Coronavirus Stress and Resilience: Exploring the Role of Hope and Meaning in in Life Undergraduate Students

Abdullah MERT[1], Gökmen ARSLAN[2], Özlem TAGAY[3]

[1]*Uşak University, Faculty of Education, Uşak, Turkey* 🆔 *0000-0003-0653-2297*

[2]*Mehmet Akif Ersoy University, Faculty of Education, Burdur, Turkey* 🆔 *0000-0001-9427-1554*

[3] *Mehmet Akif Ersoy University, Faculty of Education, Burdur, Turkey* 🆔 *0000-0002-9821-5960*

ARTICLE INFO

ABSTRACT

The aim of the present study was to investigate whether meaning in life and hope mediate the association between coronavirus stress and resilience in university students. The participants were 376 (68% female) undergraduate students attending a public university in Turkey. The age of the students ranged from 18 to 38 years (Mage = 20.67, SD = 3.62). The results of the present study suggest that the meaning of life and hope attenuate the negative effects of stress on hope and resilience. Specifically, hope emerged as an important mechanism for the relationship between meaning in life and resilience. These findings provide insights into the relationships between coronavirus stress, hope, sense of life, and resilience in young adults during the period COVID -19. Hope and sense of life may function as protective factors to promote mental health and well-being by increasing an individual's ability to recover from stressful situations with high motivation and in creative ways. The purpose of the present study was to examine whether meaning in life and hope mediate the relationship between coronavirus stress and resilience in university students. The participants were 376 (68% female) students attending a public university in Turkey. The age of the students ranged from 18 to 38 years (Mage = 20.67, SD = 3.62). The results of the study showed that the meaning of life and hope mitigated the negative effects of stress on hope and resilience. Specifically, hope was found to be an important mechanism for the relationship between meaning in life and resilience. These findings shed light on the relationships between coronavirus stress, hope, sense of life, and resilience in young adults during COVID -19. Hope and sense of life may act as protective factors to promote mental health and well-being by increasing individuals' ability to recover from stressful situations with high motivation and in creative ways.

1. Introduction

The pandemic of coronavirus disease-19 (COVID -19), which has been a very real threat to human welfare and health for about two years, has swept the world. Coronavirus (COVID -19), which emerged in China in the last months of 2019 and has spread around the world, affects people and societies in many ways. The first case in our country was observed on March 11. This epidemic was declared a pandemic by WHO on March 16, 2020 (WHO, 2020). The number of countries and people affected by this virus is increasing day by day. The fact that this virus is spreading rapidly and threatening the whole world is causing great concern to people. Moreover, the suppression approach (Huang, Allie, Gnanasegaran & Bomanji, 2020) of restricting movement as much as possible by forcing the masses to stay at home for a while to slow down the outbreak (Huang et

---

Citation: Mert, A., Arslan, G., & Tagay, Ö. (2021). Coronavirus stress and resilience: Exploring the role of hope and meaning in in life undergraduate students. *International Journal of Psychology and Educational Studies*, *8*(Special Issue), 129-198. https://dx.doi.org/10.52380/ijpes.2021.8.4.575

al., 2020) causes stress. Stress is associated with unpredictable and uncontrollable life events that people face (Cohen, Kamarck & Mermelstein, 1983). It is a state of tension related to an individual's anxiety, uncertainty, and constant need for security (Stranks, 2005).Previous studies have reported that stress is negatively correlated with resilience (Hou et al., 2017; Liu et al., 2016; Pengilly & Dowd, 2000). A high accumulation of stress decreases a person's ability to build resilience (Ong, Bergeman, Bisconti, & Wallace, 2006; Tugade & Frederickson, 2007). Resilience is an individual's ability to recover and adapt to the changing situation in the face of negative life events (Miceli, 2012) and to protect mental health despite being in a difficult situation (Herrman et al., 2011). Thus, resilience is not only the resistance to stressful events (Wang, 2000), but also the ability to return or recover from stress (Arslan, 2015). It assigns a definite positive value to risk factors that can be viewed as threats that increase the likelihood of negative outcomes or decrease the likelihood of positive outcomes (Masten, 2001). Resilience demonstrates the importance of acting on people's strengths (Seligman & Csikszentmihalyi, 2000). When individuals remain determined after a negative experience (Mowbray, 2011), maintain normal functioning, and sustain the developmental process by using the necessary biological, psychological, and social resources to counteract the negative effects of the stress, this increases resilience (Fletcher & Sarkar, 2013; Ungar & Perry, 2012).Hope provides a balance against both personal and interpersonal events that cause anxiety during periods of uncertainty (Folkman, 2010). Hope is thus a variable closely related to stress and resilience because it has the potential to be the mediator between both. Hope as a person's psychological power is a cognitive process that helps people develop positive expectations to achieve desired goals and perceive that these goals can be accomplished (Lazarus, 1993; Irving, Snyder, & Crowson, 1998; Snyder et al., 1991). According to the hope theory, hope is a cognitive and motivational structure that reflects individuals' perceptions of their capacities (Snyder, 2002). The structure of hope reflects an individual's perception of the ability to conceptualize their goals, develop strategies to achieve these goals, and maintain the motivation to use these strategies (Snyder et al., 2003). Highly hopeful individuals consider stressful situations as challenging rather than threatening and generally evaluate situations positively (Rubin, 2001; Snyder et al., 2000). They emphasized the importance of hopeful thinking in preventing problems and increasing resilience. A longitudinal study by Ciarrochi, Heaven & Davies (2007) found that hope predicted self-esteem, positive attribution style, and emotional well-being. These results suggest that hope is an important construct that might help to explore the impact of stress and meaning in life on resilience during the coronavirus pandemic.

The meaning of life is a concept that refers to whether human life fits into a consistent pattern in a cosmic sense and whether a person's life is meaningful in a worldly sense (Yalom, 1980). "Meaning in life" is the subject of interest in positive psychology, which depicts how and with what individuals experience meaning in their lives (Martela & Steger, 2016). Seligman (2002) has described a meaningful life as an individual's dedication to a goal that is more important than themselves, emphasizing that individuals whose lives are meaningful have longer well-being compared to those who take a hedonistic approach. Research has shown that meaning is significantly associated with well-being (e.g., positive affect, life satisfaction, and happiness; Steger, Oishi, & Kashdan, 2009), personality and coping styles (Steger, Kashdan, Sullivan, & Lorentz, 2008), and psychological distress (Edwards & Holden, 2001; Korte, Cappeliez, Bohlmeijer, Westerhof, Cappeliez, & Smit, 2012). Considering the existential approach of positive psychology, meaning is key to individuals' mental health and well-being (Frankl, 1985; Wong, 2016), and meaning in life helps people overcome challenges by increasing resilience (Wong, & McDonald, 2002). People who experience adverse events can protect their mental health by striving for meaning in life (Du, Li, Chi, Zhao, & Zhao, 2017). Therefore, meaning in life is an important mechanism that can promote resilience and positive development in individuals (Arslan, Yılmaz, & Wong, 2020; Wong, 2012) and may help to understand the relationship between coronavirus stress and resilience in college students.This study aimed to investigate the direct and indirect association between coronavirus stress, meaning in life, hope, and resilience among Turkish young adults within the context sketched above. Based on the preceding rationale and extant literature, we hypothesized that (i) meaning in life and hope would mediate the association between coronavirus stress and resilience and (ii) hope would mediate the association between meaning in life and resilience.

2. Methodology

2.1. Participants

The current research was carried out utilizing a cross-sectional mediation design. The independent variable of the study was coronavirus stress, and the dependent variable was resilience. Meaning in life and hope were determined as mediators. Participants included 376 (68% female) undergraduate students attending a public university in a small urban city in Turkey. Students ranged in age bet

ween 18 and 38 years (Mage = 20.67, SD = 3.62). They reported their socioeconomic status (SES) as follows: Low SES= 10.4%, Medium SES= 78.5%, and Upper SES= 11.2%. All participants were informed that participation in the study was voluntary, the survey was confidential, and they could quit the survey at any time if they did not want to continue. After signing an electronic assent form, an online survey including study measures and democratic items was administered to students who volunteered to participate in the study.

2.2. Measures

2.2.1. Coronavirus Stress

Coronavirus Stress Scale (CSS) is a 5-item self-report questionnaire developed to assess stress from the coronavirus pandemic (Arslan et al., 2020). The CSS included eight items rated on a 5-point Likert scale ranging from 0 = never to 4 = very often (e.g., "In the past month, how often have you felt like you could not control the important things in your life because of the coronavirus?"). Research has shown that the scale has high reliability in the Turkish sample (Arslan et al., 2020).

2.2.2. Hope

The Dispositional Hope Scale (DHS; Snyder et al., 1991) was used to assess hope. The DHS includes 12 items and two dimensions; agency and pathways. Four of these items are filler items, and each dimension includes four items. All items are rated using a 7-point Likert type scale ranging from 1 = definitely false to 8 = definitely true. The Turkish version of DHS provided good levels of reliability and validity (Tarhan, & Bacanlı, 2015).

2.2.3. Resilience

The Resilience Measure (BM; Arslan, 2020) was used to assess the resilience of adults. The scale is 5–item self–reported measure (e.g., "I think I'm good at dealing with stressful events"), which are scored using a 5-point Likert scale ranging from 1= strongly disagree to 5= strongly agree. The RM demonstrated good reliability and validity among Turkish adults (Arslan, 2020).

2.2.4. Meaning in Life

Meaning in life was assessed using Meaningful Living Measure (MLM; Arslan, 2020) that is a 6-item self-report scale (e.g., "As a whole, I find my life meaningful"). All scale items are scored using a 7-point Likert type scale ranging from strongly disagree (1) to strongly agree (7). Previous research has revealed that the MLM had strong internal reliability estimates with the Turkish sample (Arslan, 2020).

2.3. Data analyses

Before testing the proposed mediation models, preliminary analyses were conducted to examine the descriptive statistics, normality assumption, and correlation coefficients among the study variables. Normality was examined using kurtosis and skewness values and their cutoff values (Kline, 2011). A Pearson product-moment correlation analysis was then conducted to examine the relationships between the study variables. Several mediation models were then tested to analyse the mediating role of hope and meaning in life in relation to stress and resilience using the macro PROCESS (Model 6) for SPSS version 3.4 (Hayes, 2018). Model results were interpreted using standardised path estimate values (β) and squared-multiple correlations ($R2$): .01-.059 = small, .06-.139 = moderate, and ≥ .14 = large (Cohen, 1988). Additionally, the bootstrap method was explored with 10,000 replicate samples to estimate 95% confidence intervals (CI) for indirect effects (Hayes, 2018; Preacher & Hayes, 2008). All analyses were conducted using SPSS version 25.

3. Findings

3.1. Preliminary Analyses

Table 1. *Descriptive statistics for the study variables*

| | | | | | | | | | Female | | Male | |
Scales	α	Min.	Max.	*M*	*SD*	g_1	g_2		*M*	*SD*	*M*	*SD*
1. Coronavirus stress	.78	0	20	11.97	3.69	−.16	.32		12.70	3.34	10.47	3.90
2. Resilience	.81	5	25	16.85	3.87	−.31	.07		16.35	3.74	17.90	3.46
3. Meaning in life	.92	10	42	30.90	7.54	−.85	−.02		30.68	7.16	31.36	8.33
4. Hope	.95	14	62	44.99	10.34	−.64	−.04		44.26	9.80	46.52	11.34

Note. g_1 = skewness, g_2 = kurtosis. SES = Self-reported socioeconomic status

Findings of the preliminary analysis revealed that skewness values were between −.85 and −.16, and kurtosis values ranged from −.04 to .32 (skewness and kurtosis scores < |1|), suggesting that all variables of the study had relatively normal distribution (Field, 2009; Tabachnick & Fidell, 2013). Internal reliability estimates with the present sample were adequate–to–strong, ranging between .78 and .95, as shown in Table 1. Subsequently, correlation analysis results indicated that stress was negatively and largely associated with resilience (r= −.50, p<.001) and moderately correlated with meaning in life (r= −.27, p<.001) and hope (r= −.31, p<.001). Resilience had also moderate-large and positive correlations with meaning in life (r= .41, p<.001) and hope (r= .54, p<.001).

Table 2. *Unstandardized coefficients for the mediation model*

| | | Consequent | | | | | | | | | | | |
| | | M_1 (Meaning in life) | | | | M_2 (Hope) | | | | Y_1 (Resilience) | | | |
Antecedent		Coeff.	SE	t	p	Coeff.	SE	t	p	Coeff.	SE	t	p
X (Stress)	a_1	-.53	.10	−5.15	<.001	a_2 −37	.10	−3.56	<.001	c' −.37	.04	−8.84	.004
M_1 (Meaning in life)		–	–	–	–	d_{21} .93	.04	18.66	<.001	b_1 .02	.03	.54	.589
M_2 (hope)		–	–	–	–	– –	–	–	–	b_2 .14	.02	7.02	<.001
Constant	i_{M1}	37.27	1.29	28.76	<.001	i_{M2} 20.70	2.23	9.25	<.001	i_y 17.31	.99	14.38	<.001
		R^2 = .07				R^2 = .53				R^2 = .41			
		F = 26.44; p < .001				F = 211.39; p < .001				F = 88.42; p < .001			

Note. SE = standard error. Coeff = unstandardized coefficient. X = independent variable; M = mediator variables; Y = outcomes or dependent variables

In addition, a series of univariate analysis of variance was performed to investigate the differential effects of gender on stress, resilience, meaning in life, and hope. Findings of this analysis provided a significant main effect of gender for stress (F = 40.88, p < .001, R2 = .07), resilience (F = 23.46 p < .001, R2 = .04), and hope (F = 3.97, p < .05, R2 = .01). Females reported higher levels of stress (M= 11.97, SD= 3.69) and lower levels of resilience (M= 16.35, SD= 3.74) and hope (M= 44.26, SD= 9.80) than male, as shown in Table 1.

3.2. Primary Analyses

Several mediation models were conducted to investigate whether meaning in life and hope mediated the association between stress and resilience in the context of the COVID-19 pandemic. Findings of the first model indicated that coronavirus stress had a significant predictive effect on resilience ($\beta = -.42$, $p<.001$) and meaning in life ($\beta = -.26$, $p<.001$), and meaning in life partially mediated the association between stress and resilience ($\beta = .31$, $p<.001$; indirect effect$= -.08$). Stress and meaning in life together accounted for 34% of the variance in resilience. The second model was then performed to examine the mediating effect of hope in the association of stress with resilience. Results from the model showed that stress significantly predicted resilience ($\beta = -.37$, $p<.001$) and hope ($\beta = -.31$, $p<.001$), and hope partially mediated the association between stress and resilience ($\beta = .43$, $p<.001$; indirect effect$= -.13$). Stress explained 9% of the variance in hope, and stress and hope together accounted for 41% of the variance in resilience.
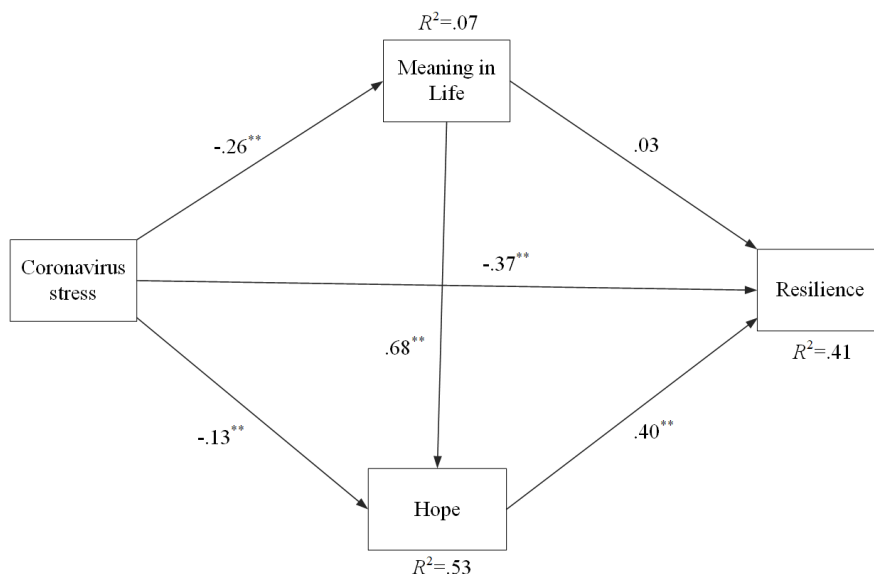
Note. $^{**}p<.001$.

Figure 1. *Proposed Model Indicating the Standardized Associations Between Variables*

Next, we examined the mediating effect of hope and meaning in life on the relationship between stress and resilience. Model results indicated that stress had a significant predictive effect on hope ($\beta = -.13$, p .001) and sense of life ($\beta = -.26$, p .001), and sense of life partially mediated the relationship between stress and hope ($\beta = .68$, p .001; indirect effect$= -.18$). Stress accounted for 7% of the variance in sense of life, and stress and sense of life together accounted for 53% of the variance in hope. In addition, stress was a significant predictor of resilience ($\beta = -.37$, p .001), and hope mediated the relationship between these variables ($\beta = .40$, p .001). However, meaning in life did not mediate the relationship between stress and resilience ($\beta = .03$, p= .58). Specifically, meaning of life had a significant indirect effect via hope, and hope fully mediated the relationship between meaning of life and resilience, as shown in Figure 1. Meaning in life also had a significant effect on resilience through hope in the context of stress. All variables together explained 41% of the variance in resilience among adults.

4. Conclusion and Discussion

he current study investigates whether meaning in life and hope mediate the relationship between coronavirus stress and resilience. According to the literature, it is necessary to focus on protective and mitigating factors of stress during the coronavirus pandemic. Understanding protective and mitigating factors has a positive impact on the well-being of individuals. The results of the study confirmed that the meaning of life and hope mitigate the negative effects of stress on hope and resilience.

First, the results of the current study showed that coronavirus stress has a predictive effect on resilience and meaning of life. According to some authors, resilience refers to a dynamic developmental process associated with maintaining positive adaptation under life-threatening conditions (Luthar et al., 2000; Masten, 1999).

Coronavirus disease continues to affect many societies in unprecedented ways. The process of pandemic is a difficult and complex process that people have difficulty understanding. Previous research has shown that stress and fear of coronavirus predict common mental health problems such as psychological distress, poor physical health (Shigemura et. al., 2020), depression, and anxiety (Arslan & Yıldırım, 2020; Montano & Acebes, 2020). Also, Karataş and Tagay (2021) pointed out that there is a negative and significant relationship between resilience and COVID -19 anxiety in Turkish adults. These conditions are a source of stress and anxiety for everyone. Therefore, it is important for the well-being and mental health of individuals to deal with and adapt to the stress experienced in this process in a healthy way (Rosenberg, 2020). He results of the present study suggest that meaning in life attenuates the negative effects of coronavirus stress on hope and resilience. Meaning is one of the most important components for coping with difficult times in life. In this regard, it is important to develop an existential source of flexibility, such as a sense of meaning and purpose (Kim, et al., 2005). According to Steger (2009), meaning in life expresses an individual's belief that his or her life is important, purposeful, and valuable. Previous research has shown that meaning in life is positively related to psychological well-being and mental health (Alandete, 2015), life satisfaction, and happiness (Karataş, Uzun & Tagay, 2021; Steger, Oishi, & Kashdan, 2009). According to Wong & McDonald (2002), meaning helps people cope with challenges by increasing resilience. Park et al. (2008) emphasized that individuals first evaluate a particular situation in their lives and determine whether it is consistent with their global or situational sense. If the situation is found to be consistent with one of these two meanings, the effect of stress decreases. Ryland and Greenfield (1991) found that there is a negative correlation between meaning and stress in life. Halama and Bakošová (2009) found that the level of meaning in life is a moderator in the relationship between perceived stress and coping. Frankl (1996) found that meaning in life has a positive effect on the ability to cope with difficult life situations. Previous research has shown that meaning of life, resilience, and mental health are positively related during the Covid 19 pandemic. According to this study, the ability to cope with difficulties, have a sense of purpose, and have hope can mitigate the effects of Covid-19 stress (Arslan, Yıldırım & Wong, 2020; Trzebiński, Cabański and Czarnecka, 2020; Yıldırım, Arslan & Oezaslan, 2020).

Moreover, the results of the current study showed that coronavirus stress predicted resilience and mediated hope significantly and hope partially in the relationship between stress and resilience. Specifically, hope was found to be an important mechanism in the link between meaning in life and resilience. Consistent with these findings, Folkman (2008) found that hope is particularly effective in coping with long-term stressful situations. Moreover, uncertainties about when something will happen, what it will be, or what the outcome will be cause more stress in people, and hope is an important coping factor in this process. Kirmani et al. (2015) and Collins (2009) found that there is a significant positive correlation between hope and resilience. People with high levels of hope are able to respond constructively to difficult conditions and their levels of resilience are higher. It is found that people with high levels of hope also have higher levels of resilience to stressful life events and overcome the stressful process more easily. Hope is an emotion that makes it easier for individuals to cope with difficult life circumstances. Wong (1993) stated that one of the most important sources of increasing stress resilience is for individuals to find meaning in their lives and have a high level of hope. Only in this way can individuals cope with stressful situations more easily and become more resilient. In the current study, it was shown that meaning in life predicts the level of resilience with the effect of hope higher (Wong, 1993). Blasco-Belled et al. (2020) showed that hope positively influences life satisfaction during the pandemic, and hope in overcoming the pandemic promotes people's belief in winning the battle against COVID -19. It is found that individuals who perceive their lives as meaningful and have high levels of hope are more resistant to stress. Overall, these findings suggest that life meaning and hope are important factors that promote resilience in young adults during the coronavirus pandemic.

The coronavirus disease has caused an increase in stress levels in people due to fear of infection, death, social distance, and isolation. The fact that there is still no solution for dealing with the global epidemic adds to this stress. This makes it all the more important to find out which variables will influence people's level of stress in the process.

4.1. Implications and Limitations

COVID -19 outbreaks show how quickly the world can change dramatically. In this context, the adaptation of individuals and society to this process is very important for both physical and mental health. The results of the current study show that the level of individual resilience is important for coping with these stressful times

and that the meaning of life with the effect of hope positively influences resilience in the time of coronavirus stress. Resilience is a multidimensional and complex entity and is a relatively new area of research. Therefore, activities that promote levels of hope and meaning in life may improve resilience and mental health in people. Studies aimed at increasing individuals' resilience levels can be organized through training on hope and meaning in life. At this point, mental health providers could plan and implement prevention and intervention programs aimed at increasing levels of hope and meaning in life, which in turn promotes resilience. Since activities with a theme of meaning and hope could have positive effects, especially in terms of coping with coronavirus stress and increasing resilience, the use of these concepts could be effective in managing the process. Overall, this study provides insight into the relationships between coronavirus stress, hope, sense of purpose, and resilience in young adults during the period COVID -19. Hope and sense of purpose could act as protective factors to promote mental health and well-being by increasing an individual's ability to recover from stressful situations with high motivation and in creative ways.

The results of this study should also be considered in light of some methodological limitations. First, the data were collected from college students based on self-report. Therefore, future research should examine the relationship between variables using other methods of data collection (e.g., quantitative). Second, the participant group included students who were predominantly female and attended a public college in a small town in Turkey. Considering this limitation, further studies could be conducted with different and large samples (e.g., adolescents, middle adults). The cross-sectional approach is considered as another limitation of the study, and longitudinal research is warranted to investigate the causal relationship among the variables in the study.

5. References

Alandete, J. G. (2015). Does meaning in life predict psychological well-being. *The European Journal of CouncellingPsychology, 3*(2), 89-98.

Al-Naser, F., & Sandman, M. (2000). Evaluating resilience factors in the face of traumatic events in Kuwait. *Medical Science 2*, 111–116

Arslan, G. (2015). Psychometric properties of child and youth resilience measure (CYRM-12): The study of reliability and validity. *Ege Journal of Education,16*(1), 1-12.

Arslan, G., & Yildirim, M. (2020). Coronavirus stress, meaningful living, optimism, and depressive symptoms: A study of moderated mediation model. *PsyArXiv.1*-27 https://doi.org/10.31234/osf.io/ykvzn

Blasco-Belled, A., Tejada-Gallardo, C., Torrelles-Nadal, C. & Alsinet, C. (2020) The costs of COVID-19 on subjective well-being: An analysis of the outbreak in Spain. *Sustainability,12*.6243.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, S., Kamarck, T. & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396.

Collins, A., B. (2009). *Life experiences and resilience ın college students: a relationship influenced by hope and mindfulness* [Unpublished doctoral dissertation]. Texas A&M University: Texas, USA.

Doğan, T. (2015). Adaptation of the brief resilience scale into Turkish: a validity and reliability study. *The Journal of Happiness & Well-Being, 3*(1), 93-102.

Du, H., Li, X., Chi, P., Zhao, J., & Zhao, G. (2017). Meaning in life, resilience, and psychological well-being among children affected by parental HIV. *Journal AIDS Care, 29*(11),1410-1416. https://doi.org/10.1080/09540121.2017.1307923

Edwards, M., J., & Holden, R., R. (2001). Coping, meaning in life, and suicidal manifestations: examining gender differences. *Journal of Clinical Psychology, 57*(12), 1517–1534

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: a review and critique of definitions, concepts, and theory. *European Psychologist, 18*(1), 12-23.

Folkman, S. (2010). Stress, coping, and hope. *Psycho-Oncology, 19*(9), 901-908.

Folkman, S. (2008). The case for positive emotions in the stress process. *Anxiety Stress and Coping, 21*, 3-14. http://dx.doi.org/10.1080/10615800701740457

Frankl, V. E. (1996). *Der wille zum sinn.* Bern: Huber.

Frankl, V. E. (1985). *Man's search for meaning a touchstone book pocket book.* New York: Simon and Schuster Publishers.

Feldman, D. B., & Snyder, C. R. (2005). Hope and the meaningful life: theoretical and empirical associations between goal-directed thinking and life meaning. *Journal of Social and Clinical Psychology, 24*(3), 401-421.

Field, A. (2009). *Discovering statistics using SPSS*. London: Sage publications.

Halama, P., & Bakošová, K. (2009). Meaning in life as a moderator of the relationship between perceived stress and coping. *Studia Psychologica, 51*(2-3), 143-148.

Halama, P. (2014). Meaning in life and coping: sense of meaning as a buffer against stress. In: Batthyany, A., Russo-Netzer, P. (Eds.) *Meaning in positive and existential psychology* (pp. 239-250). New York: Springer, ISBN 978-1-4939-0307-8.

Hayes, A. F. (2018). Partial, conditional, and moderated mediation: Quantification, inference, and interpretation. *Communication Monographs, 85*, 4-40.

Hao, S., Hong, W., Xu, H., Zhou, L., & Xie, Z. (2015). Relationship between resilience, stress and burnout among civil servants in Beijing, China: Mediating and moderating effect analysis. *Personality and Individual Differences, 83*, 65–71. https://doi.org/10.1016/j.paid.2015.03.048

Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience? *Canadian Journal of Psychiatry, 56*(5), 258-265.

Huang, H. L., Allie, R., Gnanasegaran, G., & Bomanji, J. (2020). COVID19 -Nuclear medicine departments, be prepared! *Nuclear Medicine Communications, 41*(4), 297–299. https://doi.org/10.1097/MNM.0000000000001183

Hou, X. L., Wang, H. Z., Guo, C., Gaskin, J., Rost, D. H., & Wang, J. L. (2017). Psychological resilience can help combat the effect of stress on problematic social networking site usage. *Personality and Individual Differences, 109*, 61-66.

Irving, L. M., Snyder, C. R. & Crowson, J. J. (1998). Hoping and coping with cancer by college women. *Personality & Individual Differences, 66* (2), 195-214.

Karataş, Z., & Tagay, Ö. (2021). The relationships between resilience of the adults affected by the covid pandemic in Turkey and Covid-19 fear, meaning in life, life satisfaction, intolerance of uncertainty and hope. *Personality and Individual Differences, 172*, 110592.

Karataş, Z., Uzun, K., & Tagay, Ö. (2021). Relationships Between the Life Satisfaction, Meaning in Life, Hope and COVID-19 Fear for Turkish Adults During the COVID-19 Outbreak. *Frontiers in Psychology, 12*, 778.

Kim, T., Lee, S., M., Yu, K., Lee, S., & Puig, A. (2005) Hope and the meaning of life as influences on Korean adolescents' resilience: Implications for counselors. *Asia Pasific Education Review 6* (2), 143-152.

Kirmani, M., N., Sharma, P., Anas, M., & Sanam, R. (2015). Hope, resilience and subjective well-being among college going adolescent girls. *International Journal of Humanities & Social Science Studies, 2*(1), 262-270.

Korte, J., Bohlmeijer, E., T., Westerhof, G. J., Cappeliez, P., & Smit, F, (2012) Life-review therapy for older adults with moderate depressive symptomatology: a pragmatic randomized controlled trial. *Psychological Medicine, 42*(6),1163–1173

Lazarus, R. S. (1993). From psychological stress to the emotions: a history of changing outlooks. *Annual Review of Psychology, 44*, 1-2).

Luthar, S., Cicchetti, D. & Becker, B. (2000). The construct of resilience: a critical evaluation and guidelines for future work. *Child Development, 71*(3), 543-562.

Martela, F.& Steger, M.F. (2016). The three meaning of meaning of life: Distinguishing coherence, purpose and significance. *The Journal of Positive Psychology, 11*(5), 531-545.

Masten, A. S. (1999). Resilience comes of age: Reflections on the past and outlook for the next generation of research. *In resilience and development: positive life adaptations* (pp. 282–296). M. D. Glantz, J. Johnson L. Huffman (Eds.), New York: Kluwer Academic/Plenum Publishers.

Masten, A. S. (2001). Ordinary magic: Resilience process in development. *American Psychologist, 56* (3), 227-239.

Miceli, P. L. (2012). *The acceptance of complexity: effects on psychological well-being and resilience* [Unpublished doctoral dissertation]. University of North Carolina, Chapel Hill.

Montano, R, L., Acebes, K. M. (2020). Covid stress predicts depression, anxiety and stress symptoms of Filipino respondents. *International Journal of Research in Business and Social Science 9* (4), 78-103.

Mowbray, D. (2011). Resilience and strengthening resilience in individuals. *Management Advisory Service, 2,*24.

Neenan, M., & Dryden, W. (2012). Understanding and developing resilience. In M. Neenan & S. Palmer (Eds.), *Cognitive behavioral coaching in practice* (pp. 133- 152). New York, NY: Taylor & Francis Group.

Ong, A. D., Bergeman, C.S., Bisconti, T. L., & Wallace, K.A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology, 91*(4), 730–749.

Park, C., L., Malone, M., R., Suresh, D., P., & Rosen, R., I. (2008). Coping, meaning in life, and quality of life in congestive heart failure patients. *Quality of Life Research, 17*, 21-26.

Pengilly, J. W., & Dowd, E. T. (2000). Hardiness and social support as moderators of stress. *Journal of Clinical Psychology, 56*(6), 813-820.

Pezirkianidis, C., Stalikasa, A., Efstathioua, E. & Karakasidoua, E. (2016). The relationship between meaning in life, emotions and psychological illness: the moderating role of the effects of the economic crisis. *The European Journal of Counselling Psychology, 4*(1), 77–100. https://doi.org/10.5964/ejcop.v4i1.75

Preacher, K., J., & Hayes, A., F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891.

Rosenberg, A. R. (2020). *Cultivating deliberate resilience during the coronavirus disease 2019 pandemic*. Jama Pediatrics.

Ryland, E. & Greenfeld, S. (1991). Work stress and well-being: An investigation of Antonovsky's sense of coherence model. *Journal of Social Behavior and Personality, 6*, 39-54.

Rubin, H., H. (2001). *Hope and ways of coping after breast cancer.* (Unpublished master's thesis). Rand Afrikaans University, Johannesburg.

Seligman, M., E., P. (2002). *Authentic happiness.* Free Press, New York

Seligman, M., E., P. & Csikszentmihalyi, M. (2000). Positive psychology an introduction. *American Psychologist, 55* (1), 5-14.

Simon, R. W., & Nath, L. E. (2004). Gender and emotion in the United States: Do men and women differ in self-reports of feelings and expressive behavior? *American Journal of Sociology, 109*, 1137-1176.

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Jennifer Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine,15*, 194–200.

Snyder, C. R., Lopez, S. J., Shorey, H. S., Rand, K. L., & Feldman, D. B. (2003). Hope theory, measurements, and applications to school psychology. *School Psychology Quarterly, 18*(2), 122–139. https://doi.org/10.1521/scpq.18.2.122.21854

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry, 73*(4), 249275. https://doi.org/10.1207/S15327965PLI1304 01

Snyder, C. R. (2000). *Handbook of hope.* San Diego, CA: Academic Press.

Steger, M. F. (2009). Meaning in life. In C. R. Snyder and S. J. Lopez (Eds), *Oxford handbook of positive psychology* (pp. 679–687). Oxford University Press,.

Steger, M. F., Kashdan, T., B., Sullivan, B., A., & Lorentz, D. (2008). Understanding the search for meaning in life: personality, cognitive style and the dynamic between seeking and experienced meaning. *Journal of Personality, 76*(2), 199-227

Stranks, J. (2005). *Stress at work management and prevention*. Elsevier Book Aid International.

Tabachnick, B., G., & Fidell, L., S. (2013). *Using multivariate statistics* (6th ed.). Pearson.

Tarhan, S., & Bacanlı, H. (2015). Adaptation of dispositional hope scale into Turkish: validity and reliability study. *The Journal of Happiness & Well-Being, 3*(1), 1-14.

Trzebiński, J., Cabański, M., & Czarnecka, J. Z. (2020). Reaction to the COVID-19 pandemic: the influence of meaning in life, life satisfaction, and assumptions on world orderliness and positivity. *Journal of Loss and Trauma, 25*(6-7), 544-557.

Ungar, M. & Perry, D. B. (2012). Violence, trauma and resilience, cruel but not unusual: violence in Canadian families. *Wilfrid Laurier University Press*, 119-143.

Wang, C., E. (2000). Developing a concept of hope from a human science perspective. *Nursing Science Quarterly,13*(3), 248-251

World Health Organization (WHO) (2020). *Responding to community spread of COVID-19* [online]. Website https://www.who.int/publications-detail/responding-to-community-spread-ofcovid-19 [accessed 12 April 2020].

Wong, P., T., P. (2016). Meaning-seeking, self-transcendence, and well-being. In A. Batthyany (Ed.), *Logotherapy and existential analysis.* Proceedings of the Viktor Frankl Institute, 1, 311-322. Cham, Switzerland: Springe

Wong, P., T., P. (2012). Toward a dual-systems model of what makes life worth living. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and* applications (2nd ed). New York, NY: Routledge.

Wong, P., T., P., & McDonald, M. (2002). Tragic optimism and personal meaning in counselling victims of abuse*. Pastoral Sciences, 20*(2), 231-24.

Wong, P., T., P. (1993). Effective management of life stress: The resource-congruence model. *Stress Medicine, 9*, 51-60.

Yalom, I. D. (1980). *Existential psychotherapy*. Basic Books.

Yıldırım, M., Arslan, G. & Özaslan, A. (2020). Perceived Risk and Mental Health Problems Among Healthcare Professionals During COVID-19 Pandemic: Exploring the Mediating Effects of Resilience and Coronavirus Fear. *International Journal of Mental Health and Addiction*, 1-11. Doi: https://doi.org/10.1007/s11469-020-00424-8