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The Influence of the Background Color "Red" on the Appraisal of Pictures

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ARTICLE INFO

ABSTRACT

It is assumed that color has an influence on human cognition and behavior. The red effect has been taken up by a large body of research and the purpose of the study was to test the influence of red as a background color on the appraisal of pictures. Participants were randomly divided into two conditions: red or white. They appraised the levels of valence and arousal of four pictures with background colors of red or white. Results demonstrated that the levels of arousal were significantly higher when negative pictures with background color red were presented than when they were presented with background color white. This study's results are consistent with previous studies that have demonstrated a context-dependent manner of color effects on human cognition and behavior.

1. Introduction

It is assumed that color has an influence on human cognition and behavior. The red effect has been taken up by a large body of research especially because red is a color which captures our attention (e.g., Buechner, Maier, Lichtenfeld, & Schwarz, 2014; Lindsay et al., 2010; Pomerleau, Fortier-Gauthier, Corriveau, Dell'Acqua, & Jolicœur, 2014; Sokolik, Magee, & Ivory, 2014; Tchernikov & Fallah, 2010). Red is used in warning and hazard signs such as stop signals and fire alarms (e.g., Borade, Bansod, & Gandhewar, 2008; Elliot & Maier, 2007; Griffith & Leonard, 1997; Luximon, Chung, & Goonetilleke, 2008; Pravossoudovitch, Cury, Young, & Elliot, 2014; Serig, 2000; Smith-Jackson & Wogalter, 2000; Wogalter, Kalsher, Frederick, Magurno, & Brewster, 1998) and is often associated with anger (e.g., Fetterman, Robinson, Gordon, & Elliot, 2011; Fetterman, Robinson, & Meier, 2012; Guéguen, Jacob, Lourel, & Pascual, 2012; Hupka, Zalesku, Otto, Reidl, & Tarabrina, 1997; Young, Elliot, Feltman, & Ambaby, 2013). The association between red and anger is founded by experiential correlation, which means that people who are angry experience a rush of blood to the head and turn red. The association is also explained from the perspective of conceptual metaphor (Lakoff & Johnson, 1980). Lakoff and Johnson (1980) explained that "the essence of metaphor is understanding and experiencing one kind of thing in terms of another". In fact, metaphor is not only a figure of speech but also an important part of the conceptual system used to understand abstract concepts. The conceptual metaphor theory asserts

that metaphors provide conceptual mappings between more concrete, embodied, and common "source concepts", and more abstract, disembodied, and less perceptual "target concepts" (Landau, Meier, & Keefer, 2010; Meier, Scholer, & Fincher-Kiefer, 2014). In a nutshell, the word derivation from red to anger is explained by conceptual metaphor "EMOTION IS COLOR". Kövecses (2005) suggested that actual linguistic metaphors are expressions of conceptual metaphors. For example, seeing red or being red with rage is used for describing angry people and is based on conceptual metaphor "ANGER IS RED". In fact, the association is robust and these studies have found that the activation of red facilitates anger concepts. Therefore, red can be a negative stimulus which motivates our avoidance behavior (Maier, Elliot, & Lichtenfeld, 2008). The avoidance tendency enhanced by red can also influence our actual behavior. For example, Elliot, Maier, Moller, Friedman, and Meinhardt (2007) found that red impaired performance on achievement cognitive tasks. Attrill, Gresty, Hill, and Barton (2008) and Hill and Barton (2005) found that red enhanced performance in a variety of competitive contexts. These results are apparently contradictory in that sometimes red enhances performance and sometimes impairs, but in fact they are not inconsistent. Red informs individuals the existence of threat and they try to brush it away or to prepare for the coming threat by increasing the levels of arousal. As a result, simple physical activities are enhanced, whereas complicated cognitive activities are impaired because of physical responses (e.g., an increase of adrenaline, fight-or-flight response).

On the other hand, in the context of sexual allurement and sexual attraction, red can be a positive stimulus which motivates our approach behavior (e.g., Elliot & Niesta, 2008; Guéguen, 2008, 2010, 2012a, 2012b; Guéguen & Jacob, 2012a, 2012b, 2014; Lin, 2014; Niesta-Kayser, Elliot, & Feltman, 2010; Roberts, Owen, & Havlicek, 2010). These studies reported that men felt more attraction to women who wore red or even had something red (e.g., a laptop computer) because of the association between red and sexual attraction and sexual arousal to women. Similarly, women felt more attracted to men who wore red (e.g., Elliot et al, 2010; Roberts, Owen, & Havlicek, 2010) because of the association between red and high male status, dominance, and testosterone levels(e,g., Changizi, 2009; Muehlenbein & Bribiescas, 2005). In fact, research has found that some male animals show their dominance by displaying red on parts of their bodies (e.g., Bakker & Milinski, 1993; Pryke & Griffith, 2006; Setchell & Wickings, 2005). Therefore, the dual effect of the color red shows that red influences our cognition and behavior in *a context-dependent manner* (Meier, D'Agostino, Elliot, Maier, & Wilkowski. 2012). Elliot and Maier (2012) proposed CIC (color-in-context) theory as the context dependence of colors. CIC theory suggested that color meanings and effects are context specific and the same color can result in opposite meanings in different contexts. As previous studies mentioned above indicate, red has positive and negative (approach and avoidance) meanings.

Just as an experiment demonstrating color's context-dependence, Rohr, Kamm, Koenigstofer, Groeppel-Klein, and Wentura (2015) found that red enhanced avoidance tendency only for unhealthy food (negative stimulus) and had no effect for healthy food (positive stimulus) by adopting the approach-avoidance paradigm. However, how the color red influences the appraisal of valence and arousal of things remained in question.

The purpose of the study was to test the influence of red as a background color on the appraisal of pictures on the premise of color's context-dependence.

2. Method

2.1. Ethics Statement

The experiment was approved by the Academic Committee of the School of Psychology at Koshien University. All participants provided written informed consent before participating in the experiments. At the end of the experiment, they were debriefed.

2.2. Participants

Twenty-nine university undergraduate students (18 male 11 female, M_{age}=20.10, SD=2.04) participated in the study. No participants realized the purpose of the study.

2.3. Design

A 2 (background color: red or white) × 4 (pictures) between-subjects design was implemented.

2.4. Stimuli

Pictures were selected from Open Affective Standardized Image Set (OASIS), which was made by Kurdi, Lozano, & Banaji (2016). Among the OASIS, four pictures were selected according to the combination of low and high levels of valence and arousal (2 pictures of low or high valence × 2 pictures of low or high arousal). The levels of valence and arousal of each picture are as follows ; picture 1 (Fire 9) : low valence (1.47) × high arousal (5.15), picture 2 (Destruction 2) : low valence (2.19) × low arousal (3.06), picture 3 (Beach 5) : high valence (5.59) × low arousal (3.36), picture 4 (Cat 5) : high valence (6.22) × high arousal (4.86). A seven point scale was used to appraise the levels of valence and arousal of each picture in OASIS. Consequently, more than 3.5 was treated as upper level and less than 3.5 was treated as lower level in the study.

2.5. Apparatus

Pictures were presented using a tablet PC (22cm wide × 13.5cm long). The size of the pictures was 11cm wide × 9cm long. The luminance of the screen was constant.

2.6. Procedure

Participants were randomly divided into two conditions (red: N=13, white: N=16). They looked at four pictures one by one presented on a tablet PC for five seconds and appraised the levels of valence and arousal of each picture on a seven point scale. They answered from 1: very negative to 7: very positive about the levels of valence. In order to appraise the levels of arousal, the Self-Assessment Manikin (SAM) scale of seven grades (Lang, 1980) was used. This is because the concept of arousal is harder to comprehend intuitively than that of valence (Kurdi, Lozano, & Banaji, 2016) and the prevention of participants' confusion of valence and arousal by using SAM, which is easy to understand visually.

3. Results

The mean values and standard deviations of the levels of valence and arousal are presented in Table 1.

A 2 (background color)×4 (pictures) ANOVA was performed with the levels of valence given as the dependent variable. A main effect of the pictures was found ($F(3,81)=47.91$, $p<.001$, $\eta^2=.64$). As a result of multiple comparisons, a significant difference was found in all pairs of pictures except pairs of pictures 3 and 4 ($p<.01$). Neither a main effect of background colors ($F(1,27)=.47$, $p=.50$, $\eta^2=.02$) nor the interaction between background colors and pictures ($F(3,81)=1.20$, $p=.32$, $\eta^2=.04$) was found.

A 2 (background color)×4 (pictures) ANOVA was performed with the levels of arousal given as the dependent variable. Neither a main effect of pictures ($F(3,81)=1.19$, $p=.32$, $\eta^2=.04$) nor background colors ($F(1,27)=1.17$, $p=.29$, $\eta^2=.04$) was found. The interaction between background colors and pictures was significant ($F(3,81)=4.36$, $p<.01$, $\eta^2=.14$). Since there was a significant difference in the interaction, a simple main effects test was conducted. Results indicated that the simple main effect of the background color red was significant in pictures 1 and 2 ($p<.05$) (Figure 1.).

Table 1. Mean values and standard deviations of the levels of valence and arousal

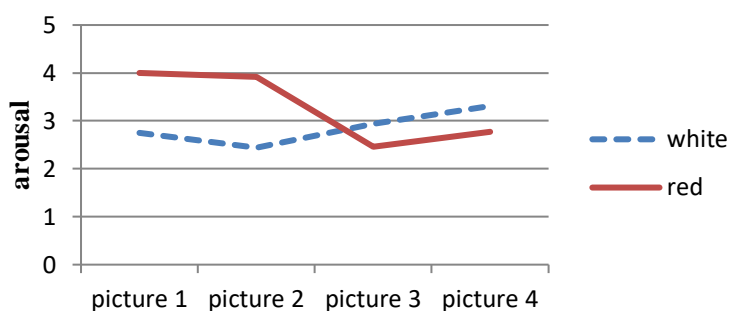| valence	M	SD		arousal	M	SD
picture 1 red	3.15	1.34		picture 1 red	4.00	1.78
white	3.69	.79		white	2.75	1.13
picture 2 red	2.46	1.05		picture 2 red	3.92	2.10
white	2.88	.81		white	2.44	1.21
picture 3 red	5.69	1.18		picture 3 red	2.46	1.33
white	5.13	1.54		white	2.94	1.84
picture 4 red	5.85	1.77		picture 4 red	2.77	1.64
white	6.13	1.20		white	3.31	1.70

Figure 1. Background color and the levels of arousal

4. Discussion

It was found that the background color red had no effect on the levels of valence and the levels of arousal were significantly higher when red negative pictures were presented than when white negative ones were presented. This is consistent with results of Rohr et al. (2015) in that red had an effect on appraisal of only negative targets (e.g., unhealthy food, negative pictures).

Red influences our cognition and behavior in a context-dependent manner (Meier et al., 2012). However, the approach-effect of red occurs only in a very specific context (i.e., romantic context), and instead, red is predominantly associated with avoidance tendency (Rohr et al., 2015). It appears that low valence (negative pictures) is associated with avoidance tendency and high valence (positive pictures) is associated with approach tendency, respectively. Therefore, negative pictures and background color red are both associated with avoidance tendency, and when these two attributes come together, avoidance tendency could be facilitated because they both have same attributes (avoidance). On the other hand, positive pictures and red have opposite attributes (positive pictures for approach vs. red for avoidance). Consequently, the arousing effect of red was offset by positive pictures and no difference was found between arousal levels in white background (pictures 3 & 4). The state of increased avoidance tendency means that a threat is imminent and individuals need to prepare for the threat by increasing the levels of arousal, for high levels of arousal is essential for flight tendency. As a result, this study showed the increase of the levels of arousal when negative pictures which are background color red were presented.

On the other hand, red had no effect on the valence levels of pictures in this study. More research is needed about the reason, but there may be a possibility that the red-negative or red-positive association is always dependent on a context and default evaluative response to red is neither negative nor positive. Some research pointed out the red-negative association (e.g., Gil & Le Bigot, 2016), but definitive conclusions on the matter should not be made as Moller, Elliot, and Maier (2009, p.901) indicated "it seems prudent to continue to entertain the possibility that the red-negative association is achievement-specific". Hence, it is considered that the negativity of red was not activated because the appraisal of the levels of valence of pictures is not achievement-specific context.

5. Limitation

The study has some limitations. First, only four pictures were used for appraisal and future research should adopt more pictures and standardize the value of valence and arousal of each picture when they are classified into high level or low level. In fact, as a result of multiple comparisons, a significant difference was found between the levels of valence of pictures 1 and 2. Pictures 1 and 2 were both treated as low valence stimuli in the study and it was not desirable to find a significant difference between them. This implies that the selection of pictures did not function very well. Second, extreme negative pictures (e.g., a dead body) in OASIS were not used out of consideration for ethical reasons and portrait photographs were also not used in this study.

Future studies should also investigate attributes of subjects (e.g., persons, landscapes, things) given that color effect is context-dependent.

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The Effectiveness of a Body Image Group Counselling Program on Adolescent Girls in High School[*]

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ABSTRACT

The aim of this study was to investigate the effect of a body image group counselling program on adolescent girls in the context of Positive Psychology and Positive Psychotherapy. The sample set consisted of 22 female students, 11 in the experimental group and the other 11 in the control group, and they are all in the 9th grade and have negative body images. Research was conducted based on a pattern of a pre-test, post-test and follow-up test with control and experimental groups. A Body Image Scale, Body Image Coping Strategies Inventory and Program Evaluation Form were used as data collection tools. The positive body image group counselling program was conducted on the experimental group for ten sessions. The Wilcoxon sign rank test, Mann-Whitney U test and repeated-measure of analysis of variance (ANOVA) were used for data analysis. According to the results, the program was statistically significant. Additionally, the results revealed statistically significant increases in positive body images and coping strategies in the intervention group when compared with the control group. The program may be used to increase positive body image.

Keywords:
Body image, coping strategies, adolescents, positive

1.Introduction

As with individuals at all developmental stages, one of the main concerns for adolescents is their body. Because adolescents sense the world and its components with their body and their experiences are dependent on their perception of themselves, they organize their lives based around body image. The feelings they have for the body, mind and their response to it is also an important and key provision in this process. To have a healthy, productive and happy life, adolescents need the tools to create a more positive perception of their body. One of these tools can be a positive intervention program for adolescents girls based on positive psychology and positive psychotherapy.

In psychology, feelings for the human body, thoughts and concepts used to express responses are considered "the body image" (Cash & Pruzinsky, 1990). Body image is considered either positive or negative (Cash, 2004, 2008). Negative body image is defined as an individual having negative feelings and thoughts about their body and at the same time giving negative reactions to their body (Farell, Shafran & Lee, 2006). People's body images are open to change in each developmental period; however, adolescence is of critical importance in terms of body image.

Adolescence is a period in which many physical, cognitive, emotional and social changes occur (Steinberg, 2007). Especially with puberty, adolescents experience many physical and hormonal changes (Papalia, Olds & Feldman, 2004). These changes affect the body image of adolescents (Cash, 2002). In addition, the negative experiences they have as a child about their bodies, personality traits and ideal body image, as presented by

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the media and factors such as the diet industry, are important. As a result, some adolescents must deal with both rapid changes in their body and the negative body image they have created (Cash, 2008). Adolescents are resorting to various positive and negative coping strategies, such as an extreme preoccupation with appearance, avoidance (to accept the body in a positive way and to gain social approval) and harm to the body (Cash, 2002, 2004, 2008).

When adolescents are unable to cope with negative body image in a healthy way, the results cause many problems. For example, negative body image has a negative impact on adolescents' problem-solving skills, the ability to fulfil cognitive tasks and academic achievement (Cash, 2002, 2004, 2008). In addition, negative body image is an important risk factor in the development of eating disorders (Yanover & Thompson, 2008). In addition to these aspects, negative body image affects adolescent girls more. In this context, for adolescents with a negative body image, depression (Levine, Smolak, 2002), unhealthy diet and a constant desire to lose weight (Johnson, Grieve, Adams & Sandy, 1999; McCaba & Ricciardelli, 2005), social anxiety and school absenteeism (Yanover & Thompson, 2008), substance abuse (Neumark-Sztainer, Paxton, Hannan, Haines & Story, 2006), unsafe sexual experience (Schooler, 2013), self-harm (Muehlenkamp & Brauch, 2012), loneliness (Caccavale, Farhat & Iannotti, 2012) and eating disorders such as anorexia and bulimia nervosa (Moe, 1999) have been observed. These findings reveal the importance of interventions for those with a negative body image.

In regard to the interventions of negative body image and their importance, two different approaches are discussed in the literature. The first of these approaches is a pathology-based approach that focuses on the negative aspects of body image (Tylka, 2011). However, this situation, while helping to a better understand the negative body image, insufficiently addresses the understanding regarding positive body image. At this point, there have been two positive approaches. One of them is a positive psychology and the other is a positive psychotherapy.

Positive psychology is concerned with an individuals' happiness. This approach has three components of a happy life based on pleasuring life, engaging life and meaningful life (Seligman, 2002). Pleasuring life is divided into two categories: pleasure and gratification. The body lies in the pleasure category. Examples of factors that increase the pleasure of the flesh could be fragrances, flavors, reading, cooking and involvement in sports (Rashid, 2009). In addition to these factors, the human body can experience pleasure and positive emotions trigger this capability (Hefferon & Boinvell, 2011).

There are also explanations of positive psychology on body image. The positive psychology approach contends that positive adaptive features cannot be taught to individuals based on negative features. Furthermore, resolving a negative body image will not create a positive body image automatically. Similarly, a positive body image cannot be defined as the opposite of a negative body image. This approach focuses on improving positive emotions because there are many more benefits of positive emotions than negative emotions such as widening one's perspective, building capacity, tailoring and increasing an individual's protection and resistance to disease (Fredericson, 2001; Tylka, 2011). Because of these properties, in positive psychology-based studies, the characteristics of individuals with positive body image are used as a means of coping (Holmqvist & Frisen, 2012; Tylka & Wood-Barcalow, 2005).

One of the positive-oriented approaches is positive psychotherapy. In the literature, there are two different positive psychotherapy approaches. One of them was proposed by Peseschkian (1987) and is more of a theory-based approach - Positive Psychotherapy. The other is the more research-based Positive Psychotherapy, which was developed by Seligman and his colleagues (2006). Both approaches advocate that the characteristics of individuals with positive features should be used as a coping mechanism for those with a negative body image.

Because negative body image affects adolescents globally, it also affects Turkish adolescents. In regards to the body image of adolescents in Turkey, pathological focused research studies have observed characteristics such as eating disorders, self-esteem and anxiety (Okan & Şahin, 2010; Örsel, Canpolat, Akdemir & Özbay, 2004). Experimental studies are conducted in response to negative body image in the international literature (Holmqvist & Frisen; 2012; Asberg & Wagaman, 2010; Winzelberg, Abascal & Taylor, 2002). However, there are no experimental studies in Turkey on preventing negative body image and interventions. Consequently,

this study is aimed at female adolescents to test the effectiveness of a group counselling program based on positive psychology and positive psychotherapy to enable them to cope with negative body image.

2. Method

2.1. Research Design

The purpose of this study: to cope with negative body image and to examine the effectiveness of positive psychology and positive psychotherapy based group counselling, a program was developed for adolescents girls. The study was conducted using an experimental pattern based on a pre-test, post-test and follow-up design as experimental and control groups (2×2×2). The independent variable of the study is a group counselling program while the dependent variable is the level of a female adolescent's body image and coping with negative body image. The experimental application was developed as a single session per week (90 minutes) and was conducted over a total of ten weeks in the 2014-2015 academic year. Implementation of the follow-up study was conducted after six months.

To examine the effectiveness of the program, the Wilcoxon sign-rank test, Mann-Whitney U test and repeated-measure of analysis of variance (ANOVA) were used. Additionally, individuals in the experimental group were asked about the effectiveness of the program with an open-ended questionnaire and the technique of the content analysis on the basis of each sentence was conducted for the received responses.

2.2. Study Groups

This study was conducted in a district in Ankara on adolescent girls attending a high school. In the study, a purposive sampling method was used, which gives importance to the specific objectives of the research. In addition to these principles, the usability and practicality of this method were also important (Fraenkel & Wallen, 1994). Using this information, there are two important reasons for the students being studied in the context of the aforementioned school. The first of these is the literature. According to the literature, negative body image is common in adolescence; approximately 70% of female adolescent and 45% of male adolescents are not satisfied with their body weight and shape (Smolak, 2012). A second reason is that one of the researchers in this study is serving as a counsellor at the school.

In determining the students who would be entered into the experimental and control group in the study, "the involvement of female students under a standard deviation obtained from the arithmetic mean of Body Image Scale" principle was adopted. In accordance with this principle, a total of 130 female students applied to the relevant scales. General conversations regarding work done by one standard deviation below the arithmetic mean of the remaining 38 students were given. A meeting was held with 38 students who fall below one standard deviation of the arithmetic mean and general information about the study is provided. Overall, 24 students wanted to participate in the study as volunteers.

These volunteer students were assigned to experimental and control groups using the random assignment method. In this way, the presence of 12 subjects in each group was ensured. However, one of the students assigned to the experimental group, although they volunteered to participate in the research, was removed from the group (for personal and familial reasons), and the number of subjects in the experimental group dropped to 11. In the following process, a person in the control group was randomly removed from the group with the draw method. In conclusion, the study was conducted on a total of 22 female high school in the 9th grade including (11) in the control group and (11) in the experimental group. The average age of the female students in the experimental group was 15.4. The average age of the girls in the control group was 15.6.

2.4. Instruments

Body Image Scale (Body Image Test): the "Body Image Scale" was developed by Secord and Jourard (1953). The scale aims to measure how satisfied people are with various parts of their body and a variety of body functions. Balogun previously assessed the validity and reliability of the scale in his study (1986). The test-retest reliability coefficient was found to be $\alpha = 0.89$. The scale is in the form that is used in our country and consists of 40 items measuring five answers with a ratings tool (1 = I like it very much, 2 = I like it, 3 = Neutral, 4 = I do not like it, 5 = I do not like it ever). The most positive expression is 1 point; the most negative statement is 5 points. According to this rating scale, the lowest total score can be 40 points while the highest total score

is 200. The increase in the total score from the scale indicates that the satisfaction of the person's body part or function increases while the decrease of the score indicates a decrease in satisfaction. The Turkish adaptation of the scale was conducted by the Hovardaoğlu (1992). In a study conducted on college students, the validity of the scale assessed by a Cronbach alpha reliability coefficient of two half-α = 0.75 was found. In this study, reliability studies have also been conducted on all female students studying at the school of concern, and the Cronbach alpha reliability coefficient of the scale was found to be α = 0.96.

Body Image Coping Strategies Inventory-BICSI: To measure coping strategies related to individual threats and negative body image, an inventory was developed by Cash et al. The scale consists of three subscales: appearance fixing, positive relational acceptance and avoidance. The answers to the phrase are in the range of "disagree (1)" and "I totally agree (4)". The scale's subscale consists of; 1-10 items "Appearance Fixing", 11-21 items "Positive Relational Acceptance" and 22-29 items "Avoidance". The height of the average score represents the height of the strategy in the relevant dimensions. The original scale's Cronbach's alpha coefficient; the "Appearance Fixing" subscale is 0.90 for women and 0.93 for men; the "Positive Logical Acceptance" subscale is 0.80 for women and 0.85 for men; the "Avoidance" subscale is 0.74 for both women and men. The Turkish adaptation of the Body Image Coping Strategies Inventory (BİBSÖ) was made by Dogan, Sapmaz and Totan (2011). BİBSÖ is a 29-item self-report style measuring tool. The Cronbach's alpha coefficient scale "Appearance Fixing" subscale is 0.84 for women and 0.87 for men; the "Positive Relational Acceptance" subscale 0.83 for women 0.81 in men; and the "Avoidance" subscale is 0.84 for both women and men. In this study, reliability studies have also been conducted on all female students studying at the school of concern. Accordingly, the scale's Cronbach's alpha coefficient "Appearance Fixing" subscale is 0.90, the "Positive Relational Acceptance" subscale is 0.97, and the "Avoidance" subscale is 0.86

Program Evaluation Form: The effectiveness of the program was evaluated qualitatively after the post-test and follow-up work. For this, an interview form was formed, and in this form, two open-ended questions were included for each application along with the demographics. The questions asked after the last test session were as follows:

   - What are the beneficial aspects of the program?

   - What are the negative aspects of the program?

The questions asked after the follow-up study were as follows:

How did you deal with negative thoughts about your body in the six months after the end of the program?

What did you do to protect your body in the six-month period after the end of the program?

2.4. Procedure

In the program, sessions and activities were based on the results of the research in the literature such as Positive Psychology and Positive Psychotherapy theory and practice studies. In this section, the two approaches, in terms of program content, are evaluated.

Positive psychology-based aspects of the program: The content and activities of the program in this study are based on data obtained from the results of the theoretical and empirical studies in the field of positive psychology (Eryılmaz, 2015; Yager & Ark., 2013; Holmquist & Frisen, 2012; Tylka, 2011; Neumark-Sztainer et al., 2000). Currently, the program has been prepared on the basis of the features found in individuals with a positive body image. These features are: to raise awareness of the individual about the factors that influence the formation of their own body and body image; to help the individual realize the beauty and strengths of their own body; to help individuals have an objective and flexible perspective without comparing their body with others; to create awareness of the subjectivity of the concept of beauty and happiness; to increase media literacy; to help individuals gain a critical perspective for the ideal image presented by the media in regard to fad diets and cosmetic products; to help individuals create a positive inner voice that enables them to cope with the negative and automatic thoughts about their body; to help individuals expand viewpoints on finding healthy ways to deal with the physical changes in regards to specific coping with adolescence; to help individuals improve their capacity to deliver attention and care, acceptance, respect and love of their bodies; to increase the awareness of the meaning and value of life and their body; to help individuals expand their life goals related their bodies.

Positive psychotherapy-based aspects of the program: Each session in the program has been prepared in accordance with the five steps in the self-help model of Positive Psychotherapy (Peseschkian, 1987). Each stage of the treatment, the content of the sessions and sessions corresponding to this stage can be summarized as follows:

1. The observation step is the first step, and the session aims is to ensure that participants develop a wider awareness of the strategies they use to cope with body image and find what support is readily available. 2. The inventory step consists of the third and fourth sessions; it identifies objectives that are effective in the formation of their body image and examines the awareness participants have about past experiences, cultural norms, media and peers 3. The positive interpretation step is the fifth session, and the purpose is so that participants become aware of the positive aspects and functional sides of their bodies. 4. The verbalization step consists of the sixth, seventh and eighth sessions, and the purpose is to examine their ability to create a positive inner voice and a broader perspective. The solution was flexible and criticized their attempts to find a way for themselves and their bodies. 5. The objectives expansion step includes the ninth and tenth sessions. The purpose of this step is for participants to realize the meaning of their bodies and have short and long term objectives on how to improve their interest and provide the body skills and body care.

In summary, this study is based on Positive Psychology and Positive Psychotherapy. Both approaches were used in this program, and the following results are shown in Table 1. The distribution terms of Positive Psychology and Positive Psychotherapy approach of the program.

Execution and content of the program: The necessary permits and approvals from the relevant authorities were obtained before starting the study. Because of the length of time needed for the program, study sessions are held outside of school hours. Therefore, students in the experimental group received official permission from their parents before starting the program.

Positive Psychology and Positive Psychotherapy were applied to the experimental group, in the context of adolescent girls, to develop a positive body image group counseling program. This was conducted during a 90-minute session in a week. For the study at the related school, the program was conducted in a group counseling room where the necessary technical equipment was chosen and the necessary arrangements were made for the group counseling practice. The activities conducted in each session and sessions in the program are detailed below:

Table 1. The theoretical structure of the program

Sessions	Aim	Positive Psychotherapy	Positive Psychology
1. Session	To raise awareness about their body image	Observation step; Balance model, awareness	Positive and negative aspects of body image. Self-discovery
2. Session	Feelings, attitudes against the body and awareness of behavior	Observation step; Symptoms Letter	The things I can change about my body and things I cannot change.
3. Session	Create awareness about past life events that influence the formation of the body image.	Inventory Step; Hazard model, body biography	The positive aspects of little Ben's body
4. Session	Create awareness about the recent events that influence the formation of the body image	Inventory step; clothes and body Environment and body	My body heritage, unique aspects
5. Session	To make aware of the positive and functional aspects of the body.	Positive interpretation step; feels good to the body, using story	My body as a source of happiness, thanks to the body
6. Session	Skills development, coping with benchmarking and teasing	Verbalization step; coping with the negative inner voice	Creating positive inner voice

7. Session	Develop critical thinking in style against the ideal image to gain a broader perspective of beauty.	Verbalization step; dealing with media images	Develop media literacy skills to make their own definition of beauty
8. Session	Develop positive inner voice related to their bodies.	Verbalization step; mental control	Best friend of my body, Apology to the body
9. Session	Enable them to realize the meaning and value of the body for themselves	Purposes expansion step; give meaning, my life goals	Focus on the functionality of the body, My gratitude, flow list
10. Session	To ensure short and long-term plans for developing a positive body image	Purposes expansion step; maintain a positive body image and development plan	Love card, Message to me in the future Love card, change appreciated.

First Session: Information about the programs and group process is provided to the participants. Group rules are created for participants to acclimate to the group process and then they meet with each other during warming activities. After the expectations of the program are described, body image awareness activities are conducted by the participants. Group sharing was terminated after the group was provided homework. After learning expectations of the participants about their body image, awareness activities related to body image are conducted. The group was terminated after group sharing and homework was provided.

Second Session: After participant sharing related to homework, the study continued with warming activities. Then, participants own discovery activities based on feelings about the physical changes brought on by puberty and what type of coping strategies they used, was conducted. The positive equilibrium model of psychotherapy was described to participants and they were asked to draw the patterns of their own equilibrium. Participants discussed how they related with their bodies and completed a "What I can change" and "What I cannot change" table, and this table was displayed in the study hall so that it could be completed by the end of the group process. The group was terminated by providing homework after group sharing.

Third Session: After taking the participants through the sharing related to the homework, the study continued with warming activities. In this session, parental role models that influence the formation of their body image, including cultural values and media, and a "self-discovery work" is conducted with the participants. Each participant created his own body and examined their biography on the basis of the equilibrium models. The group was terminated by providing homework after group sharing.

Fourth Session: After taking the participants through the sharing related to the homework, the study continued with warming activities. In this session, the participants recognize negative automatic thoughts related to cognitive control over their bodies and it ensures that their self-discovery activities are carried out. By reading "The Girl In The Red Velvet Dress", an awareness activity was performed. The group was terminated by providing homework after group sharing.

Fifth Session: After taking the participants through the sharing related to the homework, the study continued with warming activities. A self-discovery program was conducted with the aim of participants questioning social pressure and the media and trying to offer an ideal body image. Participants created their own ideal image against the ideal image that is non-realistically offered by the media. An awareness activity was performed with the participants to ensure assessment with a critical perspective of messages forwarded by ads. The group was terminated by providing homework after group sharing.

Sixth Session: After taking the participants through the sharing related to the homework, the study continued with warming activities A self-discovery study was performed to ensure that the participants gain awareness that each body is good and private and to encourage the participants to accept differences in physical sizes. Drama activities are used to raise awareness about how making comparisons of their body image effects their ability to wake up and awareness and learning to stop making comparisons. The group benefited from the

story named "Crow and Peacock" on how to cope with being ridiculed and to develop coping skills for negative feedback. The group was terminated by providing homework after group sharing.

Seventh Session: After taking the participants through the sharing related to the homework, the study continued with warming activities A drama was performed to enable the participants to cope with negative feelings about their bodies and to recognize the relationship between body satisfaction and eating disorders. The group was terminated by providing homework after group sharing. A letter of apology to the body was written to appreciate the functions possessed by the body. The story "Perfect Camel" provided them the ability to gain a greater flexibility and broader perspective related to the beauty concept. The group was terminated by providing homework after group sharing.

Eighth Session: After taking the participants through the sharing related to the homework, the study continued with warming activities. In this session, drama studies were conducted to ensure that participants realize that they give to their body and to create awareness of what their bodies offer and may offer to them. The "Gratitude to My Body" activity was applied. The group was terminated by providing homework after group sharing.

Ninth Session: After taking the participants through the sharing related to the homework, the study continued with warming activities. The participants were asked to transform the awareness gained during the group period to create a life purpose for their bodies. The participants were asked to transform the table "What Can I Change" and "What I Can Not Change", which was a table that was posted after the first session and filled with feedback from participants leaders, into small mobile table for themselves. Activity forms named "My Life Goals, Thanks to My Body Flow" were fulfilled and they were each asked to share with the group. The group was terminated by providing homework after group sharing.

Tenth Session: After taking the participants through the sharing related to the homework, the study continued with warming activities. By again reviewing the experiences of the participants, the evaluation studies were conducted to determine how many purposes they perform. They were asked to give feedback regarding the changes and the development of themselves and their friends that they observed during the sessions. A story named "Shirt of Happiness" was read and "A Message to Future Body" activity was applied. After the sharing, qualitative and quantitative evaluation forms were completed and then the session was terminated.

3. Findings

3.1. Descriptive statistics

Table 2. Descriptive statistics of the outcomes

Scales	Group	Pre-Mdn	Post-Mdn	Fol. Mdn	Pre M	Post M	Fol. M	Pre-SD	Post SD	Fol. SD
BI	Ex.	119	132	144	115.7	128.9	149.9	9.2	10.9	18.7
	Con.	119	109	114	113.5	110.7	114	10.4	9.7	8
AF	Ex.	24	21	25	24,3	21.6	24.1	4.9	5.6	5.11
	Con.	27	29	29	27.3	29.0	28.8	4.05	3.09	3.18
PRE	Ex.	28	38	37	28.5	38.1	37.3	5.3	3.2	3.1
	Con.	26	23	24	25.5	23.5	24.1	3.8	2.7	3.5
A	Ex.	15	14	12	16.1	13.2	12.9	3.9	3.2	4.0
	Con.	16	17	19	16.2	18.1	20.1	2.4	2.8	4.5

BI: Body Image, AF: Appearance Fixing, PRE: Positive Relational Acceptance, A: Avoidance; Ex: Experiment; Con: Control; Pre-Mdn: Pre-test Median; Post-Mdn: Post-Test Median; Fol.Mdn: Follow-Up Median; Pre-M: Pre-test Mean; Post-M: Post-Test Mean; Fol.M: Follow-Up Mean; Pre-SD: Pre-test Standard Deviation; Post-SD: Standard Deviation; Fol.SD: Follow-Up Standard Deviation.

3.2. Findings related to the pre-test group comparisons

To compare pre-test scores of the experimental and control groups, the Mann-Whitney U test was used. According to the test results, it was concluded that there was no significant difference between the experimental body image scale and the control group pre-test scores (U=53,00; p=.621 p>0,05). Similarly, the

test results according to the Mann-Whitney U test concluded that there was no significant difference between experimental and control groups according to the experimental and control group pre-test scores in terms of experimental sub-dimensions and the Body Image Coping Strategies Questionnaire; "Appearance Fixing"(U=40,50, p= .185, p>0,05), "Positive Relational Acceptance" (U=38,00, p=.137 p>0,05) and "Avoidance" (U=56,00, p= .765 p>0,05) control groups. These findings showed that the experimental and control group are paired groups.

3.3. Quantitative and qualitative findings related to the effects of the experiment

Quantitative findings: To determine the efficiency of the program, a repeated-measures ANOVAs method was used. When examining the results of the individuals in the experimental group, the program had a significant effect on body image [F(1,36, 13.63) = 38.122; p<.00; effect size: 0.79]. It was also found that the individual group body image scores in the experimental group were significantly different from each other for the scale of the pre-test, post-test and follow-up test scores. According to a post hoc comparison (Bonferroni), a post-test (M=128.90, p<.00) and follow-up test scores (M= 149.90, p<.00), the participants in the experimental group were significantly higher than their pre-test scores (M= 115.72, p<.00), and follow-up test scores of the participants in the experimental group were also significantly higher than their post-test scores.

The coping strategies scale with body image, the dimension in the acceptance of positive relationships and individuals in the experimental group showed a significant difference between the pre-test, post-test and follow-up test scores [F(1,57, 15.71)=22.56; p>.01, effect size: 0.69]. According to the post hoc comparison (Bonferroni), post-test (M=38.18, p<.00) and follow-up test scores (M= 37.36, p<.00), the participants in the experimental group were significantly higher than their pre-test scores (M= 28.54, p<.00), and follow-up test scores of the participants in the experimental group were not significantly higher than their post-test scores.

However, in the coping strategies scale with body image in the size of appearance fixing, there was no significant difference between the pre-test, post-test and follow-up test scores in the experimental group of the individuals [F(1,47, 14.70)=1.96; p= .180 p>.05]. Finally, for the coping strategies scale with body image, in the size of avoidance there was no significant difference between pre-test, post-test and follow-up test scores in the experimental group of the individuals [F(1,44, 14.40)=3.72; p=.092 p>.05].

For individuals in the control groups, the results indicated that there were significant effects of avoidance [[F(1,61, 16.08)=5.51; p=.020 p<.05). According to the post hoc comparison (Bonferroni), the follow-up test scores (M= 18.09, p<.05) of the participants in the control group were significantly higher than their pre-test scores (M= 16.18, p<.05). Finally, for individuals in the control groups, the results indicated that there were no significant effects on body image [F(1,49)=0.913; p= .395, p>.05], positive relational acceptance [F(0.38, 13.85)=2.15, p= .162; p>05] or appearance fixing [F(1.02, 10.28)=1.09; p= .323, p>05].

Qualitative findings: A meeting was held with the students in the experimental group after the post-test session of this study. In the meeting, questions were asked of the participants to evaluate the program. Primarily, the students in the experimental group were asked; "What are the beneficial aspects of the program?" and "What are the negative aspects of the program?" No participant provided a negative response to the second question. The responses to the first question relating to the results of the analysis are provided in Table 3.

Table 3. The program's contribution to the individuals in the experimental group

Contributions	Sample sentence
Maintenance and care	I pay more attention to personal care
Self esteem	I began to see myself as more valuable
Using healthy coping methods	I began to care for my flaws instead of focusing on them.
Mental control	I don't mind all that much and I don't think my adversity.
Body acceptance	I began to love my body.
Optimism	I have better perspectives for the future, my body and my body beauty
Body protection	I stopped causing harm to my body.

When examining the distribution of sentences related to the benefits of program, it was concluded that the program provided adolescents a better means to care for and pay attention to their bodies, improve their self-esteem, to use healthy coping methods, to increase cognitive control, to accept their own bodies and become more optimistic towards their bodies.

3.4. Findings related to the follow-up study

Quantitative Findings: The Mann-Whitney U test was used to compare the post-test and follow-up scores of both groups. According to the results, in terms of body image scale scores, individuals in the experimental group (MDN = 144) scored highly compared to individuals in the control group (Mdn=114) (U=1.00, Z= -3.90; p= 0.000; p<0.01). The body image strategies scale in the appearance of fixing size showed that individuals in the experimental group (Mdn=25.00) received lower scores compared to the individuals in the control group (Mdn=29.00) (U=23.50, Z= -2.45; p= 0.014; p<0.05). Similarly, in the avoidance size, individuals in the experimental group (Mdn=12.00) received lower scores compared to individuals in the control group (Mdn=19.00). (U=11.00, Z= -3.26; p= 0.000; p<0.00). Finally, in positive relational acceptance size, individuals' scores in the experimental group (Mdn=37.00) were higher compared to individuals in the control group (Mdn=24.00) (U=0.00, Z= -3.99; p= 0.000; p<0.00).

Qualitative Findings: In the follow-up phase, individuals in the experimental group were asked two open-ended questions. The first of these questions was: "How did you deal with negative thoughts about your body six months after the end of the program?" and "What did you do to protect your body in the six-month period at the end of the program?" A content analysis on the basis of the sentence was conducted to the responses of these questions.

The results are provided in Table 4 and Table 5.

Table 4. How to deal with negative thoughts about their body:

Coping strategies	Sample Sentence
Mental control	There is nothing to be sorry for that I cannot change.
To make transfer	I brought my stories to the group and used mobile messages.
Optimistic thinking	Everyone has positive and negative sides.
Positive suggestion	I told myself that my negative feelings will pass.
Self-acceptance	I know myself and my defects and learn to cope with them by making peace.

Table 5. Those made to protect the body

Way of Protection	Sample Sentence
Healthy nutrition	I reduce my junk food consumption.
Active life	I started playing football.
Regular sleep	I do not go to sleep at very late hours
Positive inner voice	I don't say negative things to my body
Not to give harm to the body	I'm making my hair less flat.

4. Discussion

This study was conducted with the aim of examining the effectiveness of a positive body image group counseling program for female adolescents with a negative body image. When the research results were examined, it was found that the developed program was effective. In other words, the program created a positive body image and increased adolescent girls' positive coping skills. In this section, the findings of the study were discussed in the framework of the relevant literature.

When the literature was examined, it was determined that individuals experience many physical changes during puberty. Height growth, an increase in weight and acne, the appearance of primary and secondary sexual characteristics and the ability of reproductive capacity are examples (Steinberg, 2005; Moe 1999). Adolescents having a positive body image facilitate coping with these changes in a healthy; otherwise, these changes become an important risk factor for adolescents (e.g., anorexia, bulimia, obesity, low self-esteem,

depression and smoking) (Stice, Hayward, Cameron, Killen, & Taylor, 2000; Jongenelis, Byrne, & Pettigrew, 2014; Kaminsky & Dewey, 2014; Grilo, Masheb, Brody, Burke-Martindale & Rothschild, 2005). This study contributed to the literature because a great deal was accomplished on an important issue. Furthermore, when the national literature was examined about body image in adolescents and compared with body image throughout the research that looked at the relationships between various variables (Okan & Şahin, 2010; Örsel, Canpolat, Akdemir & Özbay, 2004; Uskun & Şabaplı, 2013), an experimental study based on the development of positive body image was not observed. This study contributed to the national literature regarding this issue.

One of the theoretical bases of the program, positive psychology is a perspective on psychological problems. According to this view, psychology is not only the study of disease, weakness and damage but also the examination of great and strong properties of individuals (Seligman, 2002). The attitude that psychology is stuck in pathology leads to critique of psychology as a "Victim science". Thus far, psychologists see people as the remaining assets exposed to external factors instead of seeing them proactive and creative assets with self-determination (Seligman & Csikszentmihalyi, 2002). Positive Psychology has three major focuses; a positive experience of the individuals, positive features and studies on positive theories. With the focus on positive experiences, individual's taking satisfaction from the past experiences and at the moment feeling a sense of happiness and optimism for the future and concepts of hope (Seligman & Csikszentmihalyi, 2002). Based on these tenets of positive psychology, the purpose of the program and topics of the properties owned by individuals who have a positive body image (optimism, flexible point of view, critical perspective against the media image of the positive features of appreciation and hope) have been created from events intended for development. In this context, this study may be considered a reflection of positive psychology. This is because female adolescents in this study noticed positive experiences in the past (with regard to their bodies) through group experiences and also taking positive feedback that they had pleasure in experiencing; this provided control over the automatic negative thoughts and cognitive activities and through activities they have increased optimism and hopes by setting goals for the future.

Individuals in the experimental group that had significant differences between the pre-test and post-test scores from Body Image Scale shows strengthening of the positive aspects of individuals and can be effective in creating a positive body image. In positive psychology, the body is one of the pleasant aspects of life that causes well-being, a psychological source of pleasure and hedonic fragrances. Flavors, reading books, cooking and doing sports are located in this category (Rashid, 2009). According to positive psychology, the body has the ability for pleasure, desire and to trigger positive emotions. According to this theory, a positive body is revealed by five main mechanisms such as interpersonal touch, positive sexual behavior, physical activity, nutrition and physical pain (Hefferon & Boinwell, 2011). Providing activities to increase healthy coping skills of individuals with a negative body image, the program is a basis for the effective operation of these five mechanisms (body protection, hobbies, active living, healthy eating and positive results of negative body image experience). This study with these characteristics provides a contribution to experimental studies on body image positive psychology.

When evaluating results in terms of positive psychotherapy, individuals in the experimental group with perceptions of body image that are increased in the positive direction showed that, when prepared according to the five-step model of positive psychotherapy, the program has shown to be effective. While positive psychotherapy approach describes theoretical explanations related to the body, there are no experimental studies on the intervention in negative body image. As a result, this study contributed to the field of positive psychotherapy.

This study was conducted in the context of positive psychology and psychotherapy. According to the study findings, it was observed that adolescents expand their capacity of positive factors such as optimistic thinking, an increase in self-esteem, expanding the use of coping strategies and cognitive control making. These results may be due to activities used in the study. In the study, positive psychology activities were implemented, such as gratitude, the reason of my happiness, to compliment activity, and gratitude activity for adolescents' to live with positive emotions. Studies in the field of positive psychology show a broadening of an individual's perspectives, an increase in their capacity and a tailoring of the negativity of the past to experience positive emotions (Hefferon & Boinwell, 2011). Consequently, the cause of the gains adolescents express in this study show that the positive feelings may have been experienced through the program.

In this study, there was no significant and meaningful difference between the first test and post-test scores for individuals in the experimental group when we look in terms of appearance avoidance and correction sub-dimensions of the Body Image Coping Strategies Scale. Possible causes of this condition may be a continuation of the functionality of existing coping strategies for individuals, and it may be that learning coping skills will replace pathologies but will take time to obtain a result. A young girl wearing a large T-shirt to hide her weight is exhibiting a healthy coping strategy, and continuation of this behavior until she loses weight is an example of avoidance. When we look at this situation in terms of positive psychotherapy, although this situation cannot be a healthy coping strategy, individuals continue to use these strategies, and they are significant in terms of showing the ability to protect her from negative emotions. The results of this research show us that it is also difficult to change an adolescent's inappropriate coping strategies that they use to deal with their body image in a ten-week program. The majority of the students at the evaluation sessions stated that the duration of the program is insufficient, and it should be included in the curriculum and begin at an earlier age. The results in this respect can be used as prevention regarding negative body image and can also be used to develop positive body image programs.

When examining the literature, adolescents with a negative body image have a low self-esteem level, do not show care and attention, use unhealthy coping methods (Jongenelis, Byrne, & Pettigrew, 2014; Kaminsky & Dewey, 2014; Grilo, Masheb, Brody, Burke-Martindale & Rothschild, 2005), have trouble accepting their own bodies, and have a pessimistic view of the future and for their bodies (McCabe & Ricciardalli, 2003; Thompson, Shroff, Herbozo, Cafri, Rodriguez & Rodriguez, 2007; Neumark-Sztainer, Paxton, Hannan, Haines & Story, 2006). When considered the result of qualitative evaluation, the program was effective in eliminating the negativity expressed in the above literature while raising the level of adolescents' self-esteem, providing care and attention to their body, improving their healthy coping strategies and enabling them to acquire an optimistic view.

From the findings of the results of this study, a model based on the literature on body image can be created hypothetically, based on both theory and research. In this regard, a model is proposed in Figure 1 based on the findings of this study, hypothetical results and the research literature as a model for developing a positive body image.
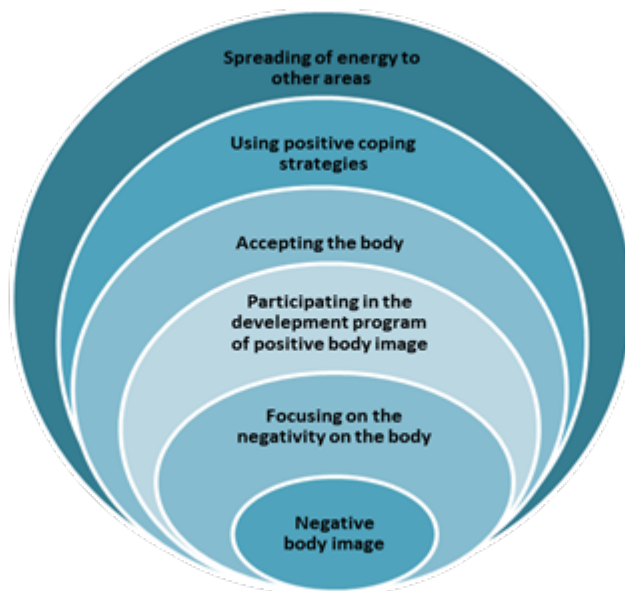

Figure 1. Hypothetical and research-oriented model of positive intervention for body image

According to this model, the first element of the model constitutes female adolescents with negative body image. When the literature is examined, it is seen that adolescents with a negative body image experience avoidance, an appearance fix, focus on being perfect, cause damage to their body, have a negative inner voice and compare themselves with others (Cash, 2002). Therefore, the second element in the model was named "Focusing on the negativity on the body." Adolescents focusing on these problems in the body need help to cope with a negative body image. Therefore, the third element in the model has been named "Participating in the development program of positive body image." Individuals who participate in structured programs

change their thoughts and behavior, which are a non-functional sense. For the formation of this change, it is necessary that individuals discover and understand themselves (Egan, 1994). Participants, who discover and understand themselves, accept themselves. Therefore, the fourth dimension in the model has been named "Accepting the body". After accepting themselves, the individuals need to apply healthy coping strategies to improve the body they value (Tylka, 2011). Therefore, the fifth dimension of the model has been named "Using positive coping strategies". According to the concept of positive psychotherapy, individuals are expanding their coping resources when they get rid of their problems (Peseschkian, 1987). At this point, the final size of the model consists of "Spreading energy to other areas."

Considering the findings of this study, it has been observed that female adolescents with a negative body image in the experimental group created a positive body image. Body image development was influenced by many factors (Cash, 2008; Moe, 1999). For this reason, tools are needed that will transform negative body images to positive ones. In this context, it can be concluded that the program developed for the study and activities implemented in the program were effective tools in developing a positive body image. In the following process, the developed program can be applied to adolescents at different age levels.

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Assessment Indicators of Tertiary Student of Internship Programs Adjust Industry 4.0

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ABSTRACT

The purpose of this study was to study the assessment indicators for the entrepreneurial learned by tertiary student of internship programs adjust Industry 4.0. This study used in-depth interviews and focus groups were used to develop the ability indicators and gain consistency between the ability items. The research results showed that there were three types of entrepreneurial cognition learned by students of internship programs adjust Industry 4.: start-up experience, industry-specific experience, and managerial experience. The ability content included 11 items of entrepreneurial cognition ability: entrepreneurial traits, basic commercial ability, communication ability, digital ability, professional innovative ability, financial management ability, human resource management ability, marketing management ability, operational (work) ability, and risk management ability, and there were a total of 91 ability indicators. There were 48 items of entrepreneurial cognition that had high importance and usage frequency.

Keywords:
Tertiary students; Industry 4.0; Assessment Indicators; Entrepreneurial ability; internship program

1.Introduction

Facing the impact of "Productivity 4.0" and promoting intelligence related policies   have undergone major changes. The electronic machinery industry, precision machinery industry and information communication, is Taiwanese traditional strengths. Through the industry's 4.0 and innovation technology in the wisdom of robotics and Internet of things, so that Taiwan's industry will reproduce the global competitiveness (Niesen, Houy, Fettke, & Loos, 2016; Zhang, Wan, Hsu, & Rayes, 2016).

The challenge of helping the community to meet the transitional period from school to society is one of the important topics in the school to enhance student employment and entrepreneurship (Castillo-Vergara, & Álvarez-Marín, 2016). Through the workplace practice so that students access to the practical knowledge, to understand the true meaning of learning, to stimulate students positive attitude and employment will be a important issue. Due to the influence of rapidly declining numbers of students in higher education and the international financial scene, the employment problems of university students has received increased attention

in Taiwan (Castillo-Vergara & Álvarez-Marín, 2016; Chou & Shen, 2015;). Although Taiwan currently has an accessible higher education system, there is still a gap between the training of personnel and the demands of the workplace. Most graduates have not conducted career planning and have not prepared for employment, resulting in their inability to immediately join the workforce after graduation and an inability to adapt to the workplace environment (Cho, Robalino, & Watson, 2016; Xaver, & Ann, 2016).

In assisting new graduates in facing the challenges of the transitional period between school and work, internship education is an important issue in schools for helping elevate the employability and entrepreneurial ability of students (Francisco, Moriano, & Jaén, 2016; Fretschner & Weber, 2013; Fukuda, 2014). Workplace internships allow students to access practical knowledge, understand the truth about learning, elicit active work attitudes and employment intentions, understand their hopes for the workplace in the future, promote their understanding for occupational life and learn occupational skills, and cultivate correct working attitudes and occupational values (Heinrichs, 2016; Kucel, Róbert, Buil, , & Masferrer, 2016). Kwong and Thompson (2016) believed that under the context of economic recession and high unemployment, university courses need effective educational content that emphasizes the importance of elevating student employability, so as to help improve the employability of students.

In order to improve the work maturity and experiences of students, Japan has used workplace experience methods to cultivate occupational consciousness in areas such as student views on labor, occupations, and social responsibility (Kucel, Róbert, Buil, & Masferrer, 2016; Kwong, & Thompson, 2016). Advanced countries of the world such as the United States, United Kingdom, Europe, Australia, and Canada are also working to promote entrepreneurial education. It has been shown that the gap between student learning and utility is decreased through theoretical know-how and by practicing the learning contents (Lanero, Vázquez, & Muñoz-Adánez, 20151). The European Union assists students to use internships, and more than 200,000 high school students have established student companies to learn entrepreneurial skills, comprising 15% of the population (Lanero, Vázquez, & Muñoz-Adánez, 2015; Miao, Qian, & Ma, 2016). Singapore uses the entrepreneurial university model to recommend students for one-year internships in overseas high-tech companies. At the same time, students learn entrepreneurial courses at partner universities through strategic alliances, which allow the students to be apprentices in tech companies while learning about corporate entrepreneurship, foreign culture, and global economic knowledge (Kucel, Róbert, Buil, & Masferrer, 2016; Kwong, & Thompson, 2016; Miao, Qian, & Ma, 2016).

An overview of internship education in the West and Japan shows that it is still mainly based on experiential learning. In Singapore, even though students take entrepreneurial education courses during internships, there are no entrepreneurial courses or cultivation of the entrepreneurial spirit and abilities such internships. Other than general basic courses, internship education courses should also include entrepreneurial courses that allow students to engage in entrepreneurial learning and "learn by doing." This would benefit the cultivation of the entrepreneurial spirit and realize entrepreneurial motivation (Miao, Qian, & Ma, 2016; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2016). Thus, the purpose of this study was to use dimensions such as educating about successful industrial entrepreneurs and experts to construct assessment indicators for the entrepreneurial cognition learned by university students in internship programs, to plan and incorporate entrepreneurial spirit and entrepreneurial cognition in internships, and to assist students in socializing entrepreneurial behavior.

2. Purposes of this study
The object of this study was to understand tertiary students' assessment indicators for the entrepreneurial learned by tertiary student of internship programs adjust Industry 4.0 that as a reference for course development and evaluation of abilities of entrepreneurs. The purposes of this study are to address the 3 following issues.
1. To analyse assessment indicators for the entrepreneurial learned by tertiary student of internship programs adjust Industry 4.0.
2. To induct types of entrepreneurial cognition learned by students of internship programs adjust Industry 4.
3. To analyse students' ability ïndicators that that had high importance and usage frequency of internship programs.

3. Methodology

3.1 Research method and subjects

In-depth interviews were used to understand the views of successful entrepreneurs on the cultivation of entrepreneurial cognition courses in domestic educational industrial internship programs, as well as the extent to which these traits are incorporated into internship programs. This study treated seven successful entrepreneurs with and internship backgrounds. For successful entrepreneurs in the , this study used individuals who had founded or were in charge of cultural enterprises and cram schools under the category "education and academics" in the Taiwan Bigbook, to explore how entrepreneurs conduct internship programs adjust Industry 4.0and feasible methods for on-site internships (Taiwan Business Directory Service 2013). This study used purposive sampling and snowball sampling to conduct in-depth interviews with seven entrepreneurs with more than five years of experience in entrepreneurship in order to depict the narrative nature of the entrepreneurial spirit and content of entrepreneurial cognition as given by entrepreneurs. The researcher used start-up experience, managerial experience and industry-specific experience in education as the focuses to construct the entrepreneurial cognition of entrepreneurs.

Focus groups were used to concentrate on the results of the in-depth interviews in order to confirm entrepreneurial cognition and the content of its incorporation in internship programs, as well as the educational content that should be constructed. This study used two entrepreneurs, internship institution representatives, internship advising teachers, industry teachers, and educational experts, for a total of 10 participants. The Kolmogorov-Smirnov One Sample Goodness of Fit Test was used to evaluate the expert's consistency in their views of entrepreneurial cognition.

3.2 Research tools and data analysis

The in-depth interviews were used to analyze the start-up experience, managerial experience, and industry-specific experience of entrepreneurs in the , in order to confirm the abilities that internships program adjust Industry 4.0 should have. The interview questions included the entrepreneurial motivation of the entrepreneurs and the entrepreneurial cognition and elements for entrepreneurs in entrepreneurship. The in-depth interview data was processed using protocol analysis and ATLAS.ti qualitative analysis software to complete the data encoding and analysis. Three encoders used encoder reliability to test the reliability (Wimmer and Dominick 2000). The questions in the interview outline included:
  (1) Are the items in entrepreneurial cognition suitable for students in internship programs?
  (2) Is the bidirectional detailed list in entrepreneurial cognition suitable for students in internship programs?
  (3) Is the content of the items in entrepreneurial cognition clear for students in internship programs?
  (4) Are the ability levels in entrepreneurial cognition suitable for students in internship programs?
  (5) Can the items in entrepreneurial cognition reflect the current circumstances for students in internship programs?

After the documentary analysis and in-depth interviews, all the necessary entrepreneurial knowledge indicators were converted to the "Checklist of entrepreneurial cognition that should be possessed by students in internship programs adjust Industry 4.0", after which focus group symposia were held to confirm the required entrepreneurial knowledge items and create a catalogue of the abilities in entrepreneurial cognition that should be present in internship programs. The data analysis and statistical procedures used in this study were frequency distribution and the K-S single-sample fit test, in order to understand the consistency of samples for the descriptions of various abilities. The statistical significance level of this study was set at 0.05.

4. Results

4.1 Entrepreneurial cognition items that should be cultivated in internship programs adjust Industry 4.0
The entrepreneurial cognition items that should be cultivated in internship programs adjust Industry 4.0included the three major areas of start-up experience, industry-specific experience, and managerial

experience, with a total of 91 items. The content is shown in Table 1. There were 12 items for entrepreneurial cognition ability, 13 items for entrepreneurial traits, eight items for basic commercial ability, eight items for communication ability, four items for digital ability, ten items for professional innovative ability, nine items for financial management ability, eight items for human resources management ability, nine items for marketing management ability, 15 items for operational (work) ability, and five items for risk management ability.

Table 1. Entrepreneurial cognition indicators that should be possessed by students in internship programs.

Target level	Objective level	Trait level	Indicator level	Single-sample K-S fit test Z value	Importance	Frequency
A. Start-up experience	A1 Entrepreneurial cognition ability	A1-1 Evaluate entrepreneurial opportunities	● Understand the developmental trends of the industry.	1.45*	H	L
			● Produce entrepreneurial ideas.	1.89*	H	H
			● Analyze the feasibility of entrepreneurial ideas.	1.56*	H	H
		A1-2 Evaluate market trends	● Describe factors that should be considered in entrepreneurship.	1.99*	H	L
			● Analyze the tools necessary to make money in entrepreneurship.	1.89*	H	H
			● Describe usable resources in entrepreneurship.	1.56*	H	H
		A1-3 Fundraising	● Estimate the amount of funds needed for entrepreneurship.	1.65*	H	L
			● Plan the source of entrepreneurial funds.	1.45*	H	L
			● Describe how entrepreneurial funds would be raised.	1.89*	H	L
			● Determine human resource needs and conditions.	1.56*	H	L
		A1-4 Equipped with knowledge of relevant industrial and commercial regulations	● Industrial and commercial regulations.	1.89*	H	L
			● Fire safety regulations.	1.56*	H	L
	A2 Entrepreneurial traits	A2-1 Leadership	● Eagerness to accept new innovation and suggestions.	1.99*	H	H
			● Approval of hard work by others.	1.89*	L	L
			● Guiding others in using positive narratives.	1.56*	L	L
		A2-2 Bearing risks	● Evaluating investment risks.	1.45*	H	H
			● Establishing business strategies.	1.89*	L	L
			● Authorizing at suitable times.	1.56*	L	L
		A2-3 Innovativeness	■ Teaching and learning about psychology.	1.52*	H	H
			● Classroom management.	1.88*	H	H
			● Student management practice.	1.76*	H	H
		A2-4 Proactiveness (love, patience)	● Honesty, integrity, and responsibility.	1.52*	H	H
			● Describing character traits of entrepreneurs in the industry.	1.88*	H	L
			● Creating a personal professional image.	1.89*	H	L
			● Time management and establishing personal goals in career development.	1.56*	H	H
B. Industry specific experience	B1 Basic commercial ability	B1-1 Having the concepts of corporate management	● Describing the characteristics and importance of corporate ethics.	1.45*	L	L
			● Understanding concepts of financial management.	1.89*	H	L
			● Understanding concepts of risk management.	2.01*	H	L
			● Understanding basic concepts of strategic management.	1.47*	H	L
		B1-2 Having concepts in marketing	● Understanding the functions of marketing management.	1.88*	H	H
			● Understanding the characteristics of service management.	1.76*	H	H
			● Describing forms of commercial activity in	1.45*	H	L

			relevant industries.			
			● Explaining the opportunities for industries to create additional value.	1.89*	L	L
	B2 Communication ability	B2-1 Text communication	● Writing business letters.	1.88*	L	H
			● Giving employees work guidance.	1.89*	H	H
			● Holding efficient employee meetings.	1.56*	L	L
		B2-2 Interpersonal relations	● Listening.	1.42*	H	H
			● Telephone communication skills.	1.32*	H	H
			● Conducting oral briefings.	1.66*	H	H
		B2-3 Communication ethics	● Developing different types of clientele.	1.76*	H	L
			● Stress management.	1.45*	H	H
	B3 Digital ability	B3-1 Basic computing ability	● Producing basic webpages.	1.42*	L	L
			● Operating computer accessories.	1.32*	H	H
		B3-2 Computer application ability	● Maintaining customer consumption records.	1.61*	H	H
			● Maintaining consumption and transaction records for the day.	1.50*	H	H
	B4 Professional innovative ability	B4-1 Product innovation	● Developing a good educational human resource development system.	1.88*	H	L
			● Installing a professional academic advancement competition system	1.89*	H	H
			● Establishing a system to guarantee customer service quality.	1.56*	H	L
		B4-2 Technical innovation	● Innovation in educational recruitment.	1.78*	H	H
			● Teaching innovation.	1.90*	H	H
			● Curricular innovation.	1.29*	H	H
			● Performance auditing.	1.34*	H	L
		B4-3 Service innovation	● Having a convincing educational position.	1.61*	H	H
			● Possessing a profit base for education.	1.54*	H	H
			● Evaluating learning effects.	1.71*	H	H
C. Managerial experience	C1 Financial management ability	C1-1 Fund management	● Able to estimate needs for cash flow.	1.26*	H	L
			● Able to read an asset and liabilities chart.	1.92*	H	L
			● Able to read an income statement.	1.47*	L	L
		C1-2 Product purchase, sales, and inventory management	● Supervising and becoming familiar with accounting procedures.	2.18*	L	L
			● Explaining the concept of opportunity cost.	1.83*	L	L
			● Describing price concepts.	1.41*	H	L
		C1-3 Cost-benefit analysis	● Describing cost-benefit analysis.	1.78*	L	L
			● Evaluating factors that affect operational risks.	1.89*	H	H
			● Understanding tax-saving measures.	1.55*	H	H
	C2 Human resource management ability	C2-1 Human resource management	● Developing human resource rules for companies.	1.36*	H	L
			● Developing benefit and incentive systems.	1.72*	H	H
		C2-2 Human resource development	● Interviewing jobseekers.	1.83*	H	H
			● Interviewing people leaving positions.	1.88*	L	L
			● Developing a team spirit.	1.79*	H	L
			● Establishing work teams.	1.65*	H	L
		C2-3 Human resource management	● Implementing employee education and training.	1.78*	H	H
			● Evaluating employee performance.	1.46*	H	H
	C3 Marketing management ability	C3-1 Sales ability	● Determining products or services that satisfy customer needs.	1.69*	H	H
			● Planning product combinations.	1.76*	L	H
			● Determining market differentiation.	1.45*	H	H
			● Choosing target markets.	1.67*	H	L
			● Executing market analysis.	1.88*	H	L

		C3-2 Promotional ability	● Establishing marketing strategies.	1.79*	H	H
			● Establishing customer relations.	1.65*	H	H
		C3-3 Pricing ability	● Computing costs for advertising media.	1.90*	H	H
			● Pricing strategies.	1.29*	H	H
	C4 Operational (work) ability	C4-1 Target market management	● Choosing store locations.	1.56*	H	L
			● Naming and registering a store.	1.79*	H	L
			● Determining decorating ideas.	1.34*	H	L
			● Planning service paths at the business location.	1.78*	H	L
		C4-2 Customer service	● Standardizing service procedures.	1.91*	H	H
			● Maintaining instruments, equipment, and machinery.	1.80*	L	H
			● Managing product inventory.	1.44*	L	L
			● Implementing quality improvement techniques.	1.69*	H	H
		C4-3 Daily operations management	● Implementing analysis of competitors.	2.07*	H	H
			● Predicting monthly and annual sales.	1.85*	L	L
			● Developing tax-saving strategies.	1.67*	H	L
		C4-4 Strategic planning	● Establishing company operational targets and missions.	1.60*	H	H
			● Implementing SWOT analysis.	1.76*	H	H
			● Developing strategies to enter markets.	1.62*	H	H
			● Developing strategies to withdraw from markets.	1.77*	L	L
	C5 Risk management ability	C5-1 Property and personnel safety	● Explaining methods of how to transfer risks.	1.36*	L	L
		C5-2 Disaster management	● Understanding related legal knowledge.	1.89*	L	L
			● Human and material resource management.	1.47*	L	L
		C5-3 Dealing with emergencies	● Ability to deal with emergencies.	1.62*	H	H
			● Safety management of students.	1.36*	H	H

Note: H, L refer to the importance (frequency) in entrepreneurial cognition; H indicates highly important (high usage frequency); L indicates not important (low usage frequency).

4.2 Core entrepreneurial cognition that should be cultivated in university internship programs

The core entrepreneurial cognition that should be cultivated in industry internship programs adjust Industry 4.0were described based on their importance and usage frequency, as shown below in Figure 1:

(1) The internship programs should cultivate 48 high importance and usage frequency ability items in entrepreneurial cognition, among which 11 refer to start-up experience, 17 refer to industry-specific experience, and 20 refer to managerial experience. The high importance and usage frequency ability items are generally entrepreneurial traits and professional innovative ability, followed by marketing management ability and operational (work) ability.

(2) The internship programs should cultivate 31 high importance and low usage frequency ability items in entrepreneurial cognition, among which 10 refer to start-up experience, eight refer to industry-specific experience, and 13 refer to managerial experience. The high importance and low usage frequency ability items are generally entrepreneurial cognition abilities, followed by operational (work) ability and basic commercial ability.

(3) The internship programs should cultivate three low importance and high usage frequency items in entrepreneurial cognition, among which one refers to industry-specific experience and two refer to managerial experience. The low importance and high usage frequency items are communication ability, marketing management ability and operational (work) ability.

(4) The internship programs should cultivate 19 low importance and usage frequency items in entrepreneurial cognition, among which four refer to start-up experience, four refer to industry-specific experience, and 11 refer to managerial experience. The low importance and usage frequency items are entrepreneurial traits and financial management ability, followed by operational (work) ability and risk management
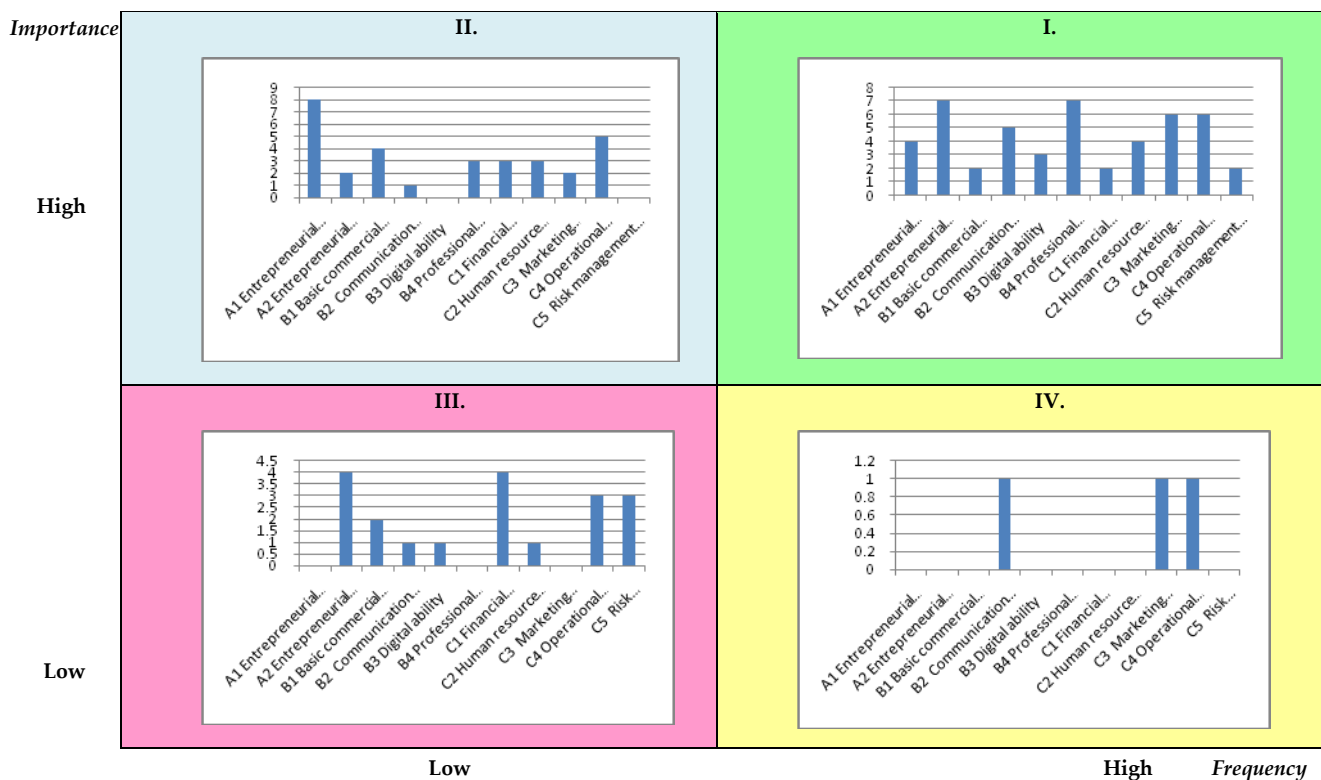
ability.

Figure 1. Importance and frequency of entrepreneurial cognition assessment indicators in university internship programs.

5. Conclusions

The above research showed that the entrepreneurial cognition assessment indicators of internship programs adjust Industry 4.0included the three types of start-up experience, industry-specific experience, and managerial experience, with a total of 91 items. However, according to the actual results, internship programs adjust Industry 4.0should cultivate 48 high importance and usage frequency items in entrepreneurial cognition, among which 11 referred to start-up experience, 17 referred to industry-specific experience, and 20 referred to managerial experience. The high importance and usage frequency ability items were generally entrepreneurial traits and professional innovative ability, followed by marketing management ability and operational (work) ability.

Through internship programs, university students can learn the entrepreneurial cognition perspective. Entrepreneurship is an activity that requires massive amounts of internal and external network resources. In initiating entrepreneurship, entrepreneurs will devote themselves to constructing social networks that benefit the development of their new business and use these network relationships to elevate the probability of success in their business. Industry-specific experience accumulated in the entrepreneurial process will be very helpful to entrepreneurs in the continued discovery of business opportunities and in promoting the growth of the new business (Pfeifer, Šarlija, & Sušac, 2016; Uy et al.,2015; Weinberger, 2016).

The resources and abilities accumulated by start-up experience are not only unique but are also irreproducible. Receiving training in start-up experience will strengthen an individual's ability to make decisions about issues under the context of great uncertainty and time pressure (Pfeifer, Šarlija, & Sušac, 2016; Shinnnar, , Hsu, & Powell, 2014). MThe study also found that management experience has the content of service market and market knowledge, and that industry-specific experience is also closely connected to customer issues and market knowledge. The special experiences of entrepreneurs can elevate the ability to withstand uncertain

risks, allowing them to be more likely to perceive market opportunities and take risks in grasping business opportunities (Shirokova., Osiyevskyy, & Bogatyreva, 2015; Xaver & Ann, 2016).

For students who want to become corporate owners, entrepreneurial education is necessary, among which entrepreneurial operational and marketing tools, as well as experiential learning activities and networking opportunities, are important parts of internship programs adjust Industry 4.0 (Xaver & Ann, 2016; Zhang et al., 2016). Zhang et al. (2016) believed that entrepreneurial education courses should include commercial economy and performance, management and law, personnel studies, and small business and retail management.

In terms of the content of entrepreneurship-embedded internships, the real content to be learned is the habits of entrepreneurs (Francisco, Moriano, & Jaén, 2016). Through school internship programs, students can cultivate the potential traits of entrepreneurs, entrepreneurial beliefs, and perceptions of entrepreneurial skills, thus enabling them to express entrepreneurial cognition (Cho, Robalino, & Watson, 2016; Fukuda, 2014; Weinberger, Patry, & Weyringer, 2016).

Weinberger et al. (2016) pointed out that in order to help student employment and the competitiveness of the employment market, teachers, educational institutions, and students need to establish a balanced structure with the employment market. In order to satisfy the different demands of employers and employment, teachers need to use more methods in entrepreneurial instruction, in order to guide students to realize their adventurous spirits. Uy et al. (2015) found that the planning of internship programs, industrial participation, and student commitment produces active influences on the overall satisfaction with the internship experience. Pfeifer et al. (2016) believed that the demand of the employment market comes from the lack of important abilities and transferable skills.

6. Implications

For schools planning internship programs, such programs should cultivate three categories in entrepreneurial cognition, with a total of 91 items. These items can be used when, under the arrangement and guidance of schools, students go to public and private organizations involved in the to engage with workplace personnel and customers for educational and learning activities with real contact, in order to engage in occupational experiences and actual labor and work (Denise, 2015;Miao, Qian, & Ma,2016; Nabi, 2016). The learning dimensions in entrepreneurial ability include: (1) start-up experience, which refers to technical innovations, core technical innovations, operational methods, and the creation of new value in the ; (2) managerial experience, which refers to product innovation, product operational methods in the , service innovations and the creation of new values in the ; and (3) industry-specific experience, which refers to having a customer-orientation in the and perceiving the customer needs of student parents and ways to satisfy them. Thus, entrepreneurship-embedded internship course development should first offer basic core entrepreneurial courses to students so they can have a foundational understanding for entrepreneurship.

For the incorporation of internship programs adjust Industry 4.0in schools, this study found 11 items in start-up experience, 17 items in industry-specific experience, and 20 items in managerial experience that had high importance and usage frequency. The entrepreneurial spirit that should be learned by students in internship programs adjust Industry 4.0should be defined as students being able to explore the entrepreneurial perception for market opportunities in the , bear risks, and use operational and management strategies. internship programs adjust Industry 4.0guide students and allow them to come into contact with entrepreneurs or managers, and the interpersonal interactions and real operations of internships can help students deeply understand possible problems in the entrepreneurial process.

For the implementation of internship programs adjust Industry 4.0by schools, in regards to the entrepreneurial traits and professional innovative ability with high importance and usage frequency, students can use internship work activities to learn entrepreneurial skills and experiences relating to the occupations and engage with different people such as entrepreneurs and managers, in order to experience the entrepreneurial process and management method of the . Such actions can also inspire entrepreneurial intentions and the

ability to act and understand the educational knowledge, skills, and necessary abilities in internship programs, thus creating an entrepreneurial life that trains students to become entrepreneurs or persons in charge of the.

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The Relationship Between Problem Solving and Creative Thinking Skills among Nursing Students

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ARTICLE INFO	ABSTRACT
	The aim of this study is to determine the relationship between problem solving and creative thinking skills among nursing students. This is a cross-sectional and correlational study. The sample was composed of 266 nursing students who were assessed on the creative thinking scale and problem solving inventory. The problem solving capability of students increase statistically significant levels as the grades of the students increase. The average score students get from creative thinking scale, did not show any difference due to the level of grade and all students obtained scores to be defined as "over the average creativity". There was a moderately significant negative correlation between the scores of the two scales employed by the study. Especially higher scores on problem solving for the senior nursing students in comparison with others, is an important result proving nursing education has a positive effect on problem solving. Keywords: *Creative thinking, nursing, problem solving, student*

1.Introduction

Problem is defined as a situation which requires investigation, learning, thinking, analyzing and solving, while problem solving is defined as a multi-dimensional skill that require conscious efforts (Turkish Language Society [TDK], 2016; Tok and Sevinç, 2010; Eskin, 2009). The factors that affect problem solving are determined as intelligence, customs, social expectations, self-confidence, skills to think as well as level of creativity (Gomez, 2007; Otacıoğlu, 2007; Özer et al., 2009). Today considering changing health care requirements, the profession of nursing requires individuals who are creative with researcher characters, who have access to information, who produces and uses information. Expanding of creativity facilitates improvement of contemporary nursing applications and nursing care, also increases the problem solving (Şen et al., 2013). One of the effective ways to increase welfare level and life quality is to have the skill of creative thinking and skill to find creative solutions to problems.

Nurses have to face with many problems in implementation area. One of the most important factors to determine the safety and quality of the care delivered by nurses is the skills of problem solving. It is expected from the nurses who have to work with individuals with different problems in clinical environment, to have high skills of problem solving (McEwen and Brown, 2002). The developed and adequate problem solving skills of nurses, are the requirement of their liabilities of preventing harm and protecting lives of individuals they provide health care (Abaan and Altıntoprak, 2005). Nurses can able to serve efficient service in favor of increasing life quality and protecting and improving public health in case they can raise themselves as individuals with effective problem solving skills. Individuals with high skills of problem solving are generally

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defined as creative, innovative, open to criticism, and open to changes (Nezu and Nezu, 2001). These specifications which individuals with high skill of problem solving have, at the same time coincides with the professionals skills expected from a professional nurse. Thus, one of the most important outputs of nursing education is the improving the students' problem solving skills (Abaan and Altıntoprak, 2005). In the studies executed in order to determine the problem solving skills of nursing students, it is determined that problem solving skills of the students are at average level and problem solving skill of first year students is lower than second, third and fourth grade students (Yurttaş and Yetkin, 2003; Gönülal and Bahar, 2005; Günüşen and Üstün, 2011).

A person's knowledge on problem solving, is not enough for him to solve all problems he faces with. Producing creative solutions towards the problem is as important as high problem solving skills. While some problems have adequate and certain, definite solutions, some others may have not (Mertoğlu and Öztuna, 2004). Creative thinking, which plays an important role in development of society and humankind, within a large scope diverging from daily life to scientific studies, can be defined as presenting a unique product at the end of the process (Argun, 2004; Çetin et al., 2015; Yıldırım, 2007). Creativity of creative thinking; can be defined as seeing the differences while looking at the same thing people look at, a new attitude of acceptable behavior other than usual things and patterns, ability to present a new thinking process or a new product (Dolgun and Erdoğan, 2012). Societies composed of individuals with developed thinking skills as well as creative skills, plays a crucial role adopting the world's conditions, determining the power and direction of the change and contributing to such change (Çetin et al., 2015). Thus, what is expected from education is the contribution to emerging of individuals with independent thinking skills, who may solve problems, with problem solving skills (Emir et al., 2007).

There are limited numbers of studies with nursing students on effect of creative thinking as an effective variable in problem solving. Determining of creative thinking and problem solving skills levels of nursing students is necessary for planning and developing initiatives towards this area.

1.1. Research Questions

1. What is the level of creative thinking skills of nursing students?

2. What is the level of problem solving skills of nursing students?

3. Is there any relationship between nursing students' problem-solving skills and creative thinking skills?

2. Method

2.1. Purpose and Study Design

The aim of this study is to describe the level of creative thinking and problem solving skills among nursing students and to examine their relationship with creative thinking and problem solving skills. The cross-sectional, descriptive and correlational design was used.

2.2. Participants

The cross-sectional, descriptive and correlational study was conducted between September 2015 and April 2016 in Mehmet Akif Ersoy University, Faculty of Health Sciences in Burdur, Turkey. Convenience sampling methods were used. Fifteen students refused to participate. Participants were first, second, third and fourth year undergraduate students (n=266) in the Bachelor of Nursing Science Degree in the academic term of 2015–2016.

2.3. Instruments

2.3.1. Demographic characteristics

This form is comprised of three questions regarding students' socio-demographic characteristics: Age, sex, level of class.

2.3.2. Creative thinking skills scale

The scale which was developed by Whetton and Cameron (2002) in order to determine the creativity levels of individuals is adopted to Turkish as "Creative Thinking Skills Scale" by Aksoy (2004). The scale is a likert type scale with "I do agree", "I do not agree" and "I am undecided" alternatives and composed of 40 articles each of which has different scoring. The articles in the scale has minimum -2, and maximum 4 points (Aksoy, 2004). Point intervals between 0-9 are defined as non creative, 10-19 are creative under the average, 20-39 are defined as creative at the average level, 40-64 points are defined as creative over the average, 65-94 points are defined as very creative and 95-116 points are defined as extraordinary creative. Increasing of total scores means the increase at the levels of creativity (Aksoy, 2004).

2.3.3. Problem solving skills inventory (PSSI)

This 35-item inventory used to measure individuals' own perception of problem-solving skills was developed by Heppner and Petersen (1982). The PSSI consists of 35 items and three factors. The first of these factors is problem-solving confidence (11 items), the second one is avoidance of/approach to the problem (16 items), and the third one is control (15 items). The Cronbach's alpha reliability coefficient of the original scale was 0.90. The coefficients for the subscales ranged between 0.72 and 0.85. The test–retest reliability coefficients of the subscales ranged between r = 0.83 and r = 0.89 (Sahin & Heppner, 1993). The scale is a 1–6 point Likert-type scale (from "I always act (behave) this way" to "I never act (behave) this way.") and can be applied both to adolescents and to adults. Whereas items 9, 22, and 29 are not scored, items 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30, and 34 are reversely scored. The reliability and validity of the Turkish version of the scale was conducted by Sahin and Heppner (1993). The Cronbach's alpha reliability coefficient of the scale was determined as 0.88. The lowest and highest possible scores to be obtained from the scale are 32 and 192, respectively. There are no cutoff points in the evaluation of the scale. Lower scores obtained from the PSSI indicate high problem-solving skills, whereas higher scores indicate poor problem-solving skills. In this study, the reliability coefficient of the scale was determined as 0.81.

2.4. Data Collection

The questionnaires were distributed during class hours, and students were asked to complete and return them at the end of the lesson. The questionnaires were collected by the author after they were completed.

2.5. Data Analysis

For data analysis, the SPSS 17.0 software (SPSS, Inc., Chicago, IL, USA) was used. A test of hypothesis with p value of <0.05 was considered significant. Descriptive statistics were used to determine students' characteristics. The relationship between problem-solving skills and creative thinking skills was examined with Pearson's correlations. The statistic 'r' value of 0.00 to 0.24 was considered a weak relationship; 0.25 to 0.49 was a moderate relationship; 0.50 to 0.74 was a strong relationship; and 0.75 to 1.00 was a very strong relationship (Aksakoğlu, 2006).

2.6. Ethical Consideration

Written permission from Mehmet Akif Ersoy University Ethical Committee (GO 2016/2-6) and the Mehmet Akif Ersoy University Faculty of Health Sciences was also obtained. The objective of the research was explained to the participants and written permission was received from those agreeing to participate in the research.

3. Results

The average age of the attendant students is 20.87 ± 1.61, 66.9% of them female, 30.1% of them are at the first grade.

Table 1. Comparison of nursing students' scores regarding their creative thinking skills (n: 266)

Level of class	n	Mean scores for creative thinking X ± SD	Min-Max	F	p
1st year	80	42.05±14.33	17-78	2.526	0.058*
2nd year	69	43.88±14.21	24-82		
3rd year	55	49.23±16.99	26-84		
4th year	62	44.48±15.43	13-80		

*p > 0.05

The creative thinking skills scores of the students are determined by using single dimensional variance analysis. Difference among classes are not determined statistically meaningful (F = 2.526, p = .058) (Table 1). The highest creative thinking skills scores are obtained in third grade students.

Table 2. Comparison of nursing students' scores regarding their problem-solving skills (n: 266)

Level of class	n	Mean scores for problem-solving skills X ± SD	Min-Max	F	p
1st year	80	99.36±11.60	68-132	26.356	0.000*
2nd year	69	96.69±14.06	53-126		
3rd year	55	93.21±19.74	58-138		
4th year	62	77.03±18.34	54-114		

*p < 0.05

Problem solving skills scores of the students are determined due to their class levels by using single dimensional variance analysis. Difference between classes are determined statistically meaningful (F = 26.356, p = .000) (Table 2). It is determined that, scores of the fourth grade students are meaningfully higher than first, second and third grade students and the difference derives from the scores of fourth grade students (Table 2).

A negative, statistically meaningful relation at low level is determined in relation between creative thinking and problem solving skills scores of the students (r = -.172, p = .005) (Table 3).

Table 3. Relationship between creative thinking and problem-solving skills of nursing students (n: 266)

Mean scores for creative thinking X ± SD	Mean scores for problem solving skills X ± SD	r	p
44.57±15.27	92.19±17.96	- 0.172	0.005*

*p < 0.01

4. Discussion

It was determined that, the average scores of the students from creative thinking skill scale does not show a difference at class level, all class averages are at 40-64 points interval; thus all of them are considered in "creative over the average" group. It was determined that third grade students had the highest average points among the classes. It is only that there are only a few numbers of studies in literature on creativity of nursing (Ku et al., 2010; Chan, 2013). In the systematic evaluation of creativity in nursing exercised by Chan (2013), it is stated that some people are more creative than the others although creativity skills can be improved with education. For nursing students to be directed towards creative thinking, the trainers and administrators in education should direct students to their areas of interests and activities. It is stated that, trainers in education should steer students to activities such as poetry, role playing, music and sculpture in order to improve their creativity skills (Chan, 2013).

Executed studies prove that, providing varieties in education, supporting of independent education, learning in group studies by trusting others, facilitate the creativity (Emmanuel et al., 2010; Hall and Mitchell, 2008; Lillyman et al., 2011; Hydo et al., 2007). Furthermore, in the studies executed by Karataş and Özcan (2010) about effect of creative thinking activities on students' creative thinking and project development, it was determined that, methods such as brain storming and concept map contribute to the creative thinking of the students. It is stated that creativity has been an individual process and very different methods can be tried in order to improve creative thinking. For instance, it is stated that staying out of current rules, stating new thoughts against the generally accepted norms, having communication with new people other than people you interact with in your daily life, and staying away from classical thinking patterns, may increase point of view and creativity of individuals (Dolgun and Erdoğan, 2012). In order to develop creativity in nursing education, firstly environments, in which creativity is encouraged and promoted, should be emerged. In order to think creative, first the individual should be aware of creativity, than should be encouraged to creative thinking. The success in developing creativity is mostly dependent on learning about the subject of creativity (Tulum and Memiş, 2006). Like in all educational systems, in also nursing education, trainers as the most important corner stones of education have significant liabilities. Some behaviors and attitudes of trainers that take place in education process have important effects on emerging and developing of creativity (Tulum and Memiş, 2006). While searching for studies on creativity of nursing students, we were unable to reach any research articles. Nurses, operating in fast changing, developing and complicated structure, as being a member of profession, have to be individuals who may able to adopt changes and innovations, solve problems by using creative thinking, who can question, who can contribute to his profession by being affected from different disciplines and who may also think with criticism (Bahar, 2006). Thus, it is extremely important to use creative thinking in order to see possible results of nursing and to find valid answers and to expose creative actions as the nature of being professional (Şen et al., 2013).

Due to the findings of study, problem solving skill is observed at the highest level in fourth grades, the lowest in the first grade students. Problem solving skills of the students that attend to study increase as the levels of grade increase. In the literature, there are studies on changes in problem solving skills due to levels of grade have different solutions (Günüşen and Üstün, 2011; Beşer and Kıssal, 2009; Durmaz et al., 2007). Different from these studies, there are also studies pointing out that levels of grades of students have no effect on problem solving skill (Altun, 2003; Tezel et al., 2009).

In the study executed by Batıgün and Kayış (2014) on stress factors in university students and problem solving skill, it is determined that individuals with high stress factors have lower problem solving skills. Total score of problem solving skill is determined as 97.94±15.73. This result shows parallelism with the result of our study in terms of average points. In the study executed by Yıldırım and friends (2011) on determining high school students about problem solving skills and effective factors, the average problem solving skill of the students is determined as 89.91±19.77. It is stated that, since problem solving skills are teachable and improvable cognitive skills, at every area of educational process, they should be stressed on (Yıldırım et al., 2011). In the study of Abaan and Altıntoprak (2005) in which problem solving skills of nurses were evaluated, problem solving inventory average score had been determined as 77.48 ± 14.75. Since the nursing students have very high average scores in our study, it is thought that nurses solve problems better that the nursing students. In the study of Kanbay and friends (2013) in which problem solving and critical thinking skills of nursing post graduate students, average total problem solving skill is determined as 92.45 ± 1.29. Although differences are

observed in problem solving skill average scores among classes, this difference was not found meaningful (p>0.05). The result of the study shows parallelism with our average scores (92.19 ± 17.96), but there are differences in terms of there are no differences among grades. Inadequacy of problem solving skill that improves the quality of nursing care, affects negatively the quality, professionalism in work, autonomy and having the power (Abaan and Altıntoprak, 2005). Thus, problem solving skills of the nurses should be developed throughout the education process (Günüşen and Üstün, 2011). In the study of Tok and Sevinç (2010) which examined the effect of education on critical thinking and problem solving skill, it is determined that problem solving skill scores of the students decreased after the education given. Within this context, it is determined that education has positive effects on problem solving skill.

There is statistically weak and meaningful relation between creative thinking and problem solving skill. According to the average scores of the students that attend to our study, it is determined that students have over average creativity. As a result of the comparison between grade levels, third grade students obtained the highest average points while first grade students had the lowest scores. Within this context, creativity levels in the order are third grade, fourth grade, second grade and first grade. Furthermore, the highest average on problem solving is the fourth grade, while the lowest scores belong to first grade. Within this context, even at low level, a relation between creativity levels of students and problem solving has been determined and it is also determined that as the level of grade increases, students may think more creative and may solve problems easier. Within this context, it is believed that education has positive effect on creative thinking and problem solving. Student with creative thinking may easily notice the problems ad may bring creative solution alternatives. Thus, he/she knows what to do when she faces with a problem, she may produce appropriate methods to solve problems and may ring creative solution alternatives. Since any study evaluating the relation between creative thinking and problem solving has not been reached in literature, this issue cannot be discussed.

5. Conclusion, Study Limitations and Implications for Nursing Knowledge

As the result of this study, it is determined that, creative thinking skill and problem solving skills of the students increase as the levels of grades increase. Furthermore, it is determined that, average points of problem solving skill of fourth grade students are high, students have over the average creativity scores. Nurses, while undertaking their roles and liabilities in presenting health services, should be aware of their creativity in order to contribute professional improvement as health discipline, to facilitate adaptation to new technologies and practices, to expedite nursing care and they also have to improve and expose their characteristics (Şen et al., 2013). The creative thinking and problem solving skills of the nursing students can be improved by applying creativity increasing practices at schools and faculties. Making comparisons of nursing students with the students in other disciplines may also help to expose the contribution of nursing education (Günüşen and Üstün, 2011). Making of further studies on creative thinking among nurses and students of nursing education is suggested in order to expose the relation between creative thinking and problem solving skills.

This research should be evaluated more extensively with a larger sample. In the future, qualitative studies can be conducted in order to find out how creative thinking affects problem solving skills.

It is important for students to assess their creative thinking and problem solving skills. Since the high creative thinking of control may affect the problem solving skills, it is important to develop a curriculum and strategies which aim to improve the undergraduate nursing students' problem solving skills and creative thinking skills.

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English Language Anxiety: Development and Validation of a Brief Measure

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ABSTRACT

In view of the lack of a short scale for the direct measurement of English language learning anxiety developed in the Egyptian context, this study aims to develop and validate a brief scale. Exploratory factor analysis (EFA) was employed using (362) EFL learners enrolled in first year at college of education, Minia University. Results of EFA proved that the scale consisted of four subscales: (speaking anxiety, (8) items, α=.84, writing anxiety (8) items, α=.84, reading anxiety (8) items, α=.84, listening anxiety, (8) items, α=.83). Confirmatory factor analysis (CFA) was conducted on 46 items to examine the structure validity. Results of confirmatory factor analysis showed that the four-factor model fitted well and results met the criteria for goodness of fit indices (>.90) and root mean score residual (RMR < .05) which means the (ELAS) has a four factor structure in the Egyptian university students sample. The brief scale has good reliability and adequate validity and results of the analysis supported the conclusion that it is a reliable and valid measurement instrument.

Keywords:
English Language, Language Anxiety, English Anxiety scale.

1. Introduction

Horwitz et al. (1986) stated that anxiety can be defined as the subjective feeling of tension, apprehension and worry associated with an arousal of the autonomic nervous system. Psychologists use the term specific anxiety reaction to differentiate people who are generally anxious in a variety of situations from those who are anxious only in specific situations. Many people claim to have a mental block against learning a foreign language although these same people may be good learners in other situations. In many cases, they may have an anxiety reaction which impedes their ability to perform successfully in a foreign language class; they may find learning stressful.

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1.1. Statement of the Problem

A trend of investigation suggests a pressing need to develop proper and standardized measurement instruments for researchers who are interested in the quantitative assessment of foreign language anxiety. Cheng added that the use of inadequate language anxiety measures led to reaching conflicting results regarding the relationship between foreign language anxiety and language achievement or performance (Cheng, 2004).

Research into language anxiety was first carried out largely with English-speaking learners of Indo-European languages (Kleinmann, 1977), and, later, Japanese (Aida, 1994) mainly in the United States with high achieving students (Aida, 1994; Saito, Horwitz, & Garza, 1999). Given that earlier studies were conducted in the American and European settings, it would seem worthwhile to consult studies of other groups of language learners in different learning contexts such as Egypt.

Western researchers are attaching considerable importance to anxiety in foreign language study. Little work has been done in Egypt, however; there is a pressing need in Egypt, as a developing country, to cater for English teaching and learning in order to have individuals capable of activating tourism and adopting modern technological advances; that is why Egyptian ministry of Education made English as a compulsory subject for all elementary schooling years (Mousa, 2009; Ali, 2010a).

For achieving the objective of this study, the following research question was addressed: What are the factors of the English language learning anxiety short scale developed in the Egyptian setting?

1.2. Rationale for the study

Park and French (2013) suggest that as the (FLCAS) scale developed by (Horwitz, Horwitz, & Cope, 1986) has been widely used around the world, psychometric evidence has been established. Most recently, Panayides and Walker (2013) showed through Rasch measurement, that the scale is unidimensional. Nonetheless, they brought into question the extremely high reliability (internal consistency) suggesting possible flaws in the scale.

Walker and Panayides (2013) stated that due to the fact that time and settings are not constant, there is a need to re-evaluate and perhaps refine even widely-accepted instruments such as the FLCAS. They conducted a study of the psychometric properties of the FLCAS. They verified that test anxiety was a component of FLA, which had previously been disputed. They found the reliability of the FLCAS to be very high. They suggested that such high reliability is undesirable in psychometric scales since it can lower their degree of validity. They revealed two reasons for such a high reliability. First, the items covered a rather narrow range on the construct continuum. Such under-representation of the construct threatens validity. Second, the scale includes many parallel items which may give a false sense of a high degree of reliability and decreases validity.

The Foreign Language Classroom Anxiety Scale (FLCAS) developed by (Horwitz et al., 1986) has been extensively used in studies over the past 27 years and has facilitated a tremendous development in the research into FL classroom anxiety. Notwithstanding, instruments should always be piloted for new settings and new populations as "existing validity evidence becomes enhanced (or contravened) by new findings" (Walker and Panayides, 2013). The construct validity of the FLCAS was determined through the use of Cronbach's alpha reliability estimates and principal components factor analysis (Matsuda & Gobel, 2004). The researchers suggested that relatively low alpha estimates of the FLCAS (0.78) might have affected the factor analysis results; however, it is more likely that its multidimensional nature was at least partly responsible for the failure of several items to load onto the hypothesized factors (Apple, 2011, p.60).

Studies so far have shown different factor structures for the FLCAS. Horwitz et al. (1986) designed a three factor structure. Tóth (2008) used the FLCAS on a Hungarian sample and verified the three components suggested in Horwitz et al. (1986) and claimed that the factors obtained were closely related thus confirming that FLCA is a unidimensional construct. On the other hand, Aida (1994) found four factors for the FLCAS. A few years later Cheng, Horwitz, and Schallert (1999) extracted two factors as did Matsuda and Gobel (2004). They labelled the first factor general English performance anxiety and the second low self-confidence in speaking English. If the FLACS is found to be multidimensional, this makes using one total score

questionable and it would be advisable for future researchers to try three separate scores for the three components (or two or four depending on the number of factors extracted) and investigate them separately (Walker and Panayides, 2013).

Apple (2011) stated that "Unfortunately the items of the FLCAS were never validated and the unidimensionality of the FLCAS was never examined, even though the originators admitted to deliberately including items from what they believed were three separate constructs" (p. 58). Bora and Jongmin (2011) reported that the FLCAS provides precise and reliable information for persons with low to medium levels of language anxiety whereas information becomes increasingly unreliable for individuals having high levels of anxiety.

All these aforementioned reasons besides the difference of the cultural setting in which the FLCAS was originated, and the lack of English language learning anxiety scales in Egypt encouraged the present researcher to prepare a new scale for measuring this construct in the Egyptian context. It is worthy noting that the items of the FLCAS and other scales were the core of the earlier version of the scale prepared in this study.

1.3. Foreign language learning anxiety

In the context of foreign language learning, learners may feel anxious due to problems related to communication apprehension (e.g., difficulty in understanding the teacher's instruction) negative evaluation (e.g., fear of correction and fear of making mistakes) and a general feeling of anxiety (e.g., fear of failing the class) (Horwtiz et al., 1986). Marwan, (2007) indicated that there are three factors which learners believe have contributed to their FL anxiety, namely lack of preparation, lack of confidence and fear of failing the class. Of these three factors, most participants agreed that lack of preparation was the main cause of their anxiety followed by lack of confidence. In addition to the above factors, teachers' inappropriate ways of teaching and their reluctance to develop rapport with their students can also contribute to learners' anxiety during learning a foreign language (Worde, 1998).

1.3.1. Listening Anxiety

One of the two productive skills in language learning, listening is a major threat for foreign language learners. Krashen (in Young, 1991) maintains that although speaking is often cited as the most anxiety provoking skill, listening comprehension may also lead to high levels of anxiety, particularly when the text is incomprehensible to the listener. Considering the process of communication, listening plays a crucial role in achieving mutual understanding because one cannot sustain a conversation without understanding what he/she is being said. Vogely (1998) posits that listening comprehension anxiety can undermine speech production because, in order to interact verbally, the listener must first understand what is being said.

1.3.2. Speaking Anxiety

Speaking in class is probably the most frequently cited concern of anxious second language learners (Aida, 1994; Liu and Jackson, 2008; Mak and White, 1997). Compared to the bulk of research on anxiety associated with other skills, in particular speaking, the number of studies on FLLA is far from being satisfactory (Elkhafaifi, 2005). Woodrow (2006), posited that anxiety experienced in communication in English can be debilitating and can influence students' adaptation to the target environment and ultimately the achievement of their educational goals.

Foreign language learning speaking-in-class anxiety warrants attention because there are many factors contributing to foreign language learning speaking-in-class anxiety such as speech anxiety and fear of negative evaluation, uncomfortableness when speaking with native speakers, negative attitudes towards the English class, negative self-evaluation, fear of failing the class/consequences of personal failure, speaking in front of the class without preparation, being corrected when speaking, inadequate wait-time, not being allowed to use the first language in a second/foreign language class (Mak, 2011).

1.3.3. Reading Anxiety

Saito et al. (1999) were the first scholars who revealed that foreign language reading anxiety is a distinct phenomenon but related to foreign language anxiety in general. They pointed two aspects of foreign language reading that elicit anxiety; unfamiliar scripts and writing systems: According to them, foreign

language learners who are more familiar to the scripts of the target language would be less expected to experience anxiety in the act of reading. Unfamiliar culture: at some point of the reading process, the reader would not make sense of the whole text due to the incomplete knowledge of the cultural material underlying the text. They offered a scale to measure foreign language reading anxiety. They devised a five-point likert scale consisting of 20 items ranging from "strongly agree" to "strongly disagree" as a specific scale to measure foreign language reading anxiety. The foreign language reading anxiety measure reported good internal reliability with an internal consistency of .86 on Cronbach's alpha for the total number of participants. To determine the validity of the foreign language reading anxiety, they examined the concurrent validity using a Person Product-Moment correlation coefficient. The analysis revealed a relationship between the two scales (r =.64, p = .01, n = 383). That is, students who have a high level of foreign language anxiety tend to also have a high level of foreign language reading anxiety and vice versa.

Al-shboul, Ahmad, Nordin, & Rahman (2013) explored the underlying problems and factors that contribute to reading anxiety faced by EFL students at Yarmouk University, Jordan. It was a qualitative exploration of the sources of English language reading anxiety for which observation, semi-structured interviews and diaries were collected from six informants with different levels of English language proficiency. The findings of the study revealed that there were two aspects of foreign language reading anxiety: personal factor and text feature. Under the concept of personal factor there were also two main sources of foreign language reading anxiety, which are: afraid of making errors and worry about reading effects. On the other hand, there were three main sources of foreign language reading anxiety under the concept of text feature, which are: unknown vocabulary, unfamiliar topic, and unfamiliar culture.

1.3.4. Writing Anxiety
Writing anxiety is a critical factor in writing process. Students with writing anxiety find all the stages of writing process extremely demanding and challenging. In addition, they feel anxious about the perception of the outcome of writing process. Hence, such an anxiety appears to be the fear of negative evaluation (Madigan, Linton, & Johnson, 1996). Some factors, such as classroom, teacher exam, and personality traits, lead to anxiety (Young, 1991). As a result, anxiety adversely affects written text production. Many studies in the literature have also noted that. Therefore, anxiety is a critical and decisive notion in language learning process and writing process (Karakaya& Ülper, 2011).

2. Review of Literature
Aida (1994) tested Horwitz et al.'s construct of foreign language anxiety by validating and adapted FLCAS for students of Japanese. It was an exploratory study to discover the structure and reliability of the scale using Ninety-six students (fifty-six males and forty females). Results provided partial support for Horwitz et al.'s construct of foreign language anxiety. It has shown evidence that speech anxiety and fear of negative evaluation are indeed important components of foreign language anxiety. Yet the results didn't support Horwitz et al.'s claim that test anxiety is the third component of foreign language anxiety. No significant gender difference in foreign language anxiety was reported by this study.

Abu-ghararah (1998) adapted the foreign language classroom anxiety scale (FLCAS) developed by Horwitz et al. 1986. This scale was translated into Arabic and administered to Saudi college males (n =165) and female (n =153) at college of education, King Abdulaziz university. Validity and reliability of the translated version of the scale were verified. Results of factorial analysis resulted in four factors: (a) Non-facilitative negative feelings, (b) self-confidence. (c) Mastery of listening and conversation, (d) interactive approaches.

Kim (2002) established the validity and reliability of an associated classroom measure. Data were drawn from 446 Korean university students learning English as a Foreign Language. Quantitative data were factor analyzed to discover the underlying dimensionality of the construct and generated a 3-factor model (i.e., production, literacy, and aural and evaluative anxieties) of the FL anxiety. Construct and concurrent validity of the measure was assessed. Findings showed that the current measure is a highly reliable and valid measure of the FL anxiety construct. Internal consistency as estimated by alpha coefficient was .94 and test-

retest reliability, r = .77. Construct validity of the FLPAS using the correlation with the respective measures administered were .83 (FLPAS), STAI (.70), TAI (.31), and CAPS (.53).

Cheng, (2004) developed a scale for assessing English language writing anxiety using 421 EFL majors enrolled in seven different colleges in Taiwan. Results of Exploratory factor analysis suggested that the scale have good reliability and adequate validity.

Tóth (2008) adapted Horwitz, Horwitz, and Cope's (1986) Foreign Language Classroom Anxiety Scale (FLCAS) on 117 Hungarian English major students and 66 non-English major students. Results of exploratory factor analysis revealed that the scale is valid and retained the same factorial structure in the Hungarian context. Reliability of the scale was confirmed by internal consistency.

Bora & Jongmin (2011) examined the psychometric properties of the Korean version of the foreign language classroom anxiety scale (FLCAS). They investigated the empirical construct validity of the FLCAS by using the graded response model (GRM) in Item Response Theory (IRT) for estimating students' language anxieties more accurately. The results showed that the FLCAS is unidimensional and reliable. Furthermore, the results reveal that the FLCAS provides most precise and reliable information for individuals with low to medium levels of language anxiety, whereas it becomes increasingly unreliable for individuals having high levels of language anxiety.

Guntzviller, Jensen, King, & Davis (2011) developed and validated a foreign language anxiety in a medical office scale (FLAMOS), the participants were 100 of low income, primarily Spanish-speaking Latinos. The scale factored into a uni-dimensional construct and showed high reliability (α=.92). The scale also demonstrated convergent and divergent validity compared with other communication anxiety scales. FLAMOS was significantly correlated with communication apprehension (r=.40, p<.001), communication anxiety (r=.36, p<.001), and receiver apprehension (r=.30, p=.002). FLAMOS and comfort speaking=reading English were strongly negatively correlated (r=_.46, p<.001), while the negative correlation between FLAMOS and comfort speaking/reading Spanish only approached significance (r=_.18, p=.07). FLAMOS was a statistically significant indicator of the level of acculturation in terms of language preference (β=_.29, p=.02) and thus demonstrated predictive validity. These findings demonstrate that FLCA in a medical setting is distinct from FLCA in other settings. The Foreign Language Anxiety in a Medical Office Scale provides a validated measure for researchers and may help to explain Latino health care communication barriers

Walker & Panayides (2013) investigated the psychometric properties of the Foreign Language Classroom Anxiety Scale (FLCAS) for Cypriot senior high school EFL students (ages 16-18), through Rasch measurement.

The researchers clarified two discrepancies found in the literature: first the factor structure of the scale and second whether test anxiety is a component of FLCA. The Greek version of the FLCAS was administered to a sample of 304 senior high school EFL students. Results showed that after removing five items which poorly fitted the Rasch Rating Scale model, the remaining 28 items formed a unidimensional scale, one component of which is test anxiety. The degree of reliability was high. Semantic analysis of the items revealed that one of the reasons was the inclusion of many parallel items. The Rasch person-item map showed that a second reason was the narrow coverage of the construct by the items and the 5-point Likert scale was shown to be marginally optimal.

Walker & Panayides, (2014) constructed a new scale for measuring foreign language classroom anxiety (FLCA). They began their study with the creation of an extended item pool generated by qualitative methods in which 52 teachers of English participated. Subsequent Rasch and semantic analyses led to the final 18-item Foreign Language Classroom Anxiety Inventory (FLCAI) using a sample consisting of 212 high school students. In comparison with the Foreign Language Classroom Anxiety Scale (FLCAS), the FLCAI demonstrated more convincing evidence of uni-dimensionality and the optimal 5-point Likert scale functioned better. The findings proved that FLCAI is more practical for classroom practitioners to administer and analyze. It maintains its psychometric properties and covers a wider range on the construct continuum thus improving the degree of validity of the instrument.

Mella & Zapata (2015) conducted confirmatory Factorial Analysis of the Foreign Language Classroom Anxiety Scale (FLCAS) in high school Chilean students. Factorial models proposals by Pérez-Paredes and

Martínez-Sánchez (2001) [Model 1] and by Arnaiz and Guillén (2012) [Model 2] were analyzed. 971 high school students from Temuco, Chile, participated in the study. The ages fluctuated between 13 and 19 years old (M = 15.3; SD = 1.2); 58.7% were boys and 41.3% girls. Model adjustment was tested, as well as the instrument's reliability and the temporal stability. Results indicated an adequate adjustment for Model 1 (X^2= 1209.292; df = 246; CFI = .937; TLI = .930; $RMSEA$ = .064); an adequate internal consistency, shows metric invariance between men and women, and presents stability in the test-retest. The instrument allows knowing the global level of anxiety in foreign language students, being a valid and reliable tool for teachers to support English learning.

Ali (2016) developed and evaluated a self-report scale of English learning anxiety that conforms to the four language skills using (221) EFL learners enrolled in second year at college of education, Minia University. Results of EFA proved that the scale consisted of four subscales: (speaking anxiety, (15) items, α=.93, listening anxiety, (14) items, α=.85, writing anxiety (9) items, α=.88, and reading anxiety (8) items, α=.85). Confirmatory factor analysis (CFA) was conducted on 56 items to examine the structure validity. Results of confirmatory factor analysis showed that the four-factor model fitted well and results meet the criteria for goodness of fit indices (>.90) and root mean score residual (RMR < .05) which means the brief measure has a four factor structure in the Egyptian university students sample. Results indicated that language achievement was negatively correlated to language anxiety and ELLA doesn't differ according to gender of student.

3. Method

3.1. Participants

The present study involved a total of 362 randomly selected EFL students 162 males and 200 females (ages 18-19) enrolled in the second year at college of education, Minia, Egypt. The students have all been studying English for a minimum of 8 years. All subjects were voluntary recruited as a validation sample for computing validity and reliability of the scale. They were enrolled at a public university in North Upper Egypt.

3.2. Instrument

The brief measure of English language anxiety was developed and validated in this study. The initial version consisted of 46 items. The final version of the scale consisted of 32 items measuring four factors of English language learning anxiety.

3.3. Scale development and validation procedures

The preparation of the new scale underwent the following steps:

3.3.1. Review of the relevant literature
The process of reviewing the related literature resulted in preparing a pool of 20 items cited from the previous studies e.g. (Horwitz et al., 1986; Saito et al., 1999; Matsuda & Gobel, 2004; Çubukcu, 2008; Bozavli & Gulmez, 2012; Serraj & Noordin, 2013; Zhang, 2013; Capan & Karaca, 2013). 26 newly created items were added to the pool. Thus, the total number of the first version of the scale was 46 items.

3.3.2. Informal interviews and discussions were held with experienced teachers of English, professors and lecturers of TEFL (teaching English as a foreign language), professors of educational psychology, and students who are enrolled in English department. They were asked to write down their ideas and beliefs about English language learning anxiety due to their long experience and being concerned with teaching and learning English. Their discussions, thoughts, causes, results of language anxiety and proposed items were carefully taken into consideration during the phrasing of the 26 newly created items.

3.3.3. The first version of the scale was given to a panel of jury to take their views with regard to the appropriateness, accuracy and relevance of items. They corrected some items and reformed other ones. Four

items were omitted by the experts because they were ambiguous, irrelevant to the construct of the scale and repetitive or similar in meaning to other items. The resulting number of items was 46 which were administered in the pilot study and were subject to exploratory factor analysis.

3.3.4. The items cited from the published papers were written in English while those resulted from interviews and discussions were written in Arabic as it is the native language of the participants. The cited items were translated into Arabic by a bilingual Egyptian researcher. To ensure language equivalence back translation technique was used as a method of reducing errors and biases in translation. The items translated into Arabic were given to another bilingual expert. He was unfamiliar with the original version of the scale and was requested to translate Arabic version of the scale into English as much as accurate translation as possible conveying the maximum similar meanings. Then, the judges were asked to evaluate whether each item from Arabic version was capable of conveying the same meanings as in the English version. On the basis of their evaluation, the best possible translation conveying the meanings closest to the original has been retained.

3.3.5. The scale has been administered on 362 participants studying English as a foreign language in the first year at college of education, Minia University. It is a 5-point lickert scale ranging from strongly agree (scale point I) to strongly disagree (scale point 5) the middle point being neutral (scale point 3).

4. Results

4.1. Exploratory factor analysis

An exploratory factor analysis with principal components was conducted to identify a viable factor structure of 46 items.. The resulting factors were rotated to a simple structure using Promax rotation. The number of factors retained was determined by using the following criteria: (1) Kaiser's rule of retaining factors with eigenvalues greater than 1, (2) factor explains at least 10% of the total variance extracted, and (3) each factor had to have at least three items. Inclusion criterion for items on the retained factor was that they had loadings of at least .3 on that factor. The analysis yielded four factors (see table 2): (speaking anxiety, (8) items, α=.84, writing anxiety (8) items, α=.84, reading anxiety (8) items, α=.84, listening anxiety, (8) items, α=.83, Alpha for total score was α=0.90). 14 items were omitted because they didn't meet the aforementioned criteria.

Table 1. *Descriptive statistics of the scale and its sub-scales (n=362)*

	M	median	mode	SD	skewness	kurtosis
speaking anxiety	25.58	26.50	28.00	6.23	-.145	-.724
writing anxiety	22.65	23.00	23.00	5.36	-.046	-.241
reading anxiety	20.38	21.00	24.00	5.86	.169	-.542
listening anxiety	28.26	28.50	30.00	5.05	-.316	-.126
total score	96.88	97.00	91.00	17.01	-.040	-.412

Table 1 shows that the score of mean is equal to median and approaches mode besides the value of skewness is near zero. Taken together, those data demonstrate that the sample distribution is semi-normal.

Table 2. *Eigenvalues and Extraction Sums of Squared Loadings (N=362)*

Factors	Total	(%) Variance	Cumulative(%)
1	4.14	12.95	12.95
2	3.93	12.30	25.24
3	3.92	12.24	37.48
4	3.78	11.81	49.28

Table 3. *Factor loadings for the scale*

Items	Factor 1	Factor 2	Factor 3	Factor 4
1.I worry when asked to speak in English during lecture	0.712			
2.I worry when asked to deliver a presentation in English	0.706			
3.I feel perplexed during oral exams of English	0.706			
4.I feel perplexed during speaking in English in front of classmates	0.696			
5.I feel ashamed when I reply in English to teacher questions	0.664			
6.I lack self-confidence when I speak in English to others	0.653			
7.I fear to be ridiculed by classmates if I speak English	0.606			
8.I fear to communicate in English	0.569			
9.I worry when asked to write an essay in English		0.739		
10.I find difficulty in writing correct essay		0.735		
11.I worry when asked to write a paragraph in English		0.683		
12.I feel mindless when I begin to write in English		0.670		
13.I find difficulties in written expression		0.643		
14.I get low grades in writing syllabus		0.617		
15.I feel upset during the class of writing		0.615		
16.It takes a long time to organize my ideas during writing		0.559		
17.I lack self-confidence during reading			0.754	
18.Reading in English causes worry for me			0.741	
19.I feel upset when asked to read English			0.725	
20.I feel bored when I read in English			0.617	
21.I feel perplexed if I read a full page in English			0.609	
22.I feel dissatisfied with my level in reading in English			0.587	
23.Learning to read in English is a difficult task			0.581	
24.I feel upset when I asked to read unfamiliar topic			0.539	
25.I worry when I listen to fluent speakers of English				0.735
26.I find difficulty in comprehending fast speakers of English				0.678
27.I find difficulty in understanding lectures, news, speeches and dialogues delivered in English				0.667

28. I find difficulty in answering listening tasks	0.666
29.I find difficulty in discriminating information that I listen English	0.636
30.I doubt my ability to properly speak English	0.605
31.I find difficulty to discriminate homophones	0.550
32.I worry that I do not understand what the lecturer say in English	0.531

4.2. Structure Validity

Confirmatory factor analysis (CFA) was conducted on 32 items to examine the structure validity. Results of confirmatory factor analysis are presented in Table 4. The four-factor model fit well and results meet the criteria for goodness of fit indices (>.90) and root mean score residual (RMR < .05) (see McDonald & Marsh, 1990) which means the brief measure has a four-factor structure in the Egyptian university students sample. The names allocated to the four factors are those created by the researcher.

Table 4. *CFA results of the four-factor model (*N= 362)

Model	χ^2	RMSEA	GFI	AGFI	CFI	RMR
Four factor	1.816	.048	.875	.856	.911	.05

Table 4 shows that the results of confirmatory factor analysis meet the criteria of goodness of fit indices and the four-factor model fitted well which means that the English language anxiety brief scale has four factors in the Egyptian University context.

4.3. Reliability

To ensure reliability of the scale Alpha cronbach was computed and its results are shown in table 5.

Table 5. Reliabilty of sub-scales

	Cronbach Alpha
speaking anxiety	0.84
writing anxiety	0.84
reading anxiety	0.84
listening anxiety	0.83
total score	0.90

Table 5 shows that the sub-scales and the total scale have adequate reliability.
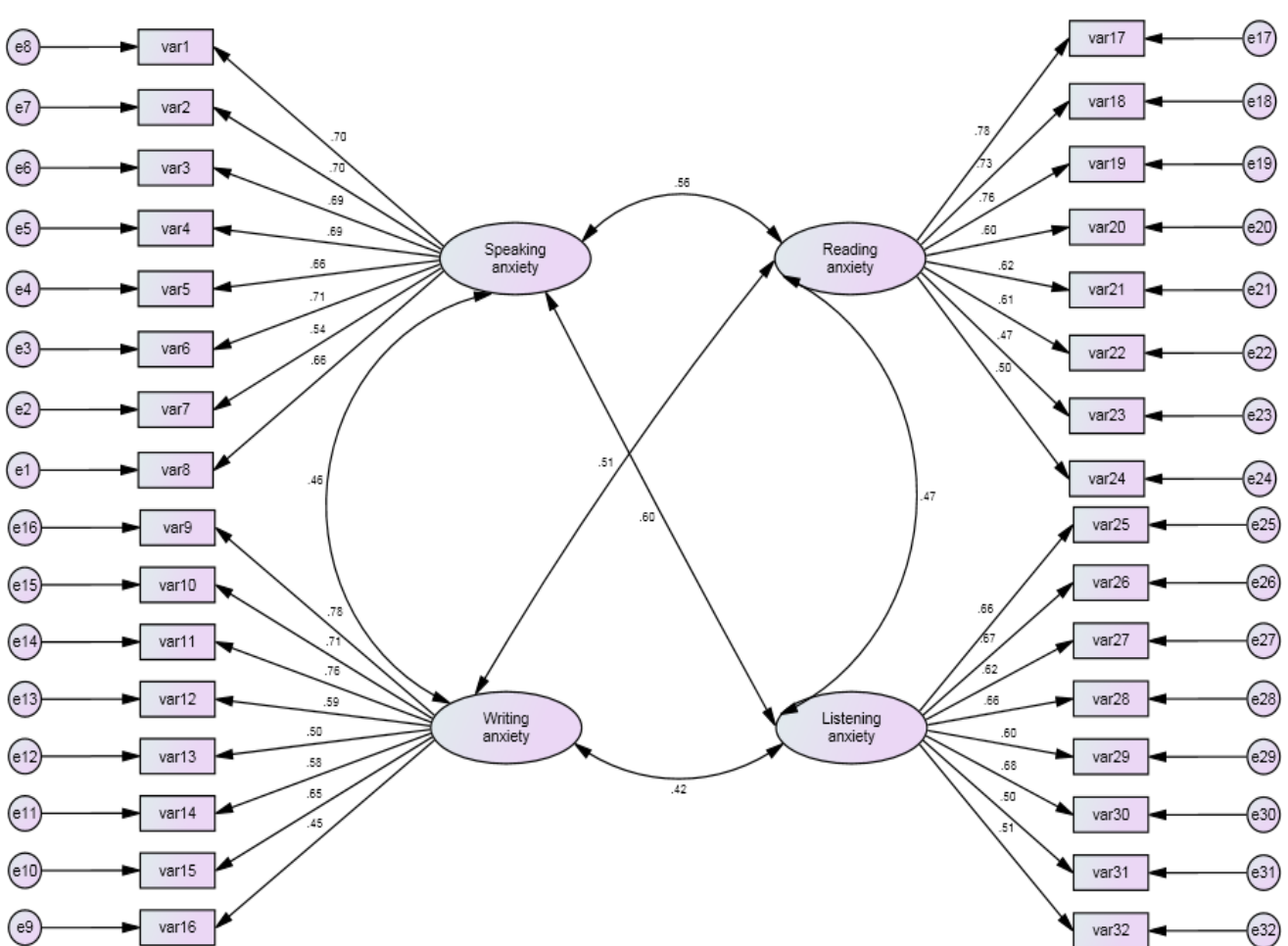
Figure 1: Confirmatory Factor Analysis of English Language Learning Anxiety Brief Measure

5. Discussion & Conclusions

The main aim of this paper is to develop and validate a scale for the measurement of English language learning anxiety experienced by Egyptian college students. Results of exploratory factor analysis yielded four factors: speaking anxiety, listening anxiety, writing anxiety and reading anxiety respectively (See table 3).

Results of confirmatory factor analysis showed that the scale retained the same factorial structure and the four-factor model fitted well and met the criteria for goodness of fit indices (>.90) and (RMR>.05) (See table 4). Reliability coefficient obtained by Cronbach alpha formula for the total score of the scale was 0.90 indicating that the internal consistency of the developed scale is satisfactorily reliable. As a result, reliability and validity of the developed measurement tool were ensured and can be regarded as adequate.

Recognizing the effect of anxiety on learning English; it was necessary to develop a valid and reliable instrument which is needed for the direct measurement of that anxiety in Egyptian college students. This study presents the tool that may help practitioners, teachers, and lecturers in identifying the sources and solutions to English learning anxiety as reported by their students and discuss the pedagogical implications that relate to the results.

Recognizing the effect of anxiety on learning English as a foreign language in Egypt; it was necessary to develop a valid and reliable instrument which is needed for the direct assessment of that anxiety in Egyptian college students. In this study, the researcher developed the instrument that may of great use for practitioners, teachers, and lecturers in identifying the sources and solutions to English learning anxiety. The present scale provides a psychometrically sound measure that may be used to further explore English

language learning anxiety in Egyptian populations. It may be used in future research to assist in filling research gaps pertaining to assessment and intervention of English language learning anxiety. By presenting this scale, the present study constitutes a step forward in the assessment of English language learning anxiety and opens up some interesting paths for further investigation.

6. Limitations & Future Research

Despite the theoretical and practical importance of the present findings, there is a limitation concerning the sample, It was restricted to just Minia university, any generalization of the results should be treated with caution. More studies should be conducted to find out how the cultural background and other demographic variables affect English language learning anxiety. The construct validity of this short scale needs to be reconsidered and investigated using larger sample in further research.

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Analysis of The Theses About Marital Adjustment (2006-2016)*

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ABSTRACT

The aim of this study is to analyze the theses about marital adjustment in Turkey. 74 postgraduate theses that exist on the data base of "Council of Higher Education" were investigated via "Thesis Review Form". Theses studied between 2006-2016 are examined. "Marital adjustment" was used as key words. It is a qualitative research. The document analysis was used throughout the study. As a result, it is found that most of the theses are master theses and quantitative studies. Mostly, women studied on theses and working groups are composed of different married men and women.

Keywords:
marital adjustment, post graduate theses

1. Introduction

Marriage is a communication and interaction system. The viability of this system is measured by verbal and nonverbal correspondence between the spouses, and by sending and receiving messages (Özgüven, 2009). This system, which includes the unity of two people with different interests, desires and needs, is a special cooperation shaped by social rules and laws that are effective in the development and self-realization of the individual (Ersanlı and Kalkan, 2008). Marriage is our most common way of life (Bharambe and Baviskar, 2013). Marriage is pleasure, happiness, peace, satisfaction, interaction with others, fulfilling social responsibilities and enhancing personality. The marriage relationship is fragile, ever-changing and a mixed phenomenon (Goel & Narang, 2012). In a marriage it is important that spouses can express their spiritual, social and sexual expectations and messages because a harmonious marriage comes true, first of all, with a healthy communication (Özgüven, 2009).

Marriage adjustment is the effort of the spouses themselves and to each other to reach a consensus, achieve common purpose and balance on the specific conditions of marriage. Marriages of couples who can interact with each other, who can agree on marriage and family issues and solve their problems positively are defined as harmonious marriages (Erbek ve ark, 2005). Marriage adjustment is the process of changing, adopting, and correcting the behavior and interaction of individuals and couples in order to achieve maximum satisfaction in relation (Bali and diğ., 2010). A harmonious marriage is hidden in the completion of a wife and her husband in all areas of life materially and spiritually (Özuğurlu, 1985). It is important for marriage adjustment that spouses have a ripeness in understanding of the growth and development in their relationship. If this development is not fully realized, the end of the marriage relationship is inevitable. Because marital adjustment requires a satisfying relationship between spouses, characterized by reciprocal interest, involvement, understanding and acceptance (Slathia, 2014). Although it is very important on the first days of marriage, marriage adjustment is a fact that should last a lifelong. Sexual harmony and mutual pleasure are among the most important factors that access marital adjustment to success (Goel & Narang, 2012). It is also very important which meaning is attached to marriage as much as finding the right person in

a marriage. The most important determinants of harmony among spouses are what is expected from marriage. Whether the expectations are realistic and the expectation of the woman and the man overlap each other determine the quality of harmony in a marriage (Tarhan, 2007). One of the preconditions of a harmonious marriage is a healthy communication. Communication determines the quality of marital life. It is difficult to maintain a harmonious marriage without solving communication problems between spouses (Ersanlı & Kalkan, 2008).

While some researchers are evaluating the marital adjustment based on spouses' feelings about marriages or each other, others found it more appropriate to evaluate the characteristics of the relationship, such as marital conflict areas or communication characteristics (Erbek ve ark, 2005). Marital adjustment, which proves the quality of your marriage, is one of the most common topics of study in marriage and family. In many studies, marriage adjustment was associated with success, satisfaction, trust, happiness, consensus, commitment, acceptance, integration, and so on. These terms may sometimes be replaced by meaning within themselves, and each may have a different meaning. They are sometimes used to express the psychological state of one of the married couples, sometimes to express the social psychological aspect of the relationship, and sometimes to express the sociological dimension of a group or system (Chaudhari & Patel, 2009).

According to the data of Turkish Statistical Institute, the number of divorces increased by 41% in the last ten years. 1.151.591 couples were divorced in Turkey in the last 10 years covering the period of 2006-2015. The number of divorced couples was 93.489 in 2006, 94.219 in 2007, 99.663 in 2008, 114.162 in 2009, 118.568 in 2010, 120.117 in 2011, 123.325 in 2012, 125.305 in 2013, 130.913 in 2014 and 131.830 in 2015.

The purpose of this study is to present the current situation by making various analyzes of the post graduate theses on marriage adjustment in the last ten years, to raise awareness and to bring a new point of view to the studies to be carried out after that. In this research, it is aimed to reach the following sub-objectives:

1. What are the types of theses on marriage adjustment?

2. Which universities are involved in marriage adjustment theses?

3. What are the institutes where theses on marriage adjustment are studied?

4. In which years the theses on marital adjustment were written and how were they distributed?

5. How is the distribution of the cities where the theses on marital adjustment were studied?

6. How is the distributions of researchers that studied on marital adjustment?

7. How is the distribution of theses on marriage adjustment according to their supervisor degree?

8. In which groups were the theses on marital adjustment studied?

9. What are the types of research used in theses on marital adjustment?

10. What are the statistics used in the theses on marriage adjustment?

2. Method

2.1. Research Model

This research is a meta-evaluation study designed in the screening model which aims to examine theses prepared from 2006 to 2016. While the theses were examined, document analysis technique which is a qualitative data collection method was used. Document analysis includes analysis of written materials that contain information about facts and phenomena targeted for investigation (Yıldırım & Şimşek, 2013).

2.2. Study Group

The universe of the study creates theses about marriage adjustment in Turkey. The sample of the study was determined by sampling, which is one of the objective sampling strategies. In a study, observation units can be formed by persons, events, objects or situations with certain qualities (Büyüköztürk ve ark., 2011). The criterion in this research is that the thesis were written between 2006-2016, the key words of "marriage

integration" were included and opened to access in the Thesis Documantation Center of the Council of Higher Education.

**2.3. Data Collection Instrument**

Within the scope of this research, the theses that were scanned with "marital adjustment" keywords and allowed to be accessed by the researcher were downloaded on the page of the national thesis center which is accessible on the website of "Council of Higher Education". Theses with restricted access were excluded from the study due to the failure to provide the requested data. A "Thesis Review Form" was developed for the purpose of study to examine national theses related on marital adjustment by the researcher.In the development of the form, relevant literature was searched and data collection tools of similar studies in different fields were examined.

2.4. Data Analysis

Information on the type of dissertation, university, institute, year, province, researchers' gender, advisor title, study group, type of research and statistics used in data analysis are available in this developed form. In the analysis of the data of this study, frequency and percentage were used and the data was shown on the graphs.

3. Results

Findings and interpretations of the theses obtained within the scope of this research aimed to make an in-depth examination of the graduate theses prepared on the field of marital adjustment in the last ten years were included as a part of the research.
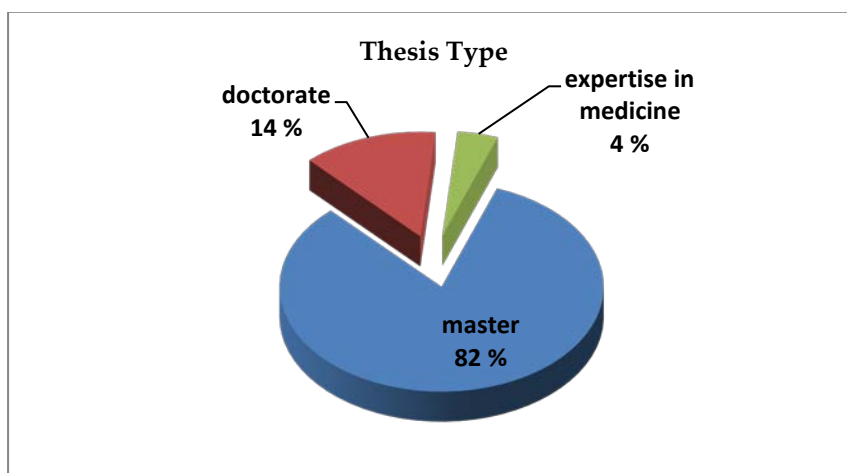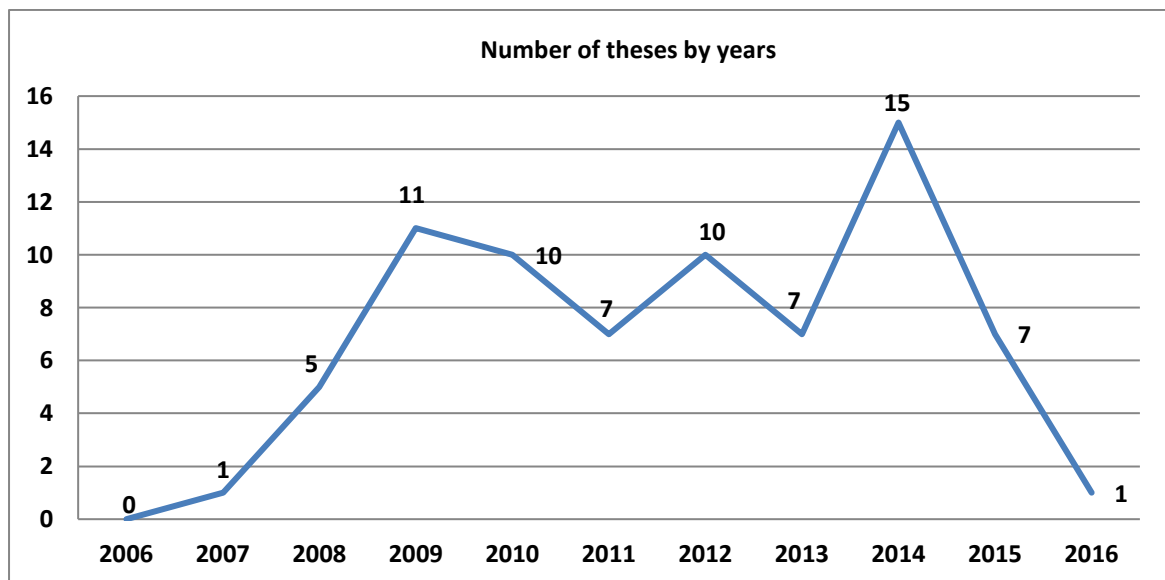

Graph 1. Distribution of Theses Type

When Graph 1 is examined, it is seen that 82% of the theses made in the last decade about marital adjustment (f = 61) is composed of master theses. PhD theses consist of 14% slice (f = 10) and expertise theses consist of 4% slice (f = 3).

Gender of the Researcher

man 14 %

woman
86 %
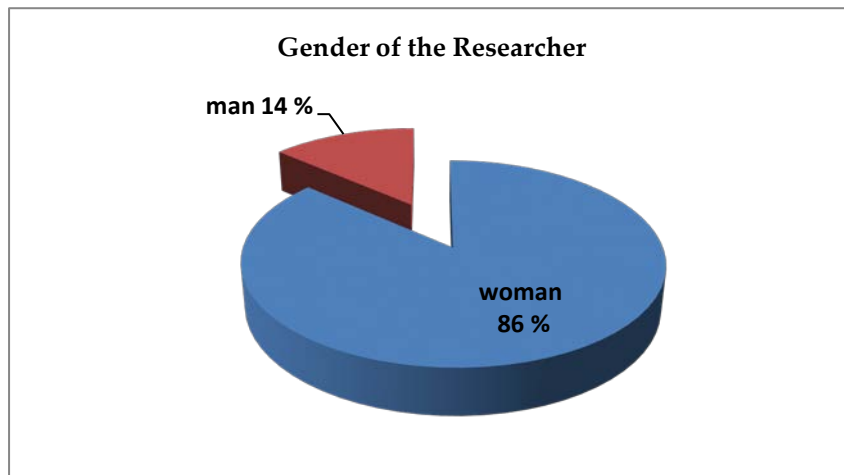
Graph 2. Distribution of Researcher by Gender

When Graph 2 is examined, it is seen that 86% of postgraduate researchers studied on marriage adjustment are female (f = 64) and 14% are male (f = 10). In other words, it can be said that the proportion of women is much higher than that of men among researchers working on marital adjustment.

Number of theses by years

Graph 3. Distribution of Theses by Years

When Graph 3 is examined, it is observed that the number of theses carried out on marriage adaptation shows an irregular distribution according to years. It is seen that the most of the studies in the postgraduate theses were performed in 2014 (f = 15), but no studies in 2006 was done. A constant increase from 2006 to 2010 attracts attention. Taking into account the Turkish Statistical Institute's Data, it is thought that the gradual increase in divorce rates has attracted the attention of the researchers and may have driven them to seek solutions. The decline in the last year is thought to be due to the fact that the year has not yet been completed and delays have occurred in the implementation of the new defended theses.
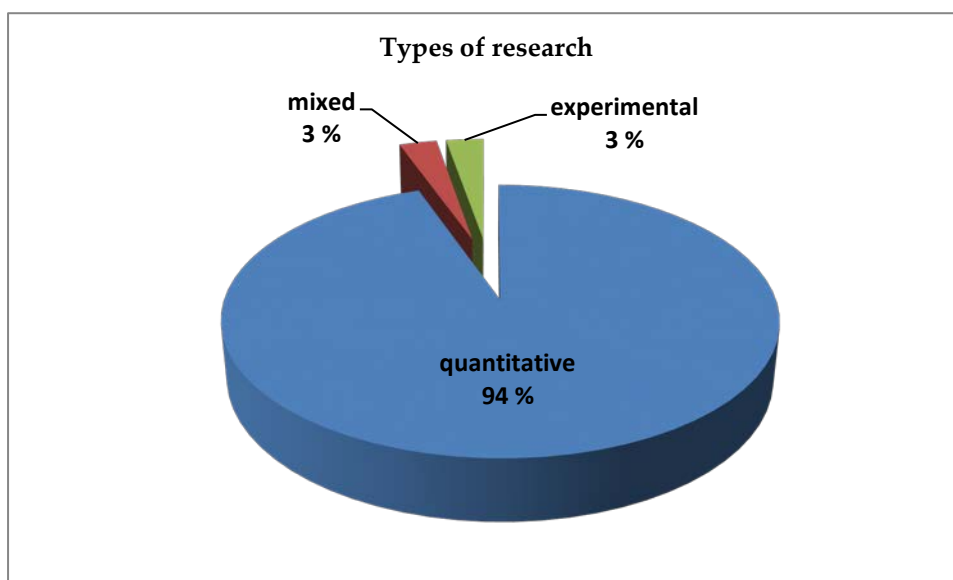
Graph 4. Distribution of Research Types

When Graph 4 is analyzed, quantitative research methods (f = 70) are more widely used in researches. In researches, quantitative research method was used at the rate of 94%. Mixed method (f = 4) was used at the rate of 5%
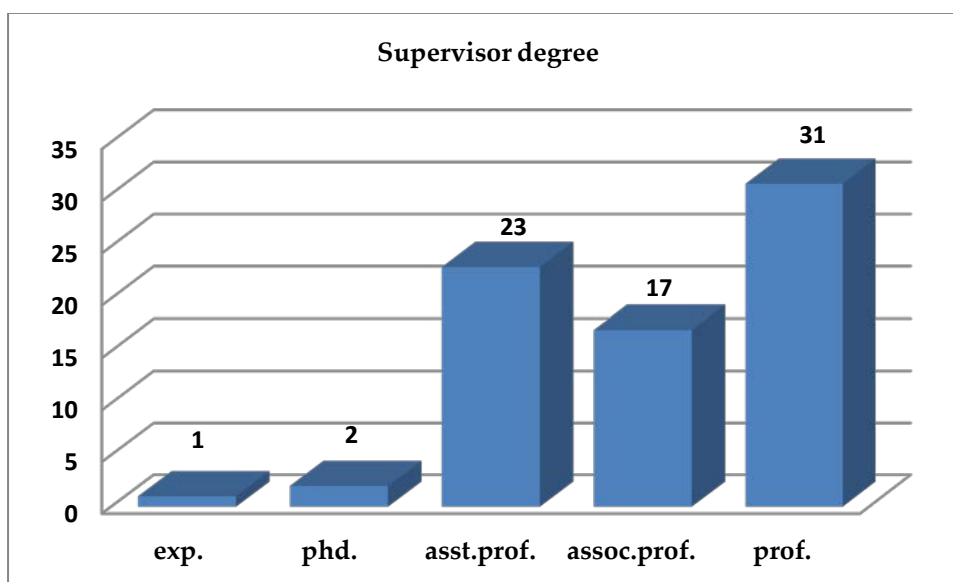

Graph 5. Distribution of Supervisors' Degree

In Graphic 5, when the degree of the supervisors were examined, it is found that 42% of the consultants are professors (f=31), 31% are assistant professors (f=23), and 23% are associate professors. (f=17)
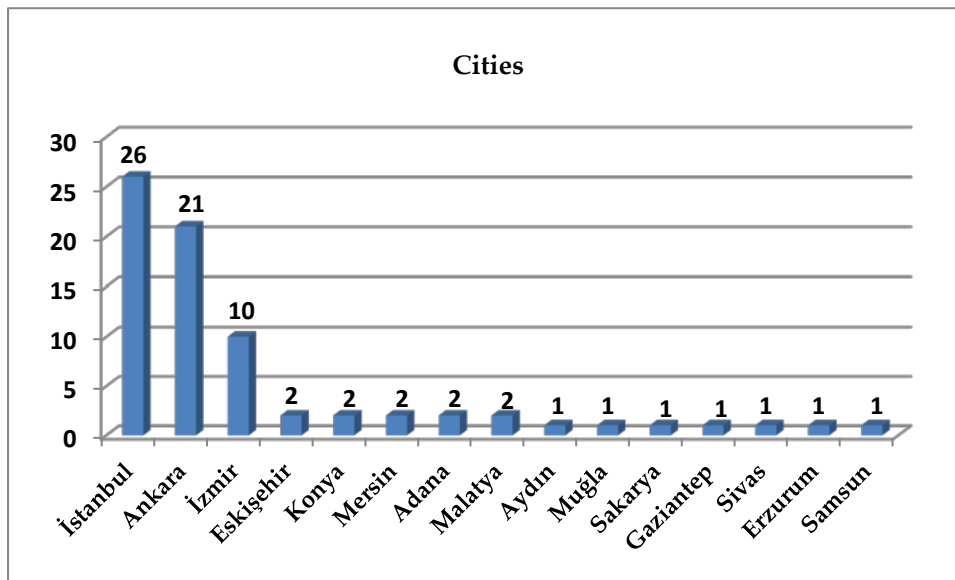
Graph 6. Distribution of cities where theses are studied

When Graph 6 is examined, it is seen that the thesis about marital adjstment is realized in a very limited region of Turkey. The first three cities where theses are mostly studied were Istanbul (f=26), Ankara (f=21) and Izmir(f=10). According to Turkish Statistical Institute data, the first three cities with the highest divorce rates are the same ones. From this point of view, the data show parallelism.
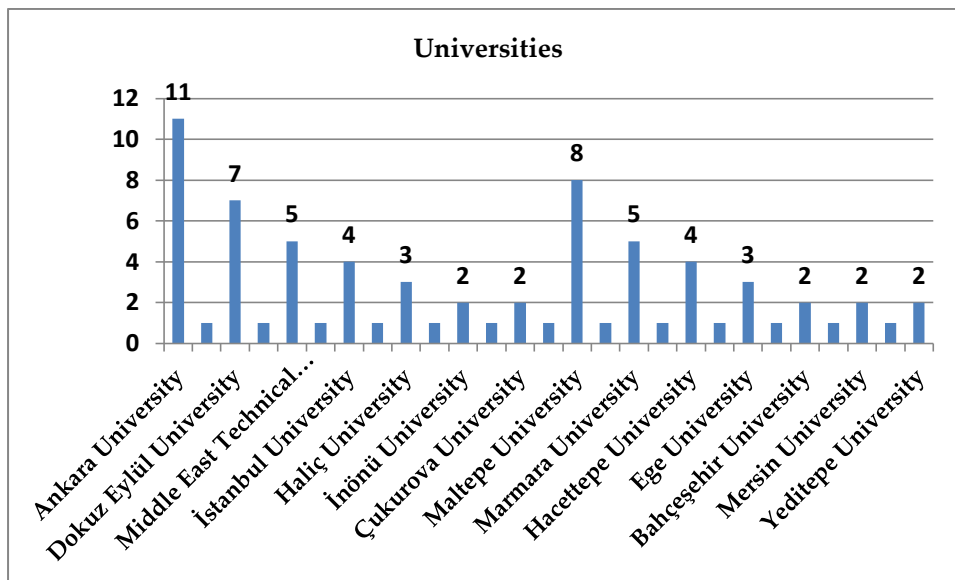

Graph 7. Distribution of Universities

When the distribution of theses on marital adjustment according to universities is examined in Graphic 7, it is noticed that there are many variations. Theses on marital adjustment have been made in 28 universities in the last decade. It is seen that marital adjustment is studied in Ankara University (f=11) the most and then Maltepe University (f=8) and Dokuz Eylül University (f=7) come respectively.
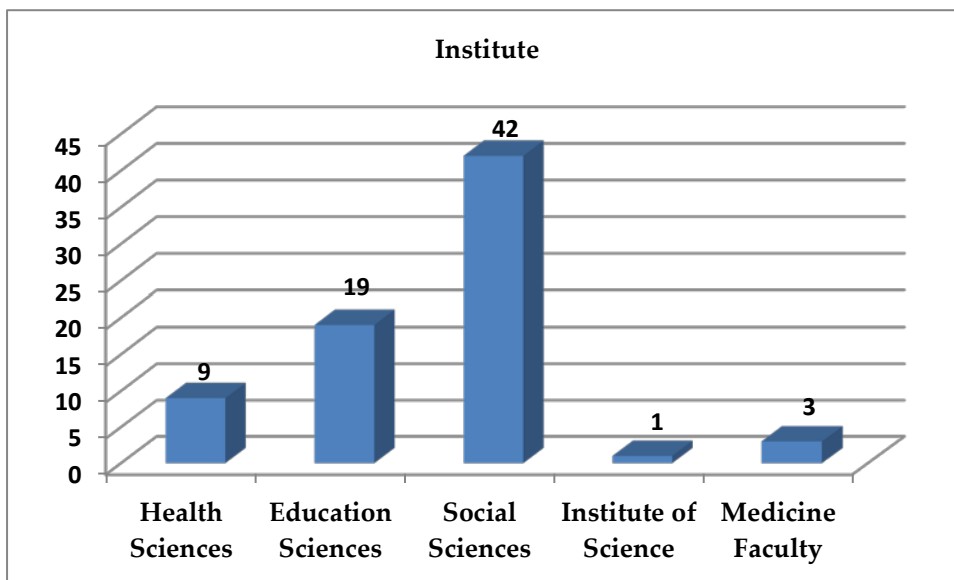
Graph 8. Distribution of the Institutes

In Graphic 8, it is seen that social sciences ranked first with 57% (f=42), followed by Educational Sciences with 26% (f=19) and Health Sciences with 12% (f=9).
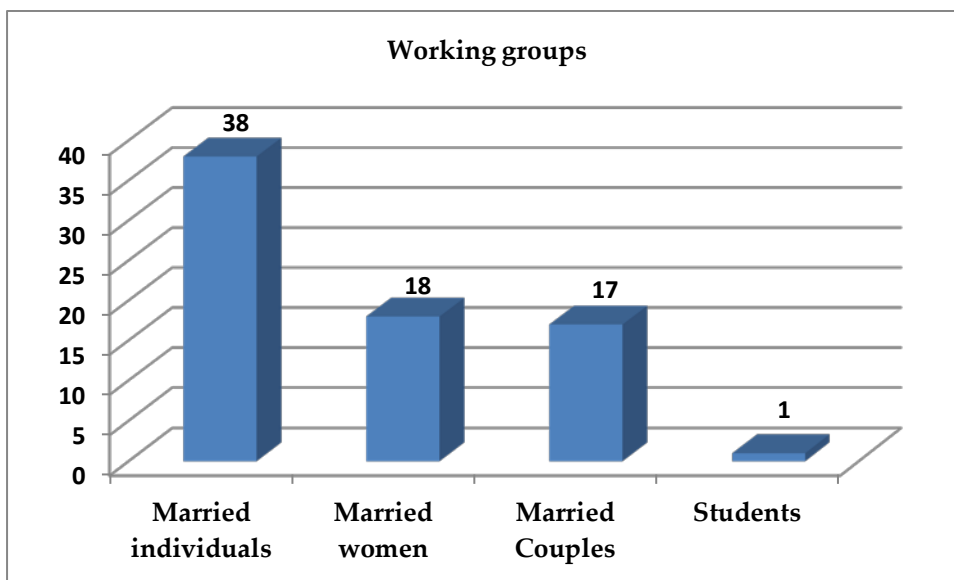
Graph 9. Distribution of Working Groups

When Graph 9 is examined, it can be seen that the distribution of the study groups in the theses about marital adjustment reveals the fact that 51% married individuals were studied compared to 24% of married women and 23% of married couples. Apart from this, it seems that married couples are studied the least. As a reason, it can be said that it is difficult to work with couples spontaneously, and there is difficulty in reaching sufficient funds.
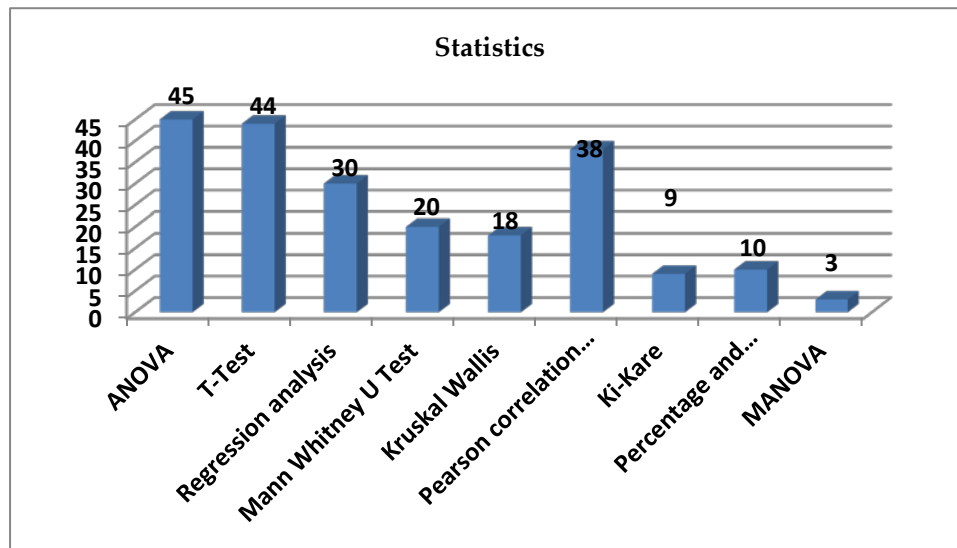
Statistics

Graph 10. Distribution of Statistics Used in Data Analysis

When Graph 10 is examined, it is seen that there is a parellelism between the types of research and the means of data collection in the theses that were included in the research. As the quantitative research technique is preferred much more in theses, it is seen that descriptive statistics are used extensively in the general sense. The most frequently used ANOVA and T-test were parametric tests. Mann Whitney-U and Kruskall Wallis are widely used for non-parametric tests.

4. Discussion, Conclusion and Implications

Increasing divorce rates and deterioration in the structure of the family have recently revealed the importance of the work to be done in a marriage. When you look at the divorce reasons, it attracts the attention that the biggest rate is the severe incompatibility. This is related to marital adjustment. In this context, postgraduate research on marriage adjustment is of great importance both for the employee and for the working group. In this study, the postgraduate theses taken for the review and evaluation were handled as updated in the site of "Council of Higher Education" between 2006-2016.

According to the examination made, most theses studied are master theses. Theses are mostly quantitative research. Descriptive statistics are used. Research type and statistical methods are parallel. The researers mostly studied with married men and women. Most of the researchers are female. Supervisors are mostly professors. Theses were mostly studied in social sciences. As marriage is important for society, it is a subject of social sciences. Istanbul is the most studied city. This result may be related to the population of the city and the capacity of the universities there. The largest numbers of studies were conducted at Ankara University. Most studies were conducted in 2014. Compared to master and doctoral theses, master theses are more than doctoral theses. This ratio may be explained by the fact that the number of faculty members is limited due to the inadequate number of educated faculty members in relation to the field at the universities. More studies have been done at major universities such as Ankara, Dokuz Eylül and Middle East Technical University. It may be possible to explain this result with the faculty member and the potential of the student. The reasons for the female researchers being more than male researchers may be because of their interest in marriage and solution-focused approach. On the other hand, the lack of experimental work can be related with the difficulty of working in that area.

Due to the increase in divorce rates in the last decade, it may be more beneficial to carry out qualitative and quantitative studies that provide in-depth analysis of marital adjustment. Especially experimental studies will be more useful in solving problems in marriage. Researchers should study on couples, mostly. Further researches on marriage adjustment in each region of our country should be studied to determine the situation and solve the problem.

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