary school students, followed by adolescents, university students and adult groups.
- It was found that only 1 of the studies did not include control group, the remaining 25 had control group and 3 studies had also placebo group in addition to control group.

- When the problem areas the studies were conducted on were examined, it was found that the experimental process was tried on various different problem areas. While problem areas focused mostly on undesired behaviours, it was followed by studies conducted on individuals who experienced any health problem.
- When the studies conducted were examined, it was found that all studies except 1 had significant effect on the experimental group SFBT was applied.
- It was found that group counselling was preferred in studies and the number of studies conducted with a group was found to be higher than those conducted individually.
- When the number of sessions in the experimental procedure applied was examined, it was found that the studies were mostly conducted as 6 sessions. It was found that the lowest number of sessions was 4, while the highest number of sessions was 10.
- When the experimental designs were examined, it was found that the designs used most were 2x3 experimental design and pre-test/post-test control group semi-experimental design.
- When the studies were examined, it was found that follow-up test was used in 14 studies, while it was not used in 12 studies.
- According to another important finding of the study, it was found that the efficiency of SFBT was not compared with another experimental procedure based on another theory in any of the studies.
- Finally, when the studies were examined in terms of the state of using the 8 criteria of SFBT, while no evaluation was made in 2 of the studies because details were not given about the experimental process, it was found that all of the studies used at least 5 criteria and 4 studies used all of the 8 criteria.

As a result of findings of the present study which analysed the experimental studies conducted with SFBT approach in Turkey, it was found that the studies had significant effect on the experimental groups and it was found that SFBT had a significant effect on Turkey population. It can be seen that there are studies with similar results in literature. As a result of Gingerich and Eisingart (2000)'s study which analysed experimental studies conducted with SFBT, it was found that in all of the 15 studies which were analysed, SFBT had a significant effect on the group it was applied. Similarly, as a result of the meta-analysis Kim et al. (2015) analysed the effects of SFBT on Chinese population, and it was found that in all of the 9 experimental studies, SFBT was effective on Chinese population. In another study, Kim and Franklin (2009) examined the effectiveness of SFBT applied in schools and as a result of the study they concluded that SFBT was effective on problems experienced in schools. According to these results, as it is possible to say that SFBT is an effective counselling approach, it is also possible to say that the reason for this result can be the fact that authors did not want to publish studies which found no effect or that editors did not find these studies worth publishing.

As can be understood from its name, Solution Focused Brief Therapy is a counselling approach which tries to reach a solution in a short time and which tries to reach the solution in a time as short as possible without focusing on problems. In a meta-analysis conducted by Kim (2008), it was found that in experimental studies conducted with SFBT approach, studies with an average session number of 6.5 gave more effective results when compared with other studies. According to the results of this study, it was also found that studies conducted with solution focused approach mostly had 6 sessions. There are similar studies conducted with 6 sessions in literature (Zimmerman, Jacobsen, MacIntyre and Watson, 1996; Cockburn, Thomas and Cockburn, 1997; Zimmerman, Prest and Wetzel, 1997; Polk, 1996; Eakes et al., 1997).

Another important result of this study is that studies conducted in Turkey were mostly conducted on the field of education (schools), nursing (health institutions) and social services (community health centres). Miller, Hubble and Duncan (1996) stated that solution focused studies were conducted in various fields such as family counselling services, health institutions, schools, prisons, hospitals, and community health centres. Experimental studies conducted in literature support this finding. It can be seen that SFBT is applied in various fields, mainly educational institutions (Sundstrom, 1993; Eakes et al., 1997; Geil, 1998).

According to Sklare (2013), solution focused approach is a very practical and effective approach for counsellors working in schools. The sample groups on which the 26 studies analysed in this study were mostly secondary and high school students (adolescents) and university students. There are similar studies in literature. The number of studies which present results that practices with solution focused approach give effective results especially in schools are very high (Adıgüzel and Göktürk, 2013; Kim and Franklin, 2009; Meydan, 2013; Doğan, 2000). The remarkable point here is that there are no studies conducted on elderly and child group. Only 1 of the 26 studies analysed in the present study was conducted in the field of family counselling with married couples. Considering that solution focused therapy comes from family systems centre and that the starting point is family counselling, it can be said that more studies should be conducted with this sample group.

In this study, it was found that in all of the studies conducted with SFBT except 1, there was a control group in addition to experimental group and in 3 of the studies, in addition to control group there was also a placebo group. When it is considered that it is important for experimental studies to have control groups so that the effect of experimental process can be understood better, it can be said that experimental designs of the studies examined in the present study are positive. Another interesting finding of the study is that none of the studies analysed compared the efficiency of SFBT with another theory. When the experimental studies conducted in literature are examined, it can be seen that there are limited numbers of studies making comparisons with other theories. In a study, Sundstrom (1993) compared SFBT with Interpersonal Psychotherapy approach and concluded that both were effective in depression treatment. Gingerich and Eisingart (2000) compared studies conducted with SFBT with other theories and mentioned the significance of finding out the effect of the therapy like this. It can be said that the fact that no such comparison was made in none of the 26 studies analysed within the context of this study is a shortcoming in terms of showing the effectiveness of SFBT.

Finally, the studies analysed in the present study were analysed based on SFBT criteria and it was found that four of the studies met all of the criteria, while all of the studies met at least 5 of the 8 criteria. When similar studies were analysed in literature, Gingerich and Eisingart (2000) analysed 15 studies according to 7 criteria they set. As a result of the study, it was found that all of the 7 criteria were met only in two studies, while 4 or less criteria were met in five of the studies. When it is considered that solution focused counselling approach has its specific rules and assumptions, it can be thought that applying the predetermined criteria is important in terms of setting a standard.

5. Suggestions

Suggestions made in the light of the findings of the study can be listed as follows:

- Considering that solution focused approach can also be applied in classrooms, studies conducted in the future can be applied in the form of classroom counselling in addition to group and individual counselling.
- Experimental studies with SFBT to be conducted in the future can be applied on married couples within the context of family counselling and on elderly sample.
- Experimental studies conducted with SFBT can be compared with another theory and the effectiveness of SFBT can be shown better.
- In addition to education, nursing and social services, SFBT can be applied in child health centres, hospitals, prisons, nursing homes, etc.
- In order to establish a standard in SFBT applications, importance should be given to include all SFBT criteria in studies conducted.

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Informative Parent Training on Parental Advocacy and Legal Rights for Families with Children with Special Educational Needs

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ABSTRACT

This study aims to illustrate the effectiveness of the programme of informative parent training which is about the rights of families of children with special educational needs (SEN), and which is presented via the direct instruction method. The research was designed in a semi-experimental model consisting of a single group pre-test and post-test design. The study group consists of 11 mothers and four fathers of children with SEN who continued to a private special education and rehabilitation centre in Ankara. Interview forms and the "Legal Rights Information Test" were used to collect data for this research. The pre-test and post-test scores obtained within the scope of the research were analysed in the SPSS software suite, and social validity data were subject to content analysis and descriptive analysis. The dependent variable of the study, which is the level of knowledge about the legal rights of families of children with SEN, was found to have increased following the informative parent training provided for families ($t = -8.573$, $p < .001$). The pre-test average score (17.73) of The Legal Rights Knowledge Test of families was lower than the post-tests averages (31.47), the difference being statistically significant. Most of the families participating in the research argued that the content, process, and materials of the training program were beneficial to them and suggested similar training for other families.

Keywords:

Special education, Parent training, Legal rights, Children with special educational needs

1. Introduction

Family, which is the cornerstone of society, is a social institution which is in touch with other societal foundations. Families go through important processes throughout their children's lives. When a disabled individual is a member of the family, however, these processes will be different. Disability is a condition whereby an individual has difficulty in interacting or due to which the individual cannot adapt, either wholly or in part, to their society and environment because of some form of injury sustained before, during, and after birth (Ataman, 2009). Thus, the difficulties that may arise due to the nature of disability will require individuals with SEN and their families to cope with various quite serious issues (Boulet, Boyle, & Schieve, 2009; Wright & Taylor, 2014; Zisser & van Stone, 2015).

The main purpose of families and educational institutions is to prepare children for adulthood and social life regardless of the children having any such disabilities (Anderson, 2001; Meral, 2011). Socialization is the process of being part of the society in which one lives. However, children with SEN face various obstacles due to the very nature of society itself during the process of socialization (Ahmedi, Khodadadi, Anisi, & Abdolmohammadi, 2011). The difficulties that children with SEN face can also affect their families in a negative way (Ewles, Clifford, & Minnes, 2014). Thus, parents of children with SEN can experience more specific difficulties caused by the nature of these disabilities in addition to the problems experienced by other

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families while raising their children (Davis & Gavidia-Payne, 2009; Kurtzer-White & Luterman, 2003). The problems that children with SEN and their families can face can be categorised as being health-related, care-related, educational, economic, social and psychological in nature. In this process, many different needs of the affected families arise, many of which they would be unable to deal or cope with on their own; accordingly, social services need to be provided. However, in order to determine what services are to be offered families, it is necessary to understand what the needs of the individual families are; in that, clearly identifying the needs of families is very useful in determining the feature, content, type, and method of the services that will need to be provided (Sucuoğlu, 1995). Here, Bailey and Simeonsson (1998), who have conducted a number of leading studies in the field, have stated that families of children with SEN need help to explain the situation to others, gain appropriate knowledge and skills, access to social services and, of course, financial support.

According to Zuckerman et al. (2014), families with children with SEN typically lack information and advocacy with regard to the services that disabled people are nominally provided with. Similar results have been obtained in a number of studies conducted in Turkey (Akçamete & Kargın, 1996; Evcimen, 1996; Kargın, 2001; Mert, 1997; Öztürk, 2011). According to Çitil's research, as carried out in Turkey with 342 parents, the most serious needs of families of children with SEN centre around improving the quality of education of their children, supporting them financially, improving the social services available to them, raising social awareness, increasing their socialization possibilities, regulating their environments, improving their Social Security and employment rights, informing them about their own rights, and in providing psychological support (2016). Given these results, parents who have accepted the status of their children and are looking for solutions for their future development need support with many issues (Wright & Taylor, 2014). In this context, families need to be familiar with issues like the type of disability, how to diagnose their children with regard to their difficulties, how to make educational assessments, what type and level of education they will receive, support and special education services, etc. (Coren, Hutchfield, Thomae, & Gustafsson, 2010). They may also need assistance in how to support their children's continuing education at home, how to provide a suitable educational environment for them, how they should behave, and how to teach skills that will make their everyday lives easier (Çitil & Doğan, 2019; Wade, Llewellyn, & Matthews, 2008). In addition, they need to be informed about how they can cope with the difficulties which they will face in social life, how they can benefit from social services, and what their legal rights and responsibilities are (Wright & Taylor, 2014). It seems unlikely that they will either have or be able to develop the knowledge and skills mentioned here above on their own recognisance (Davis & Gavidia-Payne, 2009).

One of the most effective measures to be taken to meet the above-mentioned requirements is parent training (Wade, Llewellyn and Matthews, 2008). Parent training is a programme intended to help families gain the effective methods and techniques that can be used to teach their children the skills and concepts they need and how to control their behaviour (Tavil & Karasu, 2013). The purpose of parent training, which is a systematic and conceptual-based process, is to ensure that parents have sufficient skills for, and to inform them about, different aspects of the parenting (Schulz, 1987; Tavil & Karasu, 2013). Parent training programmes can help parents learn the parenting skills which they need (Coren, et al., 2010). It should not be surprising, then, that parent training has emerged as an important topic in the literature on children with developmental disabilities (Matson, Mahan, & LoVullo, 2009).

There are many studies in which academicians have developed the concepts for various parent training programmes and teach families different skills through different methods and techniques or offer counsel. It is understood that most studies related to parent training have considered the skills families need to teach their children about self-care, both in terms of in-home skills and those needed in daily life (Cavkaytar, 1999; Çakmak, 2011; Elmalı-Alptekin, 2011; Işıl, 1994; Özcan, 2004; Sarı, 2003, Sönmez-Diler, 2008; Şabanova, 2000). In addition to these issues mostly frequently encountered in this field of the literature are those on training offered to parents to cope with problematic behaviours in their children (Berbercan, 2010; Brookman-Frazee, Vismara, Drahota, Stahmer, & Openden, 2009; Gökçe, 2017; Sayın, 2014; Scahill, et al., 2016; Sucuoğlu, Küçüker & Kanık, 1993; Tavil, 2005), those that strengthen the children's communication skills with parents and experts (Aktaş, 2015; Ertürk-Mustul, 2015; Kargın, 2001; Koca, 2016; Konuk-Er, 2011; Özen & Kırcaali-İftar, 2000), those that strengthen the parents' abilities to cope with the anxiety they face, for example, psychological problems such as stress and depression that arise as a result of learning about their children with SEN (Ardıç, 2013; Brookman-Frazee, et al., 2009; Çin, 2001; Konuk-Er, 2011; Sarı, 1999; Vardarcı, 2011), and training for families

of children with SEN that are more informative and include content about the characteristics and education of these children (Birkan, 2001; Özgür, 1993; Sardohan-Yıldırım, 2017; Sarı, 1999; Yücel, 2006). As can be seen above, parent training studies for families with children who have special need are mostly concentrated on teaching self-care skills, changing certain modes of behaviour, etc.

There is little information about whether parents are familiar with available resources (e.g., programmes, support, training), and what information they find useful and how they prefer to access resources (Gilson, Bethune, Carter, & McMillan, 2017). In this context, parents may not be aware of their rights, nor of the services appropriate to their children (Leiter, & Wyngaarden-Krauss, 2004). The purpose of any parent education programme is to improve children's quality of life (Crockett, Fleming, Doepke, & Stevens, 2007). However, these families firstly need to know their rights in order to take advantage of the support offered by social services, alleviating their problems related to education and finance, and be able to understand how their legal rights might be defended (Burke & Hodapp, 2016). Many parents with children with disabilities find themselves in unfortunate situations when entering the world of special education. Parents often face bureaucratic educational structures and must know their rights to receive adequate service (Bacon & Causton-Theoharis, 2013). A consideration of the associated literature suggests that the process of knowing and defending the legal rights of parents with children with disabilities is referred to as 'parental advocacy'. Munro (1991) defined effective advocacy as "a non-violent empowerment and support process where families with disabled relatives can express dissatisfaction constructively and offer creative solutions to existing problems in human services systems" (cited in Ewles, Clifford, & Minnes, 2014). Parental advocacy is necessary to ensure that children receive the services they need to maximize their potential for development (Scifres, 2012; Wright & Taylor, 2014).

There are also many legal regulations regarding the rights of the disabled in the US, where, according to the Individuals with Disabilities Education Act (IDEA), parents may need to acting as advocate to provide appropriate services to their children (Burke & Goldman, 2017). Special advocacy training is becoming increasingly widespread among lawyers in the US – and indeed abroad – to address both the need for some to defend such children's interests and a standard uniformity for parents' rights, and getting benefits from government (Burke & Goldman, 2017). In order to encourage parents to participate in special education, IDEA provides funding for Parent Education Institutes where they can learn about barriers, special education policy and other issues related to the education of their children (Ong-Dean, Daly, & Park, 2011). Some institutions in the US serve families in terms of special education rights and advocacy. For example, Parent Training and Information Centres [PTIs], Community Parent Resource Centres and Protection and Advocacy Agencies (P & As). Besides, there are education models such as the SEAT project and VAP which are offered to those who want to volunteer their advocacy in the field of special education (Burke, 2013). Such centres, agencies and programmes all focus on strategic advocacy. Here they teach parents with children with disabilities how to exercise their rights through special education law, policy and procedures (Burke & Hodapp, 2016).

Disabled citizens and their families have many legal rights in various areas, such as education, employment, tax, transportation and accessibility in Turkey. In addition to international regulations, such as the United Nations, Convention on the Rights of Persons with Disabilities, there are legal regulations specific to Turkey, notably Law No. 5378 on the rights of individuals with disabilities and Decree No. 573 on the law of special education (Çitil, 2017).

There are many social services available in Turkey to meet the needs of families who have children with SEN. However, there are no independent centres, such as PTIs in the USA, that offer support for families with children with disabilities or that teach them advocacy skills. Informing families with disabled children is maintained through parent training. The "Regulation for Special Education Services", which regulates the educational services of children in need of special education in Turkey, provides legal guarantees regarding the training of disabled children's parents. This regulation carries certain obligations for these children's schools, special education centres, and guidance and research centres. However, the Ministry of National Education has not yet developed a standard or programme for this subject, even though the parent training is a legal framework. For this reason, the educational services offered to the families of children with SEN in Turkey are somewhat inadequate.

Living as an independent, productive and happy individual in society is, of course, as much the right of a disabled person as an able-bodied. Therefore, it is a very important requirement for children with SEN and their families to know their rights to ensure they are in a better position in terms of social life (Burke & Hodapp, 2016). For example, knowing the educational rights of the child with disability in the individualized education programme meeting can be beneficial to families' ability to make the right decisions (Burke & Goldman, 2017) because, according to some studies, parents have difficulty in understanding the jargon used in special education meetings and, therefore, defending their rights (Burke, Goldman, Hart, & Hodapp, 2016). Therefore, it is important to raise families with knowledge and rights advocacy skills pertaining to special education (Goldman, Burke, Mason, & Hodapp, 2017). Although the ultimate goal of parental advocacy is to ensure that children with disabilities receive an appropriate education, little empirical research has been conducted into the effects of such advocacy (Burke et al., 2018). In Turkey, in particular, there have been very few studies conducted in this area. It can be seen that only Balta (2010) has carried out an informative education study for families with children with disabilities in Germany, and determined what support is available in the field of special education, leisure activities, the Special Education Law in Germany, and how they can meet their rights and needs. Further, Sardohan-Yıldırım (2017) made certain interventions in families' learning and defending their legal rights in action research conducted to empower families with children with disabilities. Therefore, the main focus point of this study is to develop a training programme for parents of children with SEN to help them gain awareness of their legal rights.

This study aims to determine whether the informative parents' training programme on the legal rights of children with special educational needs in Turkey is effective for families of children with SEN. To this end, answers to the following questions were sought:

1. Does the programme increase the information available to participating families with regard to legal rights?
2. What are the views of the participating families towards the programme (social validity findings)?

2. Methodology

2.1. Research Design

This study was designed using a semi-experimental model consisting of a single group of pre-test and post-test design. The effect of the experimental process we intend to carry out in this research design will be tested on a single group. The measurements of the subject's dependent variable are obtained by using the same test subjects and the same measurement tools pre-test (i.e., before the application), and post-test (i.e., after the application) (Balta, 2010, 28). The significance of the difference between the pre-test and post-test values belonging to a single group is tested in this research pattern (Büyüköztürk et al., 2016). The dependent variable of the study is the level of information about the legal rights of children with SEN, whilst the independent variable is the "Parent Training Programme" which informs parents about the legal rights of children with SEN.

2.2. Participants

The sample consists of 11 mothers and four fathers who have disabled children attending a private special education and rehabilitation centre in Ankara. The average age of the parents participating in the programme is 32. Five of the participants are primary school graduates, five are high school graduates, one is a secondary school graduate, one has an associate degree, and three are university graduates. All the mothers are housewives, and the jobs of the fathers were identified as electronic technician, civil servant, engineer and security guard. It was observed that the participants had an average of two children.

2.3. Tools of Data Collection and the Development of Educational Program

The content of the data collection tools and training programme used in the scope of the research are as follows:

2.3.1. Implementation Process and Informative Parent Training Programme on Legal Rights to Families of Children with Special Educational Needs

Name of The Programme: Parent Training Programme That Informs Families of Children with SEN About Their Legal Rights

The Programme Designer: Parent training programme was designed by a researcher.

The Programme Practitioner: The Parent Training Programme was implemented by the researcher with scientific studies on legal rights.

The Type of Programme: This programme is a kind of informative consultancy based on the institution and group.

The Features of The Participants of The Programme: The target group of the programme consists of parents who have children attending a private special education centre in Ankara.

The Duration of The Programme: The Programme consists of four sessions. Each session is scheduled for 60 Minutes. Two sessions were held in the institution on Monday and Wednesday afternoons.

Target Group of The Programme: Families of children with SEN.

Objectives of The Programme: The overall aim of this programme is to let the parents know the legal rights and responsibilities of families with children with SEN. For these purposes, the information required to answer the following questions will be provided.

1. What are the legal rights and responsibilities of parents for the education of their children with SEN?
2. What are the legal rights and responsibilities of families related to the employment of their children with SEN?
3. What are the legal rights and responsibilities of the parents related to the economic rights of children with SEN (tax exemptions, salary) for families?
4. What are the legal rights and responsibilities in terms of social, political and transportation issues of children with SEN?
5. Where and how can families of children with SEN learn their legal rights?

The Stages of The Programme: The preparation and implementation phases of the programme are listed in the following sequence.

1. Determination of parents attending parent training sessions
2. Creating the content to be presented in the programme
3. Preparation of materials to be presented to families
4. Creating questionnaires and interviewing forms for the evaluation of the families
5. Determination of methods and techniques to be used
6. Planning parent training sessions
7. Carrying out the sessions
8. Evaluation

The Evaluation of The Programme: In order to evaluate the effectiveness of the programme, the "Family Information, and Programme expectations form", "Legal Rights Information test", and "Programme Evaluation Form" were applied. These were further developed by the researcher.

Methods and Techniques Used in the Application of The Programme: The programme was implemented in the form of a direct instruction method and question-answer method with families. The practitioner informed the working group using Microsoft PowerPoint presentations and provided a discussion session conducted with the question-answer method. Since the programme is not an applied one, no homework was given to families after any of the sessions.

Material Used in the Application of The Programme: Separate Microsoft PowerPoint presentations were prepared and used for each session. Also, a booklet was distributed to families during the training period. The "Legal Rights of Disabled Children in Turkey" booklet, prepared by the researcher, was distributed to the

parents at the time of the training sessions and collected after their completion. After the post-test, the parents were given the booklet as a gift by the researcher.

The booklet consists of more extensive information covering the content of the training. There is related legislation as well as the rights and responsibilities of families in each chapter. Moreover, information such as official websites and contact addresses, which are the institutions and organizations responsible for the legislation and services related to addressing disabilities, are given in the margins of the booklet. The booklet was enriched with visuals and written in plain language. A total of 28 pages of booklets were printed on thick cardboard cover, coloured and glossy paper.

The Application of the Programme: This programme was implemented over four sessions.

First Session: The researcher first introduced himself and met the families. Later, he introduced the purpose of his research, the content, and process of the training programme. Families agreed in writing that they were willing to work with the researcher and that they would attend each session. After that, the family Information Form and pre-test were distributed by the researcher. This first stage took approximately 60 minutes. After a 10-minute break, the second part of the first session was started. After this stage, the researcher started lecturing about the subject. In the first session, the negative situation of families and individuals with disabilities experienced in the historical process and how they gained their current legal rights were discussed. Further, the issue of where and how to learn about the legal rights of their children was discussed. This session also lasted 60 minutes.

Second Session: A brief five-minute review of the previous session was given at the beginning of the second session. In this session, which lasted about an hour, the processes of the education of their children were discussed and the rights they had had in these processes were explained to the parents.

Third Session: The third session took place two days after the second session. In this session, families were told about the legal rights and responsibilities related to the economic rights (tax exemptions, salary) of children with SEN. After this session, which lasted about an hour, a 20-minute break was taken, and the last session was started.

Fourth Session: The last session was held to discuss matters of social-, political- and transportation-related legal rights and responsibilities of children with SEN. At the end of the session, which lasted about 50 minutes, the researcher asked families whether they were curious about anything or if there were another subject they would like to discuss. After a 10-minute question-answer session, the researcher thanked the families and ended the session. After a 10-minute break, a post-test and programme evaluation and satisfaction form were given to the families.

2.3.2. The Form of Expectation of The Programme and Information About the Family

The family information and programme expectations form is a short form developed by the researcher, aimed at determining appropriate demographic information relating to the families (marital status, age, education, child's characteristics, etc.) and consisted of five open-ended questions.

Also, this form consists of open-ended questions which include the reasons for participating in the programme, the areas in which families know their rights, the situations under which they had participated in such training before, the sources of information about learning their legal rights, and questions that would help them understand their expectations with regard to the parent training programme that they were going to participate in.

The questions in the related form were developed by the researchers in accordance with the research and its purposes. They were developed by taking the expert opinion of three different faculty members working in the field of special education.

2.3.3. Legal rights information test

The legal rights information test consisted of 40 multiple choice questions developed by the researchers. The legal rights information test was developed by examining the relevant literature and legislation and compiling important information that it was felt parents of children with SEN need to know. The tests were created with four choices and the test was grouped considering the easy, medium and difficult questions .. In the legal rights information test, 10 questions addressed the education-related rights of disabled people, 10 their

employment and social security rights, 10 their economic rights (tax exemptions, salary), and 10 their legal rights and responsibilities on social, political and transportation issues. The “legal rights information test” was applied as a pre-test and post-test to measure the level of awareness of the legal rights of families.

2.3.4. Programme Evaluation Form (Social Validity)

The Programme Evaluation Form is a form created from 10 questions developed by the researcher by researching the related literature and, in accordance with the research objectives, was intended to gain the opinions of the participating families about the programme after its implementation and to determine its social validity. This form was distributed after the implementation of the parent training programme. In order to finalize the Program Evaluation Form, expert opinion was obtained from three faculty members working in the field of special education.

2.4. Analysing the Data

The pre-test and post-test scores obtained from the Legal Rights Information test applied within the scope of the research were analysed in the SPSS suite of programs. Correct answers by parents were scored ‘1’, and incorrect answers were scored ‘0’. The scores of the participants obtained from the pre-test and post-test are reported in the tables in terms of means, percentages, and standard deviations. In order to determine the differences, the t-test was applied, and the statistical significance level was accepted as 0.05 in the analyses. The social validity data of the study were subject to content analysis and descriptive analysis, with the categories and codes obtained from the content analysis analysed and presented in frequency and percentage form.

The assumptions (normality and homogeneity) of a parametric test were tested for the data collected from the families for pretest before the application of training and post-test after the application of training. Table 1 shows the Shapiro-Wilk test results for the assumption of normality. The resulting p-value of Levene’s test that shows the homogeneity of variance calculated for both pretest and post-test is less than the significance level ($p < .05$), suggesting that the obtained differences in sample variances have equal population variances.

Table 1. Pre-Test and Post-Test Shapiro Wilk Statistics

	Shapiro-Wilk		
	Statistic	Df	Sig.
Pre-Test	0.93	15	0.29
Post Test	0.91	15	0.16

* $p < .05$

Table 1 shows that the data collected from both pretest and post-test meet the assumption of normality. Before the application of comparison tests, it was confirmed that the assumptions of normality and homogeneity of the variances were met. The scores obtained from the scales are continuous and in interval scale. Being independent of one sample from another sample (group), measuring dependent variable in ratio or interval scale, and meeting the assumption of normality and homogeneity of variances are required for the application of parametric tests (Köklü, Büyüköztürk & Bökeoğlu, 2007, s. 152-161). Within this context, paired-samples t-test was used to compare the scores obtained from the pretest and post-test.

3. Findings

The findings obtained from the process of implementing an informative parent training programme on the legal rights of families with children with disabilities are presented below under the headings of families about the programme, their level of knowledge about their legal rights before and after the programme, and their level of satisfaction with the programme.

3.1. Findings Related to the Expectation of the Programme

Table 2. Frequency and Percentage Distribution of Families with Disabled Children Regarding the Expectation Levels of the Programme

Features	Categories	f	%
The reason for joining the program	Acquisition of knowledge	14	93.3
	Curiosity	1	6.6
	Education	6	40
On what subject they have the least information about their rights	Self-care	3	20
	Employment	2	13.3
	All topics	5	33.3
Previously participated in training on legal rights	Yes	0	-
	Never	15	100
	By special education centres	4	26.7
	By searching online	3	20
How they exchange information about legal rights	By asking other parents	3	20
	Asking friends and relatives	2	13.3
	Lawyers	1	6.6
	Never	2	13.3
	Obtaining awareness of their legal rights	10	66.6
The expectation of the Program	Preparation for the future of the child	2	13.3
	To be more conscious	1	6.6
	To learn how to defend their rights	1	6.6
	To identify their deficiencies	1	6.6
Total		15	100

In Table-2, when the sources of information about the legal rights of the parents with children with disabilities and the expectations of the parent training programme they were participating in are analysed, 93.3% of the respondents answered “obtaining information” when asked about the reasons for participating in the programme, whilst one participant responded because he was curious. For the question “In which area do you think you are less knowledgeable about your legal rights?” 33.3% of the participants stated that they did not know their rights adequately in all matters, 40% in education, 20% in care, and 13% in employment. All participants reported that they had not previously participated in a similar information programmes on legal rights. For the question “How have you been exchanging information about legal rights to date?”, 26% of the participants (seven) were from private special education and rehabilitation centres, 20% were researching the internet, 20% were asking other families with disabled children, and 13.3% were asking their friends or relatives about their legal rights. 13.3% of the participants stated that they had not received any information from anyone or anywhere before. When asked about their ‘expectations from the informative parent training program’ about the legal rights they will participate in, 66.6% of the participants expressed their expectations of the programme as getting to know their legal rights, 13.3% of the participants expressed their expectations of the programme as preparing for their child’s future, one said to be a more conscientious parent, another said to learn how to defend the parent’s rights, whilst the final participant said to identify and fulfil their child’s needs.

3.2. Findings on the Information Level of the Parents

As stated in the method section, before the implementation of the parent training programme, the Family Information and Program Expectations Form, whose findings were shared above, was first applied, after which the Legal Rights Information Test was applied to the families to determine their level of knowledge about the legal rights of families.

The same test was applied again as a post-test for the families subsequent to the training sessions. In this context, the pre-test and post-test scores obtained from the legal rights information test conducted for the families are presented in Table-2.

Table 3. Family Legal Rights Information T-Test Results; Pre-test and Post-test Scores

	N	\bar{X}	Ss	t	P
Info Pre - Test	15	17.73	5.910		
Info Post- Test	15	31.47	4.033	-8.573	.000

When Table-3 is examined, a statistically significant difference was found between the Legal Rights Information Test of the Families pre-test and post-test scores ($t = -8.573, p < .05$). Parents' Legal Rights Information pre-test mean scores (17.73) are lower than post-test mean scores (31.47) and the difference is statistically significant. In other words, according to this finding, obtained as a result of the analysis, the informative education on legal rights given to families with children with disabilities has been effective.

3.3. The Evaluation of the Programme and findings regarding Social Validity

The results of the programme evaluation and social validity that families indicated at the end of the programme are reported in Table-3.

Table 4. The distribution of the frequency and percentages of the parents' satisfaction with the programme

Question	The Categories of Answers	f	%
To what extent the programme meets expectations	Yes	14	93.3
	Mostly	1	6.6
Views on the content and duration of the programme	The content and duration were sufficient	10	66.6
	The duration was short	5	33.3
	All of them	8	53.3
The subjects found useful in the programme	Education	5	33.3
	Employment	4	26.7
	Social Security	2	13.3
	Health	2	13.3
The subjects found useless in the programme	Transportation	1	6.6
	Everything was useful	12	80
	Development through history	2	13.3
	The rights of higher education	1	6.6
	Very good / good / fine / enough	9	60
Your suggestion and thoughts on the handbook 'The Legal Rights of Parents'	Informative	2	13.3
	Fine but can be developed	1	6.6
	Phone services and web addresses are useful	1	6.6
	Reference guide	1	6.6
Satisfaction with participating in the programme	Yes	15	100
	No	0	-
Thoughts on the practicality of the use of this programme for other families	Yes	15	100
	No	0	-

The suggestions of the families on the programme	Implementations should be more frequent and repeated	12	80
	The duration period should be longer	2	13.3
	Examples and details should be increased	1	6.6

When Table-4 is examined, the opinions of the participants regarding programme evaluation and satisfaction are as follows: while 93.3% of respondents answered yes to the question “Did this programme you attended meet your expectations on learning your legal rights?”, one of them said, “Mostly yes”, while for the question regarding the content and duration of the programme being sufficient, two-thirds of the respondents answered “Yes”; one-third stated that the duration should be longer. When asked “Which of the topics presented in the programme are useful to you?”, it was seen that the participants marked more than one option. In this context, 53.3% of the participants marked all of them, while one-third of the participants marked “education”, 26% marked “employment”, 13.3% “social rights”, 13.3% “health rights” and one parent marked “transportation” as being useful to them. The question “What are the issues that are not useful to you in the programme?”, 80% of the participants stated that all the programme had been beneficial, while two stated that the historical process was not useful and one stated that the rights of higher education were not useful to them. All participants stated that there was no part of the researcher’s presentation that they had difficulty understanding. Finally, the presentation format was good enough for all the participants.

As an answer to the question “What are your opinions and suggestions regarding the booklet on legal rights of families given to you in the program?”, 60% of the participants said that they thought that the booklet was well presented, 13.3% said it was good but could be developed, one said it was good and very comprehensive, one stated that it was very useful to have the relevant institutions phone numbers and internet addresses in the booklet, and the other participant stated that the booklet is great work and he will carry it with him all the time. All the participants stated that they had been happy to participate in this programme and that they believed it would be useful to other families too. The most important suggestion made by the participants regarding the programme was that such programmes should be conducted more frequently. Some participants proposed organizing up-to-date courses with wider and more extensive timeframes since they wanted to know about their legal rights in various subjects. Also, one participant shared the view that it may be useful to offer similar programmes on disabled children to families without disabled children.

4. Discussion and Conclusion

According to the research findings, families do not consider that they are sufficiently aware of their legal rights. They try to learn their legal rights from different sources. None of the participating families had ever previously attended training on legal rights. Before participating in the training programme offered within the scope of this research, they expected that the level of information they were aware of regarding legal rights would increase as a result of this training. These findings are consistent with the limited studies in the literature (Çitil, 2016; Çitil & Doğan, 2019; Gür & Kurt, 2011). According to Gilson et al. (2017), little is known about how parents would prefer to access available resources (e.g., programmes, supports, training).

The level of information on the legal rights of families of children with SEN, which is the dependent variable of this study, was found to have increased after the informative parent training application offered to the families. In this context, it was observed that the training programme met the expectations of the families.

According to various reviews and meta-analyses in the literature, parent education has a considerable impact on children and their families (Beaudoin, Sébire, & Couture, 2014; Lee, Niew, Yang, Chen, & Lin, 2012; Wade, Llewellyn, & Matthews, 2008). Cohen et al. (2010) found in a review that the training offered to parents with disabled children improved their parenting skills. Burke et al. (2016) conducted parental advocacy training with Latin families. After the training, the group participants were shown to have significantly more special education knowledge (Burke, Magaña, Garcia, & Mello, 2016). Again, Burke et al. (2016) conducted another research under the Voluntary Advocacy Project (VAP). After a given form of training, the participants showed significant gains in their special education knowledge and advocacy skills from pre-tests to post-tests (Burke,

Goldman, Hart, & Hodapp, 2016). In Rouleau's (2007) study, twelve parents participated in a total of 12 sessions for a total of 24 hours of training. As a result of the training, parents' knowledge about their legal rights in terms of understanding the Individualized Education Programme process had increased. When all these studies are evaluated, the results of this research are consistent with the literature. As a result of the research, two-thirds of the families argued that the programme and the duration were sufficient, but one-third argued that the duration was too short. This study was performed over four sessions and, excluding pre-tests, it lasted about four hours. Considering that some families think that the duration was short, it would be possible to increase the number of days over which the programme is run and extend the research's duration for a few more hours. In another study comparing training programmes, Burke (2013) found that advocacy training programmes differ according to duration, training emphasis and activities. Therefore, it remains unclear what kind of education significantly improves knowledge and advocacy skills (Burke, Goldman, Hart, & Hodapp, 2016). In this way, content development can be carried out, such as homework assignments that were not implemented in this research and helping parents to gain skills in researching legal rights. The parents' skill at defending their rights has not been examined in the research. In this context, descriptive and applied research could be undertaken. For example, research can be carried out involving the education of parents of children with SEN who do not know how to write a petition, the ability to apply to formal institutions such as CIMER (Presidential Communication Centre), or the ability to develop solutions for specific problems.

The survey shows that parents mostly liked the content presented in the programme curriculum, finding it to be perfectly adequate. In similar studies in the literature, parents reported a high level of satisfaction with similar programmes (Beaudoin, Sébire, & Couture, 2014; Burke, Magaña, Garcia, & Mello, 2016; Suppo & Floyd, 2012). Besides, most studies show that families participating in parent education experience increased positive parent-child interactions and reduced parental stress (Suppo & Floyd, 2012). However, a few of the participants stated that the historical process was not useful. One participant parent also stated that the content on Higher Education Rights was not useful too. Here, it is seen that the age and type of disability of the child influences the perspective of the families. For example, parents who have a 20-year-old child with a severe mental disability may not need to know the rights of higher education students with SEN. The extent to which parents consider various types of information useful can vary according to demographic factors (e.g., child's age, disability type, socio-economic status, etc.) (Gilson, Bethune, Carter, & McMillan, 2017). According to Leiter and Wyngaarden-Krauss (2004), parents with children with severe and multiple disabilities may have different needs and additional service requests. For this reason, the training programme on the legal rights of families with children can be differentiated by considering the characteristics of the target group.

The booklet on the legal rights of families of children with SEN was prepared and distributed for this research. According to the research findings, families stated that this booklet was very useful. Young, Morgan, Callow-Heusser & Lindstrom (2016) conducted an intervention study on parents only in the form of a 'brochure' and 'brochure + training'. As a result of the research, the members of the group who received 'brochure + 60 minutes of training' showed a much higher level of transition information. It has been observed that it is useful to give courses on the legal rights of families of children with SEN based on direct and face-to-face participation backed up by institutions, as in this research. However, many parents may not participate in such training and courses for various reasons. According to Çitil's (2016) research, 72.5% of mothers have never participated in informative activities such as conferences, panels, symposiums, and training courses. 15.8% of mothers and 6.1% of fathers who have children with SEN participate in such activities once a year (Çitil, 2016). It has been seen that the chances of parents participating in such a training programme on legal rights are actually quite low, as only a small number of parents attend informative training. Therefore, it might be useful to prepare and distribute informative printed materials on the legal rights of parents of children with SEN. However, Fitzgerald and Watkins (2006) found that the readability of handbooks on parents' rights exceeded many parents' reading skills and created a potential barrier to the development of some parents' advocacy skills. For this reason, these materials should be prepared in a language suitable for the target audience.

It has been observed that some researchers, government agencies and non-governmental organizations have set up websites and various social media groups and discussion forums on this subject to help families with of children with SEN learn their legal rights. These initiatives are undoubtedly very useful. Shachar and Neumann (2010) conducted a meta-analysis comparing the academic performance of studies completed

between 1990 and 2009 in distance education courses. In 70% of the 125 studies included in the meta-analysis, students who took courses with distance education (compared to formal education) achieved greater educational attainment. (cited by Burke, Goldman, Hart, & Hodapp, 2016). However, Shachar and Neumann's research results may not be applicable in the case of Turkey. Besides this, according to Çitil's (2016) research, half of the mothers of children with SEN and two-fifths of fathers do not use the internet at all. It is seen that those who use the internet for research or obtaining information are very limited.

Only 20% of the participants of this research use the internet to exchange information on their legal rights. According to the research, people prefer to ask employees of special education and rehabilitation centres or they prefer to learn via their immediate surroundings. Considering all these results, it is useful to provide face-to-face training and counselling for the parents of children with SEN. Besides, they should be provided with a combination of different methods such as printed materials and websites. Different methods should be used and tried for parental advocacy training. For example, Plunge (1998) used video training to give parents information about their legal rights, special education processes, communication with school professionals, and the development of Individualized Education Programmes, and has achieved effective results. Suppo & Floyd (2012) also proposed alternative methods and techniques for parents living in remote and rural areas.

One of the biggest limitations of this research is it is being conducted with a single group. For this reason, it would be beneficial to have a larger sample of similar studies, differentiated according to different types of disability, expanded content, different training methods, and control group variations (Young et al., 2016). As mentioned above, the parent training programmes for parents of children with SEN are extremely limited. Among these training programmes, it can be seen that there are very few studies involving legal rights (Balta, 2010; Sardohan-Yıldırım, 2017). For this reason, it can be said that the practice and research that aims to teach families their legal rights and responsibilities will contribute greatly to the quality of life of families of children with SEN, as well, of course, as its contribution to the literature.

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Investigation of Intergenerational Romantic Relationship Perception

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ABSTRACT

The aim of this research is to examine the perception of intergenerational romantic relationship. In this study, phenomenology method, which is one of the qualitative research methods, has been used. The sample of the study consists of 113 participants, 52 of whom are male and 61 are female. While 8 male, 4 female participants fill in the form face to face, 44 male, 57 female participant responses the answers online. Participants have been completed the answers to the research questions online. In the data analysis, inductive content analysis has been used. In the analysis of the research findings, it has been concluded that there are differences in the perception of the X, Y and Z generation participants in romantic relations by taking into account the gender and marital status variables.

Keywords:

Romantic relationship, intergenerational, romantic relationship before marriage, romantic relations of adolescents

1. Introduction

In terms of creation, it can be considered that adequate physiological and psychological needs of human beings are sufficient to maintain the continuity of mental and physical health, and that only biological needs are not the right approaches for the continuity of life. In support of this, Maslow (1943) states that human beings have psychosocial needs such as love and belonging, as well as physiological needs (Cited in Ersanlı & Koçyiğit, 2013). It is stated that the social character of human beings necessitates the relationship with other people and it is an indispensable need (Terzi & Özbay, 2016). Adler (2016) states that human relations have a three-dimensional structure as friendship, love and work relations and treats each of these relationships as a life task. Love, which is one of these life duties, is in the love relationship, marriage relationship and parenting duties of individuals. Therefore, it can be said that establishing a romantic relationship is a life task. It is stated that romantic relationship is a relationship that includes voluntarily established attachment, passion and intimacy with individuals' freely chosen partners (Collins, 2003; Sternberg, 1986). Human meets its psychological needs by establishing close relations such as "belonging (Maslow, 1943; cited in Özen & Gülactı, 2010)"; "self-disclosure", "sharing" (Müezzinoğlu, 2014), "love and compassion (Sexton & Sexton, 1982; cited in Eryılmaz & Atak, 2009)".

Some of the romantic relationships that usually start with dating may result in marriage with family unity. Flirting, which is a process of getting to know each other, can affect the relationship after marriage positively or negatively. Another common type of marriages is arranged marriages. In the literature, there are many studies in which arranged and dating marriages are examined in terms of various variables. Some studies (Çelik, 2009; Macit, 2016; Şendil & Korkut, 2008) show that marital adjustment is higher among individuals who have married by agreement (flirting) compared to arranged married individuals (Çelik, 2009; Macit, 2016; Şendil & Korkut, 2008). In addition, Çimen (2007) states that the marital satisfaction of individuals who are arranged married is lower. It can be said that individuals who have spend more time with their partners,

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get to know each other better, learn their wishes and expectations about marriage and flirting contributes to longer and happier marriages.

It is known that the pre-marital process is important in order to establish a healthy and long-term marriage and that the marriages, which cannot be established on a solid basis, bring divorce. Mavili and Aktaş (2009) state that couples' family history, culture and upbringing make it difficult to solve the problems in the family. When the divorce statistics are evaluated, it is stated that the rate of divorce is higher in arranged marriages than in consensual marriages (Sağlam & Aylaz, 2017). In this context, it can be said that it is important for individuals to have a romantic relationship to get to know each other before marriage.

Turkey Statistical Institute (TÜİK), according to 2017 data 38.7% of the marriage relationship is seen in the first year of their parents, resulting in divorce. One reason why the divorce rate is so high may be that the couples are married in an insufficient and incorrect way (without being masked and without transparency in the relationship) without flirting and not fully acquainting each other. It can be said that individuals' ability to choose the right partner depends on their romantic relationship experiences. It can be said that individuals' ability to choose the right spouse depends on their romantic relationship experiences. Özabacı (2014) states that pre-marital romantic relationship experiences and developed criteria affect individuals' marital decisions. If couples fail to spend enough time together before marriage or do not fully open themselves and do not express their expectations and wishes to their partners, this may lead to problems later in the relationship. It can be said that in order for these relational problems to disappear, individuals need to develop themselves in terms of having romantic relationships and this depends only on their experiences.

Pre-marriage romantic relationships can be affected by social perceptions. In their study of high school students about peer-friendship relationships; Büyükşahin-Çevik and Atıcı (2008) was found that families had an effect on their adolescents' romantic relationships and especially mothers intervened more in Turkey. When the development process of individuals is taken into consideration, it is seen that romantic relationships are experienced during adolescence (Bayhan & Işıtan, 2010; Collins, 2003; Kansky & Allen, 2018). Therefore, it can be said that adolescence is a critical period for human life, especially in terms of the recognition of the opposite sex and the development of romantic relationship skills. In the literature supporting this, it is stated that the individual either establishes his / her own identity or shapes the cognitive elements that contain standards, expectations and ideals related to romantic relationships in this period (Sprecher & Metts, 1999; cited in Deveci-Şirin & Soyer, 2018). Yalçıntaş- Sezgin (2015) states that the concepts of flirting or dating are mostly used for adolescent romantic relationships and defines the flirt as a relationship that includes communication, emotion sharing, and experiences based on sexual attraction. These characteristics are among the developmental tasks of the psychosocial period that Ericson describes it as "isolation vs proximity" (Ericson, 1968, cited in Arslan & Arı, 2008). It can be said that the romantic relationships experienced during adolescence help to fulfill these tasks.

Another period in which romantic relationships are important is the emerging adulthood (Arnett, 2000), which is the period between adolescence and adulthood. In the literature, it is observed that the romantic relationships in adolescence have very important effects on emerging adults to develop the necessary behaviors in order to better adapt to the adult life (Connolly & Konarski, 1994; Yavuzer, 2017). It is stated that romantic intimacy, which is one of the important criteria of healthy identity development for emerging adults, is a process that includes value, belief, happiness, choice, emotion and productivity in addition to sexual attraction (Arnet, 2000). The relationships in this period are different from those in adolescence. Adolescents perceive romantic relationships as short-term, fun-based flirty, while adults are more concerned with physical and emotional closeness and think that their partners evaluate future (Ercan & Eryılmaz, 2013). In this context, it can be said that adolescents and adults have different romantic perception perceptions and their meanings. In addition, although studies on romantic relationships are predominantly on adolescents and emerging adults, it can be said that individuals' perceptions of romantic relationships are important in later life.

When the literature is examined, there are many researches about romantic relations. While some of these studies focus on the romantic relations of adolescents (Kansky & Allen, 2018; Shulman, Seiffge-Krenke, & Walsh, 2017; Yavuzer, 2017), some of them are related to adult romantic relations (Erçan & Eryılmaz, 2013; Eryılmaz & Atak, 2009; Gizir, 2013; Saraç, Hamamcı, & Güçray, 2015;). However, no research has been found comparing the perception of intergenerational romantic relationship. As in many other cases, it can be thought that the romantic relation phenomenon is different between generations. It can be said that it is important to determine how these relationships, which occupy a big place among adult lives, are perceived, how much and in what direction they have changed from past to present.

In the Turkish Language Association (TDK) glossary, the generation is defined as (a group of people who were born in approximately the same years, have shared the conditions of the same age, therefore similar problems, shared fate, and who were responsible for similar duties. In terms of the classification of generations (Mannhenim, 1928 cited in Kelgökmen- İlic & Yalçın, 2017) Those born between 1965-1980 are generation X, those born between 1981-2000 and generation Y and those born after 2000 are considered as generation Z. In the same period, depending on the characteristics of the period in which they develop a common consciousness, individuals with similar thoughts and experiences on any subject (Cox & Holloway, 2010; Gürbüz, 2015) perceptions and thoughts of any phenomenon may be similar to each other and various aspects of other generations may be expected to be different.

When the literature is examined, it is seen that intergenerational comparisons are more related to work life (Aydın & Başol, 2015; Dinç & Aydemir, 2015; Fenzel, 2013; Koç, Öztürk, & Yıldırım, 2016). However, there is no study on the perception of intergenerational romantic relationship which is the subject of this research. It can be said that the family union, which is described as the smallest unit and building block of the society, is based on romantic relationships. Although romantic relationships seem to be an experience in which only two people are interlocutors, it can be said that there are complex relationships that parents and especially other individuals in the society comment on. It is seen that the support from the family has a positive effect on establishing romantic relationships for both individuals in adolescence and emerging adulthood (Scharf & Mayseless, 2001; Seiffge-Krenke, Persike, & Shulman, 2015). Intergenerational differences can be thought to differ in romantic relationship perception as in many other subjects. Conflicts caused by differences can be prevented by knowing the dynamics that affect the point of view of individuals of different age groups. Therefore, in this study, it was aimed to investigate the perception of romantic relationship between generations and the aim of this study was to determine the opinions of individuals in different age groups about "Definition of Romantic Relationship", " Perspectives on Romantic Relationships Before Marriage" and "Romantic Relationships of Adolescents". In addition, it is aimed to examine and compare research questions according to gender and marital status variables.

2. Method

2.1. Research Model

In the study, case science pattern which is one of the qualitative research designs is used. Case science pattern is an in-depth study and investigation of the cases. The facts of the study were determined as "romantic relationship", "romantic relationship before marriage" and "romantic relations of adolescents". In order to determine the meaning of the romantic relationship, the point of view of romantic relations before marriage and the romantic relations of adolescents, an interview form consisting of three open-ended questions and gender, age, and marital status demographic variables were formed by the researcher. Interview forms were delivered to 101 participants via online media (via mail and message) and 12 people were interviewed face to face. Relevant meanings and themes have been revealed based on the interviews. The answers were transferred to microsoft excel program and themes were created based on repeated words and phrases.

2.2. Study Group

A total of 113 participants were interviewed, 52 of whom were male and 61 were female. The appropriate sampling (Büyüköztürk, 2012) is the selection of the sample from easily accessible and practicable units due

to the limitations in time, money and labor. The participants were grouped into 3 generations. Thirteen married men (mean age: 43.50) who were born between 1965 and 1980 (mean age: 43.50), 13 married women (mean age: 42.69); 12 single men (mean age: 28.33), 14 single women (mean age: 26.57), 11 married men (mean age: 29.90), 18 married women (mean age: 31.33) born in 1981-1999; There were 16 single men (mean age: 16.73) born after 2000 (age Z) and 16 single women (mean age: 17.20 years). Table 1 shows the demographic characteristics of the participants.

Table 1. Characteristics of the sample

	Married		Single	
	Male	Female	Male	Female
X Generation (1965-1980)	13	13	-	-
Y Generation (1981-1999)	11	18	12	14
Z Generation (2000-)	-	-	16	16

2.3. Data Collection

Research data were collected by semi-structured interview form developed by the researcher. In the interview form, the participants were asked about their birth date, gender and marital status. Questions about the facts "What is a romantic relationship?", "What do you think about romantic relationships before marriage" and "What do you think about the romantic relationships of adolescents?". In order to determine the research questions, expert opinion was consulted and questions were raised by an expert who had studies on marriage and romantic relations. While 101 participants completed the interview form online, 12 participants were interviewed face to face. Before submitting an online form, the researcher introduced himself and gave information to the participants for the purpose of the research. E-mail and message interview forms were sent to the volunteers who wanted to participate in the research via online environment. After all the data were collected, the interview documents were transferred to the computer environment and classified according to the characteristics of generation, gender and marital status. After the arrangements made, the data obtained from the participants were read several times at different times. After these readings, data were transferred to microsoft excel program and repetitive words and themes were coded in the direction of word groups.

2.4. Data Analysis

In the analysis of data, inductive content analysis was used. Content analysis is a method of defining, analyzing and presenting themes based on data (Selçuk, Palancı, Kandemir, & Dündar, 2014; Yıldırım & Şimşek, 2006). In this context, first of all, all data were read repeatedly at different times, and the themes that are prominent for the answers to the questions were coded. For the purpose of coding, data analysis was performed by another expert and the codes and the themes were compared. After the comparison, opinions were exchanged and themes were established by providing unity.

In the validity dimension of the research, long-term interaction and expert examination methods were used. In addition, attention was paid to take into parenthesis (epoche) which is the disregard of the researcher's experience, knowledge and prejudices about the case he / she examines in his study (Byrne, 2001). In order to ensure reliability, from the planning of the process to the conclusion of each process, each stage was shared with a specialist in qualitative research methods.

3. Findings

The themes of the answers given to the questions as a result of the coding of the data obtained from the participants and the examples of the answers that make up these themes are as follows:

3.1. Participant Opinions on Romantic Relationship Perception

Seven different themes were reached by examining the answers to the question “What is Romantic Relationship?”. Themes and sample participant views are shown in Table 2.

Table 2. Themes and Sample Participant Opinions Based on Determination of Themes

Emotional Dimension	‘Walk of love with excitement and passion’, ‘One word Love’, ‘Romantic relationship expresses emotional bond’, ‘It is the way of a feeling journey; excitement, longing, pain, grief, happiness, many feelings, and the result of the search of people who want to live because of their nature’, ‘It is a form of relationship that emerges with the formation of a mutual interpersonal set of positive feelings.’
Behavioral Dimension	‘It's something like there isn't any certain time for gifting, joking, laughing, crying’, ‘Two people show the same care in a relationship’, ‘The effort of both people to continue the relationship’, ‘To show that you love the other person, that you care about him/her, by word or behavior’
Interpersonal	‘Normally, I think the romantic relationship will make the couple happy, special words, gestures and a more intense emotion environment.’, ‘Emotional relationship between two people. We can also perceive it as being darling’, ‘Romantic relationship is a process of love-sharing between men and women’
Intentional	‘It is the relationship that couples meet each other's needs. (love, respect, touch, service, gift)’, ‘Romantic relationship is to alleviate each other's loneliness.’
Meaning Given to Relationship	‘Soggy things’, ‘It is a kind of relationship that your heart can go a little out of the logic in which pleasant words are spoken’, ‘I don't have much idea, but for me, the romantic relationship is different from other kind of love.’, ‘I think it is the sweet-happy union that occurs when men and women both complete and reveal each other's emotional sides.’
Time/Process Dimension	‘Flirting and loving process’, ‘Romantic relationship is a process of love-sharing between men and women.’, ‘It is a form of relationship that is happy and exciting as partners are in the process of discovering each other.’
Sexuality	‘It is a form of relationship with sexual interest and intense bond in passionate intimacy’, ‘When the spouses surprise each other from time to time, the sensual contact during the time they spend together (putting his hand on his shoulder, etc.) represents the romantic relationship.’

Table 3 shows the grouping of the responses obtained from the interviews according to gender, marital status and age (generation) variables. A participant's response may be related to more than one theme.

Table 3. Frequency of Repetition of Themes by Category

Male Single Y		Female Single Y	
Emotional Dimension	10	Emotional Dimension	11
Behavioral Dimension	10	Behavioral Dimension	10
Interpersonal	8	Interpersonal	5
Intentional	3	Intentional	2
Meaning Given to Relationship	3	Meaning Given to Relationship	3
Time / Process Dimension	2	Time / Process Dimension	2
Sexuality	0	Sexuality	0
Male Single Z		Female Single Z	
Emotional Dimension	7	Emotional Dimension	15
Behavioral Dimension	4	Behavioral Dimension	9
Interpersonal	7	Interpersonal	5
Intentional	1	Intentional	0
Meaning Given to Relationship	5	Meaning Given to Relationship	6
Time / Process Dimension	0	Time / Process Dimension	0
Sexuality	0	Sexuality	1
Male Married X		Female Married X	

Emotional Dimension	9	Emotional Dimension	13
Behavioral Dimension	3	Behavioral Dimension	15
Interpersonal	5	Interpersonal	4
Intentional	0	Intentional	0
Meaning Given to Relationship	5	Meaning Given to Relationship	2
Time / Process Dimension	2	Time / Process Dimension	0
Sexuality	2	Sexuality	2
Male Married Y		Female Married Y	
Emotional Dimension	19	Emotional Dimension	23
Behavioral Dimension	0	Behavioral Dimension	7
Interpersonal	4	Interpersonal	8
Intentional	2	Intentional	2
Meaning Given to Relationship	2	Meaning Given to Relationship	4
Time / Process Dimension	0	Time / Process Dimension	2
Sexuality	1	Sexuality	0

3.2. Participant Opinions about Premarital Romantic Relationship

Thirteen different themes were reached by examining the answers to the question “What do you think about romantic relationships before marriage?”. Themes and sample participant views are shown in Table 4.

Table 4. Themes and Sample Participant Opinions Based on Determination of Themes

Emotional Dimension	‘Intensity of emotions experienced before marriage may decrease after marriage’
Behavioral Dimension	‘In the premarital relationship, there is the excitement of the secret cover meeting you’re young and you enjoy more every time you spend.’
Regarding Marriage	‘But when you get married without recognition, there are often separations.’
Interpersonal Dimension	‘I must have a girlfriend before marriage’
Boundaries	‘Exact boundaries should be defined and be walked through that boundaries’, ‘I look positive after a restrained relationship’
Positive Perspective	‘It is normal for a person to want to know the person to whom he / she will have bonds, to know the person to live and to share things with him/her.’
Negative Perspective	‘I don’t find romantic relationships very appropriate because romantic relationships are temporary and people may experience emotion transitions in romantic relationships.’
Process	‘Temporary things’, ‘I think romantic relationships before marriage is a process of “trial and error” that leads to successful marriage and the right choice of spouse.’
Romanticism	‘But this is a real premarital people becoming more romantic.’
Contributions to Relationship	‘Most of the time, a person experiences his/her marital life by taking into account the mistakes or experiences they have made in a romantic relationship.’
Society and Belief Dimension	‘But it is not appropriate as a belief’, ‘Premarital romantic relationships should be evaluated according to socio-cultural and belief system of society or individual.’
Intentional Dimension	‘As a result, people need to meet some of their physical or emotional needs throughout their life.’
Sexuality	‘Premarital romance is a candidate relationship to today’s Leyla-Mecnun epic if there is no sexual experience.’

Table 5 shows the grouping of the responses obtained from the interviews according to gender, marital status and age (generation) variables. A participant's response may be related to more than one theme.

Table 5. Frequency of Repetition of Themes by Category

Single Male Y	Single Female Y
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Emotional Dimension	4	Emotional Dimension	5
Behavioral Dimension	5	Behavioral Dimension	6
Regarding Marriage	3	Regarding Marriage	7
Interpersonal Dimension	3	Interpersonal Dimension	4
Boundaries	3	Boundaries	0
Positive Perspective	0	Positive Perspective	2
Negative Perspective	2	Negative Perspective	1
Process	3	Process	4
Romanticism	5	Romanticism	2
Contributions to Relationship	3	Contributions to Relationship	7
Society and Belief Dimension	1	Society and Belief Dimension	0
Intentional Dimension	1	Intentional Dimension	2
Sexuality	1	Sexuality	0
<hr/> Single Male Z		<hr/> Single Female Z	
Emotional Dimension	0	Emotional Dimension	4
Behavioral Dimension	2	Behavioral Dimension	3
Regarding Marriage	3	Regarding Marriage	6
Interpersonal Dimension	2	Interpersonal Dimension	4
Boundaries	1	Boundaries	0
Positive Perspective	11	Positive Perspective	3
Negative Perspective	0	Negative Perspective	3
Process	0	Process	0
Romanticism	0	Romanticism	0
Contributions to Relationship	0	Contributions to Relationship	4
Society and Belief Dimension	0	Society and Belief Dimension	0
Intentional Dimension	3	Intentional Dimension	0
Sexuality	0	Sexuality	0
<hr/> Married Male X		<hr/> Married Female X	
Emotional Dimension	5	Emotional Dimension	9
Behavioral Dimension	4	Behavioral Dimension	9
Regarding Marriage	2	Regarding Marriage	2
Interpersonal Dimension	3	Interpersonal Dimension	1
Boundaries	3	Boundaries	1
Positive Perspective	4	Positive Perspective	4
Negative Perspective	0	Negative Perspective	0
Process	1	Process	3
Romanticism	3	Romanticism	1
Contributions to Relationship	0	Contributions to Relationship	6
Society and Belief Dimension	1	Society and Belief Dimension	0
Intentional Dimension	0	Intentional Dimension	2
Sexuality	1	Sexuality	0
<hr/> Married Male Y		<hr/> Married Female Y	
Emotional Dimension	0	Emotional Dimension	11
Behavioral Dimension	1	Behavioral Dimension	9
Regarding Marriage	2	Regarding Marriage	9
Interpersonal Dimension	3	Interpersonal Dimension	4
Boundaries	1	Boundaries	0
Positive Perspective	2	Positive Perspective	8
Negative Perspective	1	Negative Perspective	0
Process	2	Process	5
Romanticism	1	Romanticism	4
Contributions to Relationship	1	Contributions to Relationship	5
Society and Belief Dimension	2	Society and Belief Dimension	0

Intentional Dimension	7	Intentional Dimension	4
Sexuality	1	Sexuality	0

3.3. Participant Opinions About Romantic Relations of Adolescents

Sixteen different themes were reached by examining the answers to the question “What do you think about the romantic relationships of adolescents?”. Themes and sample participant views are shown in Table 6.

Table 6. Themes and Sample Participant Opinions Based on Determination of Themes

Emotional Dimension	‘Excitement, adrenaline, expression of the first emotion, the first emotional analysis of personality, but I see innocent but temporary.’
Behavioral Dimension	‘Some of them can become very disgusting’
Interpersonal Dimension	‘I say "grow up children" because they are always happy, declaring people princes / princesses of their lives and worshipping them.’
Technology	‘They start on the phone and end on the phone’
Social-Belief Dimension	‘I think that this can happen through removing the issue of mutual relations from the axis of virginity as a society and to start training on these issues at an early age so that both boys and girls can develop healthy.’
Sexuality	‘I think that adolescents perceive their relationships as sexually attractive behaviors rather than romantic relationships, or as meeting sexual desires rather than liking from the opposite sex.’
Intentional	‘Sometimes it's just not to be alone in a friend environment.’
Romanticism	‘If it is to be lived, I think a love should be experienced in adolescence’
Process	‘I think it's temporary.’, ‘This is the most beautiful time when your heart is so pure.’
Attributions to the Adolescent	‘It is very difficult to see something about romantic relationships among young people.’
Risks	‘Alcohol, cigarette or substance use together, running away from school, running away from home, having sexual experiences are mostly experienced in relationships during this period.’
Characteristic of Developmental Period	‘I perceive them as activities with a partner in order to complete / perform the expected developmental task.’
Positive Perspective	‘Everyone has or should have a relationship.’, ‘Always necessary and pleasing.’
Negative Perspective	‘Should not be at the Adolescence’, ‘I don't look positive to the romantic relationship of adolescents’
About Future	‘Nevertheless, having a romantic experience in adolescence adds a lot to the experiences of romance in their future lives.’
Generation Gap	‘I think it is based on more images and popularity because they are very impressed by popular culture.’

Table 7 shows the grouping of the responses obtained from the interviews according to gender, marital status and age (generation) variables. A participant's response may be related to more than one theme.

Table 7. Frequency of Repetition of Themes by Category

Single Male Y		Single Female Y	
Emotional Dimension	5	Emotional Dimension	7
Behavioral Dimension	6	Behavioral Dimension	7
Interpersonal Dimension	3	Interpersonal Dimension	5
Technology	1	Technology	0
Social-Belief Dimension	0	Social-Belief Dimension	0
Sexuality	1	Sexuality	0
Intentional	2	Intentional	11
Romanticism	5	Romanticism	1
Process	1	Process	4

Attributions to the Adolescent	3	Attributions to the Adolescent	3
Risks	0	Risks	0
Characteristic of Developmental Period	2	Characteristic of Developmental Period	4
Positive Perspective	1	Positive Perspective	1
Negative Perspective	0	Negative Perspective	1
About Future	2	About Future	0
Generation Gap	2	Generation Gap	2
<hr/>		<hr/>	
Single Male Z		Single Female Z	
Emotional Dimension	2	Emotional Dimension	4
Behavioral Dimension	2	Behavioral Dimension	7
Interpersonal Dimension	3	Interpersonal Dimension	3
Technology	3	Technology	1
Social-Belief Dimension	0	Social-Belief Dimension	0
Sexuality	0	Sexuality	1
Intentional	4	Intentional	3
Romanticism	0	Romanticism	0
Process	3	Process	3
Attributions to the Adolescent	1	Attributions to the Adolescent	2
Risks	0	Risks	0
Characteristic of Developmental Period	0	Characteristic of Developmental Period	0
Positive Perspective	2	Positive Perspective	2
Negative Perspective	1	Negative Perspective	1
About Future	0	About Future	0
Generation Gap	1	Generation Gap	1
<hr/>		<hr/>	
Married Male X		Married Female X	
Emotional Dimension	14	Emotional Dimension	8
Behavioral Dimension	7	Behavioral Dimension	5
Interpersonal Dimension	5	Interpersonal Dimension	4
Technology	0	Technology	0
Social-Belief Dimension	1	Social-Belief Dimension	0
Sexuality	3	Sexuality	4
Intentional	2	Intentional	4
Romanticism	4	Romanticism	0
Process	3	Process	3
Attributions to the Adolescent	2	Attributions to the Adolescent	1
Risks	1	Risks	0
Characteristic of Developmental Period	2	Characteristic of Developmental Period	3
Positive Perspective	2	Positive Perspective	7
Negative Perspective	3	Negative Perspective	4
About Future	3	About Future	2
Generation Gap	3	Generation Gap	2
<hr/>		<hr/>	
Married Male Y		Married Female Y	
Emotional Dimension	15	Emotional Dimension	14
Behavioral Dimension	6	Behavioral Dimension	5
Interpersonal Dimension	1	Interpersonal Dimension	3
Technology	0	Technology	4
Social-Belief Dimension	2	Social-Belief Dimension	0
Sexuality	3	Sexuality	6
Intentional	1	Intentional	3
Romanticism	2	Romanticism	3
Process	2	Process	1
Attributions to the Adolescent	0	Attributions to the Adolescent	1
Risks	4	Risks	6

Characteristic of Developmental Period	6	Characteristic of Developmental Period	4
Positive Perspective	0	Positive Perspective	6
Negative Perspective	4	Negative Perspective	2
About Future	3	About Future	2
Generation Gap	0	Generation Gap	3

4. Discussion

When the findings of the research are examined, it can be said whether the relationship between the generations of romantic relationship and the relationship between the X, Y, Z generations according to gender and marital status variables. *Emotional dimension* is the most frequently repeated theme in all age groups, regardless of gender and marital status. It is stated that emotions are at the forefront in romantic relationships (Kaçar & Parlar, 2019; Öztürk, 2013). Love, which is a part of romantic relationships, supply with emotions such as intimacy, loyalty, understanding, trust, love and respect (Sternberg, 1999 cited in Atak & Taştan, 2012). From this point of view, it can be said that individuals are one of the most important relationships that supply with emotional needs through romantic relationships.

Another common theme among female participants is the *Behavioral Dimension*. Yılmazçoban (2008) states that women have higher expectations than men in romantic relationships before marriage. Responses related to the behavioral dimension theme can be expressed as reflecting the behavioral expectations of female participants about romantic relationships and romantic relations are seen as the relationship with which certain operational requirements are fulfilled. Although the theme of sexuality is a sub-dimension of romantic relationships, it has not been repeated frequently by the participants. Balamir Bektaş and Karacan (2014), states that in traditional societies such as Turkish, romantic relationships and sexuality are more affected by social control. Mavi-Aydoğdu, Uzun, and Murat-Öztürk (2019) find that midwifery vocational high school students' attitudes towards sexual relations outside the marriage are negative and they care about being the virgin of the person they marry. This result is supported by other studies (Evcili, Cesur, Altun, Güçtaş, & Sümer, 2013; Tokuç, Berberoğlu, Varol Saraçoğlu, & Çelikkalp, 2011). This situation may be reasoned because of in Turkish society that based on social norms, the conversation about sexuality is not welcome. Kul (2019) states that the experiences of romantic relationships in the early years affect the attitudes and expectations of the opposite sex. The reason why the emotional dimension does not stand out in male participants may be that they are not encouraged as much as women in expressing emotions.

When the answers to the question about the romantic relations before marriage, which are the second of the research questions, are examined, it is seen that the theme of *Emotional Dimension* is repeated frequently in the responses of female married Y generation, whereas it is seen that the most frequently repeated theme of male participants is the *intentional aspect* of pre-marital relationships. It can be thought that man and woman's approaches to romantic relations are structurally different. Tarhan (2006) defines woman as an entity who affects first and then desires, while defines man as an entity that first desires and then affects. It can be said that this statement coincides with the research findings. *As Intentionally*, it is stated that the pre-marriage friendship and engagement processes of individuals allow them to get to know each other, to gain a lot of positive and negative experiences and to establish the necessary love bond for marriage (Duran & Hamamcı, 2010; Özgüven, 2000).

In the Y-participant responses, it is seen that the *Process* dimension for pre-marital romantic relationships is prominent when compared to the X and Z participant responses. What the participants emphasized about the process is the time that individuals spend together to get to know each other before marriage. According to a study conducted by the Ministry of Family and Social Policies (MoFSP) in 2015, 57% of marriages between 1981 and 1990 were arranged, while this ratio decreased by 34% in marriages between 2001-2011 (ASPB, 2015). The reason that the *Process* theme is more prominent among the Y generation participants than the X generation may be due to the fact that Y generation participants are affected by the differentiation in the perspective of dating relationships in the society, and that they prefer and marry after flirting (by agreement). It is stated that it is important for couples to evaluate each other with a rational and realistic

point of view before marriage in order to have a healthy and long-lived marriage union (Özgül, 2017). The fact that couples spend more time together before marriage due to sociocultural change and differentiation in social life may be the reason why the process dimension comes to the fore in the generation Y.

In terms of married individuals, it is seen that generation Y female respondents expressed more positive perspective towards romantic relationships before marriage. It can be said that this shows that female participants have a more positive attitude towards a romantic relationship before marriage. In addition, although the theme of Negative Perspective was seen among the Y-generation male respondents, it was not common in other groups of participants. Although we continue to be a traditional society, there is an increase in the number of dating (by agreement) marriage (Erdoğan & Kahraman, 2019; Şendil & Korkut, 2008). The fact that individuals get to know each other and get married may be the determinant of their longer and happier marital relationship.. While the responses to the Social-Belief Dimension theme were found only in the X and Y generation male respondents, there was no response in the Z generation participants' responses. This supports the fact that adult individuals have a traditional and conservative understanding about romantic relationships before marriage (Balamir Bektaş & Karacan, 2014; Yılmazçoban, 2008). Although there were no answers related to Sexuality theme in both sexes of Generation Z participants, there were answers at Generation X and Y male repetitive responses, even though it was less frequently repeated. It is stated that adult males' attitudes towards premarital sexual relationship are more negative than adult females' (Sakallı, Karakurt, & Uğurlu, 2001). The fact that sexuality is seen as an element of romantic relationship may be the reason for this theme to appear first in male participants. The reason why sexual theme between generation Z and generation X and Y does not stand out is that the conversation about sexuality for women and young people is not welcomed in the community.

It is seen that four of the eight responses to the theme of *Boundaries* belong to male Y generation and three to male X generation participants. This may mean that male participants of generation X and Y give more conditional approval to premarital relationships than those of generation Z, as well as female participants. Male ve X and Y participants' 'limited acceptance' of premarital romantic relationships may be due to their negative view of premarital sexual experience. In the literature supporting this, it is stated that males are more conservative for premarital sexual intercourse when compared between women (Sakallı et al., 2001).

When the answers to the question about the romantic relationships of adolescents, who are the third of the research questions, are examined, the responses of the Z generation participants on the theme of *Emotional Dimension* were not frequently repeated. However, it is seen that the most frequently repeated theme for the adolescent romantic relationships of married X and Y is *Emotional Dimension*. Another remarkable finding is that there are answers to the theme of *Technology* in adolescent romantic relationships. In the other generations, except for generation X, participants from both sexes have answers to the *Technology* theme. Adolescents are using the technology to relate to their partners in romantic relationships, to make daily contact, to discuss, to make stalk, to communicate with their partner after the separation (Draucker & Martsof, 2010; Vaterlaus, Tulane, Porter, & Beckert, 2018). Adolescents spend most of their days talking over the phone, texting and sharing on social media sites (Baker & Carreno, 2015).

The most frequently repeated theme among female Z generation participants is the *Intentional* dimension. Büyükpabuşçu (2011) states that dating for adolescents is a factor that facilitates status and acceptance within the peer group. Similarly, Savickaite, Dijkstra, Kreager, Ivonova, and Veenstra (2020) state that adolescents increase their popularity within the group. In the Generation Z participant responses, "Just to have someone..." can mean that they see their romantic relationship experiences as a means of making them popular among peer groups. When the findings were examined, another remarkable result was that X and Y generation participants described the romantic relationships experienced during adolescence as a *Developmental Task*. In the Z generation participants, there was no response to this theme. This finding is in line with Erikson's (1968) psychosocial development theory, which suggests that close relationships established during adolescence contribute to the development of an individual's healthy identity.

According to the findings of the research, it was revealed that some themes differed in male and female respondents. This may be due to the difference in values, attitudes and expectations determined by the traditional gender characteristics determined by the society (Honeycutt & Cantrill, 2001 cited in Gizir, 2013). In addition, the fact that men and women have different standards of romantic relations (Vangelisti & Daly, 2005) may be another reason for different themes to come to the fore.

5. Results and Recommendations

Romantic relations have an important place in human life in terms of forming marriage bond. Although it is thought that romantic relationships are more than two people, it is important to see how romantic relations are perceived, evaluated and understood. Considering the fact that we live together with individuals of different age groups in the society, it is natural that the different meanings loaded on various concepts may cause communication problems or disputes from time to time.

Sentences that start with "In our times..." may be a sign that the perception of generation X about themselves is different in many ways. In terms of romantic relationships, especially the perception of generation X towards adolescent romantic relationships is important. Generation X is usually the parent of generation Z, which is currently in adolescence. The fact that adolescents live and consume their romantic relationships as fast as they do in many other lives may not be welcomed by other generations. The fact that adolescents, emerging adults, and middle-aged individuals have different perceptions of romantic relationships may cause conflicts, especially between parents and adolescents. In order to reduce these conflicts, family trainings on communication with adolescents can be provided.

In this context, it can be said that the results of the research are important in terms of giving an idea about the source of the problem created by the conflicts related to the perception of romantic relations. In addition, the generation that gives the most conservative responses to romantic relationships before marriage is the X generation. The perceptions of the Z generation before romantic marriage are completely positive. Participants of generation Y generally have a positive perspective. It is stated that being conservative adversely affects attitudes towards romantic relationships before marriage including pre-marital sexuality (Sakallı et al., 2001). It can be said that the participants of Generation X have a more conservative attitude.

The most important limitation of this research is the number of participants. Since the study was a qualitative study, it was conducted with 113 participants and single X generation and married Z generation participants were not represented in this study. It was observed that some participants interpreted the concept of romantic relationship as 'romanticism ve and responded accordingly. It can be said that this situation will increase the margin of error in the research. Another limitation is the lack of quantitative data sources due to the fact that the research is a qualitative study. Quantitative studies on this subject can be done in subsequent researches.

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Prospective Mathematics Teachers' Technological Pedagogical Content Knowledge Improvement via Creating Technology-Based Mathematics Stories

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ABSTRACT

In an attempt to improve Technological Pedagogical Content Knowledge (TPACK), prospective mathematics teachers (N=52) were trained in creating technology-based mathematics teaching materials. They learned visual programming, worked in pairs and created mathematics stories, which are intended to improve fourth grade students' mathematics word problem solving. Six of the prospective teachers were willingly participated in this study and watched students completing the stories in actual classroom environments. The purpose was to show them the value of their work and provide advice with regard to improve their TPACK. They (n=6) were interviewed within a qualitative research framework. This study reveals the prospective teachers' opinions and beliefs regarding various aspects of the projects, such as students' interest, students' performance, as well as the teachers' professional, pedagogical and individual improvement. The prospective teachers are convinced that teaching by means of technology support students' learning and that technology use in the classrooms is valuable. As a result, it can be confirmed that the process helped them improve their TPACK.

Keywords:

Teacher education, visual programming, TPACK, mathematics stories, technology training

1. Introduction

Today's learners grow up in technology-rich environments and are regarded as technology natives. Thus, integrating technology in education means that it helps young learners learn in their native environment. Undoubtedly, teachers play a major role in such learning environments. Law, Pelgrum and Plomp's (2008) research with 35000 teachers from 22 different countries indicated that technology integration in education is highly related to teachers. While teachers with insufficient technology skills use technology in drill and practice style, more experienced teachers take advantage of technology in constructivist approach in their classrooms. Moreover, they develop expertise in technology use if they experience technology in conjunction with students (Liu & Szabo, 2009). According to Instefjord and Munthe (2017), prospective teachers should be trained in technology on campus and in integrating technology in schools for their future teaching practices. In this respect, preparing prospective teachers for technology integration and allowing them to use technology in educational practices (Pan & Carroll, 2002) is essential before starting to their professions.

In classrooms, within which traditional methods are used, learners experience limited activities (Rakes, Fields & Cox, 2006). This is also the case for teacher training programs that mostly classes are taught with traditional methods and accordingly prospective teachers experience limited activities. Yet, "Teachers need to leave their teacher preparation programs with a solid understanding of how to use technology to support learning" (U.S.

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Department of Education, Office of Educational Technology, 2017). However, learning how to use technology is not solely about learning how to use it as a tool. Instead, it is about using technology in combination with appropriate pedagogical techniques and the content (Koehler & Mishra, 2009). This concept is called as teachers' technological pedagogical content knowledge (TPACK), which yields effective results on teachers' effective technology use in the classrooms.

Technological Pedagogical Content Knowledge (TPACK) helps teachers with their integration of technology from recognizing the value of technology in educational settings to integrating technology in their education. This process requires teachers to know their content well, understand how students learn and have deep knowledge about technology use. The present study was conducted to show prospective teachers how to use technology to teach mathematics by taking advantage of pedagogical techniques in TPACK framework. In this framework, it is recommended for teachers to design, implement and evaluate instruction with technology (Niess, 2011). With this purpose, prospective teachers in this study were taught designing technology-based mathematics materials for students' mathematics learning, implemented their materials to students, watched them and evaluated the process. In an attempt to improve their TPACK, prospective teachers were trained in creating technology-based mathematics materials, for fourth grade mathematics classes content for the purpose mentioned above.

1.1. Technological Pedagogical Content Knowledge (TPACK)

Technological pedagogical content knowledge (TPACK) suggests a framework for effective teaching, which combines content, pedagogical techniques and technology. That is, technology is required to be used along with pedagogical techniques to teach content effectively. In this framework, teachers' knowledge is required in the concepts and pedagogical techniques. The concepts are represented with technology using pedagogical techniques, which help students overcome learning issues. Moreover, knowing the way of using technology to reinforce students' existing knowledge is required in TPACK framework. In order to have such knowledge teachers need to gain the three components of TPACK (Koehler and Mishra, 2009). In TPACK framework, teachers are required to design, implement and evaluate instruction with technology (Niess, 2011). As claimed by Koehler and Mishra (2009), teachers must be flexible in applying the three concepts of TPACK as technological solutions may differ from teacher to teacher, course to course and in how the teacher teaches the courses. Kaleli (2012) claims that in the scope of TPACK teachers are demanded to have sufficient knowledge of educational software and be able to determine suitable software for a target. Additionally, they need to know how to teach the content and target by using software. To improve their TPACK, teachers must be trained both in their training during college education and in-service training.

It is recommended that possible effect of technology on students' learning must be emphasized in teacher education programs (Ottenbreit-Leftwich, Glazewski, Newby & Ertmer, 2010). However, Tanak (2018) state that prospective teachers' pedagogical knowledge on their TPACK is more effective than their technological knowledge on their TPACK. Which is that, teaching only technological skills is not enough for teachers to develop TPACK. Agyei and Voogt (2011) recommends that teacher education programs must take it into consideration that prospective teachers take courses including technology related pedagogical issues. Hereby, they can experience integrating technology into their teaching in their future classrooms. Thus, they can develop positive beliefs in technology, which can predict their TPACK (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur & Sendurur, 2012; Cheng & Xie, 2018; Miranda & Russell, 2012).

National Council of Teachers of Mathematics, (NCTM, 2000) point out that "Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning" (p. 24). According to Niess et al. (2009) when learning how to integrate technology in mathematics classrooms, teachers go through a developmental process. This process includes five stages as progression toward TPACK: recognizing, accepting, adapting, exploring and advancing. First of all, teachers recognize technology and its association to mathematics content. Then they develop either a positive or negative attitude toward technology use in mathematics classrooms. In the next stage they decide whether or not to teach mathematics

with technology after engaging in technology related activities. In the fourth stage, teachers implement technology-based teaching-learning activities for mathematics. Lastly, teachers come to confirmation stage, in which they decide to integrate technology in mathematics classes and evaluate this decision.

Kopcha (2012) lists five barriers to teachers' technology integration in the classrooms mentioned in the literature: access, vision, beliefs, time and professional development. For professional development, he states that training teachers only in technical skills is insufficient for teachers to successfully integrate technology in education as this training is not linked to actual classroom practice. Instefjord and Munthe (2017) state that prospective teachers should be trained in technology on campus. However, they must also be trained in integrating technology in their future classrooms. Moreover, as claimed by the International Society for Technology in Education standards (ISTE, 2008) teachers must have the ability to "design, develop and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context" (p.1). For prospective mathematics teachers, teaching practice and motivation are some important factors to teach subject with technology (Yang, Ji, Zhang, Zhang & Zhang, 2018). Thus, this study brings prospective teachers, who were trained in technology on campus, and actual classrooms together to show them the value of technology in the classrooms. Eventually, the purpose was to get their views and evaluations about this experience, see how motivated they are in using technology in their future professions for teaching and learning purposes and to see if their TPACK was improved. For this aim, they created a technology-based mathematics environment to improve students' word problem solving. They learned Scratch programming in their classrooms on campus and created visual and audial animated learning environments.

1.2. Scratch Programming for Creating Mathematics Learning Environment

Scratch programming is a visual programming environment (Maloney, Resnick, Rusk, Silverman & Eastmond, 2010) developed at the MIT Media Lab by the Lifelong Kindergarten research group. As a free and open source, games, stories, simulations and interactive stories can be created with this programming language (Ouahbi, Kaddari, Darhmaoui, Elachqar, & Lahmine, 2015). Scratch enables users to create their projects in an object-oriented programming environment, in which objects can be dragged and dropped and as a result, interactive applications can be created (Pinto & Escudeiro, 2014). Moreover, learning text commands as in the other programming languages is not necessary. Users do not have to have deep programming knowledge in order to create their projects in Scratch, either. All the commands as visual programming blocks (e.g., motion, sensing, and sound) are on Scratch and users can drag and drop them to create their own projects (Nikou & Economides, 2014; Resnick et al., 2009). It is an easy program to use for anyone no matter her/his age or background (Marcelino, Pessoa, Vieira, Salvador & Mendes, 2018).

In the literature, Scratch programming has been used as a tool to teach programming (e.g. Kalelioglu & Gülbahar, 2014; Wang, Huang & Hwang, 2016), investigate students' views about programming (Yukselturk & Altıok, 2017), see how students with different level of mathematics achievement implemented, perceived and evaluated Scratch programming activities (Han, Bae & Park, 2016), and have high school students create simple games so that they would learn programming basics while learning creativity (Ouahbi et al., 2015). In the literature, the use of Scratch is mostly related to designing technology-based environments, the ability of writing computer codes and learners' perceptions of computer programming. All these uses show that this visual programming tool is used for technology creation process. This situation gave the idea that this ability can be gained to prospective teachers in terms of the technology component of TPACK framework in this study.

In this respect, prospective teachers, who had no programming experience, created their own technology-based materials to teach mathematics with Scratch. Their projects were intended for 4th grade students' word problem solving. There are many studies in the literature using Scratch as a tool to teach programming (e.g. Kalelioglu & Gülbahar, 2014; Wang, Huang & Hwang, 2016; Yukselturk & Altıok, 2017). In this study,

prospective teachers as programmers have designed their technology-based learning environments with Scratch. The purpose was to help them see the value of their work in actual educational settings. More precisely, mathematics prospective teachers learned a technology related skill, computer coding with which they designed a technology-based learning environment, and observed students' learning in this environment. With this purpose, the following research questions were examined in the present study:

1. What are prospective mathematics teachers' thoughts and feelings about the process, from training to implementation, and its contributions?
2. Do prospective mathematics teachers have any suggestions towards this teaching and learning process to teachers, teacher-candidates and researchers?

2. Method

2.1. Procedure

Mathematics prospective teachers from a faculty of education participated in this study. They mostly have classes with traditional teaching methods and rarely witness technology use in education. Technology-based teaching mostly is provided in PowerPoint presentations, educational social media (e.g., Edmodo) or game-based quiz programs (e.g., Kahoot) only when the instructor of the course use it. Accordingly, they properly do not see the benefits of technology for teaching-learning practices. Thus, it was aimed to give prospective teachers the chance of observing the benefits of technology in classrooms. A case study approach was utilized in this study. McMillan (2012) define as "an in-depth analysis of one or more events, settings, programs, social groups, communities, individuals, or other bounded systems in their natural context" (McMillan (2012, p. 279). Within this approach, mathematics prospective teachers learned a visual programming language, Scratch programming, as well as pedagogical approaches to teach mathematics by using technology in their Computer-Based Mathematics Teaching course. They observed students learning mathematics by the use of technological materials they created. Specifically, the purpose was to give them the sense of ownership of the technological tools so that they can pay full attention to students' interaction with the tools. By this way, it was aimed to improve their TPACK.

First of all, prospective teachers were trained in visual computer-programming, Scratch programming, on campus for four weeks. During this period, they learned how to use Scratch programming to create visual-audial environments using visual objects. Without needing text-based computer-programming knowledge, prospective teachers learned creating computer-based activities by dragging and dropping visual objects (e.g. motion, sound, sensing, control objects). They practiced Scratch programming with the weekly homework assignments. When they satisfactorily learned Scratch programming, they started building their final projects. They were then informed that their projects would be applied to fourth graders and asked whether they were willing to observe the learning atmosphere. As a result, six prospective teachers watched fourth grade students solving mathematics word problems in the animated stories in students' classrooms. Fourth grade students completed the animated stories in the computer lab of their schools. Prospective teachers watched fourth-grade students while the students individually were completing the projects. Prospective teachers were then interviewed about the process, from designing to applying, with semi-structured interview questions. The interviews were completed after the whole process, including the training on campus and the implementation process in the actual classrooms were completed. Their answers to the questions were coded and analyzed applying a content analysis.

2.2. Participants

The prospective teachers were at their final years in the department of Mathematics Education in a faculty of education. These participants were selected because they were about to graduate, ready for teaching and took all the required courses in mathematics education. The average age was 22. All participants were female because only female prospective teachers were willing to be involved in the study. None of them had computer coding experience before the study.

2.3. Materials

2.3.1. Animated Mathematics Stories. The prospective teachers ($N = 52$) created mathematics stories on Scratch programming in pairs. For the purpose of the study, two of these stories were used in actual classroom environments (see Figures). The selection was made based on the projects with good quality. That included projects with no error, narrated well and complete. Scratch application is required for the animated mathematics stories to work on computers. These projects were created around a story, in which mathematics word problems were embedded. In a context, prospective teachers asked to write their stories in which story characters encounter mathematics word problems within the context of the stories. A sample mathematics word problem was as following:

“Today I made 32 pieces of cake. You told me you want to buy half of these minus 10 pieces. So how many pieces do you want to buy?”

Prospective teachers designed their projects, which provided feedback based on students’ individual answers. Feedbacks were explained in conversation format for the questions. For the problem above, the feedback was as following:

“To calculate the number of pieces, we are supposed to divide the number of total pieces in half first. The result is $32/2 = 16$ pieces. Then, we need to subtract 10 pieces from 16 pieces. As a result, you will buy $16 - 10 = 6$ pieces of cake”

The story was narrated by prospective teachers including the plot and conversations between the characters and then recorded on Scratch programming. Story related pictures, background images and characters were all inserted in the projects by prospective teachers during their project creations. They also used an answer dialog box for to enter answers.

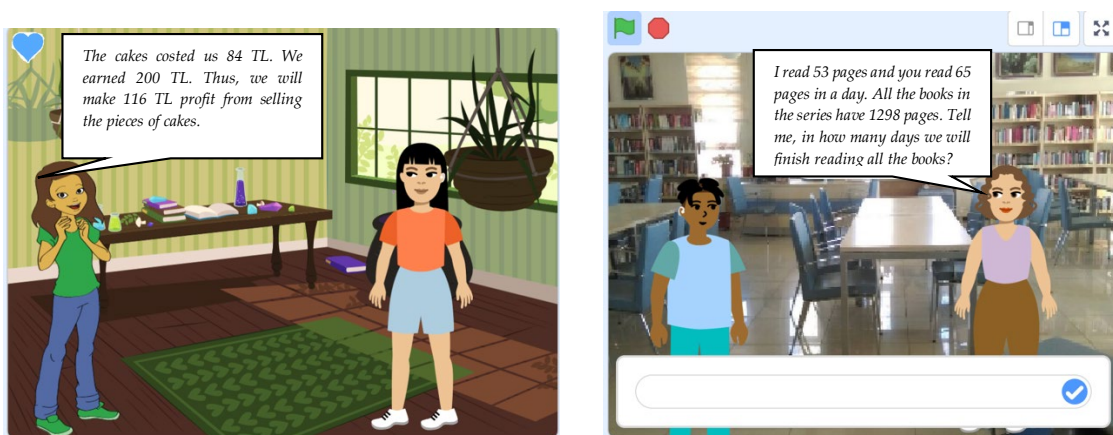


Figure 1. Sample screen-shots of the prospective teachers’ projects

2.3.2. Interview Questions. Prospective teachers answered three main questions with related sub-questions.

The questions were all open ended. The first question was about their thoughts and feelings before, during and after implementing their projects. The second question was about the contribution of the process individually, professionally and pedagogically. Finally, the last question was about their suggestions to teachers, prospective teachers and future researchers related to the process. They were asked to fill out a paper-based question form to answer these questions. For the validity of the questions, two experts in the area were asked for their opinions. Based on their feedbacks, the question form took its final shape. Prospective teachers' answers were coded with a content analysis by two independent coders. Inter-rater coders' reliability was calculated with the Miles & Huberman Formula (1994): Number of Agreements / (Number of Agreements + Disagreements). The result was 0.82. The result showed that the coding was reliable.

3. Results

3.1. Prospective mathematics teachers' views about the process

3.1.1 Thoughts and Feelings Before, During and After Implementing the Projects to Students

Prospective mathematics teachers ($n=6$) were asked what they thought and how they felt before, during and after applying their projects to the 4th grade students. Their answers were coded, the inter-rater reliability was completed and the results were summarized below in table 1.

Table 1. Prospective teachers' thoughts before/during/after the process

Thoughts/feelings before the implementation									
PT#	Incentive	Permanent learning	Functionality	Stories and Math	Misperception	Pleased	Nervous	Curious	Excited
PT1				✓					✓
PT2	✓						✓		
PT3	✓	✓						✓	
PT4			✓		✓	✓			
PT5		✓	✓		✓		✓		
PT6							✓		

Thoughts/feelings during the implementation									
PT#	Willing students	Effective	Individual differences	Attractive/ Interesting	Likeable	Intriguing	Beneficial	Successful	Exciting experience
PT1		✓							
PT2	✓				✓			✓	
PT3			✓	✓		✓			✓
PT4	✓						✓		
PT5			✓						
PT6	✓	✓							

Thoughts/feelings after the implementation										
PT#	Increases interest	Works	Delighting	Attractive	Minimizes boredom	Catchy	Useable	Must be sufficient	Out of traditional	Must be fluent
PT1	✓	✓								
PT2			✓							
PT3				✓	✓	✓				
PT4	✓						✓			
PT5								✓		✓
PT6									✓	

Before the implementation process, the prospective teachers stated that they were anxious if their projects would be beneficial on students' learning. They said they wondered whether students would see this environment as a game instead of a learning environment and find it interesting. For some candidates, preparing the program was fun, they thought that what they designed would be beneficial and lead to permanent and active learning as long as students would take it seriously. Some of the prospective teachers' thoughts were as followings:

For their individual gains, prospective teachers reported that this learning environment helped them get group work habit and take responsibility in a disciplined way. Creating a new learning environment was a new knowledge for them that they would use it in their future work life. They learned how to catch students' attention to a learning material, they said. Additionally, they stated their creativity and reflective thinking ability have improved. They also reported they personally improved digitally.

"I got a wider knowledge in computer programs and coding. I learned about the best voice recording programs and how to create higher quality records". (PT6) "I have learned Scratch programming. I have got a new knowledge now to answer technology related questions in our profession...". (PT3)

As professional contributions, prospective teachers claimed that they learned teaching mathematics in an entertaining way, forming a creative teaching environment and how to code. This learning environment is suitable to the technology age we are in, which caused them to improve their professions. They reported they would apply their knowledge from this learning experience to any mathematical topic, which requires visual aid. Additionally, one of the benefits of this learning activity was to do research and accordingly learn how to prepare problems based on students' level. Some of the answers were as following:

"We've never been taught mathematics in such a way. I understood mathematics can be made fun and instructive, thanks to this project..." (PT5). "It has caused me to present mathematics in an entertaining way. I have learned how to address technology-age children". (PT1)

As for pedagogical contributions, prospective teachers stated that with this method, they had a chance to get know the related age group, their perceptions and how to answer to the need of students with different intelligence types. They said they learned a teaching method catching students' attention, increasing knowledge persistence, ensuring active learning and providing functional feedback based on students' needs. More importantly, they said they learned a new way of teaching, which might be a replacement for outdated traditional methods. As students paid attention to the learning material, they believed it contributed to classroom management, as well. Some of the comments were as follows:

"I learned student perception, how to react to their questions, in what aspect to make explanation". (PT4) "It helped me (seeing) explaining the course based on not only logical-mathematical knowledge but also other intelligence types". (PT2) "It (this process) made me feel like so glad I am a teacher". (PT5).

3.1.3. Suggestions for others. Prospective teachers were asked whether they would make any suggestions to teachers, prospective teachers and researchers. Their answers were coded and summarized in the table below:

Table 3. Prospective teachers' suggestions to teachers/teacher candidates/researchers

Suggestions to Teachers									
PT#	Openness to innovations	Must be used	Technology knowledge	Planning	Student attention	Audio and intellectual teaching	visual learners	Problem solving	Mathematics attitude
PT1			✓	✓					
PT2		✓			✓				
PT3		✓							✓
PT4	✓								
PT5	✓		✓						
PT6						✓	✓	✓	

Suggestions to Teacher Candidates					
PT#	Learn/ Use	Openness to innovations	Willingness	Permanent learning	Non-traditional methods
PT1			✓		
PT2					
PT3					
PT4	✓		✓		
PT5	✓		✓		
PT6	✓			✓	✓

Suggestions to Researchers					
PT#	Improve/ create	Inform	Carefulness	Teach/Help	Course objectives
PT1		✓	✓		
PT2					
PT3	✓				
PT4	✓				
PT5	✓				
PT6				✓	✓

Prospective teachers suggested that teachers must use technology, be open to innovations in educational settings and must not be stuck only with the traditional methods. This requires having technology knowledge. This learning method catches students' attention and therefore teachers can use this learning method to make students like mathematics. They must provide audio-visual learning environments, in which students can learn problem solving and be intellectually active. However, they must plan everything beforehand not to have any problem during the implementation of their digital products. Their suggestions to teachers were as following:

"I recommend teachers to use such learning environments. This is a usable method for overcoming mathematics anxiety" (PT3). *"Teachers must have technology knowledge. Additionally, they should take any possible failure into consideration that might occur during teaching-learning process"* (PT1).

For recommendation to prospective teachers, the participants recommended that they must learn programming, create their projects and use them. They must learn using such learning environments so that they would provide their students with permanent learning. This result could be gained in an entertaining learning setting. They must use non-traditional methods such as their projects, improve themselves, provide such permanent learning environments and must be willing for such new environments:

"I recommend that prospective teachers must learn these kinds of tools" (PT4). *"If they use such tools learning will be permanent. Students could both be entertained and learn"* (PT6).

For researchers in such environments, prospective teachers stated researchers must increase the number of such studies and improve traditional methods. Additionally, they should be well aware of that this process requires time and endeavor. Thus, those they work with should be well informed. Moreover, they must check the mathematics curriculum course objectives well, when creating their projects. Otherwise they might not get the intended result:

"It would be a good idea to increase the number of these types of researches as it is an important method to make mathematics concrete..." (PT3). *"Researchers must complete rich and creative studies based on more complicated problems"* (PT5).

4. Discussion

Student teachers mostly are trained with traditional methods during their education. They witness only limited number uses of educational technology tools only if the instructor of their classes uses such tools. Moreover, they mostly don't take benefit of technology in their class assignments if they are required to give presentations. In this respect, it was aimed to improve prospective teachers' technology views in a positive way, which requires appropriate pedagogical methods to teach content by using technology. TPACK framework helps with teachers' professional development through technology use in a constructivist approach where technology is not utilized as an add-on tool (Koehler & Mishra, 2009). Therefore, it is necessary for teachers to have the knowledge of how students learn, their content and technology in TPACK framework. In this study, in a case study approach, mathematics prospective teachers learned a visual computer programming tool to create their own technology-based mathematics learning materials and watch students using these materials. Specifically, the purpose was to give them the sense of ownership of the

technological tools so that they can pay full attention to students' interaction with the tools. For this purpose, prospective teachers were trained on campus in a visual computer programming tool, Scratch programming, for four weeks. They learned how to code as well as designed small activities and created animated stories, in which mathematics is integrated. The prospective teachers then had a chance to watch fourth graders in their classrooms completing their materials. Upon the experiment was completed, they were interviewed with semi-structured interview questions.

Educators have insufficient training in the pedagogical use of technology. However, teachers' technology related pedagogical beliefs are shaped with their insights in different kind of devices, software and their benefits (Mertala, 2017). In this study, prospective teachers created a technology-based learning environment as programmers, applied it to students and saw its benefits. In the TPACK framework, technology is required to be used along with pedagogical techniques to teach content effectively (Koehler & Mishra, 2009). Prospective teachers claimed they recognized the pedagogical use of technology in teaching mathematics. They became familiar with the related-age group, a non-traditional teaching method, how to draw students' interest and how to provide feedback. It can also be told from the projects they designed. While creating the projects, they paid attention to students' age level in the story context and visuals, provided feedback and inserted catchy objects for students. Their comments about learning how to teach mathematics by means of technology and how to pedagogically take benefit of technology to teach mathematics are related to TPACK. As a result, it can be claimed that their TPACK improved.

Niess et al. (2009) state five stages as progression toward TPACK: recognizing, accepting, adapting, exploring and advancing. The interviews with prospective teachers showed that throughout the process they believed students liked the mathematics learning environment, were interested in the activities and believed that it was a success. This was related to recognizing stage. Also, they believed this technology-based learning environment is beneficial because it draws students' attention, may decrease students' mathematics phobia and should be used in educational settings. This was related to accepting stage and pedagogical knowledge component of TPACK. They believe the process improved them professionally; they gained new knowledge, learned teaching mathematics in an entertaining and creative way, and intend to apply their new knowledge to other mathematical concepts. This was related to adapting and exploring stages. They did not start teaching yet however it is clear that they have the intention for technology integration in their teaching. Consequently, the result is consistent with the Niess et al. (2009) five-stage developmental process for teachers' TPACK. Prospective teachers in this study came to believe that teaching mathematics in a technologically enhanced environment is beneficial and have positive feelings about technology integration in future. They believe technology-based teaching should be used in mathematics classrooms.

This study links theory and practice. The prospective teachers didn't only learn to design digital materials for their future classroom settings. They also learned how and why to use them, which confirms the practicability of this study. Teacher education is seen "too theoretical" (Sjølie, 2014, p.729) and detached from schools. Thus, this study suggests to apply this applicable approach for prospective teachers in their future work place. Prospective teachers stated that this technologically enhanced learning environment is suitable to the technology age we live in, as it is more related to real-life situations and especially helpful, which can be credited to the visual aids. Accordingly, the process used in this study showed a method to connect teacher education to schools to improve prospective teachers' views of technology.

Ertmer, Ottenbreit-Leftwich, Sadik, Şendurur and Şendurur (2012) in their study with award winning technology-user teachers reported that teachers' attitudes, beliefs, knowledge and skills in technology prevents teachers from using technology. Miranda and Russell (2012) in their study with over 1000 teachers revealed that teachers' technology use is affected by their beliefs about the advantages of technology for teaching purposes and knowing the significance of using technology in classrooms. In the present study, the interviews with the prospective teachers revealed that they believe they learned teaching mathematics in a fun

way with the use of technology, gained coding skills, learned a visualized teaching and digital teaching methods with the use of technology. They believed they learned technology by creating technology-based materials, witnessed the use of technology process while students were completing their technology-based materials, learned pedagogical use of technology and improved their technology skills. As a result, it can be claimed that barriers mentioned in the literature can be removed with such action as in the present study and the prospective teachers can develop positive beliefs toward technology. Their positive beliefs in technology can predict their TPACK (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur & Sendurur, 2012; Cheng & Xie, 2018; Miranda & Russell, 2012), as a result we can claim that their TPACK improved.

Petko (2012) suggest that teachers use technology more in their classrooms based on five circumstances. First one is that teachers must believe that computers improve learning. Teachers' unwillingness for technology integration in education is a result of their skepticism and concern in using technology (Hoffmann & Ramirez, 2018). During the implementation of student teachers' projects, it was observed that fourth grade students showed interest to the technology-based mathematics learning tools. The students wanted to continue to the projects and even asked if there are more projects they can complete. Prospective teachers seemed very happy about students' reactions. They claimed fourth graders enjoyed the activity and believed that their computer-based mathematics projects were beneficial. Additionally, they believed such learning environments would decrease students' negative feelings and increase positive feelings about mathematics. Prospective teachers recommended teachers that technology must be used in educational settings rather than only traditional methods. For their peers, they recommended they must learn designing technology-based materials aligned with curriculum objectives to support students learning. Accordingly, it can be claimed that prospective teachers believe technology improve learning, yields effective results on students' learning and as a result they don't have skepticism about the use of technology. As their beliefs stimulate their intention for using technology (Rehmat & Bailey, 2014), the process used in this study may affect their technology use intentions in their future classrooms.

ISTE (2018) requires teachers' ability to design, develop and evaluate realistic learning practices. In addition, in TPACK framework, teachers are required to design, implement and evaluate instruction with technology (Niess, 2011). With these requirements are in mind, prospective teachers designed technology-based mathematics learning projects, implemented these projects to students and evaluated technology-based learning environments in this study. They emphasized audial, visual and animated teaching elements as important elements in technology-based learning environments. According to the prospective teachers, students' multiple intelligence activities can be supported in technology-based teaching environments, which are both entertaining and instructive. It can be recommended that in TPACK framework it would be valuable to give prospective teachers the opportunity to design, develop and evaluate technology-based learning contexts in classrooms even before they become a teacher. Such an opportunity provides students with recognition of important elements in a technology-based environment that promotes students' learning.

The prospective teachers were trained in Scratch programming, which is a visual programming tool, to create technology-based mathematics projects and their project work was brought into actual classroom environments. Teachers' attitudes with no anxiety towards technology integration and their technology skills yields teachers in using technology in their classrooms (Agyei & Voogt, 2011). Based on related literature, teachers must be well trained in technology (Thomas & Knezek, 2008) and this training is the responsibility of teacher education programs (Instefjord & Munthe, 2017). The purpose in this study was to put this aim into practice and to recommend faculties of education the integration of such methods, like the one in this study, in their curriculum. At the beginning of the process, prospective teachers were told that their projects were to applied to students and they would have a chance to watch those students completing their materials. During this time, it was observed that they were curious and nervous about the process. Moreover, when the process has been completed they seemed very glad that they witnessed what they have done was interest to students and their comments revealed the nature of their positive experiences. For example, they were skeptical about

the benefits of their projects on students learning before starting to the experiment. After the experiment, they came to believe that it was an exciting experience to have students learn mathematics by means of their projects. Based on the above-mentioned literature, it can be concluded that they can overcome technology integration anxieties and as a result integrate technology in mathematics education.

As part of their training, prospective teachers are obliged to classroom observations in schools, mostly in their final years at college, as the Ministry of National Education requires it. They usually complete this process in their content area and observe traditional methods teachers use in the classrooms. They rarely observe teachers using technology in their classroom. However, all schools aren't equipped with technology in the classrooms. For this reason, all teacher candidates may not have a chance to observe technology use in education. The present study suggests that faculties of education must provide teacher candidates the opportunity to observe technology use for educational purposes. Technology integration in schools is recommended and governments invest a considerable amount of money on technology integration. Unfortunately, if teachers are not interested in and knowledgeable about technology, technology integration in schools makes no sense. Therefore, it is strongly recommended that prospective teachers must be equipped with technology skills which they can apply meaningfully in their content areas and thus improve student learning and performance. This study shows such action and its results.

5. Conclusion

Considering the fact that teachers' technology integration in education is related to their beliefs in the benefits for enhancing student learning in such environments, the results of this study are most relevant. The prospective teachers are convinced that teaching with the use of computers support improved learning and that what they have done was valuable. Additionally, they evaluated the materials based on students' pedagogical and learning needs. Their thoughts started with a certain degree of apprehension of whether what they have prepared would be beneficial. However, throughout the process they gained confidence in it being useful. They corroborated that they gained new knowledge and would apply it in the future. As a result, it can be confirmed that the process helped them improve their TPACK.

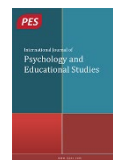
The process used in this study shows a method to connect prospective teachers' education to schools to remove barriers, which may prevent them from integrating technology in their future mathematics classrooms. This method can allow them to develop positive beliefs towards technology and as a result improve their intentions. Judging and deciding important technology-based learning elements to improve students' mathematics learning are other benefits of this method. For prospective teachers to teach mathematics by means of technology effectively, taking the benefits of TPACK is recommended. As a result, teacher education programs must help prospective teachers to develop technology skills accompanied by pedagogical and content knowledge so that they can effectively integrate technology their future classrooms. In this respect, this study showed a method to be used in teacher education programs.

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Examining the Anxiety and Internet Addiction Levels of Divorced and Married Individuals

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ABSTRACT

This study aims to examine the anxiety and internet addiction levels of divorced and married individuals. In this study, a statistically significant difference was found between the anxiety and internet addiction levels of married and divorced individuals, where the divorced persons had higher levels of anxiety and internet addiction than the married ones. No statistically significant difference was found between the anxiety and internet addiction levels of divorced and married individuals by gender. However, a statistically significant difference was determined between the anxiety levels of married individuals with respect to gender, where the females had higher anxiety levels than the males. In addition, no statistically significant difference was found between the anxiety and internet addiction levels of divorced individuals with respect to status of having children, whereas the level of internet addiction in married individuals varied statistically significantly according to this variable. It was noteworthy that individuals without children had significantly higher levels of internet addiction than those with children.

Keywords:

Divorced Individuals, Married Individuals, Anxiety, Internet Addiction

1. Introduction

By using pathological gambling model, internet addiction is defined as an impulse-control disorder similar to intoxication which does not involve any substance intake (Young, 1996). Young (1996) introduces an eight-item scale for internet addiction, where individuals who mark 5 items and above are considered to have internet addiction. These items are explained as follows;

1. Do you feel preoccupied with the Internet (think about previous on-line activity or anticipate next on-line session)?
2. Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
5. Do you stay on-line longer than originally intended?
6. Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?
7. Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet (e.g., time and amount of Internet use)?
8. Do you use the Internet as a way of escaping from problems or of relieving a dysphoric mood? (Young, 1996).

The root of the word anxiety is "anxietas" in ancient Greek and this concept means worry, fear, and curiosity (Köknel, 1988:138). The relationship between anxiety and internet addiction is one of the popular topics in our

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today's modern society. Field studies have found a relationship between internet addiction and emotional disorder, depression, generalized anxiety disorder, gaming disorder and social anxiety disorder (Cole and Griffiths, 2007, Lehenbauer-Baum et al., 2015; Weinstein and Lejoyeux, 2010; Morahan-Martin and Schumacher, 2003; Taş, 2019; Odacı & Çikrikci, 2017). As individuals' depression, anxiety and stress levels increase, they display problematic internet usage behaviors. Studies have reported that university students significantly differentiated by problematic internet usage depending on their depression, anxiety and stress levels (Odacı and Çikrikci, 2017). A study on the generalized anxiety disorder and internet gaming disorder in young adults found that those with internet gaming disorder had higher anxiety, depression and behavior inhibition scores. Another study determined that participants with internet gaming disorder had more generalized anxiety disorders (Chao-Yang-Wang et al., 2017). Individuals who experience the divorce process are observed to have higher anxiety than married ones. A study found that both internet addiction and depression levels were higher in divorced individuals than married ones, and that divorced individuals with primary school degree had higher level of internet addiction than those with high school and bachelor's degree (Tas and İme, 2019). Another study reported that males had higher level of internet addiction than females, and concluded that secure attachment, one of the attachment styles, negatively predicted internet addiction, whereas indifferent and obsessive attachment styles, which are characterized by anxiety and avoidance, positively affected it. Regarding the relationship between personality traits and internet addiction, the study also determined that responsibility and extraversion negatively affected internet addiction, whereas emotional imbalance positively affected it (Morsünbül, 2014). University students in the medium/high internet addiction group were found to have higher anxiety than others. The same results were obtained for those in the psychotism and depression group (Dalbudak et al., 2013).

One study about the internet addiction, psychological problems and coping responses found a positive relationship between internet addiction, depression, anxiety and stress. A positive correlation was also found between the shyness and emotional coping strategies from the maladaptive coping strategies of adult participants (McNocol and Thorsteinsson 2017). One study on the relationship between pathological internet addiction and loneliness, depression and social anxiety in university students determined that pathological internet addiction was used as a maladaptive behavior to reduce negative feelings such as loneliness, depression, and social anxiety (Yao & Zhong, 2014). Another study about the relationship between internet addiction, depression and anxiety found a strong relationship between internet addiction and anxiety, and a moderate relationship between internet addiction and depression (Santos et al., 2017).

In the light of the above-mentioned information, individuals may have adaptation problems in terms of reintegration into society after divorce. They may experience anxiety in this process. In addition, the increased anxiety levels of divorced individuals may increase their internet addiction levels. For this reason, this study mainly aimed to compare the anxiety and internet addiction levels of divorced and married individuals. For this purpose, the answers for the following questions were sought in the study.

1- "Is there any difference between anxiety and internet addiction levels of divorced and married individuals?"

2- "Is the anxiety and internet addiction levels of divorced and married individuals differ by gender, age, marital age, status of having children, number of children, length of marriage, reasons for divorce, education status, education status of spouse, average monthly family income, social media, daily social media usage, and education style?"

2. Method

2.1. Research Model

Since this study aims to examine the anxiety and internet addiction levels of individuals with divorced and married parents by using different parameters, it has used descriptive research model. This research model is used in studies aiming to present the situation as it is

2.2. Study sample

The study sample consisted of a total of 310 people including 149 people who were married and 161 people who were not divorced participated in the study in Istanbul province between 2018 and 2019. Of them 28.1% were male, 71.3% were female and 2 persons did not express their gender. In addition, 48.1% of the individuals were married, 51.9% were divorced; 9% were married at the age of 18 and under, 26.5% at the age of 19-21,

25.5% at the age of 22-24, 23.5% at the age of 25-27, and 15.5% at the age of 28 and above. While 57.7% of them had children, 42.3% had no children.

2.3. Data Collection Tools

Data were collected using a personal information form, the Beck Anxiety Inventory (BAI), and the Internet Addiction Scale (IAS).

2.3.1 Personal Information Form: The form consists of questions about the participants' demographic characteristics including gender, marital status, perceived economic status, educational status and internet usage times.

2.3.2. Beck Anxiety Inventory

The scale was developed by Beck, Epstein, Brown and Steer (1988) and adapted to Turkish culture by Ulusoy, Şahin and Erkmen (1996). It consists of 21 items and two sub-scales. This is a Likert-type scale scored between 0-3. The construct validity of the scale was tested using factor analysis. In addition, its criterion-related validity was tested, and found to be positively correlated with the Automatic Thoughts Scale, the Beck Depression Scale, the State Anxiety Scale, and the Continuous Anxiety Inventory. The reliability of the scale was measured using the Cronbach's alpha internal consistency coefficient and test-retest reliability, where the Cronbach Alpha's internal consistency coefficient was found to be .93, and the test-retest reliability to be .57. In this study, the internal consistency coefficient was found as .91.

3.2.3. Internet Addiction Scale

The scale was developed by Taş, Bilgin (2018). An expert opinion was received within the scope of its validity. Factor analysis was performed to determine its construct validity, where it consisted of 9 items and one factor. This one factor explained 39.607% of the total variance of the scale. The Kaiser-Meyer-Olkin (KMO) value of the scale was found to be .836, and the Barlett's Sphericity test result to be $\chi^2 = 758.899$, $p = .000$. The common variances of the items ranged between .22 and .67, the item factor load values between .45 and .74, and the item total correlations between .35 and .61. The confirmatory factor analysis revealed that the fit indices were within the acceptable limits ($X^2 / df = 2.38$, $RMR = .06$, $GFI = .94$, $AGFI = .90$, $CFI = .90$, $RMSEA = .08$). The test-retest correlation coefficient was determined as $r = .90$ and the Cronbach Alpha's coefficient as .78.

2.3. Data Analysis

Data were analyzed using descriptive statistics, correlation coefficients, multiple regression analysis, t-test, and one-way analysis of variance (one-way ANOVA). One-way analysis of variance (ANOVA) is used to calculate the significance of the difference between three or more independent means in a normally distributed series. ANOVA alone compares the arithmetic means of three or more groups cumulatively; where the ANOVA result is considered significant when at least one of these comparisons is significant.

3. Results

Table 1 presents the results of independent samples t-test performed to solve the sub-problem of "Is there a difference between the anxiety and internet addiction levels of divorced and married individuals?".

Table 1. t-test results by marital status

	Parents	N	Mean	Std. Deviation	t	sd	p
Anxiety	Married	149	13.5839	11.39648	-10.810	308	.000
	Divorced	161	25.0435	6.87600			
Internet Addiction	Married	149	14.8725	5.53647	-13.711	308	.000
	Divorced	161	22.5404	4.27053			

Accordingly, there was a statistically significant difference between the anxiety and internet addiction levels of married and divorced individuals ($p < 0.05$), where the anxiety and internet addiction levels of divorced individuals were higher than that of levels of married ones.

The results of one-way ANOVA test performed to solve the sub-problem of *“Is there a difference between the anxiety and internet addiction levels of divorced individuals by marriage age?”*.

Accordingly, there was no statistically significant difference between the anxiety levels of divorced individuals by marriage age ($p>0.05$), whereas a statistically significant difference was found between their internet addiction levels ($p<0.05$). This was because of the difference between individuals aged 18 years and below and those who are married at 22-24 years old, where the latter group had statistically significantly higher internet addiction levels than the first group.

Table 2 presents the results of independent samples t-test performed to solve the sub-problem of *“Is there a difference between the anxiety and internet addiction levels of divorced individuals by type of social media used?”*.

Table 2. Independent samples t-test results of divorced individuals by type of social media used

Social Media		N	Mean	Std. Deviation	t	sd	p	
Facebook	Anxiety	No	56	24.8393	6.71437	-.283	158	.778
		Yes	104	25.1635	7.02300			
	Internet Addiction	No	56	21.9821	4.65341	-1.219	158	.225
		Yes	104	22.8462	4.06207			
Twitter	Anxiety	No	91	25.0000	7.42967	-.091	159	.927
		Yes	70	25.1000	6.13413			
	Internet Addiction	No	91	22.0330	4.47326	-1.730	159	.086
		Yes	70	23.2000	3.92539			
WhatsApp	Anxiety	No	40	25.5750	6.29565	.563	159	.574
		Yes	121	24.8678	7.07336			
	Internet Addiction	No	40	23.4750	4.09495	1.604	159	.111
		Yes	121	22.2314	4.29876			
YouTube	Anxiety	No	67	26.6567	6.40206	2.556	159	.012
		Yes	94	23.8936	7.00302			
	Internet Addiction	No	67	23.2985	4.54278	1.918	159	.057
		Yes	94	22.0000	4.00269			
Swarm	Anxiety	No	156	25.0897	6.81400	.476	159	.635
		Yes	5	23.6000	9.44987			
	Internet Addiction	No	156	22.4551	4.23708	-1.419	159	.158
		Yes	5	25.2000	4.96991			
Periscope	Anxiety	No	148	24.9122	6.99750	-.817	159	.415
		Yes	13	26.5385	5.28544			
	Internet Addiction	No	148	22.6081	4.41339	.678	159	.499
		Yes	13	21.7692	1.96443			
Instagram	Anxiety	No	46	24.7826	6.65303	-.304	159	.762
		Yes	115	25.1478	6.98902			
	Internet Addiction	No	46	22.4783	4.36012	-.116	159	.908
		Yes	115	22.5652	4.25323			
Blogger	Anxiety	No	156	24.9936	6.95005	-.513	159	.609
		Yes	5	26.6000	4.03733			
	Internet Addiction	No	156	22.4936	4.31725	-.775	159	.439
		Yes	5	24.0000	2.12132			
LinkedIn	Anxiety	No	157	24.9490	6.91598	-1.092	159	.276
		Yes	4	28.7500	3.94757			
	Internet Addiction	No	157	22.5478	4.31819	.137	159	.891
		Yes	4	22.2500	1.70783			

Accordingly, there was a statistically significant difference between the anxiety levels of divorced individuals using and not using YouTube ($p > 0.05$), where those using YouTube had significantly higher anxiety levels. However, there was no statistically significant difference between the anxiety and internet addiction levels of divorced individuals by other types of social media used.

Table 3 presents the results of one-way ANOVA test performed to solve the sub-problem of "Is there a difference between the anxiety and internet addiction levels of divorced individuals by average daily time spent on social media?".

Table 3. One-way ANOVA test results of divorced individuals by average daily time spent on social media

		Sum of Squares	sd	Mean of Squares	f	p
Anxiety	Intergroup	193.639	5	38.728	.816	.540
	Intragroup	7305.955	154	47.441		
	Total	7499.594	159			
Internet Addiction	Intergroup	122.179	5	24.436	1.347	.248
	Intragroup	2793.665	154	18.141		
	Total	2915.844	159			

Accordingly, there was no statistically significant difference between the anxiety and internet addiction levels of divorced individuals by average daily time spent on social media ($p > 0.05$).

Table 4 presents the results of one-way ANOVA test performed to solve the sub-problem of "Is there a difference between the anxiety and internet addiction levels of divorced individuals by average daily time spent on the internet?".

Table 4. One-way ANOVA test results of divorced individuals by average daily time spent on the internet

		Sum of Squares	sd	Mean of Squares	f	p
Anxiety	Intergroup	324.806	5	64.961	1.391	.231
	Intragroup	7239.889	155	46.709		
	Total	7564.696	160			
Internet Addiction	Intergroup	170.087	5	34.017	1.919	.094
	Intragroup	2747.901	155	17.728		
	Total	2917.988	160			

Accordingly, there was no statistically significant difference between the anxiety and internet addiction levels of divorced individuals by average daily time spent on the internet ($p > 0.05$).

Table 5 presents the results of one-way ANOVA test performed to solve the sub-problem of "Is there a difference between the anxiety and internet addiction levels of divorced individuals by educational style?".

Table 5. One-way ANOVA test results of divorced individuals by educational behavior

		Sum of Squares	sd	Mean of Squares	f	p
Anxiety	Intergroup	22.268	2	11.134	.232	.793
	Intragroup	7538.226	157	48.014		
	Total	7560.494	159			
Internet Addiction	Intergroup	28.322	2	14.161	.773	.464
	Intragroup	2877.622	157	18.329		
	Total	2905.944	159			

Accordingly, there was no statistically significant difference between the anxiety and internet addiction levels of divorced individuals by educational behavior ($p>0.05$).

Table 6 presents the results of independent samples t-test performed to solve the sub-problem of “*Is there a difference between the anxiety and internet addiction levels of married individuals by type of social media used?*”.

Table 6. Independent samples t-test results of married individuals by type of social media used

Social Media		N	Mean	Std. Deviation	t	sd	p	
Facebook	Anxiety	No	68	12.5735	9.80910	-0.991	147	.323
		Yes	81	14.4321	12.57372			
	Internet Addiction	No	68	14.2206	5.48497	-1.320	147	.189
		Yes	81	15.4198	5.55397			
Twitter	Anxiety	No	120	13.0167	10.59965	-1.238	147	.218
		Yes	29	15.9310	14.20998			
	Internet Addiction	No	120	14.2583	5.27001	-2.818	147	.005
		Yes	29	17.4138	5.97326			
WhatsApp	Anxiety	No	22	15.2273	15.45787	.731	147	.466
		Yes	127	13.2992	10.59149			
	Internet Addiction	No	22	14.4545	7.63281	-0.382	147	.703
		Yes	127	14.9449	5.12434			
YouTube	Anxiety	No	74	13.5946	12.07615	.011	147	.991
		Yes	75	13.5733	10.76553			
	Internet Addiction	No	74	13.8378	5.21596	-2.298	147	.023
		Yes	75	15.8933	5.68681			
Instagram	Anxiety	No	53	12.7170	9.93126	-0.689	147	.492
		Yes	96	14.0625	12.15324			
	Internet Addiction	No	53	13.7547	5.48742	-1.846	147	.067
		Yes	96	15.4896	5.49448			
LinkedIn	Anxiety	No	139	13.2014	11.51003	-1.534	147	.127
		Yes	10	18.9000	8.41229			
	Internet Addiction	No	139	14.6259	5.46964	-2.049	147	.042
		Yes	10	18.3000	5.59861			

Accordingly, there was no statistically significant difference between the internet addiction levels of married individuals using and not using YouTube and Twitter ($p > 0.05$), where those using YouTube and Twitter had significantly higher internet addiction levels. However, there was no statistically significant difference between the anxiety and internet addiction levels of married individuals by other types of social media used.

Table 7 presents the results of one-way ANOVA test performed to solve the sub-problem of “Is there a difference between the anxiety and internet addiction levels of married individuals by average daily time spent on social media?”.

Table 7. One-way ANOVA test results of married individuals by average daily time spent on social media

		Sum of Squares	sd	Mean of Squares	f	p	Difference
Anxiety	Intergroup	611.824	5	122.365	.946	.453	
	Intragroup	18371.116	142	129.374			
	Total	18982.939	147				
Internet Addiction	Intergroup	497.878	5	99.576	3.522	.005	None-3 hours
	Intragroup	4014.798	142	28.273			
	Total	4512.676	147				

Accordingly, there was no statistically significant difference between the anxiety levels of married individuals by average daily time spent on social media ($p>0.05$). However, there was a statistically significant difference between their internet addiction levels by average daily time spent on social media ($p<0.05$). This difference was between those who do not use social media and those who spend 3 hours on social media, where the latter had higher internet addiction levels.

Table 8 presents the results of one-way ANOVA test performed to solve the sub-problem of “*Is there a difference between the anxiety and internet addiction levels of married individuals by average daily time spent on the internet?*”.

Table 8. One-way ANOVA test results of married individuals by average daily time spent on the internet

		Sum of Squares	sd	Mean of Squares	f	p	Difference
Anxiety	Intergroup	1705.185	5	341.037	2.784	.020	3 hours-5 hours and above
	Intragroup	17517.016	143	122.497			
	Total	19222.201	148				
Internet Addiction	Intergroup	688.997	5	137.799	5.121	.000	None -5 hours and above
	Intragroup	3847.581	143	26.906			1 hour - 5 hours and above
	Total	4536.577	148				

Accordingly, there was a statistically significant difference between the anxiety and internet addiction levels of married individuals by average daily time spent on the internet ($p<0.05$). This difference was between those using 3 hours and those using 5 hours and above for anxiety levels, and between those not using internet and those using 5 hours and above for internet addiction levels.

Table 9 presents the results of one-way ANOVA test performed to solve the sub-problem of “*Is there a difference between the anxiety and internet addiction levels of married individuals by educational style?*”.

Table 9. One-way ANOVA test results of married individuals by educational style

		Sum of Squares	sd	Mean of Squares	f	p
Anxiety	Intergroup	56.933	2	28.467	.215	.806
	Intragroup	19162.743	145	132.157		
	Total	19219.676	147			
Internet Addiction	Intergroup	80.072	2	40.036	1.304	.275
	Intragroup	4452.976	145	30.710		
	Total	4533.047	147			

Accordingly, there was no statistically significant difference between the anxiety and internet addiction levels of married individuals by educational style and another variables. ($p>0.05$).

5. Conclusion, Discussion and Recommendations

This study found a statistically significant difference between the anxiety and internet addiction levels of married and divorced individuals, where the divorced ones had higher anxiety and internet addiction levels. There are no similar studies of divorced and married individuals conducted in Turkey. There is a limited number of studies examining the relationship between divorce and social media usage. Öngider (2011) conducted a study of the anxiety levels in divorced and married mothers, where she found that divorced mothers had higher anxiety levels than married ones, and that children with divorced parents had higher anxiety levels than those with married parents. In line with this result, she concluded that mothers who experienced divorce process could reflect their concerns to their children. There are studies investigating the relation of some different variables with problematic internet use in individuals with anxiety disorder. Odacı and Çıkırcı (2017) found that depression, anxiety and stress levels were associated with problematic internet use, and concluded that depression, anxiety and stress were among the psychological structures leading individuals to overuse the internet. Chao-Yang-Wang et al. (2017) studied on common anxiety and internet gaming disorders, and found that the prevalence of anxiety disorder was higher in participants with internet gaming disorder. The result of this present study showing that divorced individuals had higher anxiety and internet addiction levels than married ones suggests that divorced individuals are risky groups in terms of internet addiction. This may be because they prefer to spend time on the internet to get rid of their loneliness or problems after divorce, but are addicted to the internet after a while without noticing. In fact, there are studies reporting that lonely people spend a lot of time on the internet. Yao and Zhong (2014) have examined the relationship between loneliness, depression, social anxiety and pathological internet addiction in university students, and found that pathological internet addiction was used as a non-compliant behavior aimed at reducing negative emotions such as loneliness, depression, social anxiety. Santos et al. (2017) found a strong relationship between anxiety and internet addiction, and a moderate relationship between internet addiction and depression. Taş, İme (2019) found that divorced individuals had higher levels of internet addiction and depression than married ones, concluding that divorced individuals were considered more risky groups than married one. This present study also concluded that divorced individuals constituted a risky group in terms of anxiety and internet addiction. This study found no statistically significant difference between the anxiety and internet addiction levels of divorced and married individuals by gender, but determined a statistically significant difference between the anxiety levels of married individuals according to gender, where the females had higher anxiety levels than the males. On the other hand, this present study found no statistically significant difference between the internet addiction levels of married individuals by gender. Morsünbül (2014) reached different results suggesting that males had higher levels of internet addiction than females. McNocol and Thorsteinsson (2017) have examined the relationship between internet addiction, psychological issues and coping strategies, and found that internet addiction had a positive relationship with depression, anxiety and stress. As an important result, they determined that the anxiety levels of married individuals did not statistically significantly varied according to status of having children, whereas their internet addiction levels statistically significantly differed by this variable. It was noteworthy

that individuals without children had higher levels of internet addiction than those with children. However, the levels of anxiety and internet addiction in divorced individuals did not statistically significantly varied according to status of having children.

This study found a significant relationship between the anxiety and internet addiction levels of divorced and married individuals. In particular, divorced individuals were considered risky groups in this area. Divorced individuals had higher anxiety and internet addiction levels than married ones. In this respect, both groups should receive relevant expert support. In fact, when the studies of divorce experts were examined, Wallerstein, Blakeslee (1989), Fthenakis, Niesel, Kunze (1982) Schmidt-Denter, Beelmann (1995), and Figdor (1998) emphasize that divorce and subsequent process are very difficult transition period for both adults and children, in which they should receive expert support. In particular, divorced individuals should receive psychological counseling, so that they can better cope with anxiety and problematic internet use. This study is limited to a total of 310 people, including 149 married and 161 divorced individuals, who were living in Istanbul between 2018 and 2019. There is a limited number of studies on divorce in Turkey, so academicians should study in this field. In fact, there are cultural differences between the studies carried out in other countries. In particular, there is no longitudinal studies in this field in Turkey, therefore conducting relevant studies becomes more of an issue in this regard.

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A Scale Development Study: Scientist Image, Gender of the Scientist and Risks of being Scientist*

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ABSTRACT

The aim of this study is to develop a scale to determine the scientist image of high school students and their perceptions of scientist's gender and the risks they have. Descriptive survey model, one of the quantitative research techniques, was used in the study. 760 10th grade students participated in the study. The study was conducted in the spring semester of 2018-2019 academic years. In data collection, item pools were created for the following draft scales developed by researchers: (1) "Scientist in Images Scale (ImSca)" to determine students' images of scientists, (2) "Scale for the Perception of Scientist's Gender (GenSca)" to determine students' perceptions of scientist's gender; and (3) "Scale for the Perception of the Risks that Scientist has (RiskSca)" to determine students' perceptions about the risks that scientists have. The construct validity of the scales was determined by using exploratory factor analysis on the data obtained from the scales and reliability of the scales was determined through internal consistency coefficients. As a result of the data analysis, the following structures were formed: ImSca has a 26-item structure with 8 factors, GenSca has a 23-item structure with 3 factors, and RiskSca has a 27-item structure with 6 factors. According to the results of confirmatory factor analyses, the structure of all three scales formed within the scope of the study was confirmed.

Keywords:

Scientist image, perception of the risks of scientist, perception of the gender of scientist

1. Introduction

Since the science is a product of the creativity and imagination of the people, humankind is the sole power in the progress of science. In science, the product produced by human creativity and imagination is scientific knowledge. From this perspective, scientific knowledge is the product of the culture that dominates the world of science. Science culture, on the other hand, is not the product of neither pure eastern, nor pure western culture. It contains a core from the cultures of all societies. If science had been the product of the culture of a single society or a group, alternative paradigms could not be derived in science. In this case, paradigms could not compete, and the process of generating a new paradigm would be slow. In this respect, in order for science to progress, people from different cultures should enter the world of science and bring their paradigms there. However, there are many factors that negatively affect individuals from different cultures to become scientists. One of them is the scientist image that individuals have. The studies examining the scientist images of individuals emphasized that individuals even at different age groups, generally perceive the scientist as a white race man. In the literature, this image that individuals have for the scientist is defined as "stereotyped scientist image" and this image is suggested to negatively affect the science career of females and individuals of non-white race (She, 1998). One of the main components of stereotyped scientist image is the perception of

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the gender of the scientist. It is stated that the individuals' perception of the gender of the scientist is based on social gender perception (culture of the society), males being presented in written and visual media as scientist figures and addressing scientists as a "man of science" in the language of speech (Karaçam, Aydın & Digilli-Baran, 2014; Karaçam & Digilli-Baran, 2017; Nuhoglu & Afacan, 2011). It is stated that individuals who have traditional (patriarchal) culture think that the scientist should be male because the scientist should be strong, durable and agile (Karaçam & Digilli-Baran, 2017). This cultural background negatively affects girls' career in science. Another factor affecting individuals' career in science is the perception of individuals about the risks that the scientist has. Although there are limited number studies addressing this perception, it is stated that individuals think that scientists have psychological risks such as madness; sociological risks such as exclusion from society, not being able to get married; labor-oriented risks such as theft of their product; economic risks such as losing all their assets; and life-threatening risks such as assassination, injury or loss of life due to explosion (Digilli-Baran & Karaçam, 2020).

In the above studies, where a summary of the scientist image, perception of the gender of scientist and perception of the risks that scientist has was presented, usually drawing and semi-structured interviews were used to determine these perceptions. These approaches reduce the number of individuals that can be accessed to take opinions. In this regard, to be able to get the perceptions of a broader audience, the validity and reliability study of the scales developed for the variables specified in this research will be discussed.

1.1. Studies to Determine the Scientist Image

Idea in mind is defined in the Turkish Language Association (TLA) dictionary as "objects and events perceived by the senses, appearing in consciousness without any stimulus, imagination, and image". Image is defined in the TLA dictionary as "Objects and events perceived by the senses, appearing in consciousness without a stimulus, general appearance, impression". Since idea in mind and image are synonyms, both words can be used interchangeably in the researches. The pictures formed in our minds when we hear the name of a certain concept or when we think about it is the image we create about the concept. For example, the image that an individual has about the iron atom is that the iron atom is composed of nucleus and electrons, and the shape and size of the structure formed by these atoms coming together (Atasoy, 2004). Images are separated as audio, taste, visual etc... These images have existed since the infancy of humankind and form the basis of the concepts (Mandler, 1992). In other words, our image scheme is the basis of our conceptual framework. In this regard, when the cognitive structures of individuals about a certain concept are addressed in the literature, the images that individuals have about that concept are also used. In this context, many studies examined the images that individuals have about various concepts such as atom, chemical bond, buoyancy force. Another concept in which the images of individuals are examined is the concept of scientist image.

The first study to determine the scientist images of individuals was conducted by Mead and Metraux (1957). Mead and Metraux collected the opinions of individuals with an Essay type measurement tool, and concluded that individuals have a stereotypical scientist image, described as a man wearing a white coat, with glasses, with a mustache, working in a laboratory surrounded by chemical materials and tools, crying as "Eureka, Eureka", reading books and taking notes. From Mead and Metraux (1957) to Chambers (1983) many studies (Beardslee & O'Dowd, 1961; Krajcovich & Smith 1982) have been conducted in various countries using semantic difference scales, Likert type scales and Essay. Likert type and semantic difference scales used in these studies have been developed on the basis of the theory suggested by Mead and Metraux (1957), thus similar results have been obtained, but they allowed working on larger samples.

Chambers (1983) developed a new perspective on the studies on scientist image by showing an alternative approach to Essay type data collection tools. Chambers (1983) developed the "Draw a Scientist Test Coding List", which includes seven indicators of stereotypical scientist image for encoding the data obtained from "Draw a Scientist Test (DAST)". In the coding list that he developed, Chambers covered lab coat, glasses, facial hair like beard/mustache, knowledge symbols like book/notebook; research symbols such as volumetric flask/test tubes; technology symbols such as robot/time machine; and relevant captions like equations/chemical formulas as the indicators of stereotypical scientist image. Finson, Beaver, and Cramond (1995), added eight more indicators to the coding list developed by Chambers (1983), which they suggested as indicators of stereotype science image. These are working environment (indoor), gender (male), age (middle-aged/old), working alone, symbols of danger, secrecy symbols, thought bubbles (bulb) and race (from white

race). Many studies (Barman, 1999; Fung, 2002; Newton & Newton, 1992; Ruiz-Mallen & Escalas, 2012) have been conducted to examine the scientist images of individuals in different countries and at different levels of education by using this coding list. Trash and dustbin were added by Karaçam, Bilir and Digilli-Baran (2018) to the lists developed by Chambers (1983) and Finson et al. (1995) as indicators of the stereotype scientist image.

Although DAST, developed by Chambers (1983), is quite popular in the studies conducted to determine the scientist image of individuals in the literature, it should be noted that some studies employed different measurement tools, in which semi-structured interview (Palmer, 1997; Parsons, 1997), word association test (Bovina & Dragul'skai, 2008) and metaphor (Karaçam, 2015) were used as measurement tools. These studies, in which different approaches than DAST were used, reached more detailed results such as the scientist's position in the society, cognitive, affective and psychomotor competencies in addition to the results such as scientist's appearance and working environment. In this regard, the image that individuals have was more detailed in these studies and it was observed that the image of individuals did not fall within the borders drawn by DAST. For this reason, in the recent studies (Milford and Tippett, 2013; Schrez and Oren, 2007), some measurement approaches such as Likert type scales, DAST, semi-structured interview, word association test, metaphor were employed in the data collection process. However, the items of the Likert type scales used in these studies targeted the external appearance, working environment, gender and age of the scientist based on the theoretical framework drawn by DAST. In other words, regarding the Likert type scales used in the literature, they kept the basis of the theoretical ground established by DAST although the theoretical ground was improved. In this regard, in this study we tried to develop a Likert type scale that is based on the new theoretical basis expanded as a result of the studies in which other measurement approaches than DAST were employed.

1.2. Studies about the Gender of the Scientist

One of the most basic indicators of the stereotypical scientist image that was first introduced by Mead and Metraux (1957) is male. In the following years, the studies conducted in various countries and education levels (Barman, 1999; Karaçam, 2015; Koren & Bar, 2009; Milford & Tippett, 2013; Monhardt, 2003) concluded that the majority of individuals perceive the scientist as a man. Makarova, Aeschlimann and Herzog (2019) investigated the perceptions of secondary school students towards the gender of scientists working in mathematics, physics and chemistry, and the effect of their perception on their career in these areas. As a result of the study, it has been reported that students associated male scientist with the fields of physics and chemistry, but they mostly associate it with the field of mathematics and that this association negatively affects the tendency of female students to pursue a career in these fields.

In this context, studies have been initiated to determine the origins of the male scientist image and to revise this image positively, since the perception of male scientist affects girls' career in science negatively and the tendency to have a career in science is low in the United States and European countries. In the study of Karaçam, Aydın and Digilli (2014), who think that the origin of stereotypical perceptions of the scientist may stem from textbooks, the images of scientists in textbooks were examined and they reached the conclusion that the indicator of male scientist is prevalent in the textbooks, as the other stereotypical expressions.

Unlike all these studies, Karaçam and Digilli-Baran (2017) have worked on the origins of this gender-oriented perception of these stereotypical scientist characteristics in students. The researchers, who conducted their research both with a questionnaire consisting of open-ended questions and semi-structured interview, found that many factors affected the students as the origin of stereotypes for the gender of the scientist. Among them they emphasized the use of the term "man of science", which is used to define scientists in society, scientist figures presented in written and visual media, and students' cultural infrastructure. It was found that different ideas were suggested about the gender of the scientist, especially because of the different cultural infrastructures from which the students came. Accordingly; students carrying traditional culture thought that the scientist is male; those who adapted the stereotypical woman in society thought that the scientist is a woman; students who embraced the western culture thought that the scientist may be either a woman or a man.

On the other hand, unlike all these studies, Özdeş and Aslan (2019) examined the perceptions of only female students towards the gender of the scientist and the factors affecting female students' tendency to become

scientists as a profession. Özdeş and Aslan (2019), who use phenomenology, which is one of the qualitative research methods, conducted their research with 377 secondary school female students. As a result, they reported that the image of male scientist is at the forefront, but there are also students who draw female scientist. They have found that people who thought of the gender of the scientists as men were especially affected by visual media and written sources; whereas those who drew female scientists drew it due to "the reaction to traditional gender patterns and the desire to become scientists in the future". Moreover, contrary to the literature, it was found that female students draw male scientists not because they don't want to be scientist, but because of having different interests, the way that their teachers presented the scientist, their negative attitude or negative self-perception and especially their safety anxiety towards scientists. Digilli-Baran and Karaçam (in print) named the security concern mentioned here as "risk" for scientists.

1.3. Studies on the Perception of the Risks that Scientist has

TLA (2019) defined the term stereotype as unchanging, non-specific, repeating the known ones. Risk is defined as the danger of getting harm (TLA, 2019). So, stereotypical risk, may mean the danger potential that has been considered to be true for a long time, that remained unchanged. However, like the changeable nature of science and scientific knowledge, the risks that scientists face also change with the change of the living conditions. So why students' perception of the risk that scientist has remained unchanged? The study conducted by Digilli-Baran and Karaçam (2020) in our country revealed the perceptions of secondary school students towards the risks that scientists are exposed to. Phenomenology, a qualitative research method, was used in the research, and the common meanings that secondary school students attributed to the risk phenomenon were determined. 592 secondary school students, 294 girls and 298 boys, participated in the study, of which 1115 risk statements were identified. As a result of the data analysis, the risks themes were created from the risk statements, namely affecting the environment and society; towards the tools and subjects; and affecting the scientist. It was found from these themes that approximately 90% of students have physical, sociological, psychological, labor oriented and economic risk perceptions of the scientist.

The study on the risks that the scientist may have revealed that middle school students emphasized physical risks the most and they mostly emphasized the risk of injury or death as a result of explosion as the physical risk (Digilli-Baran & Karaçam, 2020). The existence of such a result reminds the risks that scientists working centuries ago have been exposed to. Similarly, there are stereotyped risks in other themes. It was found that students emphasized the risk of losing the assets as a result of the explosion as an economic risk; getting away from the society or not being able to marry as sociological risks; failure to reach a result as a risk to labor; and risk of going mad from hard work as a psychological risk. The researchers stated that students perceive the scientist as a hero rather than a normal person, thinking that this fact may be due to the students' poor understanding of the nature of science, or that they may have acquired stereotyped scientist images. As expressed by Archer et al. (2010) and Venville et al. (2013) in the literature, on one hand the real science evokes the danger, and on the other hand the science in the school evokes safe science that is considered to be apart from the real science, which again suggests that the basis of this perception may be stereotypical thoughts.

1.4. The Role of the Study in the Literature

Regarding the objectives of the curriculum published for the science course by the Ministry of National Education (2006; 2013; 2018, a special emphasis was put on encouraging students to pursue a career in science. The most important obstacle for individuals to have a career in science is the image of the scientist they have. In the literature, it is emphasized that the stereotypical image of the scientists that individuals have negatively affects their tendency to have a career in science. It is obvious that the most important obstacle in achieving the stated purpose of the program is the stereotyped scientist image of the students. However, on the basis of this image, students also have a perception regarding the gender of the scientist and the risks they have. Therefore, it can be thought that individuals' perceptions of the gender and risks of the scientist will also affect their career tendency in science.

Regarding the studies on the image of the scientist, the gender of the scientist and the risks that scientist has in the literature, it should be noted that DAST was generally used in the studies determining the scientist image of the individuals, whereas a small number of researches using Likert type scales were encountered. In addition, it should be noted that the Likert-type scales used in the researches were developed within the framework of the working environment or the appearances of the scientist, which were generally addressed

in DAST. In this regard, in this study we developed a scale that considers cognitive and social characteristics of the scientist revealed in studies. There is no scale in the literature determining the perceptions of individuals about the gender of the scientist and the risks that they have. In this context, it is expected that the scales to be developed in this study will determine the perceptions of the individuals about the scientist, especially the image of the scientist, and the perceptions of their gender and risks that they have, which restrains individuals' from making a career in the fields of science and guiding the studies for revising the erroneous perceptions of the individuals.

The purpose of this study is to develop scales for determining the scientist image of high school students and their perceptions of scientist's gender and the risks they have.

2. Method

2.1. Research Model

In this study aiming to develop a scale for determining the scientist image of high school students and their perceptions of scientist's gender and the risks they have, survey design was used.

2.2. Participants

Within the scope of the study, data was collected from 760 high school students and the demographic characteristics of the participants are shown in Table 1.

Table 1. Demographic data of the participant group

		N	%
Gender	Female	406	53.4
	Male	354	46.6
	Total	760	100
<i>Table 1 is continued</i>			
School type	Science High School	84	11.1
	Anatolian High School	374	49.2
	Social Science High School	80	10.5
	Religious Vocational High School	61	8.0
	Trade High School	161	21.2
	Total	760	100

In the second stage, more data was collected from 385 high school students to verify the scale structures.

2.3. Data Collection Tools

In this study, which aims to develop scales for determining students' perceptions of scientists, draft scales were created first. These draft scales were designed to determine the scientist's images of high school students, their thoughts on the risks that scientists have, and their perceptions of scientist's gender. These scales were respectively named as "ImSca", "RiskSca" and "GenSca".

The process of creating draft scales is described below, and the following steps were followed while developing the scales.

2.4. Writing scale items

In order to determine students' perceptions of scientists, firstly, domestic and foreign literature was reviewed, and a pool of items was created by compiling the items derived from the researchers' experiences. A 53-item pool was created for ImSca, 76-item pool for RiskSca, and 47-item pool for GenSca. These item pools were reviewed by the researchers, and incomprehensible items, items thought to be unrelated to the scale, and items repeating the content of other items were corrected or removed from the scale. As a result of this elimination

and correction, 49 items were kept for ImSca, 58 items for RiskSca, and 42 items for GenSca, and these scales were sent to the Turkish linguistics specialist who examined them in terms of language and expression. The items were revised according to the language specialist's feedback, and the scale items were made ready for expert opinion.

2.5. Expert opinion and content validity

The expert opinion form created by considering the purpose of the scales was arranged in such a way that the experts can express their opinions about each item. Expert Opinion Forms created for each scale were sent to two experts in field of research methods and measurement, science education and educational sciences and the experts were asked to read each item, evaluate them according to the purpose of the scale and in terms of suitability as scale items, and indicate their suggestions, if any. Based on expert opinions, the scales were revised and a draft form consisting of 46 items for ImSca, 56 items for RiskSca and 38 items for GenSca was obtained.

Table 2. Change in the number of scale items

Scales	Number of items in the first item pool	Number of items after the consensus of the researchers	Number of items after Expert Opinion
ImSca	53	49	46
RiskSca	76	58	56
GenSca	47	42	38

The draft forms of the scales have five-point Likert type rating with totally disagree (1), disagree (2), moderately agree (3), agree (4), totally agree (5) options.

2.6. Data Analysis

The data obtained from the answers of the volunteer high school students on the scale items were first transferred to the computer environment. In the study, exploratory factor analysis was used for the factor analysis of the scales; Cronbach Alpha internal consistency coefficient was used for internal consistency study; and correlation analysis was used for revealing the relationships between scale factors.

3. Findings

3.1. Findings for the Validity-Reliability of ImSca

Factor analysis was conducted first to determine the compatibility and structure validity between the items. The results of the test performed to check the suitability of the data obtained from the 46-item scale for factor analysis are shown in Table 3.

Table 3. KMO and Bartlett Test Results for ImSca

Kaiser-Meyer-Olkin Sample Sufficiency		.87
	Chi-square Value	8248.42
Bartlett Sphericity Test	Degree of Freedom	1035
	P	.00

KMO (.87) and Bartlett sphericity (8248.42, $p < .01$) values obtained from the principal component analysis show that the data distribution of the sample is appropriate for factor analysis (Tavşancıl, 2010). Therefore, it can be said that the data come from a multivariate normal distribution.

In this study, basic components analysis and vertical rotation technique were used for exploratory factor analysis. The eigenvalues of the factors and the scree plot were examined together to determine the number of factors in the scale. According to the results of exploratory factor analysis, the threshold was set as .30 while determining the items to be grouped under a factor. In parallel, the items with factor loads below .30 and the items with a load difference below .10 for at least two factors were not assigned to any factors. In this context, 20 items that do not meet these criteria were excluded from the scale and they were not included in the remaining analyzes. As a result of the analysis repeated by removing these items, the scale items were

observed to be grouped under 8 factors with an eigenvalue greater than 1.00. The eigenvalues of the factors and the total explained variance of the scale after the last exploratory factor analysis are given in Table 4.

Table 4. Total amount of explained variance for ImSca

Factor Eigenvalues			
Factors	Eigenvalues	Explained Variance (%)	Accumulated Explained Variance (%)
1	4.00	15.40	15.40
2	3.27	12.58	27.98
3	1.39	5.35	33.33
4	1.29	4.95	38.28
5	1.19	4.58	42.86
6	1.10	4.25	47.11
7	1.06	4.08	51.19
8	1.04	4.00	55.19

Regarding the amount of total explained variance, it is seen that the scale has an eight-factor structure and the total variance amount explained by these eight factors is 55.19%. The results of exploratory factor analysis performed to determine the distribution of the items among the factors are shown in Table 5.

Table 5. Rotated Components Matrix after Exploratory Factor Analysis for ImSca

Factors	1	2	3	4	5	6	7	8
Items	Factor Load	Factor Load	Factor Load	Factor Load	Factor Load	Factor Load	Factor Load	Factor Load
Item 41	.72	-	-	-	-	-	-	-
Item 12	.68	-	-	-	-	-	-	-
Item 42	.62	-	-	-	-	-	-	-
Item 38	.56	-	-	-	-	-	-	-
Item 4	.46	-	-	-	-	-	-	-
Item 11	-	.71	-	-	-	-	-	-
Item 7	-	.65	-	-	-	-	-	-
Item 25	-	.60	-	-	-	-	-	-
Item 9	-	.59	-	-	-	-	-	-
Item 24	-	.40	-	-	-	-	-	-
Item 37	-	-	.72	-	-	-	-	-
Item 30	-	-	.66	-	-	-	-	-
Item 39	-	-	.66	-	-	-	-	-
Item 45	-	-	.46	-	-	-	-	-
Item 5	-	-	-	.73	-	-	-	-
Item 10	-	-	-	.71	-	-	-	-

Item 14	-	-	-	-	.71	-	-	-
Item 13	-	-	-	-	.67	-	-	-
Item 6	-	-	-	-	.55	-	-	-
Item 3	-	-	-	-	-	.66	-	-
Item 27	-	-	-	-	-	.66	-	-
Item 26	-	-	-	-	-	.64	-	-
Item 15	-	-	-	-	-	-	-.71	-
Item 2	-	-	-	-	-	-	.65	-
Item 18	-	-	-	-	-	-	-	.76
Item 20	-	-	-	-	-	-	-	.68
Eigenvalue	4.00	3.27	1.39	1.29	1.19	1.10	1.06	1.04
Explained Variance	15.40	12.58	5.35	4.95	4.58	4.25	4.08	4.00

According to Table 5, the loads of the items grouped under 8 factors vary between .40 and .76. The factors were named as follows, according to the items they contain: the first factor masculine, the second factor working for society, the third factor meticulous/creative, the fourth factor mad scientists, the fifth factor Working Indoors, the sixth factor experimenting with chemicals, the seventh factor working alone and the eighth factor intelligent.

Data was collected from 385 secondary school students to verify this factor structure of ImSca. From these data, 13 were found to be extreme values and to disrupt the normal distribution and they were removed from the data, confirmatory factor analysis was performed on the remaining 362 data. The model obtained according to the results of the confirmatory factor analysis is shown in Figure 1.

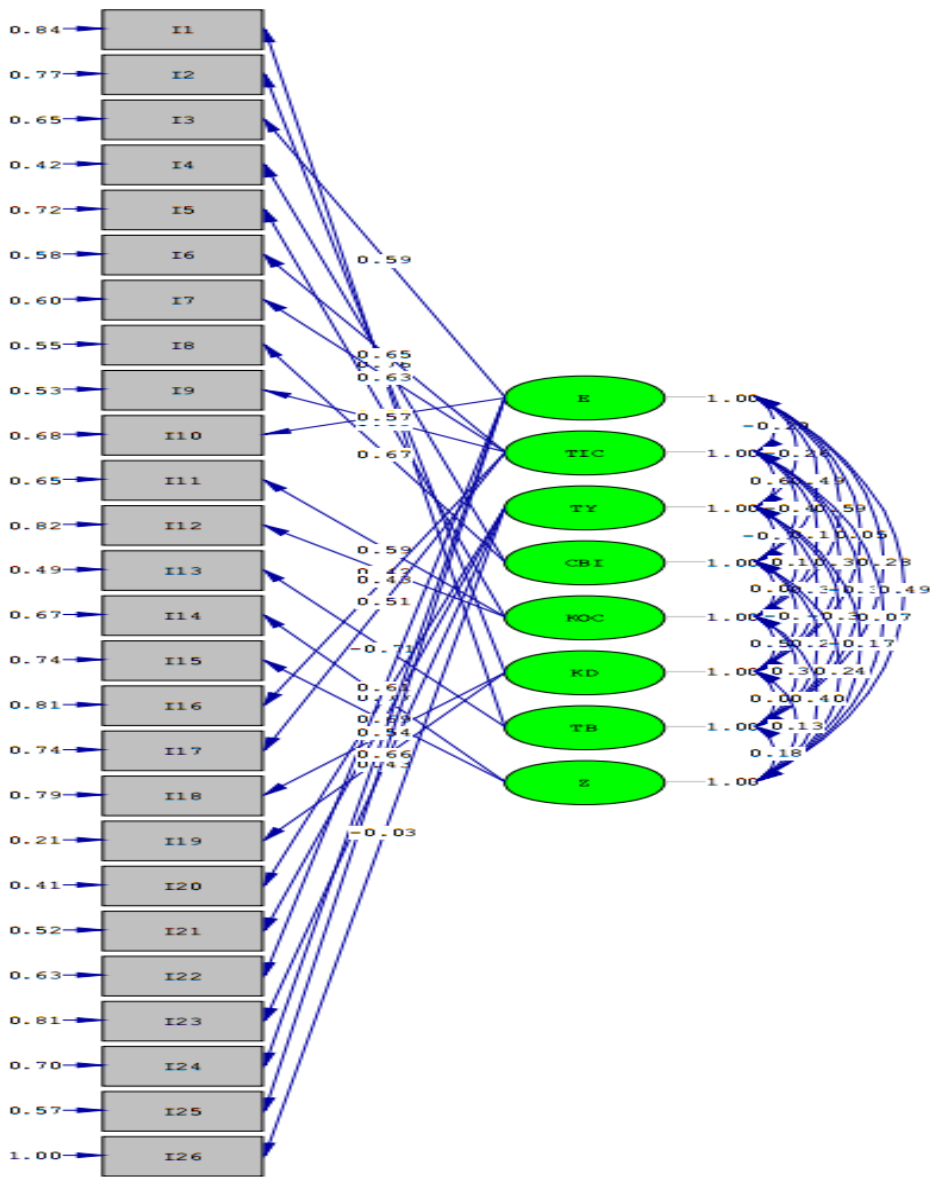


Figure 1. Confirmatory Factor Analysis Model for ImSca

Chi square, degree of freedom and goodness of fit indexes obtained from the confirmatory factor analysis results, are shown in Table 6.

Table 6. Goodness of Fit Indexes for Confirmatory Factor Analysis

Fit Parameter	Coefficient
GFI	.88
CFI	.81
NFI	.71
IFI	.81
RMSEA	.06
Sd	271
χ^2	621.65
χ^2/sd	2.29

Regarding the goodness of fit indices in Table 6, it is seen that GFI coefficient is around .90 and the other coefficients vary between .71 and .81. Considering the obtained RMSEA and χ^2/sd ratio, it can be said that the results of confirmatory factor analysis related to Scientist's Images Scale are at acceptable level, although not at the desired level.

Results regarding the reliability analysis of the scale are presented in Table 7.

Table 7. Internal Consistency Coefficients for the whole ImSca and its Sub-Dimensions

Factors	Number of Items	Alpha
1	5	.69
2	5	.65
3	4	.60
4	2	.70
5	3	.51
6	3	.47
7	2	.34
8	2	.42
Total	26	.69

n=760

According to Table 7, the reliability coefficients of the sub-dimensions vary between .34 and .70, and the reliability coefficient of the whole scale is .69.

3.2. Findings for the Validity-Reliability of GenSca

The test results performed to check the suitability of the data obtained from the 38-item scale for factor analysis are shown in Table 8.

Table 8. KMO and Bartlett Test Results for GenSca

Kaiser-Meyer-Olkin Sample Sufficiency		.95
	Chi-square Value	11446.19
Bartlett Sphericity Test	Degree of Freedom	253
	P	.00

KMO (.95) and Bartlett sphericity (11446.19, $p < .01$) values obtained from the principal component analysis show that the data distribution of the sample is appropriate for factor analysis (Tavşancıl, 2010). Therefore, it can be said that the data come from a multivariate normal distribution.

In this study, basic components analysis and vertical rotation technique were used for exploratory factor analysis. The eigenvalues of the factors and the scree plot were examined together to determine the number of factors in the scale. According to the results of exploratory factor analysis, the threshold was set as .30 while determining the items to be grouped under a factor. In parallel, the items with factor loads below .30 and the items with a load difference below .10 for at least two factors were not assigned to any factors. In this context, 15 items that do not meet these criteria were excluded from the scale and they were not included in the remaining analyzes. As a result of the analysis repeated by removing these items, the scale items were observed to be grouped under 3 factors with an eigenvalue greater than 1.00. The eigenvalues of the factors and the total explained variance of the scale after the last exploratory factor analysis are given in Table 9.

Table 9. Total amount of explained variance for GenSca

Factor Eigenvalues			
Factors	Eigenvalues	Explained Variance (%)	Accumulated Explained Variance (%)
1	9.73	28.84	28.84
2	3.19	18.81	47.65
3	1.96	17.08	64.73

Regarding the amount of total explained variance, it is seen that the scale has a three-factor structure and the total variance amount explained by these three factors is 64.73 %. The results of exploratory factor analysis performed to determine the distribution of the items among the factors are shown in Table 10.

Table 10. Rotated Components Matrix after Exploratory Factor Analysis for GenSca

Factors	1	2	3
Items	Factor Load	Factor Load	Factor Load
Item 14	.81	-	-
Item 4	.79	-	-
Item 17	.78	-	-
Item 13	.77	-	-
Item 11	.76	-	-
Item 18	.74	-	-
Item 9	.74	-	-
Item 1	.72	-	-
Item 16	.71	-	-
Item 6	.71	-	-
Item 24	.67	-	-
Item 21	-	.87	-
Item 19	-	.85	-
Item 27	-	.83	-
Item 32	-	.80	-
Item 25	-	.80	-
Item 10	-	.74	-
Item 35	-	-	.78
Item 33	-	-	.76
Item 28	-	-	.76
Item 36	-	-	.74
Item 26	-	-	.71
Item 12	-	-	.61
Eigenvalue	14.28	4.09	2.17
Explained Variance	43.27	12.40	6.58

According to Table 10, the loads of the items grouped under 3 factors vary between .61 and .87. The factors were named as follows, according to the items they contain: the first factor male, the second factor female, and the third factor male or female.

Data was collected from 385 secondary school students to verify this factor structure of GenSca. From these data, 85 were found to be extreme values and to disrupt the normal distribution and they were removed from the data, confirmatory factor analysis was performed on the remaining 300 data. The model obtained according to the results of the confirmatory factor analysis is shown in Figure 2.

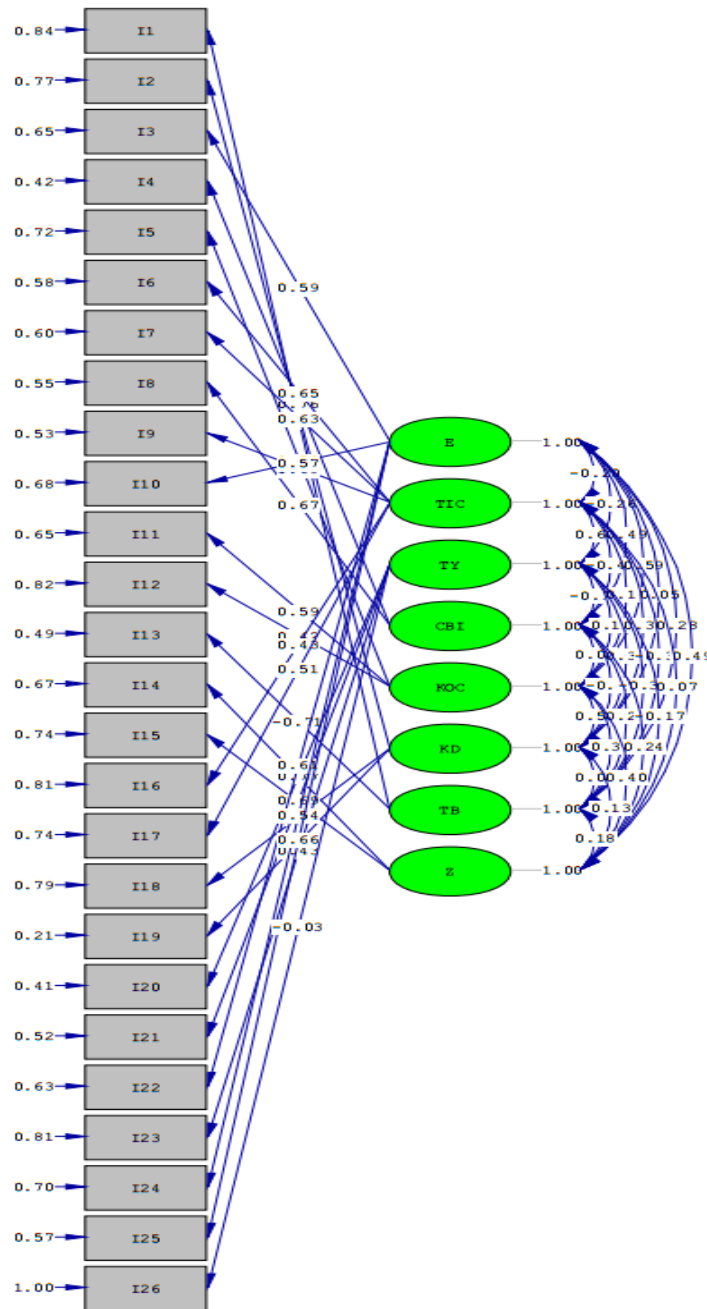


Figure 2. Confirmatory Factor Analysis Model for GenSca

Chi square, degree of freedom and goodness of fit indexes obtained from the confirmatory factor analysis results, are shown in Table 11.

Table 11. Goodness of Fit Indexes for Confirmatory Factor Analysis for GenSca

Fit Parameter	Coefficient
---------------	-------------

GFI	.86
CFI	.92
NFI	.87
IFI	.92
RMSEA	.07
<i>sd</i>	227
χ^2	553.91
χ^2/sd	2.44

Regarding the goodness of fit indices in Table 11, it is seen that the CFI and IFI coefficients are above .90, and GFI and NFI coefficients are above .85. Considering the obtained RMSEA and χ^2/sd ratio, it can be said that the results of confirmatory factor analysis related to GenSca are at acceptable level.

Results regarding the reliability analysis of the scale are presented in Table 12.

Table 12. Internal Consistency Coefficients for the whole GenSca and its Sub-Dimensions

Factors	Number of Items	Alpha
1	11	.94
2	6	.91
3	6	.86
Total	23	.82
<i>n</i> =760		

According to Table 12, the reliability coefficients of the sub-dimensions vary between .86 and .94, and the reliability coefficient of the whole scale is .82. Considering these coefficients, it can be said that scale items have a consistent structure, therefore the scale is reliable.

3.3. Findings for the Validity-Reliability of RiskSca

First of all, the test results performed to check the suitability of the data obtained from the 56-item scale for factor analysis are shown in Table 13.

Table 13. KMO and Bartlett Test Results for RiskSca

Kaiser-Meyer-Olkin Sample Sufficiency		.94
	Chi-square Value	13599.48
Bartlett Sphericity Test	Degree of Freedom	1540
	p	.00

KMO (.94) and Bartlett sphericity (13599.48, $p < .01$) values obtained from the principal component analysis show that the data distribution of the sample is appropriate for factor analysis (Tavşancıl, 2010). Therefore, it can be said that the data come from a multivariate normal distribution.

In this study, Basic Components Analysis and vertical rotation technique were used for exploratory factor analysis. The eigenvalues of the factors and the scree plot were examined together to determine the number of factors in the scale. According to the results of exploratory factor analysis, the threshold was set as .30 while determining the items to be grouped under a factor. In parallel, the items with factor loads below .30 and the items with a load difference below .10 for at least two factors were not assigned to any factors. In this context, 29 items that do not meet these criteria were excluded from the scale and they were not included in the remaining analyzes. As a result of the analysis repeated by removing these items, the scale items were

observed to be grouped under 6 factors with an eigenvalue greater than 1.00. The eigenvalues of the factors and the total explained variance of the scale after the last exploratory factor analysis are given in Table 14.

Table 14. Total amount of explained variance for RiskSca

Factor Eigenvalues					
Factors	Eigenvalues	Explained Variance (%)	Accumulated	Explained	Variance
			(%)		
1	7.02	26.02	26.02		
2	1.86	6.88	32.90		
3	1.45	5.35	38.25		
4	1.24	4.58	42.83		
5	1.15	4.24	47.07		
6	1.02	3.78	50.85		
...	...				

Regarding the amount of total explained variance, it is seen that the scale has a six-factor structure and the total variance amount explained by these three factors is 50.85 %. The results of exploratory factor analysis performed to determine the distribution of the items among the factors are shown in Table 15.

Table 15. Rotated Components Matrix after Exploratory Factor Analysis for RiskSca

Factors	1	2	3	4	5	6
Items	Factor Load	Factor Load	Factor Load	Factor Load	Factor Load	Factor Load
Item 44	.69	-	-	-	-	-
Item 52	.60	-	-	-	-	-
Item 46	.59	-	-	-	-	-
Item 18	.59	-	-	-	-	-
Item 5	.50	-	-	-	-	-
Item 21	.34	-	-	-	-	-
Item 24	-	.62	-	-	-	-
Item 14	-	.61	-	-	-	-
Item 32	-	.59	-	-	-	-
Item 12	-	.56	-	-	-	-
Item 49	-	.51	-	-	-	-
Item 53	-	.51	-	-	-	-
Item 10	-	-	.73	-	-	-
Item 11	-	-	.67	-	-	-
Item 17	-	-	.65	-	-	-
<i>Table 15 is continued</i>						
Item 16	-	-	.60	-	-	-
Item 48	-	-	.40	-	-	-

Item 31	-	-	.40	-	-	-
Item 8	-	-	-	.75	-	-
Item 9	-	-	-	.74	-	-
Item 15	-	-	-	.50	-	-
Item 35	-	-	-	-	.71	-
Item 26	-	-	-	-	.68	-
Item 54	-	-	-	-	.45	-
Item 3	-	-	-	-	-	.68
Item 4	-	-	-	-	-	.67
Item 2	-	-	-	-	-	.62
Eigenvalue	7.02	1.86	1.45	1.24	1.15	1.02
Explained Variance	26.02	6.88	5.35	4.58	4.24	3.78

According to Table 15, the loads of the items grouped under 6 factors vary between .34 and .75. The factors were named as follows, according to the items they contain: the first factor risk of being punished by the society, the second factor risk of losing health, the third factor risk of injury/death, the fourth factor risk of an asocial Life, the fifth factor risk of wasted labor, and the sixth factor psychological risks.

Data was collected from 385 secondary school students to verify this factor structure of RiskSca. From these data, 7 were found to be extreme values and to disrupt the normal distribution and they were removed from the data, confirmatory factor analysis was performed on the remaining 378 data. The model obtained according to the results of the confirmatory factor analysis is shown in Figure 3.

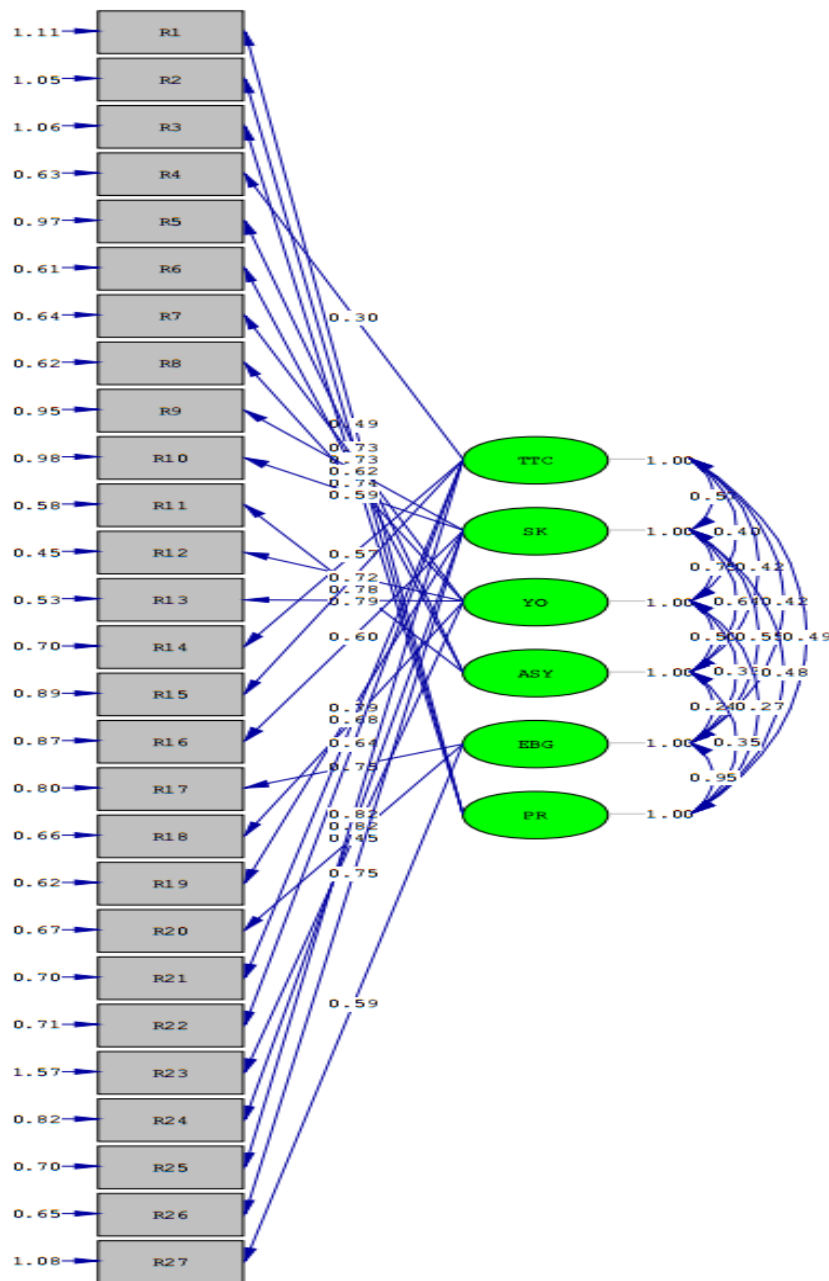


Figure 3. Confirmatory Factor Analysis Model for RiskSca

Chi square, degree of freedom and goodness of fit indexes obtained from the confirmatory factor analysis results, are shown in Table 16.

Table 16. Goodness of Fit Indexes for Confirmatory Factor Analysis for RiskSca

Fit Parameter	Coefficient
GFI	.88
CFI	.89
NFI	.80
IFI	.89
RMSEA	.05

Table 16 is continued

χ^2	662.29
χ^2/sd	2.14

Regarding the goodness of fit indices in Table 16, it is seen that the coefficients are above .80 and close to .90. Considering the obtained RMSEA and χ^2/sd ratio, it can be said that the results of confirmatory factor analysis related to RiskSca are at acceptable level.

Results regarding the reliability analysis of the scale are presented in Table 17.

Table 17. Internal Consistency Coefficients for the whole Scale and its Sub-Dimensions

Factors	Number of Items	Alpha
1	6	.73
2	6	.74
3	6	.72
4	3	.70
5	3	.49
6	3	.52
Total	27	.88

n=760

According to Table 17, the reliability coefficients of the sub-dimensions vary between .49 and .74, and the reliability coefficient of the whole scale is .88. Considering these coefficients, it can be said that scale items have a consistent structure, therefore the scale is reliable.

3.4. Findings for the Determination of the Relationships among the Sub-Scales

The results of the correlation analysis for determining the relationships between the sub-scales of the scales developed within the scope of the research and whose factor structures are confirmed are shown in Table 18. Accordingly, the following medium-level, positive relationships were discovered among the perceptions: Between Masculine Scientist and Mad Scientist ($r = .38, p < .05$), Scientist working in Indoor Environment ($r = .49, p < .05$), Male Scientist ($r = .38, p < .05$), Risk of Losing Health ($r = .37, p < .05$), Risk of an Asocial Life ($r = .40, p < .05$); Between Scientist Working for Society and Mad Scientist ($r = .41, p < .05$); Between Scientist Working in Indoor Environment and Scientist who Performs Chemical Experiments ($r = .31, p < .05$), Risk of Losing Health ($r = .39, p < .05$), Risk of an Asocial Life ($r = .30, p < .05$); Between Scientist Working Alone and Risk of an Asocial Life ($r = .39, p < .05$); Between Intelligent Scientist and Risk of Losing Health ($r = .30, p < .05$); Between Male Scientist and Female Scientist ($r = .55, p < .05$), Risk of an Asocial Life ($r = .30, p < .05$); Between Female Scientist and Risk of an Asocial Life ($r = .31, p < .05$); Between Risk of Punishment by the Community and Risk of Losing Health ($r = .43, p < .05$), Risk of Injury/ Death ($r = .31, p < .05$), Risk of Wasted Labor ($r = .41, p < .05$), Psychological Risk ($r = .36, p < .05$); Between Risk of Losing Health and Risk of Injury/Death ($r = .64, p < .05$), Risk of an Asocial Life ($r = .48, p < .05$), Risk of Wasted Labor ($r = .45, p < .05$); Between Risk of Injury/Death and Risk of an Asocial Life ($r = .30, p < .05$), Risk of Wasted Labor ($r = .35, p < .05$); Between Risk of Wasted Labor and Psychological Risk ($r = .52, p < .05$). A moderate negative correlation is observed between the perception of Male Scientist and Scientists of Both Genders ($r = -.35, p < .05$). Other correlations between variables were found to be low level or statistically insignificant. All correlations of Risks of Being a Scientist and the Perception of the Scientist's Gender subscales were statistically significant, whereas some correlations between the Scientist in Images Subscales are insignificant. It is remarkable that the perception of being a Scientist of Both Genders subscale does not have any significant correlation with the subscales of other scales.

Table 18. Pearson Product-Moments Correlation Matrix between the subscales of ImSca, GenSca, and RiskSca

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1–Masculine	1	-.12*	.00	.38*	.49*	.17*	.25*	.26*	.38*	.26*	-.09	.19*	.37*	.22*	.40*	.27*	.15*
2–Working for the Society		1	.41*	-.26*	.01	.15**	-.20*	.06	-.03	-.03	.11	-.15*	-.11	-.03	-.14*	.06	.03
3– Meticulous /Creative			1	-.13*	.21*	.19*	-.06	.14*	-.03	.09	.11	.04	.17*	.10	.10	.16*	.19*
4 - Mad Scientist				1	.15*	.14*	.21*	.09	.14*	.05	-.09	.16*	.20*	.16*	.12*	.08	.01
5– Working Indoors					1	.31*	.22*	.28*	.17*	.21*	.04	.11	.39*	.29*	.30*	.18*	.15*
6– Experimenting with Chemicals						1	.13*	.10	.11	.19*	.08	.10	.20*	.24*	.10	.19*	.07
7– Working Alone							1	.15*	.07	.21*	-.04	.10	.27*	.24*	.39*	.20*	.11
8– Intelligent								1	.19*	.20*	.05	.16*	.30*	.15*	.26*	.13*	.17*
9– Male Scientist									1	.55*	-.35*	.26*	.19*	.13*	.30*	.11	.12*
10– Female Scientist										1	-.16*	.23*	.29*	.19*	.31*	.14*	.16*
11– Male or Female Scientist											1	-.07	.01	.02	-.09	.01	.09
12– Being Punished by the Society												1	.43*	.31*	.29*	.41*	.36*
13– Losing Health													1	.64*	.48*	.45*	.28*
14– Injury/Death														1	.30*	.35*	.19*
15– An Asocial Life															1	.23*	.20*
16– Wasted Labor																1	.52*
17– Psychological																	1

n =295, **p*<.05, ** *p*<.01

4. Conclusion, Discussion and Suggestions

In this study, three different scales have been developed to determine high school students' scientist image, perceptions of the gender of scientist and the risks they have. ImSca consisting of eight sub-factors and 26 items, namely masculine, working for the society, meticulous/creative, mad scientist, working indoors, experimenting with chemicals, working alone and intelligent, was developed to determine high school students' image of scientist. In order to determine high school students' perceptions of the gender of the scientist, GenSca consisting of three sub-factors (male, female and male or female) and 33 items was developed. Finally, another scale that is RiskSca was developed to determine high school students' perceptions of the risks that the scientist has. This scale consists of six sub-factors and 27 items, namely the risk of being punished by the society, the risk of losing health, the risk of injury/ death, the risk of an asocial life, the risk of wasted labor and psychological risks. As a result of the analysis of the data obtained in this study, it was found that the psychometric properties of these three scales are sufficient.

ImSca measures the stereotyping of the scientist image of individuals. The higher score that an individual gets from the scale means the more stereotypical scientist image. The first dimension is aimed at determining how individuals perceive the gender and characteristics of the scientist. This dimension contains five items. Some of the items of this dimension are; *the scientist is a man, has a beard, and his hair is messy*. The maximum score that individuals can get from this dimension is 25. The second dimension is the scientist working for the society, which also consists of five items. Some of the items of this dimension are; *the scientist is kind, comes to weak people's aid, and informs people*. The maximum score that individuals can get from this dimension is also 25. The third dimension, consisting of four items, is the meticulous/creative dimension. Some of the items of this dimension are; *works in a planned way, is tidy and meticulous, thinks creatively*. The maximum score that individuals can get from this dimension is 20. The fourth dimension of the scale, which consists of two items, is the mad scientist. This dimension includes *scientist has evil purposes such as taking over the world, developing monsters or weapons to take over the world*. The maximum score that individuals can get from this dimension is 10. The fifth dimension, which is called working indoor, contains three items, which are *the scientist working indoor such as a laboratory or study room, works in quiet and deserted environments, the working environment is full of books*. The maximum score that individuals can get from this dimension is 15. Similarly, the sixth dimension is experimenting with chemical. The items of this dimension are as follows: *"The scientist makes experiments with chemicals, conducts dangerous experiments, works on chemical formulas"*. The maximum score that individuals can get from this dimension is 15. The seventh dimension, which is named as working alone, consists of two items, which are *the scientist works alone, has many friends to spend time and work together*. The second item should be scored in the reverse order as it is negative to the working alone dimension. The maximum score that individuals can get from this dimension is 10. The eighth and final dimension of the scale, which consists of two items such as the seventh dimension, is named as intelligent. This dimension includes *the scientist is smarter than other people, knows everything you can think of"*. The maximum score that individuals can get from this dimension is also 10. The alpha values of the dimensions of the scale vary between .34 and .70. As a result of the confirmatory factor analyzes, the goodness of fit indices are at an acceptable level, indicating that the scale structure is confirmed.

GenSca determines individuals' perceptions of the scientist's gender. The first of the three dimensions of the scale determines the perceptions about the male scientist. This dimension consists of 11 items. Some of the items in this dimension are: *"The scientist must be a man because women cannot afford to work with heavy machinery; the scientist is a man because men are more hard-working."* The maximum score that individuals can get from this dimension is 55. The second dimension includes six items for determining the perceptions of female scientist. Some of the items in this dimension are: *"The scientist is a woman because women do what they set on their mind; the scientist is a woman because women care more about what they do compare to men"*. The maximum score that individuals can get from this dimension is 30. There are six items in the last dimension of the scale, male or female. Some of these items are: *"Anyone who thinks to have talent can choose scientist as profession, regardless of the gender. Since there are both male and female scientists who have been successful in history, there can be scientists of both sexes"*. The maximum score that individuals can get from this dimension is also 30. Although the dimensions of the scale don't contain any negative items, to determine the male scientist perception in the scale, the items belonging to "women" and "men or women" dimensions should be scored in reverse order.

In this way, the high score achieved from the scale means that they perceive the scientist as male and low score means that they perceive as female. This scoring approach can be used in studies based on the survey model. However, if pretest-posttest model is used in the study, the changes in each sub-dimension should be evaluated separately. The high alpha values (Male = .94, Female = .91, Male or Female = .86) related to the sub-dimensions of the scale indicate that the items in the sub-dimensions are consistent with each other. Confirmatory factor analyzes of the scale also show that the factor structure is confirmed.

RiskSca, which is the last scale developed in the study, measures individuals' perceptions of the risks that the scientist has. The higher score that an individual gets from the scale means that they perceive scientist as a riskier profession. The first dimension of the scale is the risk of being punished by the society. The items of this dimension are intended to identify individuals' perceptions of the scientist's risk of being punished by society. This dimension consists of six items. Some of the items in this dimension are; *"If a scientist cannot find solutions to society's problems, he/she is blamed by those around him/her, if the invention of the scientist does not work; he/she is despised by people"*. The maximum score that individuals can get from this dimension is 30. Likewise, the second sub-dimension consisting of six items is the risk of losing health. This dimension contains items to determine whether individuals have a perception of a risk of losing health for the scientist. Some of the items in this sub-dimension are; *"Since the scientist sits at the computer for a long time, his waist and/or neck hurts, the scientist gets sick because he/she works day and night and is unable to rest."* The maximum score that individuals can get from this dimension is 30. Another dimension in the scale is the risk of injury/death. This dimension contains items related to determining the perceptions of whether the scientist is at risk of injury or death. Some of the items in this dimension consisted of six items are; *"When the scientist works with a poisonous animal, the poisonous animal will kill him/her, the scientist who spills chemicals such as acid will burn."* As the other dimensions, the maximum score that individuals can get from this dimension is 30. The fourth dimension, consisting of three items, is the risk of an asocial life. This dimension determines whether individuals have a perception of asocial life for the scientist. Some of the items in this sub-dimension are; *"Since the scientist spends most of his life at work, he/she has no social life, since the scientist works hard, he/she cannot spare time for his/her family."* The maximum score that individuals can get from this dimension is 15. Similarly, another dimension of the scale, which contains three items, is the risk of wasted labor. The items of this dimension intend to determine whether individuals perceive that the scientist's labor is at risk of wasting. Some of the items are; *"The scientist gets upset if he/she does not reach the desired result even though he/she has worked hard, the scientist gets upset if nobody is interested in his/her discovery."* The maximum score that individuals can get from this dimension is 15. The last dimension of the scale, which consists of three items, is psychological risks. This dimension is aimed at determining the perception of the psychological risks that the scientist has. Some of the items in this sub-dimension are; *"If a person dies of the medicine made by the scientist, he/she feels a twinge of guilt, when the scientist makes an invention, he/she gets disappointed if he/she finds out that someone else did it as well."* The maximum score that individuals can get from this dimension is also 15. Individuals' perceptions of the risks of the scientists can be determined from the total score to be obtained from the scale, as well as comments can be made regarding the sub-dimensions. The scale does not contain any negative items. For this reason, reverse order scoring is not needed. Regarding the alpha values of the dimensions, they are high; therefore the items in the sub-dimension are consistent. Also, confirmatory factor analysis results show that the scale structure has been confirmed. In this regard, it can be thought that the scale can be used in studies aimed at determining the perceptions of scientists' risk.

Encouraging individuals to pursue a career in the fields of science have been one of the general objectives of all science and technology curricula that have been revised and implemented since 2006 in our country. The major factor against the realization of these objectives of the curricula is the scientist image that individuals have and the perception of scientist's gender and the risks he/she has, which are shaped accordingly. In this regard, it is essential to conduct studies to change the scientist's images and perceptions that students have. In this respect, it is thought that the scales developed in the study will direct the mentioned researches.

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