



**Turkish Psychological Counseling and Guidance Association**  
Central Office

Turkish Psychological Counseling and Guidance Association  
Sağlık Mah. Süleyman Sırrı Cad. Sağlık İş Hanı No: 21/18, Çankaya/  
Ankara, +90 (312) 430 36 74  
www.pdr.org / bilgi@pdr.org.tr

**TURKISH PSYCHOLOGICAL COUNSELING AND  
GUIDANCE JOURNAL**  
www.turkpdrgisi.com / turkpsycouns@gmail.com



Turkish Psychological Counseling and Guidance Journal



Turkish Psychological Counseling and Guidance Association  
Central Office

ISSN: 1302-1370

## TURKISH PSYCHOLOGICAL COUNSELING AND GUIDANCE JOURNAL

June - Vol: 14 / Issue: 73

**TURKISH PSYCHOLOGICAL COUNSELING AND GUIDANCE JOURNAL**  
**Official journal of Turkish Psychological Counseling and Guidance Association**

**ISSN: 1302-1370**

**Owner**

Mesut YILDIRIM

**Editor-In-Chief**

Prof. Dr. Metin PİŞKİN, Ankara University, Türkiye

**Editors**

Assoc. Prof. Dr. Özlem ULAŞ KILIÇ, Giresun University, Türkiye  
Assoc. Prof. Dr. Selen DEMİRTAŞ ZORBAZ, Ankara University, Türkiye  
Asst. Prof. Dr. Tansu MUTLU ÇAYKUŞ, Ankara University, Türkiye

**Statistical Editor**

Assoc. Prof. Dr. Murat BOYSAN, Ankara Sosyal Bilimler University, Türkiye

**Language Editor**

Asst. Prof. Dr. Thseen NAZİR, İbn Haldun University, Türkiye

**Editorial Board**

Prof. Dr. Bradley T. ERFORD, Vanderbilt University, ABD  
Prof. Dr. Fatma Ebru İKİZ, Dokuz Eylül University, Türkiye  
Prof. Dr. Figen ÇOK, Başkent University, Türkiye  
Prof. Dr. Gürhan CAN, Hasan Kalyoncu University, Türkiye  
Prof. Dr. Hande BRIDDICK, South Dakota State University, ABD  
Prof. Dr. İlhan YALÇIN, Ankara University, Türkiye  
Prof. Dr. Selahiddin ÖĞÜLMÜŞ, Ankara University, Türkiye  
Prof. Dr. Süleyman DOĞAN, Ege University, Türkiye  
Prof. Dr. William C. BRIDDICK, South Dakota State University, ABD

**Editing, page-setting and technical support**

Ress. Ast. Zeynep GÖRGÜLÜ, Ankara University, Türkiye  
Ress. Ast. Ecem ÇİÇEK, Ankara University, Türkiye  
Özge ERDEM, Ankara University, Türkiye

**Contact**

[www.turkpdrrergisi.com](http://www.turkpdrrergisi.com)  
[turkpsycouns@gmail.com](mailto:turkpsycouns@gmail.com)

**Publication Date : June 2024**

**Volume (Issue) : 14(73)**

**TURKISH PSYCHOLOGICAL COUNSELING AND GUIDANCE JOURNAL**  
**Official journal of Turkish Psychological Counseling and Guidance Association**

**Indexes**

Turkish Psychological Counseling and Guidance Journal is indexed by ULAKBIM, SCOPUS,  
Turkish Psychiatry Index

**Publication Type**

Quarterly Published Academic Journal

**Adressess**

Saęlık Mah. Sleyman Sırrı Cad. Saęlık İř Hanı No: 21/18, ankaya/Ankara

**Phone-Fax**

+90 (312) 430 36 74

**Print**

Reprotek Dijital Baskı Merkezi ve Matbaacılık. Ziya Gkalp Caddesi No: 41 Kolej-ankaya,  
Ankara/Trkiye

**Phone**

+90 (312) 309 08 20

**Publication Date : June 2024**

**Volume (Issue) : 14(73)**

## **TABLE OF CONTENT**

The Effect of Mobile Phone Attachment and Extended Self on Nomophobia: The Mediating Role of  
Materialism

**Özge ENEZ**

*Page: 153-170*

Anxiety, Self-Efficacy, And Self-Regulation in High School Students: The Mediating Role of  
Attentional Control

**Müge Yukay YÜKSEL & Umut KERMEN**

*Page: 171-182*

The Involvement of Learning Mathematics Via Teachers' Autonomy Support and The Fulfilment of  
Basic Psychological Needs

**Andi THAHIR, Rosa RIWAYATI, & Citra WAHYUNI**

*Page: 183-193*

Validation of the Turkish Version of the Mental Health Literacy Scale

**H. Deniz GÜNAYDIN**

*Page: 194-204*

A Phenomenological Analysis of the Life Experiences of Elderly Individuals

**Esra ERDOĞAN, İrem Nur GÜRSOY, Hatice KUMCAĞIZ, & Oğuzhan YILDIRIM**

*Page: 205-216*

Career Counseling in Public Schools through the Eyes of Counselors in Turkey

**Samet ŞAHİN, Dilek Yelda KAĞNICI, Diğdem Müge SİYEZ, Serkan DENİZLİ,  
& İlkem BAŞARAN**

*Page: 217-227*

Family Context of Attitude toward Children with special Needs among Households with Children with  
special Needs in Southeast Nigeria: Implication to Sustainable Development

**Onyedikachi C. NNAMCHI, Samuel, O. OKAFOR, Samuel KALU, Peace ADUBI,  
& Ogechi IKEM**

*Page: 228-240*

Failure as an Obstacle or a Support: The Failure Beliefs Scale Development Study

**Sabire KILIÇ & Galip YÜKSEL**

*Page: 241-258*

The Efficacy of EMDR-Focused Group Counseling Program Applied to Primary School Students with  
PTSD Symptoms in Grief Process

**Esra TEKE & Selahattin AVŞAROĞLU**

*Page: 259-276*

Does Grit and Perceived Social Support Predicts Adolescents' Future Expectations in COVID 19  
Pandemic?

**Meyrem Ayça POLAT, Muhammet YILDIZ, Emrah IŞIKTAŞ, & Ramin ALIYEV**

*Page: 277-291*

## RESEARCH ARTICLE

# The Effect of Mobile Phone Attachment and Extended Self on Nomophobia: The Mediating Role of Materialism

Özge ENEZ<sup>a</sup> 

<sup>a</sup>Istanbul Medeniyet University, Istanbul, Turkey

### ARTICLE HISTORY

**Received:** 09.05.24

**Accepted:** 22.05.24

### KEYWORDS

Extended self, materialism,  
mediator analysis, mobile  
phone attachment,  
nomophobia

### ABSTRACT

This study aims to reveal the effect of mobile phone attachment (MPA), extended self, and materialism on nomophobia; investigate the mediating role of materialism on the relationship between smartphone extension and nomophobia, and the relationship between MPA and nomophobia; and adapt the Extended Self Scale to Turkish culture. Data were collected from 289 university students. Exploratory and confirmatory factor analyses, and reliability analyses have confirmed that the Turkish form is a reliable and valid measurement tool. Multiple regression analysis showed that MPA, smartphone extension, materialism predicted nomophobia. Materialism partially mediated the relationship between MPA and nomophobia, and the relationship between smartphone extension and nomophobia. This study suggests that materialistic students form an emotional attachment to the smartphone, and accept it as part of their selves. They use it to enhance their self-perceptions and cope with emotional/daily problems. Such use may cause the fear of being without a smartphone, which is nomophobia.

Today, a smartphone (SP) has become an inseparable part of daily life. Almost 60.42% of people in the world own an SP in 2024 (Bankmycell, 2024). In addition, university students use the SP almost six hours a day and spend more than two hours on social communication applications (Xu et al., 2015). Although the SP makes life easier, irresponsible SP use can cause important psychological problems. One of them is no-mobile phone phobia (nomophobia). Nomophobia is defined as stress, fear, and anxiety caused by not being able to use an SP who use it habitually (Yildirim, 2014).

Some researchers argue that nomophobia is a situational phobia associated with the fear of losing SP connection, being unable to receive calls, texts or emails, and being unable to access the conveniences offered by the SP (King et al., 2010; Yildirim, 2014). Some researchers have evaluated it in the category of addiction (Forgays et al., 2014; Hasmawati et al., 2020; Tran, 2016). This is still a controversial topic. As the term implies, nomophobia encompasses intense anxiety, fear, and distress experienced in the absence of an SP. It may be more accurate to classify nomophobia as a situational phobia (Yildirim, 2014). Therefore, nomophobia was evaluated as a situational phobia within the scope of this study.

**CORRESPONDING AUTHOR** Özge ENEZ, [ozge.enez@medeniyet.edu.tr](mailto:ozge.enez@medeniyet.edu.tr), ORCID: 0000-0002-5521-7691, Istanbul Medeniyet University, Istanbul, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counselling and Guidance Association

## Theoretical Framework

In formulating the rationale of this study, the uses and gratifications theory (UGT) (Blumler, 1979) and the compensatory internet use theory (CIUT) (Kardefelt-Winther, 2014) were used. Although these theories were developed to explain the internet, media, and information and communication technology (ICT) use regardless of the debates regarding the classification of nomophobia, it is recommended to use these theories to conceptualize nomophobia and investigate its determinants (Durak, 2019; Enez, 2021).

UGT argues that people use the internet and media in line with their emotional, cognitive and personal integrative needs (Blumler, 1979). For example, some individuals use media and the internet for self-development, psychological reassurance, and self-esteem. However, such needs may lead to problematic use of the internet or media and increase the need for their existence (Elhai & Contractor, 2018; Elhai et al., 2019). Since the SP provides constant access to the internet and media content, such needs cannot be met immediately in the absence of it, potentially leading to nomophobia. Thus, UGT can be used to explain the fear experienced in the absence of an SP, conceptualize nomophobia, and determine its determinants (Enez, 2021).

CIUT argues that problematic ICT use is a compensatory process for coping with emotional and psychological problems (Kardefelt-Winther, 2014). Like other digital technologies, SP use can be considered as a maladaptive coping strategy because it provides entertaining activities that offers relief from problems. For example, some individuals play mobile games to distract their attention from their problems (van Deursen et al., 2015). The expectancy of relief provided by the SP may increase the need for it in times of problems, causing nomophobia (King et al., 2010). Therefore, the CIUT framework can be used to conceptualize nomophobia and determine its determinants (Enez, 2021).

Based on these assumptions, the potential predictors of nomophobia (mobile phone attachment, SP extension, materialism), the expected associations of the predictors with nomophobia, and the hypotheses of this study are explained in detail below in the framework of UGT and CIUT.

### Predictors of Nomophobia

**Mobile Phone Attachment.** This study aimed to investigate the effect of mobile phone attachment (MPA) on nomophobia. Attachment theory (Bowlby, 1969) argues that people are born with an attachment mechanism that impacts their behaviours and interpersonal relationships throughout their lives. It leads people to seek closeness to an attachment figure in times of threat and stress. The presence of the attachment figure provides people safety and security but the absence of the figure causes separation anxiety.

Like the attachment bond between a mother and a new-born, people may develop a bond with an object (Konok et al., 2016). Object attachment is a kind of attachment strategy in the absence or unreliability of an attachment figure because the attachment object helps people reduce their negative emotions in times of threat and stress (Keefer et al., 2012). Therefore, a person who thinks that the attachment figure is unreliable may turn to the SP to feel safe and secure (Fowler & Noyes, 2015; Konok et al., 2016; Lou et al., 2022).

UGT argues that individuals need digital technology to meet their affective needs such as controlling negative emotions and obtaining psychological reassurance (Blumler, 1979). CIUT argues that problematic ICT use is a compensatory process for dealing with psychological and emotional problems such as separation anxiety (Kardefelt-Winther, 2014). Therefore, the absence of the object of attachment (the SP in this study) may increase anxiety. Previous studies have supported this assumption by revealing that users feel intense anxiety upon being separated from the SP and feel motivated to get it back (Cheever et al., 2014; Enez & Yalçinkaya-Alkar, 2021; Han et al., 2017; Keefer et al., 2012; Konok et al., 2016; Konok et al., 2017; Nie et al., 2020).

Although past studies have revealed that being separated from the SP causes anxiety, the acceptance of the SP as an attachment object and the effect of the absence of this attachment object on nomophobia is a neglected issue. Accepting the SP as an attachment object and the separation anxiety experienced in its absence may enable understanding anxiety, which is one of the main characteristics of nomophobia. This understanding gained through this study may be guiding in the conceptualization, prevention, and treatment of nomophobia.

**Extended Self.** The current study also aimed to investigate the impact of SP extension on nomophobia. The extended-self theory (Belk, 1988, p. 139) argues that a person's possessions can become an extension of the person's self, intentionally or unintentionally. When a person frequently uses an object, the brain perceives it

as a part of the body and the self. If individuals accept an object as a part of the self, they seek proximity to it due to the concept of extended self (Belk, 1984; Walsh et al., 2010). Today, one of the most used objects in daily life is the SP. It is used for several purposes such as saving personal information (e.g., phone numbers and passwords) and accessing online identity in social networks. Such use can strengthen the possibility of SP extension (Han et al., 2017; Walsh et al., 2009). Therefore, they may tend to protect their self-identity by keeping the SP with them at all times (Lou et al., 2022).

From the perspective of UGT (Blumler, 1979), people may incorporate the SP into the extended self to meet personal integrative needs (e.g., self-esteem and self-confidence). From the perspective of CIUT (Kardefelt-Winther, 2014), using the SP as a coping mechanism may cause individuals to perceive the SP as a coping ability that they have learned. Consequently, the SP can be perceived as part of the self. In line with these assumptions, past research found that users kept the SP nearby even though they were not actively using it (Aharony et al., 2011; Walsh & White, 2007). Similarly, it was found that the SP was accepted as the extended self and the perception of self-integrity decreased during the period of SP separation (Clayton et al., 2015; Lou et al., 2022).

Although, the disruption of self-integrity caused by SP extension can trigger an intense fear of separation from the SP, no research was identified investigating the effect of SP extension on nomophobia. Examining this effect can provide a more in-depth understanding of nomophobia. That is, this study may provide information that is not available in the literature. In this way, it may be possible to reduce the emotional, cognitive and physical problems caused by SP extension (Clayton et al., 2015; Devi & Dutta, 2022) and therefore nomophobia.

To determine the predictive effect of SP extension on nomophobia, as there is no Turkish assessment tool to evaluate SP extension, the current study aimed to examine the psychometric properties of the Extended Self Scale -Turkish Form (Clayton et al., 2015) (see Appendix A). (Detailed information is given in the materials section.). The Extended Self Scale was mainly developed to determine the degree to which objects are incorporated into the extended self. Firstly, the scale was designed to measure the car, shirt, gift, and gift giver as the extended self (Sivadas & Machleit, 1994). Then, it was adopted to measure the car, music system, pet, and least favorite possession as the extended self (Sivadas & Venkatesh, 1995). More recently, the scale was designed to measure the SP as the extended self (Clayton et al., 2015), and adaptation studies of this version of the scale were carried out in the present study.

**Materialism.** This study also aimed to investigate the effect of materialism on nomophobia. The definition of materialism is “the importance a consumer attaches to worldly possessions” (Belk, 1984, p. 291). UGT argues that (Blumler, 1979), people use technological tools to meet personal integrative needs such as self-esteem. Materialists use their possessions to display their values and attitudes, and highlight their social status (Roberts & Pirog, 2013). Therefore, acquired products gain social importance and meaning (Eren et al., 2012). Considering the public visibility of the SP, materialists may believe that the SP shows wealth and social status to others via purchasing a particular brand or through posts on social networks (Long et al., 2021, Lou et al., 2022). Therefore, the absence of the SP may have a destructive psychological effect on materialists due to their personal integrative needs (Karabati & Cemalcilar, 2010).

As argued by CIUT (Kardefelt-Winther, 2014), ICTs are used as a mechanism for coping with problems and poor coping may increase their need to use the SP to deal with difficulties. Materialists tend to use maladaptive coping strategies when they experience difficult life events such as compulsive buying (Ruvio et al., 2014). Consequently, poor coping may trigger nomophobia in materialists. Past research has also revealed that materialism is associated with nomophobia (Enez & Yalçınkaya-Alkar, 2021) and predicts nomophobia (Gentina et al., 2023).

**Materialism as a Mediator.** The current study also aimed to examine the mediator role of materialism on the relationship between SP extension and nomophobia. Materialists may be more likely to accept the SP as part of the self because they commonly use their possessions to define themselves to others (Karabati & Cemalcilar, 2010; Roberts & Pirog, 2013). If materialists use the SP as a tool to strengthen their self-image and improve the impression they make on others (Eren et al., 2012), their self-integrity may be damaged in the absence of

the SP. That is, SP extension can trigger nomophobia through materialism, which has not been investigated before.

Lastly, this study aimed to examine the mediator role of materialism on the association between MPA and nomophobia. Materialists' need for psychological security and their efforts to meet these needs through objects may cause them to accept the SP as an attachment object (Ainsworth, 1985; Chaplin & John, 2007; Konok et al., 2017). That is, MPA can trigger nomophobia through materialism, which has not been investigated before.

To sum, materialistic tendencies, which negatively affect identity integrity and positive identity perception, among young adults, are increasing day by day (Mazahir et al., 2016). Examining the effect of materialism on nomophobia may contribute to the understanding, prevention, and treatment of nomophobia. Moreover, as materialism is influenced by cultural values (Ogden & Cheng, 2011), it seems important to examine the direct and mediating effects of materialism on nomophobia in Turkish society. Besides, examining the relationship between materialism and nomophobia based on attachment theory (Bowlby, 1969) and the extended-self theory (Belk, 1988) can enrich the theoretical conceptualization of nomophobia and materialism.

### Current Study

Based on the information provided above, the current study was conducted to determine the effect of MPA, extended self, and materialism on nomophobia. The current study was also conducted to determine the mediating role of materialism on the association between extended self and nomophobia, and the relationship between MPA and nomophobia. To achieve these aims, this study also aimed to adapt the Extended Self Scale (Clayton et al., 2015; Sivadas & Machleit, 1994) to Turkish culture and determine the psychometric properties of the Extended Self Scale- Turkish form. Therefore, this study aimed to test the following hypotheses.

H1. The Extended Self Scale-Turkish form is a valid and reliable measurement tool for Turkish culture to assess SP extension among university students.

H2. Mobile phone attachment, SP extension, and materialism are significant predictors of nomophobia.

H3. Materialism mediates the association between SP extension and nomophobia.

H4. Materialism mediates the association between mobile phone attachment and nomophobia.

It is possible to say that the present study has the potential to contribute to academic research and clinical practice. This adaptation study is important and required because SP extension has not been examined in research conducted in Turkey. As SP extension causes severe physical, cognitive and psychological problems (Clayton et al., 2015; Lou et al., 2022), this scale allows examining the problems related to SP extension in Turkey. Therefore, it can be a useful tool for researchers, clinicians, policy makers and psychological counselors who want to understand the extent to which extending the SP to one's self-identity contributes to nomophobia or any psychological problem.

Moreover, to the researcher's knowledge, no studies have examined the combined effect of MPA, SP extension, and materialism on nomophobia. Similarly, the mediating role of materialism in the association between MPA and nomophobia, and in the association between SP extension and nomophobia has not been examined. This study may contribute to the development of the existing literature, as well as help determine the components of the nomophobia prevention and treatment programs. Treatment modalities applied in clinics and prevention programs applied in schools can be developed in the light of current findings.

## Method

### Participants

Considering the high prevalence of nomophobia among university students (Jahrami et al., 2023), participants were selected among university students. In addition, UGT argues that technology use is associated with the demographic characteristics of people such as age (Elhai & Contractor, 2018; Elhai et al., 2019). For participant selection, a convenient sampling method was preferred. Potential participants were asked whether they had a psychiatric diagnosis in the last 6 months and whether they had used psychiatric drugs. Participants who used drugs and were diagnosed were not included in the study. 289 university students participated in the study. The data were collected only from Istanbul Medeniyet University to prevent the university factor from being a confusing variable.

## Materials

**Nomophobia Questionnaire (NMP-Q).** Yildirim and Correia (2015) developed the NMP-Q and Yildirim et al. (2016) validated it to Turkish culture by. The NMP-Q is a 20-item and 7-point Likert-type scale (1= *strongly disagree* and 7= *strongly agree*), and includes four dimensions: (1) Not being able to communicate, (2) Giving up convenience, (3) Not being able to access information, and (4) Losing connectedness. According to confirmatory factor analysis (CFA), the goodness of fit index (GFI) was .97, the comparative fit index (CFI) was .92, and the root mean square error of approximation (RMSEA) was .08. Cronbach alpha coefficient of the questionnaire was .92 (Yildirim et al., 2016). In this study, the coefficient was .93 for the NMP-Q.

**Extended Self Scale.** The scale was developed by Sivadas and Machleit (1994). It is a 6-item and 7-point Likert-type scale (1= *strongly disagree* and 7= *strongly agree*). Across the product/person categories (i.e., car, shirt, gift, gift giver), Cronbach alpha coefficients were .90, .90, .90, and .91, respectively. According to the CFA results of the scale designed to measure the car as the extended self, GFI was .87 and RMSEA was .05 (Sivadas & Venkatesh, 1995). The coefficient of the scale designed to measure the phone as the extended self was .89 (Clayton et al., 2015). Since there is no Turkish version of the scale, an adaptation study of the scale was carried out in the current study. In this study, Cronbach alpha coefficient of the questionnaire was .90. (See results section)

**Mobile Attachment Questionnaire (MAQ).** The MAQ was developed by Konok et al. (2017) and validated to Turkish culture by Enez and Yalçinkaya-Alkar (2021). The Turkish version of the MAQ is a 13-item and a 5 points Likert-type scale (1= *not at all characteristic of me* and 5= *very characteristic of me*). It has four sub-dimensions: (1) Separation insecurity, (2) Separation anxiety, (3) Safe haven, and (4) Secure base. CFA showed that the incremental fit index (IFI) was .95, the adjusted goodness of fit index (AGFI) was .88, CFI was .95, and RMSEA was .07. Cronbach alpha coefficient of the questionnaire was .90 (Enez & Yalçinkaya-Alkar, 2021). In the current study, the coefficient was .89.

**The Short Version of the Material Values Scale (MVS).** Richins (2004) developed the MVS and Karabati and Cemalcilar (2010) validated to Turkish culture. The MVS has 18 items and 3 sub-dimensions: (1) Centrality, (2) Success, and (3) Happiness. It is a 5-point Likert-type scale (1=*totally disagree* and 5=*totally agree*). CFA showed that CFI was .84 and RMSEA was .06. Cronbach alpha coefficient of the scale was .80 (Karabati & Cemalcilar, 2010). In the current study, the coefficient was .86.

## Procedure

Participation was voluntarily and an informed consent form was given to the potential participants before data collection. Data were collected via Google Forms during the 2022-2023 academic year. Power analysis in the GPower software program was used to calculate the required sample size for analyses. The alpha level probability was determined as 0.05 and the beta level probability was determined as 0.10 (Cunningham & McCrum-Gardner, 2007). The effect size was kept at a medium level (Cohen, 1988). Power analysis indicated that 253 participants are needed for this study. 289 participants were taken as the optimal sample size for this study.

## Statistical Analyses

The data were coded into the Statistical Package for Social Sciences 23 (SPSS 23) program. First, descriptive analyses were performed. Second, it was checked whether the assumptions required for the analyses were met (normality, linearity, autocorrelation, multicollinearity, homoscedasticity). Third, exploratory factor analysis (EFA) and reliability analyses in SPSS, and CFA in Analysis of Moment Structures (AMOS) were conducted to assess the validity and reliability of the Extended Self Scale-Turkish form. Fourth, Pearson correlation analysis was conducted to investigate the associations among the study variables. Fifth, to predict nomophobia from the study variables, multiple linear regression analysis (enter method) was used. Lastly, mediation analyses were performed using SPSS Process Macro Version 3 (Model 4- Simple mediation model) to investigate the mediator effect of materialism.

## Results

Of the total sample ( $N=289$ ), 191 (66.1%) were female and 98 (33.9%) were male. Their ages ranged from 17 to 37 years ( $M=21.15$ ,  $SD=2.99$ ). 20.1% of participants had a low ( $21 \leq \text{NMP-Q-TR} < 60$ ), 59.2% had a moderate ( $60 \leq \text{NMP-Q-TR} < 100$ ), and 20.8% had a severe level of nomophobia ( $100 \leq \text{NMP-Q-TR} \leq 140$ ) (Yildirim et al., 2016).

Before hypothesis testing, the following assumptions were controlled. The kurtosis and skewness values were between +1.96 and -1.96 (Tabachnick & Fidell, 2007), indicating normally distributed data. The values were given in Table 1. Linearity assumption was tested using scatterplots and no violations were observed. The tolerance statistics were above 0.1. The variance inflation factor (VIF) values were smaller than 10 for all variables, indicating no multicollinearity in the data. The values were given in Table 3. Homoscedasticity assumption was also confirmed using linear regression plots of standardized predicted values versus standardized residuals. Durbin-Watson statistic was 1.87, showing that the values of the residuals were independent and there was no autocorrelation (acceptable range changes between 1.50 and 2.50) (Field, 2013). According to the results of outlier detection analysis based on Mahalanobis distance, no outliers were determined. Since participants were required to answer all questions in the questionnaires sent via Google Forms, there was no missing data.

**Table 1.** Descriptive statistics of the variables

Variables	<i>M</i>	<i>SD</i>	Range	Minimum	Maximum	Skewness	Kurtosis
Nomophobia	4.04	1.15	6	1	7	.01	-.54
MPA	3.30	.82	4	1	5	-.17	-.48
SP extension	2.77	1.36	6	1	7	.49	-.61
Materialism	2.93	.63	4	1	5	-.30	.01

Note. *M* = Mean, *SD* = Standard deviation, MPA= Mobile phone attachment.

### The Psychometric Properties of The Extended Self Scale- Turkish Form

H1. The Extended Self Scale-Turkish form is a valid and reliable measurement tool for Turkish culture to assess SP extension among university students.

According to the findings, H1 was confirmed. First, EFA in SPSS 23 was performed to examine the structural validity of the Extended Self Scale on Turkish university students. The Kaiser-Meyer-Olkin (*KMO*) value indicated that the sample was factorable ( $KMO = .86$ ) (acceptable value  $> .60$ ) and Bartlett's test of sphericity was significant ( $\chi^2(15) = 1088.85$ ,  $p < .001$ ) (Tabachnick & Fidell, 2007). No item was deleted because the loads of items ranged between .71 and .86. The corrected item-total correlations ranged between .69 and .81. 66.45% of the variance was explained by these items. These results approve the factor structure of the Extended Self Scale-Turkish version.

According to CFA, the chi-squared test ( $\chi^2 / df$ ) was 2.03, indicating adequate fit of the model (acceptable fit indices  $2 \leq \chi^2 / df \leq 3$ ) (Kline, 2011). RMSEA was .06. The value was in the acceptable range (acceptable fit indices  $.05 \leq RMSEA \leq .08$ ) (Browne & Cudeck, 1993). CFI was .99 (perfect fit indices  $.95 \leq CFI \leq 1.00$ ), IFI was .99 (perfect fit indices  $.95 \leq IFI \leq 1.00$ ), AGFI was .95 (perfect fit indices  $.90 \leq AGFI \leq 1.00$ ), and GFI was .99 (perfect fit indices  $.95 \leq GFI \leq 1.00$ ). These values were in the perfect fit range (Browne & Cudeck, 1993; Schermelleh-Engel & Moosbrugger, 2003). Cronbach alpha coefficient of the questionnaire was .90, indicating excellent internal consistency (acceptable value  $> .70$ ) (Streiner, 2003).

For reliability assessment, the Turkish form was split in half. The Spearman-Brown coefficient was .88. The Cronbach alpha coefficient was .87 for the first three items and .91 for the last three items. The correlation between forms was .79 (acceptable value  $> .70$ ) (Taber, 2018). To test the test-retest reliability, the Extended Self Scale - Turkish form was completed again four weeks after the first data collection by 37 randomly selected participants. The test-retest correlation coefficient was statistically significant ( $r = .77$ ,  $p < .001$ ), and Cronbach alpha coefficient was .87 (acceptable value  $> .80$ ) (Tabachnick & Fidell, 2007). The results suggest that the Turkish form has acceptable reliability and validity. (See Appendix A)

**Regression Analysis**

H2. Mobile phone attachment, SP extension, and materialism are significant predictors of nomophobia

**Table 2.** Correlations with confidence intervals

Variable	1	2	3
1. MPA			
2. SP extension	.45*** [.35, .54]		
3. Materialism	.43*** [.33, .52]	.40*** [.3, .49]	
4. Nomophobia	.73*** [.67, .78]	.47*** [.37, .56]	.42*** [.32, .51]

Note. \*\*\* $p < .001$ , MPA= Mobile phone attachment, SP= Smart phone. Values in square brackets indicate the BCa 95% confidence interval for each correlation.

As seen in Table 2, according to the bivariate Pearson correlation analysis, nomophobia was positively correlated with MPA ( $r = .73$ ,  $R^2 = .54$ , 95% BCa CI [.67, .78],  $p < .001$ ), SP extension ( $r = .47$ ,  $R^2 = .22$ , 95% BCa CI [.37, .56],  $p < .001$ ), and materialism ( $r = .42$ ,  $R^2 = .18$ , 95% BCa CI [.32, .51],  $p < .001$ ).

Then, a multiple linear regression analysis was used to predict nomophobia from MPA, SP extension, and materialism. The results showed that the three-predictor regression model significantly predicted nomophobia ( $F(3, 285) = 124.6$ ,  $p < .001$ ), confirming H2. The model accounted for 56.7% of the variability, as indexed by the  $R^2$  statistic ( $R = .753$ ,  $R^2 = .567$ ). The standardized regression coefficients showed that the importance order of predictors on nomophobia was MPA ( $\beta = .63$ ,  $t = 13.64$ ,  $p < .001$ ), SP extension ( $\beta = .15$ ,  $t = 3.26$ ,  $p = .001$ ), and materialism ( $\beta = .09$ ,  $t = 2.06$ ,  $p = .04$ ). The results were given in Table 3.

**Table 3.** Results of the multiple linear regression analysis

Predictors	B	SE	$\beta$	t	p	95% CI for B		Correlations		Collinearity Statistics	
						Lower	Upper	Zero-order	Partial	Tolerance	VIF
Constant	.32	.24		1.36	.17	-.14	.78				
SP extension	.13	.04	.15	3.26	.001	.05	.20	.47	.19	.75	1.34
MPA	.87	.06	.63	13.64	<.001	.75	1.00	.73	.63	.72	1.39
Materialism	.17	.08	.09	2.06	.04	.01	.33	.42	.12	.76	1.31
Model Fit	$F(3, 285) = 124.6$ , $p < .001$ , $R = .753$ , $R^2 = .567$										

Note: MPA= Mobile phone attachment, SP= Smart phone, VIF= The variance inflation factor, CI= Confidence interval

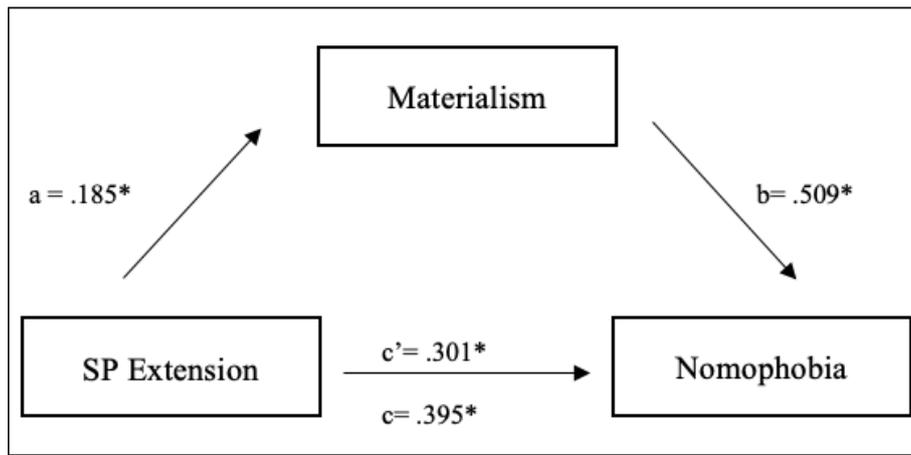
**Mediator Analyses**

H3. Materialism mediates the association between SP extension and nomophobia.

H4. Materialism mediates the association between mobile phone attachment and nomophobia.

To test the hypotheses, simple mediation analyses were performed. A bootstrapping method was used in SPSS Process Macro Model 4 (Simple mediation model) (Hayes, 2013). As a measure of indirect effect, 5000 bootstrap bias-corrected 95% confidence intervals (BCa CI) were used. In the analyses, the unstandardized beta coefficients were reported.

**Figure 1.** Mediator effect of materialism on the relationship between SP extension and nomophobia



Note: \* $p < .001$

As seen in Figure 1, the direct path for the mediation model showed that SP extension predicted materialism (path a) ( $B = .185, t = 7.31, p < .001$ ). SP extension accounted for 15.7% of the variability in materialism ( $R = .396, R^2 = .157$ ). The results also showed a significant direct effect of SP extension on nomophobia (path c') ( $B = .301, t = 6.54, p < .001$ ). Similarly, materialism significantly predicted nomophobia (path b) ( $B = .509, t = 5.16, p < .001$ ).

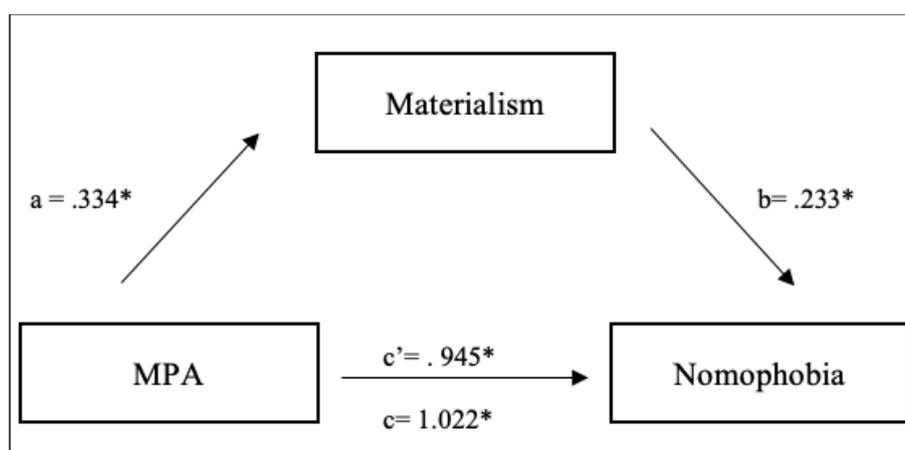
The model also significantly predicted nomophobia ( $F(2, 286) = 57.06, p < .001$ ) and accounted for 28.5% of the variability in nomophobia ( $R = .534, R^2 = .285$ ). The total effect of SP extension on nomophobia was significant (path c) ( $B = .395, t = 8.96, p < .001$ ) and accounted for 21.8% of the variability in nomophobia ( $R = .468, R^2 = .218$ ). Lastly, the results revealed a significant indirect effect of SP extension on nomophobia (path a\*b) ( $B = .094, 95\% \text{ BCa CI } [.05, .14]$ ). That is, materialism partially mediated the relationship between SP extension and nomophobia, supporting H3. The results were presented in Table 4.

**Table 4.** Mediator effect of materialism on the relationship between SP extension and nomophobia

Variable / Effect	B	SE	t	p	95% bias-corrected bootstrap CI	
					Lower	Upper
SP extension → Materialism (path a)	.185	.03	7.31	<.001	.14	.23
Materialism → Nomophobia (path b)	.509	.10	5.16	<.001	.32	.70
SP extension → Nomophobia (path c')	.301	.05	6.54	<.001	.21	.39
<b>Effects</b>						
Direct	.301	.05	6.54	<.001	.21	.39
Total	.395	.04	8.96	<.001	.31	.48
Indirect*	.094	.02			.05	.14

Note: SP= Smart phone, CI= Confidence interval

**Figure 2.** Mediator effect of materialism on the relationship between MPA and nomophobia



Note: \* $p < .001$

As seen in Figure 2, the direct paths for the mediation model showed that MPA predicted materialism (path a) ( $B = .334, t = 8.15, p < .001$ ) and accounted for 18.8% of the variability in materialism ( $R = .434, R^2 = .188$ ). The direct effect of MPA on nomophobia was statistically significant (path c') ( $B = .945, t = 15.42, p < .001$ ). Likewise, materialism significantly predicted nomophobia (path b) ( $B = .233, t = 2.92, p = .003$ ).

The model also significantly predicted nomophobia ( $F(2, 286) = 175.64, p < .001$ ) and accounted for 55.1% of the variability in nomophobia ( $R = .742, R^2 = .551$ ). The total effect of MPA on nomophobia was statistically significant (path c) ( $B = 1.022, t = 18.28, p < .001$ ) and accounted for 53.8% of the variability in nomophobia ( $R = .733, R^2 = .538$ ). The results also showed a significant indirect effect of MPA on nomophobia (path a\*b) ( $B = .077, 95\% \text{ BCa CI } [.02, .13]$ ). That is, materialism partially mediated the relationship between MPA and nomophobia, supporting H4. The results were given in Table 5.

**Table 5.** Mediator effect of materialism on the relationship between MPA and nomophobia

Variable / Effect	B	SE	t	p	95% bias-corrected bootstrap CI	
					Lower	Upper
MPA → Materialism (path a)	.334	.04	8.15	<.001	.14	.23
Materialism → Nomophobia (path b)	.233	.08	2.92	.003	.08	.39
MPA → Nomophobia (path c')	.945	.06	15.42	<.001	.82	1.07
<b>Effects</b>						
Direct	.945	.06	15.42	<.001	.82	1.07
Total	1.022	.06	18.28	<.001	.91	1.13
Indirect*	.077	.03			.02	.14

Note: MPA= Mobile phone attachment, CI= Confidence interval

## Discussion

### The Extended Self Scale- Turkish Form

In the current study, the Extended Self Scale was adopted to Turkish culture. Although the scale was developed to measure various objects as the extended self (Sivadas & Machleit, 1994), the version designed to measure the SP as the extended self (Clayton et al., 2015) was adopted in this study. The structural validity of the Turkish form through EFA confirmed a one-factor and six-item structure for the Turkish version, which is consistent with the original form. As the loads of items ranged from .71 to .86 and the corrected item-total correlations ranged from .69 to .81, all items were kept in the scale.

Similar to the findings of current research (.90), Clayton et al. (2015) showed that the coefficient of the scale designed to measure SP extension was .89. The versions of the scale developed for other objects (e.g., the car, shirt, music system, pet) also have similar Cronbach alpha coefficients (ranging between .88 and .93) (Sivadas & Machleit, 1994; Sivadas & Venkatesh, 1995). Such findings can be considered as supporting evidence that the internal consistency of the Expanded Self Scale-Turkish form is high (Streiner, 2003).

Although Clayton et al. (2015) did not provide information about the goodness of fit indices in their paper, the indices met the model fit requirements for the Turkish form. In this study, the chi-squared test and RMSEA were in the acceptable fit range, and CFI, AGFI and GFI were in the perfect fit range (Browne & Cudeck, 1993; Kline, 2011; Schermelleh-Engel & Moosbrugger, 2003). In this study, better fit values were obtained compared to the fit values obtained by Sivadas and Venkatesh (1995). For example, on the scales designed to measure the car and the least favorite possession as extended self, GFI values were .87 and RMSEA values were .05. These findings indicate that the construct validity of the current scale is higher than other versions.

Although past research did not provide information about its reliability (Clayton et al., 2015; Sivadas & Machleit, 1994; Sivadas & Venkatesh, 1995), test-retest statistic (.87) can be seen as proof of its reliability over time (acceptable value > .80) (Tabachnick & Fidell, 2007). Likewise, split-half statistics can be seen as proof of its reliability to assess SP extension (acceptable alpha value > .70) (Taber, 2018). The findings support the cross-cultural utility of the scale, indicating that the six-item scale is unidimensional, internally consistent, and reliable. Therefore, the Turkish form can be considered a promising assessment tool for the extended self among university students, confirming the hypothesis (H1).

### Mobile Phone Attachment

This study has shown that MPA is positively correlated with nomophobia and a significant predictor of nomophobia. Past studies have revealed that individuals form an attachment tie with the SP (Cheever et al., 2014; Enez & Yalçınkaya-Alkar, 2021; Keefer et al., 2012; Konok et al., 2016; Konok et al., 2017; Nie et al., 2020). These findings indicate that like the attachment figure, the SP as an attachment object may provide psychological security and relief to young adults.

From the perspective of UGT (Blumler, 1979), the SP helps to satisfy affective needs such as a sense of security. From the perspective of CIUT (Kardefelt-Winther, 2014), individuals may need the SP to control psychological and emotional problems such as separation anxiety. SP use can be considered as a maladaptive coping strategy, as it provides several entertaining activities that potentially offer relief from separation anxiety (Elhai et al., 2017). Such benefits of the SP may increase the possibility of accepting the SP as an attachment object. Consequently, the absence of it can increase separation anxiety and proximity-seeking behavior, potentially ending with nomophobia (Han et al., 2017).

Moreover, other objects cannot be alternative attachment objects to decrease interpersonal attachment separation anxiety because the SP allows communication with primary attachment figures. In the presence of it, people can reach the primary attachment figure regardless of time and place. Therefore, they may feel more intense separation anxiety in the absence of it than in other objects (Konok et al., 2017; Nie et al., 2020).

### Extended Self

The results have shown that SP extension is positively correlated with nomophobia and a significant predictor of nomophobia. Similar to the previous research (Clayton et al., 2015), this research has revealed that the SP is incorporated into the extended self. The extended-self theory (Belk, 1988) argues that if an object is thought to reflect a person's self-concept, this object is incorporated into the self and the person seeks proximity to this object to preserve self-integrity (Belk, 1984; Clayton et al., 2015; Han et al., 2017; Walsh et al., 2010).

The SP is a personalized possession that reflects the social status, values, and ideas of the owner (Han et al., 2017). If university students believe that the SP reflects their self-concept, they may feel distressed in the absence of it (Walsh et al., 2010). Moreover, an SP is used as an external memory because it is used to store and access personal information such as photos and passwords (Vincent et al., 2005). Therefore, information saved on the SP can increase the possibility of SP extension (Han et al., 2017). Likewise, since it is used to save social contacts (e.g., phone numbers and mail addresses) and access online identity on social media, it is perceived as an extension of social identity (Konok et al., 2016; Walsh et al., 2009).

Additionally, SP use as a coping mechanism may cause the SP to be accepted as a coping ability (Kardefelt-Winther, 2014). This perception may cause the SP to be accepted as an important part of the self and disruption of self-integrity in the absence of it. Therefore, accepting the SP as part of the psychical and social self may increase proximity-seeking behavior (Han et al., 2017). That is, based on these explanations and the assumptions of UGT (i.e., meeting personal integrative needs) (Blumler, 1979) and CIUT (i.e., coping) (Kardefelt-Winther, 2014), SP extension may lead to nomophobia.

### Materialism

Similar to the findings of past research (Enez & Yalçınkaya-Alkar, 2021; Gentina et al., 2023), this study has revealed that materialism is positively correlated with nomophobia and a significant predictor of nomophobia. Materialists equate possessions with power and success. Also, they tend to believe that possessions offer pleasure and enhance subjective well-being (Karabati & Cemalcilar, 2010; Long et al., 2021). Such individuals like to own objects not only for their functional benefits but also to interpret themselves and strengthen their social identity (Long et al., 2021, Lou et al., 2022). As they pay more attention to the self-expressive benefits of possessions, the possessions used in public become more important to them than the ones used in private such as books (Karabati & Cemalcilar, 2010; Richins, 1994).

Due to the public visibility of the SP, it is often used to highlight wealth and identity via purchasing a particular brand or posts on social networks (Long et al., 2021). Materialistic university students may have a more positive attitude towards the SP as a symbol of social status in their peer group, making them more prone to SP use (Ouyang et al., 2020). If the SP enhances social status and identity, its absence can have a devastating effect on materialistic youths (Karabati & Cemalcilar, 2010). These assumptions are also in parallel with the assumptions of UGT (Blumler, 1979). That is, using technological tools to meet personal integrative needs such as self-esteem. Therefore, they may experience the fear of not being able to use the SP when necessary, leading to nomophobia.

Moreover, since materialists tend to use maladaptive coping strategies in times of stress (Ruvio et al., 2014), they may need the presence of the SP instead of facing problems in more adaptive ways. For example, in line with CIUT's assumptions (Kardefelt-Winther, 2014), they may believe that shopping applications are necessary to cope with problems. Therefore, materialists may experience fear of not being able to benefit from the conveniences provided by online shopping applications such as momentary discounts on shopping sites. Thus, the privileges and values of materialists may have a significant impact on the onset and maintenance of nomophobia.

### Materialism as a Mediator

According to the results, H3 has confirmed and materialism mediates the association between SP extension and nomophobia. It is possible to say that materialist university students are more likely to see the SP as part of the self because they commonly use their possessions to define themselves to others (Karabati & Cemalcilar, 2010; Roberts & Pirog, 2013). In particular, some brands (e.g., iPhone, Samsung) may carry a status symbol

in society. Therefore, they may tend to buy such brands to support their self-expression and strengthen their self-esteem (Roberts & Pirog, 2013).

In addition, the online world has become a platform where personal possessions and consumption styles are shared virtually among individuals (Lehdonvirta, 2010). The online social self may become a dominant part of the self in materialists. Consequently, they may tend to accept the SP as the extended self. Perceiving the SP as an extension of the social self may increase anxiety about the loss of the self in the absence of it, triggering nomophobia. That is, materialism may mediate the association between nomophobia and SP extension.

Lastly, the results have confirmed H4 and materialism mediates the association between MPA and nomophobia. Objects are beneficial to comprehend one's surroundings and feel secure in an uncertain world (Morrison & Johnson, 2011). Materialists tend to feel psychological insecurity and are highly motivated to restore security (Chaplin & John, 2007). As attachment objects provide security (Ainsworth, 1985; Konok et al., 2017) and considering that materialists value objects rather than interpersonal relationships, they may be tend to accept the SP as an attachment object (Karabati & Cemalcilar, 2010; Richins, 1994; Wehmeyer, 2008). Separation anxiety in its absence may intensify the symptoms of nomophobia in materialistic university students. Thus, materialism may mediate the association between MPA and nomophobia.

### **Conclusion and Implications**

To conclude, this study has revealed that the Turkish version of the Extended Self Scale is a reliable and valid measurement to assess SP extension. To date, there was no Turkish assessment tool to evaluate SP extension. From now on, SP extension can be investigated in research conducted in Turkey. It is also a useful tool for clinicians who want to understand the extent to which extending the SP to oneself contributes to problematic SP use or any psychological problem. Understanding the relationship between students' self-perceptions and the SP can also support positive self-development and guide the psychological counseling services in schools for early diagnosis and prevention of other psychological problems that may arise. That is, the Turkish version of the Extended Self Scale will contribute to future academic research and practice.

This study has also revealed that MPA, SP extension, and materialism predict nomophobia. Based on the findings, it is possible to make suggestions about the treatment and prevention of nomophobia. Although the needs explained in UGT (Blumler, 1979) may cause nomophobia, it may not be logical to interfere with the needs of students. Instead, they should be directed to satisfy their needs in the real world instead of the virtual world. For example, instead of online activities and virtual relationships, experiencing the pleasure of face-to-face social activities in the school environment and strengthening peer relationships can prevent nomophobia. It can be recommended to increase the time allocated to these activities while organizing school programs.

Based on the assumptions of CIUT (Kardefelt-Winther, 2014) and the current findings, it is possible to assume that university students use the SP as a coping tool to relieve emotional discomfort and deal with psychological problems. Although the SP helps students to manage their problems, such use may lead to the belief that difficulties cannot be handled without the SP (Kardefelt-Winther, 2014; van Deursen et al., 2015). In treatment and intervention programs designed for nomophobia, it might be beneficial to focus on how to reduce maladaptive coping behaviors and to improve students' coping skills. Psychoeducation on adaptive coping methods can be added to the prevention programs organized in schools.

This study also suggests that students use the SP to enhance their self-perceptions. If the SP is needed to protect self-integrity and increase self-esteem, positive self-perception development techniques can be included in the prevention programs carried out at schools. This component may be particularly important for adolescence, when there is intense self-construction and identity confusion.

Moreover, students should be encouraged to give importance to interpersonal relationships and moral values rather than material possessions. If students establish meaningful interpersonal relationships, they may not experience anxiety due to the absence of the SP. In such ways, both nomophobia might be prevented and the effectiveness of the treatment modalities might be enhanced.

Based on the assumptions that students accept the SP as an object of attachment and attachment style is determined by early relationships (Bowlby, 1969), it may be useful to provide psychoeducation to parents about secure attachment in prevention programs. As attachment objects are used to provide a sense of security (Keefer et al., 2012), supportive relationships established with peers and teachers at school can contribute to the prevention of nomophobia. Thus, a psychoeducation program for administrators and teachers can be organized to create a positive school environment.

Lastly, it is possible to make some suggestions for future research on nomophobia. Previous research has mostly used quantitative study design and standard measurement tools to examine nomophobia (Jahrami et al., 2023). To a better understanding of nomophobia, conducting studies using new and/or relatively rarely used research methods can be recommended. One of these methods is the experience sampling method (ESM). In ESM, people are asked to repeatedly report their current behaviors, symptoms, and feelings over a period of time within a real-life context (Myin-Germeys et al., 2009). Like other psychopathologies, nomophobia symptoms may fluctuate during the day. It may be possible to examine such fluctuations, and identify the internal and situational determinants of these fluctuations using ESM (Enez, 2023).

The community-based participatory research method (CBPR) can also be recommended. In CBPR, research projects are conducted in local settings in which community members collaborate with researchers. By doing so, community members define the issues that need to be considered, provide information about such issues, and serve as advisors throughout the entire project (Hacker 2013). The top-down suggestions from young adults on nomophobia, MPA, SP extension, and materialism may help develop more effective treatment and prevention programs.

The online photovoice technique (OPV) can also be used to understand the meaning of nomophobia, MPA, SP extension and materialism, and the relationship between them from the perspective of young adults. This technique is based on the analysis of photographs and the stories about them, which show the meaning of these psychological constructs for the person (Tanhan & Strack, 2020). Likewise, the interpretative phenomenological analysis (IPA) can be used to investigate the perspective of young adults on these psychological constructs. IPA aims to explore how people make sense of their world, and what their personal experiences mean to them (Smith & Osborn, 2008). As OPV and IPA may provide a more holistic understanding of nomophobia, MPA, SP extension and materialism, these methods can enhance the literature and practice.

### Limitations

The limitations of the current research need attention. Data were collected from one university and more than half of the participants were women. These may affect the generalizability of the results. As the participants were university students, future studies should focus on various age groups. Due to the nature of the cross-sectional study design, the results are based on self-reports. Future studies may add biological measures to measure participants' nomophobia-induced anxiety and stress levels.

It is also important to note that due to the design of the current study, causal relationships between independent variables and nomophobia were not tested and participants were not interviewed about the causes of their nomophobia symptoms. The possible reasons stated here are only the researcher's inferences based on the relevant literature. Thus, these assumptions should be examined with longitudinal or experimental studies. Moreover, researchers should collect more detailed information through interviews.

**Funding Disclosure:** The author received no financial support for the research, authorship, and/or publication of this article.

**Conflicts of Interest:** The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Data Availability:** The data are available upon request from the corresponding author.

**Ethical Disclosure:** Ethical approval was obtained from the Istanbul Medeniyet University Social and Human Sciences Ethics Committee.

## References

- Aharony, N., Pan, W., Ip, C., Khayal, I., & Pentland, A. (2011). Social fMRI: Investigating and shaping social mechanisms in the real world. *Pervasive and Mobile Computing*, 7(6), 643-659. <https://doi.org/10.1016/j.pmcj.2011.09.004>
- Ainsworth, M. (1985). Attachments across the life span. *Bulletin of the New York Academy of Medicine*, 61(9), 792-812.
- Bankmycell. (2024, March 13). How many phones in the world?. <https://www.bankmycell.com/blog/how-many-phones-are-in-the-world>
- Belk, R. (1984). Three scales to measure constructs related to materialism: Reliability, validity, and relationships to measures of happiness. *Advances in Consumer Research*, 11, 291-297.
- Belk, R. (1988). Possessions and the extended self. *Journal of Consumer Research*, 15, 139-168.
- Blumler, J. (1979). The role of theory in uses and gratifications studies. *Communication Research*, 6(1), 9-36. <https://doi.org/10.1177/009365027900600102>
- Bowlby, J. (1969). *Attachment and Loss Volume I Attachment*. New York: Basic Books.
- Browne, M., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. Bollen and J. Long (Eds.), *Testing structural equation models* (pp. 136-162). SAGE.
- Chaplin, L., & John, D. (2007). Growing up in a material world: Age differences in materialism in children and adolescents. *Journal of Consumer Research*, 34, 480-493. <https://doi.org/10.1086/518546>
- Cheever, N., Rosen, L., Carrier, L., & Chavez, A. (2014). Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users. *Computers in Human Behavior*, 37, 290-297. <https://doi.org/10.1016/j.chb.2014.05.002>
- Clayton, R., Leshner, G., & Almond, A. (2015). The extended iself: The impact of iPhone separation on cognition, emotion, and physiology. *Journal of Computer-Mediated Communication*, 20, 119-135. <https://doi.org/10.1111/jcc4.12109>
- Cohen, J. (1988). *Statistical Power Analysis for The Behavioural Sciences*. Mahwah: Lawrence Earlbaum Associates.
- Cunningham, J., & McCrum-Gardner, E. (2007). Power, effect and sample size using GPower: Practical issues for researchers and members of research ethics committees. *Evidence Based Midwifery*, 5, 132-136.
- Devi, U., & Dutta, R. (2022). A review paper on prevalence of nomophobia among students and its impact on their academic achievement. *Journal of Positive School Psychology*, 6(3), 5397-5405.
- Durak, H. (2019). Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: Demographic variables and academic performance. *The Social Science Journal*, 56(4), 492-517. <https://doi.org/10.1016/j.soscij.2018.09.003>
- Elhai, J., & Contractor, A. (2018). Examining latent classes of smartphone users: Relations with psychopathology and problematic smartphone use. *Computers in Human Behavior*, 82, 159-166. <https://doi.org/10.1016/j.chb.2018.01.010>
- Elhai, J., Dvorak, R., Levine, J., & Hall, B. (2017). Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *Journal of Affective Disorders*, 207, 251-259. <https://doi.org/10.1016/j.jad.2016.08.030>
- Elhai, J., Levine, J., & Hall, B. (2019). The relationship between anxiety symptom severity and problematic smartphone use: A review of the literature and conceptual frameworks. *Journal of Anxiety Disorders*, 62, 45-52. <https://doi.org/10.1016/j.janxdis.2018.11.005>
- Enez, Ö. (2021). *The Phobia of the Modern World: Nomophobia: "Conceptualization of Nomophobia and Investigation of Associated Psychological Constructs"*. eKitap Projesi.
- Enez, Ö. (2023). Anksiyete ve Yalnızlığın Durumsal Nomofobi Üzerindeki Etkisinin Deneyim Örneklem Yöntemi Kullanılarak Araştırılması [Investigation of the effect of anxiety and loneliness on state nomophobia using experience sampling method]. *Gümüşhane Üniversitesi Sosyal Bilimler Dergisi*, 14(3), 766-785. <https://doi.org/10.36362/gumus.1168706>
- Enez, Ö., & Yalçınkaya-Alkar, Ö. (2021). Assessing mobile phone attachment: Validation of the Mobile Attachment Questionnaire in Turkish university students and examination of related variables. *Psychological Reports*, 125(3). <https://doi.org/10.1177/0033294121100511>
- Eren, S., Eroğlu, F., & Hacıoğlu, G. (2012). Compulsive buying tendencies through materialistic and hedonic values among college students in Turkey. *Procedia - Social and Behavioral Sciences*, 58, 1370-1377.

<https://doi.org/10.1016/j.sbspro.2012.09.1121>

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE.
- Forgays, D., Hyman, I., & Schreiber, J. (2014). Texting everywhere for everything: Gender and age differences in cell phone etiquette and use. *Computers in Human Behavior*, 31, 314-321. <https://doi.org/10.1016/j.chb.2013.10.053>
- Fowler, J., & Noyes, J. (2015). From dialing to tapping: University students report on mobile phone use. *Procedia Manufacturing*, 3, 4716-4723. <https://doi.org/10.1016/j.promfg.2015.07.568>
- Gentina, E., Maille, V., & Li, Z. (2023). A cross-national study of nomophobia among Brazilian, Chinese, French, and U.S. young people: The role of materialism. *Journal of Cross-Cultural Psychology*, 54(5), 547-573. <https://doi.org/10.1177/00220221231176060>
- Hacker, K. (2013). *Community-Based Participatory Research*. SAGE Publications. <https://doi.org/10.4135/9781452244181>
- Han, S., Kim, K., & Kim, J. (2017). Understanding nomophobia: Structural equation modeling and semantic network analysis of smartphone separation anxiety. *Cyberpsychology, Behavior, and Social Networking*, 20(7), 419-427. <https://doi.org/10.1089/cyber.2017.0113>
- Hasmawati, F., Samiha, Y., Razzaq, A., & Anshari, M. (2020). Understanding nomophobia among digital natives: Characteristics and challenges. *Journal of Critical Reviews*, 17, 122-131. <http://dx.doi.org/10.31838/jcr.07.13.22>
- Hayes, A. (2013). *Introduction to mediation, moderation, and conditional process analysis a regression-based approach*. Guilford Press.
- Jahrami, H., Fekih Romdhane, F., Pandi-Perumal, S., BaHammam, A., & Vitiello, M. (2023). Global research evidence on nomophobia during 2008-2022: A bibliometric analysis and review. *Psychology, Health & Medicine*. <https://doi.org/10.1080/13548506.2023.2268888>
- Karabati, S., & Cemalcilar, Z. (2010). Values, materialism, and well-being: A study with Turkish university students. *Journal of Economic Psychology*, 31, 624-633. <https://doi.org/10.1016/j.joep.2010.04.007>
- Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior*, 31, 351-354. <https://doi.org/10.1016/j.chb.2013.10.059>
- Keefer, L., Landau, M., Rothschild, Z., & Sullivan, D. (2012). Attachment to objects as compensation for close others' perceived unreliability. *Journal of Experimental Social Psychology*, 48(4), 912-917. <https://doi.org/10.1016/j.jesp.2012.02.007>
- King, A., Valenca, A., & Nardi, A. (2010). Nomophobia: The mobile phone in panic disorder with agoraphobia: Reducing phobias or worsening of dependence? *Cognitive and Behavioral Neurology*, 23(1), 52-54. <https://doi.org/10.1097/WNN.0b013e3181b7eabc>
- Kline, R. (2011). *Principles and practice of structural equation modeling*. The Guilford Press.
- Konok, V., Gigler, D., Bereczky, B., & Miksoli, A. (2016). Humans' attachment to their mobile phones and its relationship with interpersonal attachment style. *Computers in Human Behavior*, 61, 537-547. <https://doi.org/10.1016/j.chb.2016.03.062>
- Konok, V., Pogany, A., & Miklosi, A. (2017). Mobile attachment: Separation from the mobile induces physiological and behavioural stress and attentional bias to separation-related stimuli. *Computers in Human Behavior*, 71, 228-239. <https://doi.org/10.1016/j.chb.2017.02.002>
- Lehdonvirta, V. (2010). Online spaces have material culture: Goodbye to digital post-materialism and hello to virtual consumption. *Media, Culture, and Society*, 32(6), 883-889. <https://doi.org/10.1177/0163443710378559>
- Long, J., Wang, P., Liu, S., & Lei, L. (2021). Materialism and adolescent problematic smartphone use: The mediating role of fear of missing out and the moderating role of narcissism. *Current Psychology*. <https://doi.org/10.1007/s12144-019-00526-0>
- Lou, J., Han, N., Wang, D., & Pei, X. (2022). Effects of mobile identity on smartphone symbolic use: An attachment theory perspective. *International Journal of Environmental Research and Public Health*, 19(21), 14036. <https://doi.org/10.3390/ijerph192114036>
- Mazahir, S., Masood, A., & Musarrat, R. (2016). Increased materialistic trends among youth. *Journal of Educational, Health and Community Psychology*, 5(3), 56-77.

- Myin-Germeys, I., Oorschot, M., Collip, D., Latester, J., Delespaul, P., & van Os, J. (2009). Experience sampling research in psychopathology: Opening the black box of daily life. *Psychological Medicine*, *39*, 1533-1547. <https://doi.org/10.1017/S0033291708004947>
- Morrison, K., & Johnson, C. (2011). When what you have is who you are: Self-uncertainty leads individualists to see themselves in their possessions. *Personality and Social Psychology Bulletin*, *37*, 639–651. <https://doi.org/10.1177/0146167211403158>
- Nie, J., Wang, P., & Lei, L. (2020). Why can't we be separated from our smartphones? The vital roles of smartphone activity in smartphone separation anxiety. *Computers in Human Behavior*, *109*, 106351. <https://doi.org/10.1016/j.chb.2020.106351>
- Ogden, H. & Cheng, S. (2011). Cultural dimensions and materialism: Comparing Canada and China. *Asia Pacific Journal of Marketing and Logistics*, *23*(4), 431-447. <https://doi.org/10.1108/13555851111165011>
- Ouyang, M., Cai, X., Yin, Y., Zeng, P., Chen, Y., Wang, X., Xie, X., & Wang, P. (2020). Student-student relationship and adolescent problematic smartphone use: The mediating role of materialism and the moderating role of narcissism. *Children and Youth Services Review*, *110*, 104766. <https://doi.org/10.1016/j.childyouth.2020.104766>
- Richins, M. (1994). Special possessions and the expression of material values. *Journal of Consumer Research*, *21*, 522-533. <https://doi.org/10.1086/209415>
- Richins, M. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research*, *31*, 209-219. <https://doi.org/10.1086/383436>
- Roberts, J., & Pirog, S. (2013). A preliminary investigation of materialism and impulsiveness as predictors of technological addictions among young adults. *Journal of Behavioral Addictions*, *2*, 56–62. <https://doi.org/10.1556/JBA.1.2012.011>
- Ruvio, A., Somer, E. & Rindfleisch, A. (2014). When bad gets worse: The amplifying effect of materialism on traumatic stress and maladaptive consumption. *Journal of the Academy of Marketing Science*, *42*, 90–101. <https://doi.org/10.1007/s11747-013-0345-6>
- Schermelleh-Engel, K., & Moosbrugger, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, *8*, 23-74. <https://doi.org/10.23668/psycharchives.12784>
- Shrum, L., Wong, N., Arif, F., Chugani, S., Gunz, A., Lowrey, T., Nairn, A., Pandelaere, M., Ross, S., Ruvio, A., Scott, K., & Sundie, J. (2013). Reconceptualizing materialism as identity goal pursuits: Functions, processes, and consequences. *Journal of Business Research*, *66*(8), 1179-1185. <https://doi.org/10.1016/j.jbusres.2012.08.010>
- Sivadas, E., & Machleit, K. (1994). A scale to determine the extent of object incorporation in the extended self. In C. Park & D. Smith (Eds.), *Proceedings of the American Marketing Association Winter Conference: Vol. 5* (pp. 143-149). American Marketing Association
- Sivadas, E., & Venkatesh, R. (1995). An examination of individual and object-specific influences on the extended self and its relation to attachment and satisfaction. *Advances in Consumer Research*, *22*, 406-412.
- Smith, J. & Osborn, M. (2008). Interpretative phenomenological analysis. In J. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* ( 2nd ed., pp. 53-80). Sage.
- Streiner D. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of personality assessment*, *80*(1), 99–103. [https://doi.org/10.1207/S15327752JPA8001\\_18](https://doi.org/10.1207/S15327752JPA8001_18)
- Tabachnick, B., & Fidell, L. (2007). *Using multivariate statistics* (5th ed.). Boston: Allyn & Bacon/Pearson Education.
- Taber, K. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*(6), 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Tanhan, A., & Strack, R. W. (2020). Online photovoice to explore and advocate for Muslim biopsychosocial spiritual wellbeing and issues: Ecological systems theory and ally development. *Current Psychology*, *39*(6), 2010-2025. <https://doi.org/10.1007/s12144-020-00692-6>
- Tran, D. (2016). Classifying nomophobia as smart-phone addiction disorder. *UC Merced Undergraduate Research Journal*, *9*, 1-22. <https://doi.org/10.5070/M491033274>

- Vincent, J., Haddon, L., & Hamill, L. (2005). The influence of mobile phone users on the design of 3G products and services. *Journal of the Communications Network*, 4, 69-73.
- Walsh, S., & White, K. (2007). Me, my mobile, and I: The role of self- and prototypical identity influences in the prediction of mobile phone behavior. *Journal of Applied Social Psychology*, 37(10), 2405-2434. <https://doi.org/10.1111/j.1559-1816.2007.00264.x>
- Walsh, S., White, K., & Young, R. (2009). The phone connection: A qualitative exploration of how belongingness and social identification relate to mobile phone use amongst Australian youth. *Journal of Community & Applied Social Psychology*, 19(3), 225-240. <https://doi.org/10.1002/casp.983>
- Walsh, S., White, K., & Young, R. (2010). Needing to connect: The effect of self and others on young people's involvement with their mobile phones. *Australian Journal of Psychology*, 62(4), 194-203. <https://doi.org/10.1080/00049530903567229>
- Wehmeyer, K. (2008). User-device attachment? Scale development and initial test. *International Journal of Mobile Communications* 6(3). <https://doi.org/10.1504/IJMC.2008.017511>
- Xu, D., Qian, L., Wang, Y., Wang, M., Shen, C., Zhang, T., & Zhang, J. (2015). Understanding the dynamic relationships among interpersonal personality characteristics, loneliness, and smart-phone use: Evidence from experience sampling. *International Conference on Computer Science and Mechanical Automation (CSMA)*, Hangzhou, China. <https://doi.org/10.1109/CSMA.2015.11>
- van Deursen, A., Bolle, C., Hegner, S., & Kommers, P. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in Human Behavior*, 45, 411-420. <https://doi.org/10.1016/j.chb.2014.12.039>
- Yildirim, C. (2014). *Exploring the dimensions of nomophobia: Developing and validating a questionnaire using mixed methods research* [Master's thesis, Iowa State University]. Iowa State University Digital Repository. <https://dr.lib.iastate.edu/handle/20.500.12876/28192>
- Yildirim, C., & Correia, A. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, 49, 130-137. <https://doi.org/10.1016/j.chb.2015.02.059>
- Yildirim, C., Sumuer, E., Adnan, M., & Yildirim, S. (2016). A growing fear: Prevalence of nomophobia among Turkish college students. *Information Development*, 32, 1322-1331. <https://doi.org/10.1177/02666669155990>

## Appendix

### Appendix A

#### Extended Self Scale-Turkish Form

- 1: Kesinlikle katılmıyorum      2: Katılmıyorum      3: Kısmen katılmıyorum  
4: Karasızım      5: Kısmen katılıyorum      6: Katılıyorum  
7: Kesinlikle katılıyorum

1. Telefonum sahip olmak istediğim kimliğe ulaşmama yardımcı oluyor. (My phone helps achieve the identity I want to have.)
2. Telefonum, olduğum kişi ile olmaya çalıştığım kişi arasındaki farkı daraltmama yardımcı oluyor. (My phone helps me narrow the gap between what I am and what I try to be.)
3. Telefonum kimliğimin merkezi bir ögesidir. (My phone is central to my identity.)
4. Telefonum olduğum kişinin bir parçasıdır. (My phone is part of who I am.)
5. Telefonum benden alırsa kimliğim elimden alınmış gibi hissederim. (My phone is stolen from me I will feel as if my identity has been snatched from me.)
6. Kimliğimin bir kısmını telefonum oluşturuyor. (I derive some of my identity from my phone.)

## RESEARCH ARTICLE

# Anxiety, Self-Efficacy, And Self-Regulation in High School Students: The Mediating Role of Attentional Control

Müge Yukay YÜKSEL<sup>a</sup>  Umut KERMEN<sup>b</sup> 

<sup>a</sup>Marmara University, Istanbul, Turkey <sup>b</sup> Ministry of Education, İstanbul, Turkey

## ARTICLE HISTORY

**Received:** 10.06.23

**Accepted:** 21.04.24

## KEYWORDS

Anxiety, Attentional  
Control, Adolescents, Self-  
Efficacy, Self-Regulation

## ABSTRACT

Reducing anxiety, developing self-efficacy and self-regulation skills, and increasing attentional control are among the goals of psychological counseling sessions. This study intends to determine whether or not high school students' attentional control over their anxieties is affected by self-efficacy and self-regulation, as attentional control is not seen to have been studied correlationally with other variables in Turkey. 170 girl, 155 boys, total 325 students in Istanbul participated in the research. Data has been collected using the General Self-Efficacy Scale, the Perceived Self-Regulation Scale, the State-Trait Anxiety Inventory, and the Attentional Control Scale. Data were collected in classrooms. Correlation and path-analysis techniques have been used in analyzing the data. According to the findings, self-efficacy is a positive and significant predictor of self-regulation and attentional control and a negative predictor of anxiety in model for the high school students. Attentional control also negatively predicts anxiety. Additionally, attentional control has a partial mediating role between self-efficacy and anxiety.

As an educational environment, schools are focused on having students learn and achieve goals. The performances shown in lectures and exams are important parameters of educational life. Individuals evaluate themselves in this way and develop perceptions about their personal competence or incompetence. High-stakes exams, especially university entrance exams, are very important for individuals who have dreamt of a good future since their childhood. University entrance exams are found in many countries around the world. Countries structure these exams according to their education systems and economies (OECD, 2017). Especially in university entrance exams, individuals have to show what they have gotten from their educational lives and environmental factors (Modisaotsile, 2012). Examining the problems in students' educational environments and individual lives can be important in terms of determining the causes for low success in the exams.

Student characteristics, teaching methods, and learning materials have been examined in order to achieve educational success. Learner-related factors include both structural and psychological processes such as readiness, maturation, intelligence, motivation, age, attentional control, transference, and general excitability. Individuals who are able to focus their attention on the process from the beginning to the end of their education life and who have been highly participatory in their courses can maximally benefit from the educational environment; this situation can reflect onto their exam performance (Senemoğlu, 2018). Attentional control is a mental function with increased importance in child and adolescent development; it guides them through

**CORRESPONDING AUTHOR** Müge Yukay YÜKSEL, [muge.yuksel@marmara.edu.tr](mailto:muge.yuksel@marmara.edu.tr), ORCID: 0000-0002-7425-2716, Marmara University, Istanbul, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counselling and Guidance Association

their educational lives and at the same time allows them to be functional in everyday life (Diamond, 2013). It is also a mechanism that works together with executive functions and working memory (Astle & Scerif, 2011; Bester & Brand, 2013). *Attentional control is paired with perceiving stimulus, directing attention toward the perceived state, transferring attention from one state to another, thinking flexibly, and being able to control thought* (Derryberry, 2002). *Whether this process works or not can be understood by observing children when they start school.*

Attentional control theory is an approach related to anxiety and cognition and is based on Eysenck and Calvo's (1992) processing efficiency theory. According to the processing efficiency theory, anxiety leads to a reduction in the storage and processing capacity of working memory for a recent task. It also leads to an increase in effort for activities and work designed to improve performance. An important distinction exists in the theory between performance efficiency and process efficiency with the result being that anxiety affects functional behavior negatively. When looking at attentional control theory, this function is strikingly described through the conditions of performance, anxiety, and apprehension. Accordingly, anxiety decreases one's efficiency in daily life and makes performing tasks effectively difficult. According to the theory, the inability to perform effectively means that eliminating wrong options becomes difficult through reduced attentional control, which thus increases the likelihood of making wrong choices. At this juncture, one's attention is more susceptible to distractions. In later stages, one experiences failures in performance. The inability to perform functions appears with this sort of degradation and loss in performance. Those who cannot direct their attention begin to act impulsively. One's behaviors may become unregulated (Eysenck, Derakshan, Santos, & Calvo, 2007). This will lead to more mistakes and, consequently, more anxiety. Afterwards behaviors may be found such as developing uncontrolled behaviors in school and disobeying school rules. Thus a cycle begins in which a situation may be found where variables such as self-efficacy, anxiety, and self-regulation are affected in the school environment.

Anxiety is a normal emotion that people show from time to time. High school students may feel anxious about school and in situations unrelated to school. Nevertheless, anxiety can persist and continue in many situations and may cause people to behave negatively. This may prevent adolescents from performing properly in school (Huberty, 2009). According to Bandura (1997), self-efficacy is the belief in whether one can succeed in a task by evaluating one's abilities. Self-efficacy influences one's emotional state, motivation, and behaviors. Self-efficacy affects anxiety through one's emotional state because a person develops high levels of anxiety when thinking one cannot cope with the difficulties in life. In addition, when one evaluates one's personal capacity and power in life, anxiety may develop if one concludes that one is unsuccessful. People with high self-efficacy are able to calm themselves and seek support from friends and families (Bandura, 2010). Therefore, the aim of the study is to reveal a general picture of the relationships among self-efficacy, anxiety, and attention control, not only in the academic environment but also in life events.

Rezaei, Hosseini Ramaghani and Fazio's (2017) correlational research, which evaluated anxiety and performance in terms of attentional control theory, was done with 318 high school students. Eighty of these students were divided into low and high anxiety groups. A test was done in the form of 64 cards containing performance evaluations, problem solving, cognitive flexibility, and stimulus responses. Those experiencing high anxiety were found to have worse performances than those with low anxiety. In addition, those with high anxiety exerted more effort compared to those with low anxiety, yet ended up with significantly lower levels in performance. Another study (Melendez, Bechor, Rey, Pettit & Silverman, 2017) done with 186 children between the ages of 6-17 studied attentional control and anxiety together. According to the research findings, anxiety has a negative relationship with the skills of attention focusing and attention activation. The ability to focus attention is a significant predictor of anxiety.

Experiencing problems in attentional control leads to impulsive behaviors and thus to difficulties in regulating behaviors. In this case, another function that has been examined theoretically with attentional control is self-regulation. Self-regulation is one of the main concepts that has enabled developmental psychology to bring its perspective to psychopathology. Genetic predispositions and childhood experiences have a mediating role on adult functionality in determining whether or not one has psychological discomfort (Rueda, Posner, & Rothbart, 2016). Self-regulation has been found to have three main roles. The first is children's ability to resist stress. The second is the provision of maintaining focused attention. The last is the ability to interpret one's

own and others' mental states (Fonagy & Target, 2002). In addition to these, self-regulation can be seen as the ability to regulate emotions and thought processes (Mischel & Ayduk 2011). In other words, those with high self-regulation skills manage their own learning processes. For this reason, it is meta-cognitive. It behaves actively in learning processes and provides its own self-motivation (Schunk, 2005). In a two-part study (Diehl, Semegon, & Schwarzer, 2006) performed with 773 people, positive and significant correlations were found between attentional control and self-regulation. The same results in the first part of the study performed with children were also arrived at in the second part performed with adults. Another aspect of the study ascertained the determinants of academic performance. The variables that significantly predicted academic performance are attentional control and self-efficacy. In addition, a correlation value of 0.58 was found for attentional control with self-efficacy, another variable in our study. In the literature, tasks can be performed when focused on a goal, and attentional control and self-efficacy skills must be used together to make it easy.

A child who starts school is expected to gain the ability to read and write. Gaining this skill is equivalent to success. For this reason, the first task of a school-age child is to adapt to the learning environment and show success in his/her courses. Only in this way can a sense of self-efficacy develop. However, studying regularly and having a sense of responsibility can be effective in this process. An individual's ability to organize one's life can be influenced by both familial and environmental variables, as well as educational life. Individuals with the ability to self-regulate, which can be an important criterion in healthy personality development, are able to deal more easily with life problems. They can adapt more easily to the school environment and develop their self-confidence. In addition, they can control anxiety levels and may possess reasoning skills (Fonagy & Target, 2002). This is of course related to the ability to pay attention (Diehl, Semegon, & Schwarzer, 2006). The current study aims to examine self-efficacy, anxiety, and self-regulation skills through the attentional processes that may be important in adapting to school and work life. As such, educators and school counselors may be able to evaluate variables such as anxiety and perceived inadequacy from different perspectives and develop different strategies in the process of evaluating and directing children. In this way, countries will be able to educate students to be the labor force they need in the future because one of the skills that countries want to bring youths in secondary education is the training for them to be more compatible with the needs of the labor market (UNICEF, 2017). Thus by examining self-regulation and self-efficacy in relation to attention and anxiety processes, determining the effect of these variables on each other can help field workers develop a different perspective when evaluating individuals. In this way, individuals may be able to perform more in their work life and be more productive. As a result, the data obtained from this study not only apply to high school years but can also be the basis for studies on predictors for adulthood.

In summary, attentional control appears to be interrelated with the variables of anxiety, self-regulation, and self-efficacy. The effects of these variables on attention processes have been emphasized to be significant mainly for children and adolescents in cases such as being able to fulfill tasks or be successful academically. In addition, a study on attention has also been identified to further consider developmental needs at the forefront in childhood (Gözalán & Koçak, 2014) and pre-adolescence (Biederman et al., 2012). Individual differences in attentional control can lead to anxiety. The variations that appear in the skills of concentrating on a situation, being able to distribute attention to various situations, and being able to use attention flexibly while engaging with work can lead to anxiety in students (Reinholdt-Dunne, Mogg, & Bradley, 2013). Directing adolescents and children toward goals and feelings of self-sufficiency allows them to be able to direct their attention (Coombes, Higgins, Gamble, Cauraugh, & Janelle, 2009). Investigating these relationships over high school students is considered important. High-stakes testing is defined as exams that need to be taken for being able to finish school, for demonstrating sufficiency in a practice, for registering in a program, or for placing into a university (Jones, Jones, & Hargrove, 2003). Results from high-stakes exams appear significant to individuals and cause them anxiety (Suen & Yu, 2006). Therefore, studying the concept of attentional control in students who have not yet been diagnosed with any anxiety disorder yet are at risk of experiencing anxiety because of exams is considered important. Also, attentional control in high school students is a topic that has been insufficiently studied in literature. Investigating self-efficacy, self-regulation, and anxiety in high school students preparing for the university exam and the effect of these variables on attentional control is considered important. Showing the relationships among these variables over students would be a guide to teachers and school psychological counselors working in the field of education. Therefore

the purpose of our research is to study the variables of attentional control, anxiety, self-regulation, and self-efficacy in high school students and show their relationships in a path model.

## Method

### Research Model

This research is a descriptive study. Correlational research design was used to examine the relationships between attention control, anxiety, self-regulation and self-efficacy variables. This is a type of research that determines the relationships between two or more variables. Correlational research design do not give cause and effect relationships. The direction of the relations between the variables is found. This model facilitates the evaluation of relationships between variables. In addition, the ease of explaining and understanding the relationships is one of the advantages of this method (Kothari, 2004).

### Population and Sample

The population of the study consists of students receiving education in academic high schools in the Zeytinburnu district of Istanbul during the 2021-2022 school year. Zeytinburnu has six academic high schools with 5,619 students in these schools. The sample involves four academic high schools. The total number of students in these two schools is 3,966. In accordance with the sizes of the population and the sample, 313 individuals are considered an appropriate representation of the population in line with 5% of the sample. The number of students who participated in the research is 325. The number of girls is 170 (52.3%), and the number of boys is 155 (47.7%). The number of students for 9th, 10th, 11th, and 12th grade is 84 (25.9 %), 80 (24.6 %), 81 (24.9 %), and 80 (24.6 %), respectively. The mean score and standard deviations for age belong to girls, boys and all participants are  $15,66 \pm 1,37$ ,  $15,82 \pm 1,31$  and  $15,74 \pm 1,34$ , respectively. The ages of the participants range between 14 and 18. Random sampling was used in the research. The four schools that collected data in the study were randomly selected from six schools. In schools, the classes in which data were collected were also randomly determined.

### Data Collecting Instruments

**General self-efficacy scale.** The Turkish adaptation of the General Self-Efficacy Scale, developed by Sherer, Maddux, Mercandante, and Rogers (1982), was adapted in Turkish by Yıldırım and İlhan (2010) and is a 5-point Likert-type scale consisting of 17 questions and three sub-dimensions: initial, undaunted, and persistent effort/insistence. The total explained variance of the three sub-dimensions is 41.46%. Item-total correlations range from .46 to .70. The scale's Cronbach alpha of internal consistency is .80, and test-retest reliability is .69. For criterion validity, correlation values between scores from the General Self-Efficacy Scale with the Self-Esteem Scale, Learned Difficulty Scale, Locus of Control Scale, and Beck Depression Scale are .48, .58, -.30, and -.49, respectively.

**Perceived self-regulation scale.** The scale was developed by Arslan and Gelişli (2015). While developing the scale, the 16 items were revealed to be gathered in two dimensions: being open and searching. The explained total variance is 54.3%. The internal consistency coefficient for the whole scale is .90. Item-total correlations range from .52 to .69. The sub-scales are called openness and quest. Cronbach's alphas are .84 for being open and .82 for searching. Confirmatory factor analysis has been performed to verify the scale's one factor structure. The chi-square has been found as  $\chi^2 = 147.60$   $SD = 95$ ,  $\chi^2 / SD = 1.55$  and fit indexes as  $RMSEA = 0.042$ ,  $NFI = 0.980$ ,  $CFI = 0.990$ ,  $IFI = 0.990$ ,  $RFI = 0.970$ ,  $GFI = 0.940$ ,  $AGFI = 0.920$ , and  $SRMR = 0.035$ .

**State-Trait Anxiety Inventory.** The State-Trait Anxiety Inventory was developed by Spielberger, Gorsuch, Lushene, Vagg, and Jacobs (1983) with the aim of identifying the anxieties of normal and non-normal peoples. The Turkish adaptation of the scale was done by Oner and LeCompte (1983) and is a 4-item Likert-type self-evaluation scale. The scale has two sub-dimensions: state and trait anxiety. Its reliability coefficients are .83 and .87. Test-retest reliability correlation values are .86 for state anxiety and .71 for trait anxiety. Item-total correlations range from .71 to .68 for trait anxiety and from .26 to .68 for state anxiety (Aydemir & Köroğlu, 2000). This study only uses the sub-dimension of trait anxiety.

**Attentional Control Scale.** The Attentional Control Scale was developed by Derryberry and Reed, and the Turkish form was adapted over 349 people by Akın, Kaya, Çardak, and Demirci (2013) as a 4-item Likert-type scale. The scale consists of 20 items and has a single-dimensional structure. Item-factor loadings are between .28 and .45. The internal reliability coefficient is .78. The test-retest correlation is .61. According to the results from the confirmatory factor analysis, the goodness-of-fit values are  $\chi^2 = 426.76$ ,  $SD = 164$ ,  $\chi^2 / SD = 2.60$ ,  $RMSEA = 0.062$ ,  $IFI = .810$ ,  $CFI = 0.800$ ,  $GFI = 0.910$ ,  $AGFI = 0.880$ ,  $SRMR = 0.067$ .

### Data Collection

Permission was obtained from school administrators before collecting data. Informed consent form was taken from student parents. The scales were applied to the students in the class of a lesson-appropriate teacher. In all applications, a researcher was in the classrooms and answered the questions of the students. The personal information form, General Self-Efficacy Scale, Perceived Self-Regulation Scale, Trait Anxiety Inventory, and Attentional Control Scale were introduced to the students. The scales were given to the students who volunteered and implementations were not made for students who didn't want to fill them out. In addition, data were not obtained from students whose parents did not allow. The students filled out the scales in approximately 20-25 minutes.

### Data Analysis

The data obtained in the study were made into a data set in the program statistical programme. Frequency, percentage, mean score, and standard deviation analyses were used, and correlation analysis was used to look at the relationships among the variables of general self-efficacy, perceived self-regulation, trait anxiety, and attentional control. Frequency, percentage, mean score, and standard deviation analyses were used, and correlation analysis were made by SPSS 20. Path analysis techniques, measurement models and bootstrap method were used for examining the relationships among these variables. Path analysis, measurement models and bootstrap method were performed by JASP 0.16.0.0.

## Results

The measurement models, correlations of the variables, descriptive statistics and path-analysis diagram of the scales that were used are given in this section.

**Table 1.** Descriptive statistics and correlations of the variables

Variable	M	SD	1	2	3	4
1.Self-Efficacy	61.54	9.75	1	.53*	.48*	-.45*
2.Self-Regulation	58.04	8.70		1	.39*	-.24*
3. Attentional Control	50.77	8.72			1	-.46*
4.Anxiety	26.29	10.40				1

\* Correlation is significant at .001 level (two-sided).

According to Table 1, a positive and significant correlations are given for self-efficacy with self-regulation ( $r = .58$ ), self-efficacy with attentional control ( $r = .53$ ), and self-regulation with attentional control ( $r = .38$ ). In addition, anxiety has negative correlations with self-efficacy ( $r = -.48$ ), self-regulation ( $r = -.29$ ), and attentional control ( $r = -.48$ ). As anxiety scores increase, scores for self-regulation, self-efficacy, and attentional control decrease.

Fit indices for path models are shown in Table 2.

**Table 2.** Fit Indices for Path Model

Fit Indices	Good fit	Acceptable fit
$\chi^2 / df$	$\leq 3$	$\leq 5$
RMSEA	$\leq 0.05$	$\leq 0.08$
CFI	$\geq 0.95$	$\geq 0.90$
TLI	$\geq 0.95$	$\geq 0.90$
SRMR	$\leq 0.05$	$\leq 0.08$

For acceptable fit,  $\chi^2 / df$ , *SRMR* (Kline, 2005) and *RMSEA* (Hu and Bentler, 1999) , must be less than 5, 0.08, and 0.08, respectively; *CFI* and *TLI* must both be greater than 0.90 (Hu and Bentler, 1999).

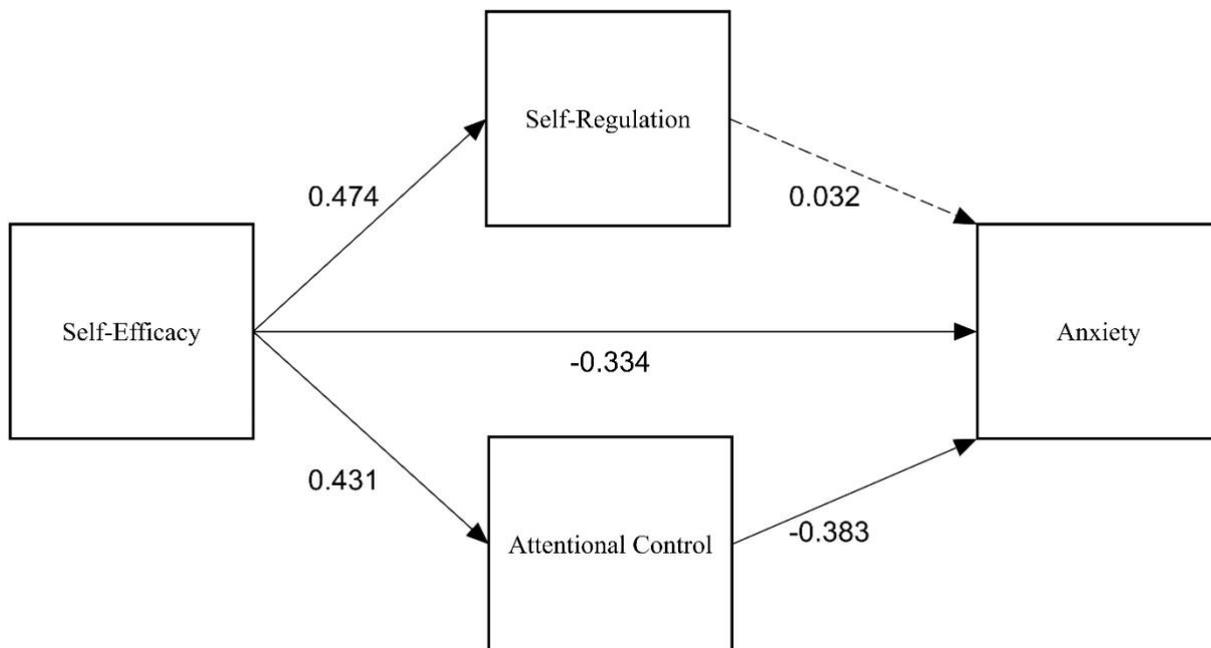
**Table 3.** Fit Indices of the Measurement Models

Variable	$\chi^2$	df	$\chi^2 / df$	RMSEA	CFI	TLI	SRMR
Self-Efficacy	201.287	99	2.03	0.054	0.910	0.901	0.049
Self-Regulation	200.661	94	2.13	0.058	0.921	0.900	0.048
Anxiety	342.788	158	2.17	0.058	0.908	0.901	0.053
Attentional Control	348.463	157	2.19	0.060	0.903	0.900	0.060

Before performing the path analysis, the measurement models were examined. In all measurement models, it was observed that there was a model-data fit.

The relationships of the variables are shown in Figure 1.

**Figure 1.** Path model of self-efficacy, self-regulation, attentional control, and anxiety for the group



According to Figure 1, self-efficacy is seen to positively predict self-regulation and attentional control and to negatively predict anxiety. In addition, the variable of attentional control negatively predicts anxiety. According to the path-analysis results, all fit indices are acceptable ( $r^2 = 2.363$ ,  $df = 1$ ,  $\chi^2 / df = 2.363$ ,  $p = .12$ ,

$RMSEA = 0.065$ ,  $CFI = 0.995$ ,  $TLI = 0.973$ ,  $SRMR = 0.018$ ).  $\chi^2 / df$ ,  $CFI$ ,  $TLI$  and  $SRMR$  have good fit for the model.  $RMSEA$  is acceptable for the model.

According to the results, self-efficacy is a significant predictor of self-regulation ( $\beta = .474$ ,  $p \leq .001$ ), attentional control ( $\beta = .431$ ,  $p \leq .001$ ), and anxiety ( $\beta = -.334$ ,  $p \leq .001$ ), and attentional control is a significant predictor of anxiety ( $\beta = -.383$ ,  $p \leq .001$ ). Self-regulation is not a significant predictor of anxiety. The variance percentages explained in the model are 28.3% for self-regulation, 23.2% for attentional control, and 28.6% for anxiety.

**Table 4.** Regression Coefficients and Bootstrap Results

Predictor	Outcome	Estimate	Std. Error	z	p	95% Confidence Interval		Standardized		
						Lower	Upper	All	LV	Endo
Self-Efficacy	Self-Regulation	0.474	0.042	11.321	< .001	0.394	0.554	0.532	0.474	0.055
	Attentional Con.	0.431	0.043	9.906	< .001	0.344	0.524	0.482	0.431	0.049
Attentional Con.	Anxiety	-0.383	0.064	-5.998	< .001	-0.509	-0.235	-0.321	-0.383	-0.321
Self-Regulation	Anxiety	0.032	0.066	0.480	0.632	-0.115	0.165	0.027	0.032	0.027
Self-Efficacy	Anxiety	-0.334	0.065	-5.132	< .001	-0.457	-0.183	-0.313	-0.334	-0.032

Table 4 shows regression coefficients and bootstrap results. Additionally defining the moderator and mediator variables would be useful. The moderator variable is defined as the variable that has the potential to cause a change in the structure or direction of a relationship between the independent and dependent variables. It has no direct effect on the dependent or independent variables. The mediator variable is defined as the variable that eliminates, increases, or decreases the power of an observed relationship between independent and dependent variables and affects both the dependent and independent variables (Çokluk, Şekercioglu, & Büyüköztürk, 2012). For this reason, attentional control has a partial mediating role between self-efficacy (independent variable) and anxiety (dependent variable) for the model. The mediating role of self-regulation between self-efficacy and anxiety is not significant.

### Discussion

The education programs of Turkey desire to educate high school students to have healthy self-perceptions, to recognize their strengths and weaknesses, and to develop adaptation processes using student personality services (MEB, 2006). This study has examined the relationships among the variables of attentional control, anxiety, self-regulation, and self-efficacy and discusses the processes that teachers and school psychologists can take into consideration in evaluating and preparing students for their after-school life.

According to the results from this study conducted with high school students, self-regulation and attentional-control levels increase and anxiety levels decrease as self-efficacy levels increase. Anxiety levels decrease with increases in self-regulation and attentional-control levels. According to the results of the path model, self-efficacy is a predictor of self-regulation and attentional control. The predictors of anxiety are self-efficacy and attentional control. In addition, self-efficacy predicts anxiety through attentional control. Self-regulation is insignificant as a predictor of anxiety.

In one research (Qudysi & Putri, 2016) that studied the variables of anxiety and self-efficacy, self-efficacy was found to be a significant predictor factor of anxiety and to explain 4% of the variance in anxiety. According to the results of the path-analysis study Roick and Ringeisen (2017) made with university students, self-efficacy and anxiety have a negative relationship. Self-efficacy directly predicts anxiety about academic success. In the path-analysis study Guerro, Farkas, and Moncada (2018) did with 106 adolescents, self-efficacy was seen to be a negative predictor of anxiety. A one-unit increase in self-efficacy leads to a .33-unit decrease in anxiety. Yıldırım (2011) examined students' mathematics success on the Programme for International Student Assessment through path analysis using the variables of self-efficacy, anxiety, and intrinsic motivation. For each of the three groups, self-efficacy was also a significant predictor of anxiety. Self-efficacy explained 9% of the variance in anxiety for the Turkish group, 13% for the Japanese group, and 27% for the Finnish group.

Additionally, Themanson and Rosen (2015) found self-efficacy to significantly predict attentional control and academic success to be explained through the mediation of attentional control. Greason and Cashwell (2009) identified the correlation value between self-regulation and attentional control to be .59. These findings in the literature support self-efficacy as a negative predictor of anxiety and as a positive predictor of attentional control. People with low self-efficacy act recessively in the jobs and tasks they need to do. They perceive their responsibilities as threats. They experience difficulty in focusing their attention on tasks that need to be done, instead focusing on their missing aspects, self-inhibiting factors, and negative results. People with high self-efficacy are willing to struggle and undertake difficult tasks. They can concentrate easily on a task. They take the strengths and positive aspects into consideration rather than the negative characteristics (Ritter, Boone, & Rubba, 2001). This explanation is able to show support for how self-efficacy explains anxiety through attentional control.

When looking at the relationship between self-efficacy and self-regulation, Gökçearslan, Mumcu, Haşlaman, and Çevik (2016) identified a positive correlation value of .59 between the two variables. According to Sadi and Uyar's (2013) path model-based study done with 428 high school students, a correlation value of .34 was found between self-efficacy and self-regulation, with self-efficacy significantly predicting self-regulation. According to Usher and Pajares's (2008) study done with 3,760 students, self-efficacy significantly predicts self-regulation. Self-regulation directs how one uses one's own cognitive abilities for success. The skill of self-efficacy has a relationship with using cognitive abilities for success. As a result, increased self-efficacy brings the increased capacities of being goal-oriented and able to regulate behavior. Self-efficacy enables the use of different strategies for various goals (Pintrich, 2004). The dimensions of self-regulation are being goal-oriented, the capacity for behavior regulation, and the capacity for different strategy usage (Zimmerman, 2002). The group that forms the current study's sample had entered their schools with high grades. They are also able to exemplify cases that form the sub-dimensions of the concepts of self-regulation and self-efficacy. The significance of the relationship between self-regulation and self-efficacy and how self-efficacy explains self-regulation may be due to the structure of the sample group.

One finding that emerged in the research is attentional control being a significant and negative predictor of anxiety. Walsh, Balint, Smolira, Fredericksen, and Madsen (2009) reported a correlation value of -.46 between the two variables. According to the research Kertz, Stevens, and Klein (2017) did with 583 university students, focused attention and attention shifting (the sub-dimensions of attentional control) are negative predictors of anxiety. Reinholdt-Dunne et al. (2013) reported in their sample of 193 individuals with depression and 165 separate individuals with anxiety that increases in attentional control brought lower levels of anxiety and depression. Bardeen, Tull, Stevens, and Gratz (2014) found attentional control to have a mediating role between anxiety and negative affectivity in adults 18 to 60 years old. The literature findings support the findings that emerged in the research process. Therefore, interventions are planned based on increasing attentional control while intervening in the process between anxiety and attentional control. This attempts to remove the dysfunctional trait between the two cases (Hsu et al., 2015).

After all, according to attentional control theory, increased anxiety negatively affects attentional control while decreased anxiety increases attentional control. In accordance with the theory, this study has found attention to increase as anxiety decreases and attentional control to have a mediating role between anxiety and self-efficacy. In light of these results, consideration of the factors related to attentional control is advisable while examining the concerns of test anxiety and insecurity that negatively affect examination processes and while examining the causes of negative in-class behaviors. In this way, the study can guide students and teachers both in adapting to education and work life and in developing healthy personalities.

### **Conclusion and Recommendations for Future Research**

This is the first correlational study in Turkey to show the mediating role of attentional control. Showing the relationships among self-efficacy, self-regulation, anxiety, and attentional control over students will be a guide to teachers and school psychological counselors working in the field of education. Firstly, this study can be useful for diminishing behavioral problems in the classroom environment related to attentional control. When a child starts to exhibit mismatches in the group, the whole group is affected and student efficiency drops. However, with individual and group guidance activities, increasing children's attention spans and, accordingly,

reducing their anxiety will be possible. In this process, interviews can be made with families in order to make students feel more competent and responsible. Also, our study can be a guide for following up on students' longitudinal academic success and whether students have learned course topics (Grissmer, Grimm, Aiyer, Murrah, & Steele, 2010; McClelland, Acock, Piccinin, Rhea, & Stallings, 2013). This study additionally shows the need for adding the effectiveness of attentional control when attempting to develop the skill of self-efficacy in psychological counseling sessions that are structured for decreasing the anxiety of those suffering from it. For these reasons, our research can be a reference source for other researchers, teachers, psychological counselors, and psychologists. Our research has limitations in addition to its positive aspects. The population and sample only reflect academic high schools as a type of school. Thus, future researchers are recommended to take their samples from other types of schools. In addition, attentional control and self-regulation are variables that have been studied together alongside academic performance. Thus, future researchers are recommended to add students' academic performances as a variable. Future researchers can also test whether or not this model works on child, early-adolescent, adult, and elderly age groups.

**Author Contributions:** The research design was made by both researchers. Müge Yüksel wrote the introduction and discussion sections of the study. Data were collected by two researchers. Data analysis was done by Umut Kermen. The Materials and Methods and Results sections were written by Umut Kermen. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Funding Disclosure:** No funding was received to assist with the preparation of this manuscript.

**Conflicts of Interest:** All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

**Data Availability:** The data sets generated during and/or analysed during the current study are available in the Mendeley Data repository, under the doi number [DOI: 10.17632/3gx5f24fpv.1](https://doi.org/10.17632/3gx5f24fpv.1)

**Ethical Disclosure:** Informed consent was obtained from the 18-year-old participants in the study. If the age of the participant is younger than 18, informed consent was obtained from both his/her parents and himself/herself.

The study was approved by the Marmara University Scientific Research and Publication Ethics Committee on January 20, 2021 (No: 2021-155). In addition, consent forms were obtained from all participants included in the study. **Ethics Committee Name:** Marmara University Institute of Educational Sciences Research and Publication Ethics Committee **Approval Date:** 20.01.2021 **Approval Document Number:** 2021/155

## References

- Akın, A., Kaya, Ç., Çardak, M. & Demirci, İ. (2013). *The Turkish version of the Attentional Control Scale: The validity and reliability study..* Presented paper in VI. National Graduate Education Congress (10-11 May, Sakarya).
- Arslan, S., & Gelişli, Y. (2015). Development of Perceived Self-Regulation Scale: Validity and reliability study. *Sakarya University Journal of Education*, 5, 67-74. <https://doi.org/10.14812/cuefd.298791>
- Astle, D. E., & Scerif, G. (2011). Interactions between attention and visual short-term memory (VSTM): What can be learnt from individual and developmental differences? *Neuropsychologia*, 49, 1435-1445. <https://doi.org/10.1016/j.neuropsychologia.2010.12.001>
- Aydemir, Ö., & Köroğlu, E. (2000). *Psikiyatride kullanılan klinik ölçekler [Clinical scales used in psychiatry]*. Ankara: Hekimler Yayın Birliği.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H Reeman and Company.
- Bandura, A. (2010). Self-efficacy. *The Corsini encyclopedia of psychology*, 1-3. <https://doi.org/10.1002/9780470479216.corpsy0836>
- Bardeen, J.R., Tull, M.T., Stevens, E.N., & Gratz, K.L. (2014). Exploring the relationship between positive and negative emotional avoidance and anxiety symptom severity: The moderating role of attentional control. *Journal of Behavior Therapy and Experimental Psychiatry*, 45(3), 415-420.

- <https://doi.org/10.1016/j.jbtep.2014.04.006>
- Bester, G., & Brand, L. (2013). The effect of technology on learner attention and achievement in the classroom. *South African Journal of Education*, 33(2), 1-15. <http://doi.org/10.15700/saje.v33n2a405>
- Biederman, J., Petty, C.R., Day, H., Goldin, R.L., Spencer, T., Faraone, S.V., Surman, C.B.H., & Wozniak, J. (2012). Severity of the aggression/anxiety-depression/attention (A-A-A) CBCL profile discriminates between different levels of deficits in emotional regulation in youth with ADHD. *Journal of Developmental & Behavioral Pediatrics*, 33, 236-243. <https://doi:10.1097/DBP.0b013e3182475267>
- Coombes, S.A., Higgins, T., Gamble, K.M., Cauraugh, J.H., & Janelle, C.M. (2009). Attentional control theory: Anxiety, emotion, and motor planning. *Journal of Anxiety Disorders*, 23(8), 1072-1079. <https://doi.org/10.1016/j.janxdis.2009.07.009>
- Çokluk, Ç., Şekercioğlu, G., & Büyüköztürk, Ş. (2012). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları*[Multivariate statistics for social sciences: SPSS and LISREL applications]. Ankara: Pegem Akademi.
- Derryberry, D. (2002). Attention and voluntary self control. *Self and Identity*, 1, 105-111. <https://doi.org/10.1080/152988602317319276>
- Diamond, A. (2013). Executive functions. *Annual Review of Psychology*, 64, 135-168. <https://doi.org/10.1146/annurev-psych-113011-143750>
- Diehl, M., Semegon, A.B., & Schwarzer, R. (2006). Assessing attention control in goal pursuit: A component of dispositional self-regulation. *Journal of Personality Assessment*, 86(3),306-317. [https://doi.org/10.1207/s15327752jpa8603\\_06](https://doi.org/10.1207/s15327752jpa8603_06)
- Eysenck, M.W., & Calvo, M.G. (1992). Anxiety and performance: The processing efficiency theory. *Cognition and Emotion*, 6(6), 409-434. <https://doi.org/10.1080/02699939208409696>
- Eysenck, M.W., Derakshan, N., Santos, R., & Calvo, M.G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336-353. <http://doi.org/10.1037/1528-3542.7.2.336>
- Fonagy, P., & Target, M. (2002). Early intervention and the development of self-regulation. *Psychoanalytic Inquiry*, 22(3), 307-335. <https://doi.org/10.1080/07351692209348990>
- Greason, P.B., & Cashwell, C.S. (2009). Mindfulness and counseling self-efficacy: The mediating role of attention and empathy. *Counselor Education and Supervision*, 49, 2-19. <https://doi.org/10.1002/j.1556-6978.2009.tb00083.x>
- Grissmer, D., Grimm, K.J., Aiyer, S.M., Murrain, W.M., & Steele, J.S. (2010). Finemotor skills and early comprehension of the world: Two new school readiness indicators. *Developmental Psychology*, 46(5), 1008-1017. <http://doi.org/10.1037/a0020104>
- Gökçearslan, Ş., Mumcu, F.K., Haşlamam, T., & Çevik, Y.D. (2016). Modelling smartphone addiction: The role of smartphone usage, self-regulation, general self-efficacy and cyberloafing in university students. *Computers in Human Behavior*, 63, 639-649. <https://doi.org/10.1016/j.chb.2016.05.091>
- Gözalın, E., & Koçak, N. (2014). Oyun temelli dikkat eğitim programının 5-6 yaş çocukların kelime bilgi düzeylerine etkisinin incelenmesi [Investigation of the effect of game-based attention training program on the vocabulary knowledge levels of 5-6 year old children]. *KMU Journal of Social and Economic Research*, 16, 115-121. <https://doi.org/10.18493/kmusekad.12328>
- Guerro, C., Farkas, C., & Moncada, L. (2018). Depression, anxiety and PTSD in sexually abused adolescents: Association with self-efficacy, coping and family support. *Child Abuse & Neglect*, 76, 310-320. <https://doi.org/10.1016/j.chiabu.2017.11.013>
- Hsu, K.J., Beard, C., Rifkin, L., Dillon, D.G., Pizzagalli, D.A., & Björngvinsson, T. (2015). Transdiagnostic mechanisms in depression and anxiety: The role of rumination and attentional control. *Journal of Affective Disorders*, 188, 22-27. <https://doi.org/10.1016/j.jad.2015.08.008>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Huberty, T.J. (2009). Test and performance anxiety. *Principal Leadership*, 10, 12-16.
- Jones, M.D., Jones, B.D., & Hargrove, T. (2003). *The unintended consequences of high-stakes testing*. Lanham, MD: Rowman and Littlefield Publishers, Inc.
- Kertz, S.J., Stevens, K.T., & Klein, K.P. (2017). The association between attention control, anxiety, and depression: the indirect effects of repetitive negative thinking and mood recovery. *Anxiety, Stress, & Coping*, 30(4), 456-468. <https://doi.org/10.1080/10615806.2016.1260120>

- Kline, R. B. (2005). *Principles and practice of structural equation modeling*. Guilford.
- Kothari, C.R. (2004) *Research Methodology: Methods and Techniques*. New Delhi: New Age International Publishers.
- McClelland, M.M., Acock, A.C., Piccinin, A., Rhea, S.A., & Stallings, M.C. (2013). Relations between preschool attention span-persistence and age 25 educational outcomes. *Early Childhood Research Quarterly*, 28, 314–324. <https://doi.org/10.1016/j.ecresq.2012.07.008>
- MEB. (2006). *İlköğretim ve ortaöğretim kurumları sınıf rehberlik programı [Primary and secondary education institutions classroom guidance program]*. Ankara: Milli Eğitim Bakanlığı
- Melendez, R., Bechor, M., Rey, Y., Pettit, J.W., & Silverman, W.K. (2017). Attentional control scale for children: Factor structure and concurrent validity among children and adolescents referred for anxiety disorders. *Journal of Clinical Psychology*, 73 (4), 489-499. <https://doi.org/10.1002/jclp.22346>
- Mischel, W., & Ayduk, O. (2016). Willpower in a cognitive affective processing system: The dynamics of delay gratification. In [KD Vohs](#) & [RF Baumeister](#) (eds). *Handbook of self-regulation, second edition: Research, theory and applications*. New York: Guilford Publications.
- Modisaotsile, B.M. (2012). The failing standard of basic education in South Africa. *Policy Brief*, 72, 1-7.
- OECD (2017). *Education at a glance 2017: OECD Indicators*. Paris: OECD Publishing. <http://doi.org/10.1787/eag-2017-en>.
- Qudysi, H., & Putri, M.I. (2016). Self-efficacy and anxiety of National Examination among high school students. *Procedia - Social and Behavioral Sciences*, 217, 268–275. <https://doi.org/10.1016/j.sbspro.2016.02.082>
- Öner, N., & Le Compte, A. (1983). *Durumluk/sürekli kaygı envanteri el kitabı[State/trait anxiety inventory handbook]*. İstanbul: Boğaziçi Üniversitesi Yayınları.
- Pintrich, P.R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16 (4), 385-407. <https://doi.org/10.1007/s10648-004-0006-x>
- Reinholdt-Dunne, M.L., Mogg, K., & Bradley, B.P. (2013). Attention control: Relationships between self-report and behavioural measures, and symptoms of anxiety and depression. *Cognition & Emotion*, 27(3), 430-440. <https://doi.org/10.1080/02699931.2012.715081>
- Rezaei, F., Hosseini Ramaghani, N.A., & Fazio, R.L. (2017). The effect of a third party observer and trait anxiety on neuropsychological performance: The Attentional Control Theory (ACT) perspective. *The Clinical Neuropsychologist*, 31(3), 632-643. <https://doi.org/10.1080/13854046.2016.1266031>
- Ritte, J., Boone, W., & Rubba, P. (2001). Development of an instrument to assess prospective elementary teacher self-efficacy beliefs about equitable science teaching and learning (SEBEST). *Journal of Science Teacher Education*, 12,175-198. <https://doi.org/10.1023/A:1016747713585>
- Roick, J., & Ringeisen, T. (2017). Self-efficacy, test anxiety, and academic success: A longitudinal validation. *International Journal of Educational Research*, 83,84-93. <https://doi.org/10.1016/j.ijer.2016.12.006>
- Rueda, M.R., Posner, M.I., & Rothbart, M.K. (2016). Attention control and self regulation. In [KD Vohs](#) & [RF Baumeister](#) (eds). *Handbook of self-regulation, second edition: Research, theory, and applications*. New York: Guilford Publications.
- Sadi, O., & Uyar, M. (2013). The relationship between self-efficacy, self-regulated learning strategies and achievement: A path model. *Journal of Baltic Science Education*, 12(1), 22-31. <https://doi.org/10.33225/jbse/13.12.21>
- Schunk, D.H. (2005). Self -regulated learning: The educational legacy of Paul R.Pintrich. *Educational Psychologist*, 40, 85–94. [https://doi.org/10.1207/s15326985ep4002\\_3](https://doi.org/10.1207/s15326985ep4002_3)
- Senemoğlu, N. (2018). Gelişim öğrenme ve öğretim: Kuramdan uygulamaya [Developmental learning and teaching: From theory to practice]. Ankara: Anı Yayıncılık.
- Sherer, M., Maddux, J.E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R.W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, 51(2), 663-671. <https://doi.org/10.2466/pr0.1982.51.2.663>
- Spielberger, C.D., Gorsuch, R.L., Lushene, P.R., Vagg, P.R., & Jacobs, A.G. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto: Consulting Psychologists Press.
- Suen, H.K., & Yu, L. (2006). Chronic consequences of high-stakes testing? Lessons from the Chinese civil

- service exam. *Comparative Education Review*, 50(1), 46-65. <https://doi.org/10.1086/498328>
- Themanson, J.R., & Rosen, P.J. (2015). Examining the relationships between self efficacy, task-relevant attentional control , and task performance: Evidence from event-related brain potentials. *British Journal of Psychology*, 106, 253–271. <https://doi.org/10.1111/bjop.12091>
- UNICEF (2017). *Annual report*. Retrieved from <https://www.unicef.org/reports/unicef-annual-report-2017>.
- Usher, E.L., & Pajares, F. (2008). Self-efficacy for self-regulated learning: A validation study. *Educational and Psychological Measurement*, 68(3), 443-463. <https://doi.org/10.1177/0013164407308475>
- Walsh, J.J., Balint, M.G., Smolira, D.R., Fredericksen, L.K., & Madsen, S. (2009). Predicting individual differences in mindfulness: The role of trait anxiety, attachment anxiety and attentional control. *Personality and Individual Differences*, 46(2), 94-99. <https://doi.org/10.1016/j.paid.2008.09.008>
- Yıldırım, F., & İlhan, İ.Ö. (2010). Genel Özyeterlilik Ölçeği Türkçe formunun geçerlik ve güvenilirlik çalışması [The validity and reliability study of the Turkish form of the General Self-Efficacy Scale]. *Turkish Journal of Psychiatry*, 1(4), 301-308.
- Yıldırım, S. (2011). Öz yeterlilik, içe yönelik motivasyon ve matematik başarısı: Türkiye, Japonya ve Finlandiya bulguları [Self-efficacy, intrinsic motivation, and achievement in mathematics: Findings from Turkey, Japan, and Finland]. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 5(1), 277-291.
- Zimmerman, B.J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64-70. [https://doi.org/10.1207/s15430421tip4102\\_2](https://doi.org/10.1207/s15430421tip4102_2)

## RESEARCH ARTICLE

# The Involvement of Learning Mathematics Via Teachers' Autonomy Support and The Fulfilment of Basic Psychological Needs

Andi THAHIR<sup>a</sup>  Rosa RIWAYATI<sup>a</sup>  Citra WAHYUNI<sup>a</sup> 

<sup>a</sup>Universitas Islam Negeri Raden Intan, Indonesia

## ARTICLE HISTORY

**Received:** 28.06.23

**Accepted:** 25.03.24

## KEYWORDS

Teacher autonomy support, fulfillment of basic psychological needs, learning engagement.

## ABSTRACT

Mathematics is one of the compulsory subjects for high school students in Indonesia. However, not many of them like mathematics. Students' low learning engagement in mathematics is affected by the social contexts of friends, teachers, and parents and the fulfilment of the basic psychological needs of the students themselves. Teachers' autonomy support to improve students' engagement is essential, especially in mathematics learning. This research was aimed at looking into the roles of the fulfilment of basic psychological needs as the element mediating teacher autonomy support and student engagement. The number of respondents in this research was 162. They were students of various high schools in Indonesia. The instruments were the autonomy support scale for measuring the teachers' autonomy support, the "feeling I have" scale for measuring the fulfilment of basic psychological needs, and the engagement scale for measuring the students' engagement. The employed analysis technique was the simple mediation model analysis. The results of this study indicate the partial mediation of the fulfilment of basic psychological needs between the teachers' autonomy support and the students' engagement. This finding implies that teachers should understand better that every student has basic psychological needs which can be fulfilled through teacher autonomy support, which, in turn, leads to learning engagement.

Study which conducted by Programme For International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) found that Indonesia's students ranked under the international standard score. Finding of PISA (2018) showed that Indonesia having graded score 379 in mathematics subject which is classified on 75<sup>th</sup> ranked out of 81 nations mathematics subject. Previously TIMSS (2015) found that Indonesia's students had a score of 397 on mathematics which is further down with international average score 500. Due to this result, Indonesia was ranked 44<sup>th</sup> out of 49 countries.

Researcher in this study conducted a survey with sample 43 senior high school students in some areas in Indonesia. The results demonstrated 52.1% stated that they did not like mathematics. They even suggested mathematics be erased. Most of them regard mathematics as a complicated, difficult, and boring subject. Most also said that when learning mathematics, they tended to prefer sleeping, playing games, chatting, pretending to pay attention, and even defacing their books. The students thought that mathematics would be easy enough to grasp if the teacher explained the lessons in a pleasant way, that in which a game was involved so that it would not be too dull.

**CORRESPONDING AUTHOR** Andi THAHIR, [andithahir@radenintan.ac.id](mailto:andithahir@radenintan.ac.id), ORCID: 0000-0001-5018-5582, Universitas Islam Negeri Raden Intan, Indonesia

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counselling and Guidance Association

Mathieson *et al.* (2022) state high school students in England mostly view mathematics as unconnected with other subjects, so they tend to drop a mathematics class. It is apparent that they are forced to follow mathematics classes. The respondents even said that they hated mathematics classes and they should not be in the classes. Kyttälä and Björn (2021) portray mathematics learning engagement as being affected by cognitive skills and material understanding. Some students have a tendency to feel anxious and avoid mathematics classes. The study also asserts that female students are more likely to get high scores on mathematics than male ones.

In looking at the achievement concept, Ames (1992) explained achievement goals as a combination of beliefs, attributions, and emotions which could determine the individual's orientation toward task accomplishment. Similar to that, Dweck (1996) pursued that achievement goals could be seen by the individuals trying to do so as a manifestation of their effort. The argument was strengthened by Elliot and Thrash (2001) which insisted that achievement is a complex concept in which individuals showed their engagement in a struggling situation pursuing the achievement.

Based on the explanation of achievement goal concept above, it can be concluded that learning engagement is a vital element for students as not only is it needed to master skills taught in school, but it also helps students adapt to their educational requirements as well (Skinner and Belmont, 1993). Learning engagement is defined as the involvement of constant positive behaviors in and attitudes towards learning activities in class (Skinner and Belmont, 1993). In Skinner *et al.*, (1993) concept, three levels of engagement have been studied and one of the most important levels is student learning engagement. This study focused on student learning engagement in mathematics which based on the previous survey results and findings on mathematics, showed that students mostly dislike mathematics and their learning engagement in this subject is low.

Learning engagement is the time, effort and participation in learning which is shown by students to achieve results desired by school (Fredricks and Paris, 2004). Learning engagement is divided into three types; behavioral, emotional, and cognitive engagement. Behavioral engagement refers to the participation and engagement in academic and social context. Emotional engagement refers to the behaviors, attachment, value, and affective actions of a student in and to their class, teachers, and peers in school. Cognitive engagement refers to the motivation to learn and make use of cognitive skills in thinking and learning. There are three social contexts regarded as influential to student engagement, especially that in mathematics, i.e. family (parents), teachers, and peers (Fredricks and Paris, 2004). Interpersonal interaction is considered to develop learning engagement in school (Fredricks and Paris, 2004) and certain forms of teacher support can affect student engagement (Deci and Ryan, 2000).

Grolnick *et al.*, (1997) found that teacher behavior has an impact on emotions and learning engagement students in class. The learning environment in the classroom sometimes makes students depressed, bored, and unmotivated to follow lessons. On the other hand, it can make students active and enthusiastic in learning. The learning environment in lecture halls facilitated by lecturers can have an influence on the relationship between lecturers and students, which can then be inspiring student motivation during learning (Reeve, 2006).

Current studies have proven that one of the teachers assistance which can enhance learning engagement in mathematics subjects is autonomy support. Study conducted by Liu, Yao, and Li (2021) revealed that teacher autonomy support has a positive relationship with academic engagement both in mathematics and literacy subjects. Also, a study conducted by Flunger *et al.*, (2022) showed that teacher autonomy support could increase student's engagement in Math and German through stimulating the students' interest in the classroom. Research by Benita, Roth, and Deci (2014) showed that teacher autonomy support, which is accommodated by providing interest and enjoyment in the classroom, will boost student's academic engagement.

Teacher autonomy support is an active process involving a teacher's acceptance of students' perceptions, like a teacher's willingness to listen to their students (Kaur, 2017). A teacher also gives chances to students to choose and make decisions on class learning activities and the teacher also delivers the material clearly so that the students will be able to do their tasks optimally. The forms of teacher autonomy support for

mathematics learning could deliver the conceptual teaching which used learning media, application, and methods which the aim is to increase students' understanding of the subject material. Teachers expected not only to provide students with theory, but also with practice which is in line with the mathematics' theory.

According to the perspective of Self-Determination Theory (SDT) every student is a person who has knowledge and love learning, which social context have an important role in determining students' constructive involvement in learning (Deci & Ryan, 2000). Teacher's autonomy support can force autonomy behavior on student's which is based on intrinsic motivation. This perspective believed that when teacher's showed autonomy facilitation in the classroom, the student's academic achievement and perceived competence could be elevated (Reeve, 2002).

Pointing to the student's objectivity, Honstra et al., (2018) stated that when a student's basic needs are fulfilled in social context they could be inherently engaged in learning. There are three types of basic psychological needs required in order for students willing to be involved in activities, that are the need for relatedness, the need for competence, and the need for autonomy (Deci & Ryan, 2000). Research conducted in the school environment has proven that teacher's support autonomy and the existence of behavioral control within certain limits are associated with positive impacts on students, including intrinsic motivation, increased satisfaction, and improved student's well-being (Deci & Ryan, 2000). In addition, experimental research conducted by Reeve and Deci (1996) found the benefit of teacher's autonomy support in the competition puzzle solving. The study revealed that not just stressful conditions which can reduce intrinsic motivation or the condition of being free from driving control competition, but there is participants' perceived autonomy that influences the results obtained in competitions designed within experiment.

In related needs aspects, LaGuardia and Patrick (2008) insisted that the relationship between teachers and students is the underlying psychological well-being in students. Creating good relationships based on motivational nature which comes from within oneself can facilitate how the students perceive and resolve incompatibilities and conflicts between them (Patrick, Knee, Canevello, & Lonsbary, 2007). In other words, the comfortable bond and being emotionally dependent on others can predict relationships well, because the processes in relationships between individuals facilitate fulfilling basic needs within the person concerned (Chirkov et al., 2011).

Based on the previous theories and research findings, it is reasonable to state that teacher autonomy support and the fulfillment of basic psychological needs influence student learning engagement. Teacher autonomy support affects the fulfilment of the needs for autonomy, relatedness, and competence, which eventually affect student learning engagement. The purpose of this research was to explore the role of the fulfilment of basic psychological needs as the mediator of the correlation between teacher autonomy support and student's learning engagement.

## **Method**

### **Research Design**

Based on its objectives, this research is classified as quantitative research. This research attempts to explain and describe each variable in detail and look at the relationships or connections between these variables (Cozby & Bates, 2012) and also the values of the mediation effects. This research was also categorized as a non-experimental research in which the researcher only conducted a survey and did not manipulate the research variables. Then, his research used one shot study design which is the selection process data carried out once over a certain period of time on an individual (or group of people) selected for observation (Cozby & Bates, 2012).

### **Participant Characteristics**

The participants of this research were 162 students with an age range of 15-18 years old. Purposive and convenience sampling technique was used to collect data from high schools students across Indonesia. The adolescents who participated in this study were predominantly female 76.5% ( $N = 124$ ) and male with percentage 23.5% ( $N = 38$ ). For age range, the adolescents participated in this study predominantly in age 17

with percentage 34% ( $N = 55$ ), age 16 with percentage 27.8% ( $N = 45$ ), age 18 with percentage 22.2% ( $n = 36$ ), and age 15 with percentage 16% ( $N = 26$ ).

This research tried to collect data from adolescents across Indonesia's province which we distributed the scales with online form. From the response, most of the adolescents come from the capital city of Lampung Province which is Bandar Lampung with percentage 37% ( $N = 60$ ), 25.9% ( $N = 42$ ) percent from South Sumatera Province, 14.8% ( $N = 24$ ) percent from district within Lampung Province, 13.6% ( $N = 22$ ) percent from West Java Province, 2.5% ( $N = 4$ ) percent from Jambi, Jakarta and Tangerang, 1.9% ( $N = 3$ ) percent from Central Java, 1.2% ( $N = 2$ ) percent from East Java, and Kalimantan 0.6% ( $N = 1$ ).

**Table 1.** Characteristics of Participants ( $N = 162$ )

Demographic variable	<i>N</i>	%
Domicile		
Bandar Lampung	60	37.0
District in Lampung Province	24	14.8
South Sumatera	42	25.9
Jambi	4	2.5
Jakarta and Tangerang	4	2.5
West Java	22	13.6
Central Java	3	1.9
East Java	2	1.2
Kalimantan	1	0.6
Age		
15	26	16.0
16	45	27.8
17	55	34.0
18	36	22.2
Gender		
Male	38	23.5
Female	124	76.5

## Instruments

**Learning Engagement.** Learning engagement was measured on the engagement scale of Fredricks and Paris (2004), which consisted of 19 items for the measurement of the students' engagement in class learning activities with four answer choices, i.e. completely disagree = 1, disagree = 2, agree = 3, and completely agree = 4. The reliability testing result was a Cronbach alpha value of 0.738 and the validity testing result was  $p < 0.05$ , which was 0.00.

**Teacher Autonomy Support.** Teacher autonomy support was measured on the autonomy support scale of Kaur (2017), which comprised 20 items for the measurement of the students' perception of whether their teacher gave choices, appreciating their ideas and suggestions, and explaining the relevance of their class learning activities. The scale offered four answer choices, i.e. completely disagree = 1, disagree = 2, agree = 3, and completely agree = 4. The reliability testing result was a Cronbach alpha value of 0.882 and the validity testing result was  $p < 0.05$ , which was 0.00.

**Fulfilment of Basic Psychological Needs.** The fulfilment was measured on the "feeling I have" scale of Deci and Ryan (2004). This measuring instrument contained 21 items measuring the students' perception of the fulfilment of basic psychological needs. This scale has four answer choices, i.e. completely disagree = 1, disagree = 2, agree = 3, and completely agree = 4. The reliability testing result was a Cronbach alpha value of 0.705 and the validity testing result was  $p < 0.05$ , which was 0.00.

### Data Analysis Techniques

The data of this research were processed through three analyses, i.e. descriptive, regression, and mediation analyses.

Descriptive statistics are used to determine the frequency distribution and percentage of the participant’s demographic data and variables. In this research, the demographic data that will be processed are domicile, age, and gender. Apart from that, descriptive statistics are also used to process the learning engagement, teacher’s autonomy support and basic psychological needs data.

The researcher aims to know the relationship between the three variables and wants to see the influence of the independent variable (teacher's autonomy support) and the mediator variable (basic psychological needs) on the dependent variable (learning engagement). This analysis was carried out to prove that each independent variable is related to the dependent variable, which became the basic assumption to proceed to the mediation effect analysis.

The mediation effect analysis was conducted to know the mediation effect of basic psychological needs variable in the relationship between teacher’s autonomy support and learning engagement through Hayes process (Hayes, 2013).

## Results and Discussion

### The General Description of the Research Variables

The researcher tested the descriptive data for each variable, that are learning engagement ( $M = 56.54$ ,  $SD = 6.489$ ), teacher autonomy support ( $M = 61.71$ ,  $SD = 7.974$ ), and fulfilment of basic psychological needs ( $M = 57.64$ ,  $SD = 6.336$ ).

**Table 2.** Description of Research Results

Descriptive Statistics					
	N	Min	Max	Mean	SD
Student Learning Engagement	162	41	73	56.54	6.489
Teacher Autonomy Support	162	37	80	61.71	7.974
Fulfilment of Basic Psychological Needs	162	42	73	57.64	6.336

Based on mean and standar deviation value on Table 2 above, then we categorized each variable in high, medium, and low category.

**Table 3.** Categorization

	High	Medium	Low
Student Learning Engagement	19.8% ( $N = 32$ )	61.7% ( $N = 100$ )	18.5% ( $N = 30$ )
Teacher Autonomy Support	17.9% ( $N = 29$ )	70.4% ( $N = 114$ )	11.7% ( $N = 19$ )
Fulfilment of Basic Psychological Needs	13.6% ( $N = 22$ )	72.2% ( $N = 117$ )	14.2% ( $N = 23$ )

As seen Table 3 above, most of the students have medium learning engagement with percentage 61.7% ( $N = 100$ ), 19.8% ( $N = 32$ ) students in high category, and 18.5% ( $N = 30$ ) students in low category. For teacher autonomy support variable, most of students got medium category of autonomy support from their teachers

with percentage 70.4% ( $N = 114$ ), 17.9% ( $N = 29$ ) students got high category of autonomy support from their teachers, 11.7% ( $N = 19$ ) students got high category of autonomy support from their teachers.

In the fulfilment of basic psychological needs variable, most of students were also in medium category. There are 72.2% ( $N = 117$ ) students were in medium category of the fulfilment of basic psychological needs. Then, 14.2% ( $N = 23$ ) students were in low category of the fulfilment of basic psychological needs and 13.6% ( $N = 22$ ) students were in low category of the fulfilment of basic psychological needs.

Furthermore, the researcher conducted multiple linear regression to explore the effect of teacher autonomy support and fulfilment of basic psychological needs to student’s learning engagement. The results of the multiple linear regression were explained in the Table 4 below.

**Table 4.** Multiple Linear Regression Results

<b>R</b>	<b>R<sup>2</sup></b>	<b>F</b>	<b>P</b>
0.667	0.445	63.726	0.000

Based on the Table 4, it could be seen that the two independent variables which the teacher autonomy support and fulfilment of basic psychological needs predict the student’s learning engagement with a significance value of  $F = 63.726$  ( $p < 0.01$ ),  $R^2 = 0.445$ . which means that the effect of the teacher autonomy support and fulfilment of basic psychological needs was 44.5% to the student’s learning engagement.

The magnitude and direction of the effect of the celebrity worship and peer interaction on the body images were explained in Table 5 below.

**Table 5.** Coefficients of Regression

	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	13.986	4.115		3.399	.001
Teacher Autonomy Support	.456	.061	.523	7.457	.000
Fulfilment of Basic Psychological Needs	.250	.080	.219	3.127	.002

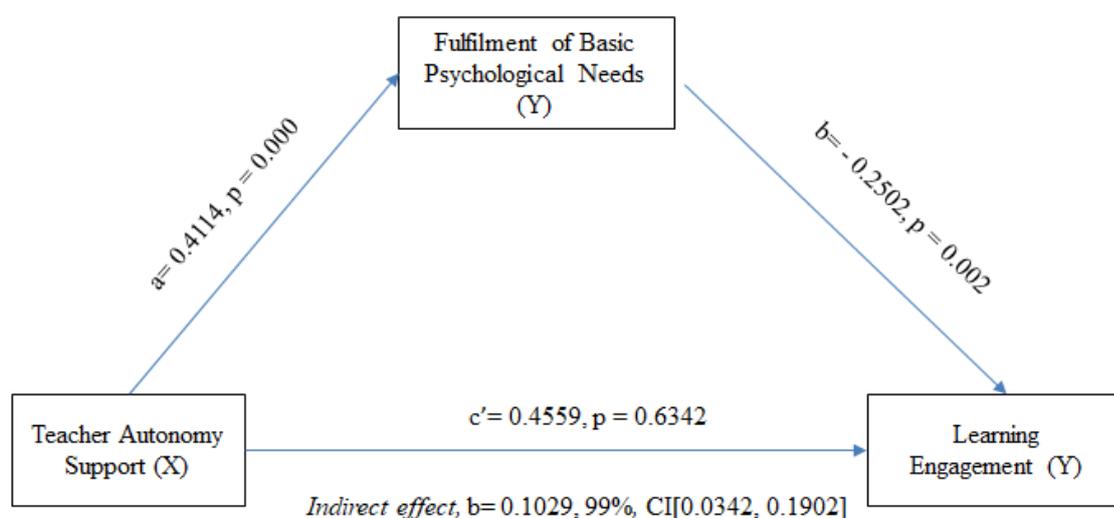
From Table 5, teacher autonomy support affect student’s learning engagement positively with  $B = 0.456$ ,  $p < 0.01$ . The results revealed that the higher autonomy support given by the teacher, the higher learning engagement showed by the students. The results of coefficients of regression also showed that the fulfilment of basic psychological needs affect student’s learning engagement positively with  $B = 0.250$ ,  $p < 0.01$ . The results revealed that the fulfilment of basic psychological needs given by the teacher, the higher learning engagement showed by the students negatively.

In this research, the main technique analysis used in this study is mediation effect with linear regression through PROCESS Hayes (Hayes, 2013). The calculation of the mediation effects with linear regression were explored in total, direct, and indirect effects. Through the calculation with the 162 research subjects, it was found out that the indirect effect of teacher autonomy support on student learning engagement through the fulfilment of basic psychological needs as the mediator existed partially. The results of the linear regression analysis show that the teacher autonomy support served as a significant variable for predicting the fulfilment of basic psychological needs as the mediator (line a)  $F = 12.284$ ,  $P < 0.005$ . With a coefficient value of  $0.251$   $p < 0.007$ , the teacher autonomy support had a positive effect on the fulfilment of psychological needs, meaning the more the teacher autonomy support, the greater the fulfilment of the students’ basic psychological needs. 33.0% of the variants of the fulfilment of basic psychological needs could be explained by the teacher autonomy support.

Then, the fulfilment of basic psychological needs as the mediator could also significantly predict the effect of student learning engagement as a dependent variable (line b)  $F = 46.470$ ,  $p < 0.05$ . The fulfilment of basic

psychological needs correlated to the student learning engagement in a positive direction with a coefficient value of 0.270,  $p < 0.008$ . This indicates that the greater the fulfilment of basic psychological needs, the more engaged the students were in learning. 69.5% of the variants of the student learning engagement could be explained by the fulfilment of basic psychological needs.

This research also resulted in a direct effect, the existence of the influence of the teacher autonomy support on the student’s learning engagement (line c). The results of linear regression analysis obtained  $\beta = 0.4559, R^2 = 0.4449, F = 63.7258, p < 0.01$  which means that the teacher autonomy support positive and significantly predict the student’s learning engagement. It means that the greater the teacher autonomy support, the higher the learning engagement which 44.49% the variants of the student’s learning engagement could be explained by the teacher autonomy support.



The coefficient of the direct effect (direct effect = c) in this research was higher than the coefficient of the total indirect effect with  $\beta = 0.1029, p < 0.01$ . It implies that the fulfilment of basic psychological needs had a partial mediator effect on the correlation of the teacher autonomy support with the student’s learning engagement. The calculation via “PROCESS” resulted in the significant indirect effect on the correlation between the teacher autonomy support and the student learning engagement partially mediated by the fulfilment with an effect size of 0.1029, CI [0.0342, 0.1902]. So, it is inferable that the fulfilment of basic psychological needs served as a significant mediator in the correlation between the teacher autonomy support and the student’s learning engagement. It bears the indication that the greater the teacher autonomy support, the higher the fulfilment of basic psychological needs, which lead to the increase in the student learning engagement.

**Table 3.** The Results of the Linear Regression Mediated Analysis

Antecedent	Consequent	Coeff	SE	T	Sig
X	M	0.4114 (a)	0.0509	8.0820	0.000
				$R^2 = 0.2899$	
				$F = 65.3195$	
M	Y	0.2502 (b)	0.0800	3.1272	0.002
				7.4573	
X	Y	0.4559 (c')	0.0611		0.000
				$R^2 = 0.4449$	
				$F = 63.7258$	
M	Y	0.1029	0.0388	7.4573	0.000

## Discussion

The objective of this research was to figure out the mediation effects of the fulfilment of basic psychological needs in the correlation of teacher autonomy support and student's learning engagement. This study found a significant positive correlation between teacher autonomy support and student's learning engagement, meaning greater teacher autonomy support results in higher student's engagement in mathematics learning.

According to self-determination theory, a teacher's teaching style in the classroom is in on a continuum from highly controlling learning behavior to supportive student learning autonomy. Teachers who support student's autonomy can facilitate the fulfillment of basic psychological needs, students' interests and provide opportunities in choosing learning activities in in the classroom (Reeve, 2006). On the other hand, teachers who tend to control the behavior of their students can hinder motivation in learning because students are required to follow and obey the instructions of the teacher or lecturer and the lecturer does not pay attention to the motivation that exists within students.

In addition, students who know that their teacher is willing to listen to their ideas and give them a chance to choose and make a decision for themselves, the students feel that they are an active individual, meaning all their actions are performed of their free will (Connell and Wellborn, 1991). This feeling of being an active agent drives a student to be more responsible for their actions (Somad, Malay, Wahyuni, 2022). Moreover, students who understand how important learning activities are for themselves will push them to participate in such activities and use their initiative when dealing with class tasks (Reeve and Jang, 2006).

Deci and Ryan (2000) revealed that individuals can be involved in various behaviors aimed at achieving self-competence and connecting with other people. The behavior displayed by individuals can originate from within oneself autonomously/independently, or there is control from outside oneself individually. For example, between two students, one is diligent and very interested completed his college assignments and wanted to take part in work competitions scientific, while other students are busy organizing to be accepted inside group of friends. The behavior displayed by the two students can be said to be autonomous behavior or behavior controlled by something that originates from outside oneself. The first student feels competent can take part in scientific work competitions because of the motivation that comes from internally and externally, while the second student does everything organizational activities are likely to be based on internal considerations themselves or based on invitation or pressure from their seniors. Therefore, autonomy has a unique meaning and role in its position as one of the three basic psychological needs of humans, autonomy in their roles regulate behavior (as opposed to behavioral control) and autonomy as basic psychological needs. The role of autonomy in regulating behavior can satisfy basic needs for competence and relationships with others. Thus, meeting the need for autonomy is essential for achieving self-determined behavior and to achieve something optimally.

Furthermore, Connell and Wellborn (1991) also reported that students will notice the completion of their basic psychological needs based on the teacher's facilitation in the classroom. If students perceive that their basic psychological need has been fulfilled, they grow the perception that they are competent, autonomous, and related. Similar with Stroet et al., (2013) who revealed that students will perceive their engagement in learning as a self-chosen act that reflects their own authentic needs and values if students satisfied with their teachers' level of autonomy support. Carreira et al., (2013) discovered that students' satisfaction of autonomy needed in the mathematics class correlates positively to their achievement development in future. In addition, study conducted by Laursen and Little (2012) revealed that teachers' autonomy support is time-varying predictive variables of the mathematics achievement and engagement across different assessments over time.

However, this research has limitations. The number of respondents, 162, was still too small for this kind of research, as not every high school in Indonesia was represented. Getting participants from several regions only was far from enough for the inclusion of the whole high schools. It is highly advisable to conduct a more profound study with a vast number of participants that represent every high school in Indonesia for a holistic understanding of the Indonesian educational system.

## Conclusion

It can be concluded that students' learning engagement in mathematics is affected by how much their teacher provides them with autonomy support and how the students perceive the fulfilment of their basic psychological needs. Their perceptions determine how engaged they are in mathematics learning.

It is hoped that the outcome of this research will base the evaluation of the educational system, especially the process of teaching mathematics, in Indonesia, shape greater teacher autonomy support, and help teachers to fulfill students' basic psychological needs through an attractive and pleasant learning process so that students get actively involved in it, especially in the process of mathematics learning.

The role of rejection sensitivity in regulating the connection between perceived maternal narcissism and self-disclosure in romantic relationships was explored in this study. It has been determined that rejection sensitivity plays a mediation function between the perceived maternal narcissism and the self-disclosure in a romantic relationship. It has been determined that features of the mother with narcissistic personality traits such as empathy deficiency, grandiosity, criticism-accusation, control-manipulation, and parentification-exploitation can create rejection sensitivity in interaction with the child, and this can negatively affect the self-disclosure towards the romantic partner of the adult. In light of these results, in psychotherapeutic interventions where the self-disclosure in romantic relationships is studied; it is thought that schema therapy methods such as parental restructuring for perceived maternal narcissism and cognitive techniques for the evaluation of negative automatic thoughts, intermediate beliefs, and core beliefs for rejection sensitivity will be beneficial.

**Author Contributions:** Andi Thahir, S.Psi., M.A., Ed. D is the first author who designed the research, conducted the research and supervised the whole research. Citra Wahyuni, M.Si as the author who analyzes the data, manages the literature, and provides the latest findings that could support this research. Rosa Riwayati is the author who collects and analyzes the data.

**Funding Disclosure:** There is no particular funding for this research, the researcher conducted this research by self-funding.

**Conflicts of Interest:** There is no conflict of interest in this research.

**Data Availability:** Data available within the article and any supplementary data are available on request from the authors

**Ethical Disclosure:** The researcher already gave the informed consent to the participant and the participant already gave an agreement before they fill the questionnaire.

## References

- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261-271. <https://doi.org/10.1037/0022-0663.84.3.261>
- Azila-gbettor, E. M., Mensah, C., Abiemo, M. K., Mensah, C., Abiemo, M. K., & Bokor, M. (2021). Predicting student engagement from self-efficacy and autonomous motivation: A cross-sectional study Predicting student engagement from self-efficacy and autonomous motivation: A. *Cogent Education*, 8(1). <https://doi.org/10.1080/2331186X.2021.1942638>.
- Benita, M., Roth, G., & Deci, E. L. (2014). When are mastery goals more adaptive? It depends on experiences of autonomy support and autonomy. *Journal of Educational Psychology*, 106(1), 258–267. <https://doi.org/10.1037/a0034007>.
- Chirkov, V., Ryan, R. M., Sheldon, K.M., (2011). *Human autonomy in cross-cultural context. perspectives on the psychology of agency, freedom, and well-being*. Springer
- Connell, J.P., & Wellborn, J.G. (1991). Competence, Autonomy, and relatedness: A motivational analysis of self-system processes. *The Minnesota symposia on child psychology*, 23. <https://drjameswellborn.com/wp-content/uploads/2017/10/Connell-and-Wellborn-Chapter.pdf>
- Cozby, P. C., & Bates, S. C. (2012). *Methods in behavioral research* (11th ed.) New York: McGraw-Hill.

- Deci, E. L., & Ryan, R. M. (2000). The “ what ” and “ why ” of goal pursuits : Human needs and the self-determination of behavior. *An International Journal for the Advancement of Psychological Theory*, *11*(4), 227–268.
- Dweck, C. S. (1996). Capturing the dynamic nature of personality. *Journal of Research in Personality*, *30*, 348-362. <https://doi.org/10.1006/jrpe.1996.0024>
- Elliot, A. J., & Thrash, T. M. (2001). Achievement goals and the hierarchical model of achievement motivation. *Educational Psychology Review*, *13*, 139-156. <https://doi.org/10.1023/A:1009057102306>
- Flunger, B., Hollmann, L., Hornstra, L., & Murayama, K. (2022). It’s more about a lesson than a domain: Lesson-specific autonomy support, motivation, and engagement in math and a second language. *Learning and Instruction*, *77*. <https://doi.org/10.1016/j.learninstruc.2021.101500>
- Fredricks, J. A., & Paris, A. H. (2004). *School Engagement : Potential of the Concept , State of the Evidence*. *74*(1), 59–109.
- Grolnick, W. S., Deci, E. L., & Ryan, R. M. (1997). Internalization within the family: The self-determination theory perspective. In J. E. Grusec & L. Kuczynski (Eds.), *Parenting and children's internalization of values: A handbook of contemporary theory* (pp. 135-161). New York, NY: Wiley.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. The Guilford Press
- Hornstra, L., Stroet, K., van Eijden, E., Goudsblom, J., & Roskamp, C. (2018). Teacher expectation effects on need-supportive teaching, student motivation, and engagement: a self-determination perspective. *Educational Research and Evaluation*, *24*(3–5), 324–345. <https://doi.org/10.1080/13803611.2018.1550841>
- Kaur, A. (2017). *A Cultural Insight into the Development of Teacher Autonomy Support Scale : A Self-Determination Theory Perspective A cultural insight into the development of teacher autonomy support scale : A self-determination theory perspective Rosna Awang-Hashim , R* (Issue April 2018). <https://doi.org/10.1108/JME-09-2016-0050>
- Kyttälä, M., & Björn, P. M. (2021). *Mathematics Performance Profiles and Relation to Math Avoidance in Adolescence: The Role of Literacy Skills , General Cognitive Ability and Math Anxiety*. <https://doi.org/10.1080/00313831.2021.1983645>.
- LaGuardia, J.G., & Patrick, H. (2008). Self-determination theory as a fundamental theory of close relationships. *Canadian Psychology*, *49*(3), 201-209. <https://doi.org/10.1037/a0012760>.
- Laursen, B., & Little, T. D. (2012). *Handbook of developmental research methods*. Guilford Press.
- Liu, H., Yao, M., Li, J., & Li, R. (2021). Multiple mediators in the relationship between perceived teacher autonomy support and student engagement in math and literacy learning. *Educational Psychology*, *41*(2), 116–136. <https://doi.org/10.1080/01443410.2020.1837346>
- Mathieson, Rachel Homer, M., Mathieson, R., & Homer, M. (2022). Research in Mathematics Education “ I was told it would help with my Psychology ”: Do post-16 Core Maths qualifications in England support other subjects? Core Maths qualifications in England support other subjects? *Research in Mathematics Education ISSN*: <https://doi.org/10.1080/14794802.2021.1959391>
- Patrick, H., Knee, C.R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology*, *92*(3), 434-457. DOI: 10.1037/0022-3514.92.3.434.
- PISA. (2018). Indonesia What 15-year-old students in Indonesia know and can do Figure 1 . Snapshot of performance in reading , mathematics and science. *Programme for International Student Assessment(PISA) Result Prom PISA 2018, I–III*, 1–10.
- Pitzer, J., & Skinner, E. (2016). Predictors of changes in students’ motivational resilience over the school year: The roles of teacher support, self-appraisals, and emotional reactivity. *International Journal of Behavioral Development*, *41*(1), 15–29. <https://doi.org/10.1177/0165025416642051>.
- Reeve, J., & Deci, E. L. (1996). Elements of the competitive situation that affect intrinsic motivation. *Personality and Social Psychology Bulletin*, *22*, 24-33
- Reeve, J. (2002). Self-determination theory applied to educational settings. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 183–203). Rochester, NY: University of Rochester Press.
- Reeve, J. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students

- benefit. *The Elementary School Journal*, 106(3), 225-236.
- Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology*, 98(1), 209–218.  
<https://doi.org/10.1037/0022-0663.98.1.209>
- Robertson, S. L. (2021). Provincializing the OECD-PISA global competences project. *Globalisation, Societies and Education*, 19(2), 167–182. <https://doi.org/10.1080/14767724.2021.1887725>
- Rohinsa, M., Maranatha, U. K., Cahyadi, S., Padjadjaran, U., Djunaidi, A., & Padjadjaran, U. (2019). *Peran Teacher Autonomy Support terhadap Engagement Siswa melalui Pemenuhan Kebutuhan Psikologis Dasar*. <https://doi.org/10.24014/jp.v15i2.7423>.
- Ryan, R. M., & Deci, E. L. (2000). Self determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychology Association*, 55(1), 68-78.  
<https://pubmed.ncbi.nlm.nih.gov/11392867/>.
- Ryan, R. M., & Deci, E. L. (2017). Self-Determination theory: Basic psychological needs in motivation, development, and wellness. *In self-determination theory: Basic psychological needs in motivation, development, and wellness*. The Guilford Press. <https://doi.org/10.1521/978.14625/28806>.
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom : Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85, 571–581.
- Skinner, Ellen A Belmont, M. J., Lynch, M., Mellor-crummey, C., Miserandino, M., Patrick, B., Regan, C., Wellborn, J., & Usinger, P. (1993). Motivation in the Classroom : Reciprocal Effects of Teacher Behavior and Student Engagement Across the School Year. *Journal of Educational Psychology*, 85(4), 571–581.
- TIMSS. (2015). *T15-International-Results-in-Mathematics.pdf*.

## RESEARCH ARTICLE

# Validation of the Turkish Version of the Mental Health Literacy Scale

H. Deniz GÜNAYDIN <sup>a</sup> 

<sup>a</sup> Konya Food and Agriculture University, Konya, Turkey

### ARTICLE HISTORY

**Received:** 06.08.23

**Accepted:** 17.12.23

### KEYWORDS

Mental health literacy,  
beliefs-oriented,  
knowledge-oriented,  
resource-oriented, life  
satisfaction, help-seeking  
stigma, factor analysis,  
adaptation, scale

### ABSTRACT

This study aimed to adapt the MHL scale and research the measurement properties of the Mental Health Literacy Scale (MHL). The calibration research used a sample of Turkish participants (n = 633) aged 18 and older, resulting in a 19-item scale with three factors. The second sample of Turkish participants (n = 810), the validation research, convergent and divergent validity, and correlational and test-retest reliability was performed. Using the AMOS 26 and SPSS 25 for MAC, respectively, confirmatory factorial analysis and exploratory factor analysis were carried out. The adaption of the MHL to Turkish revealed a three-category structure: knowledge orientation, beliefs orientation, and resource orientation. The confirmatory factorial analysis disclosed that the model with three-factor had satisfactory fit values. The Mental Health Literacy Scale seems to be a vigorous and reliable tool for assessing the degree of knowledge orientation, belief orientation, and resource orientation to MHL in Turkish culture.

MHL offers a helpful framework for understanding the elements that can influence a person's mental health behaviors and how that individual seeks psychological help (O'Connor et al., 2014). Jorm and colleagues (1997) proposed the idea of mental health literacy, which they initially described as comprehension and ideas concerning psychological conditions that support their identification, treatment, or anticipation. A recent modification to this notion incorporated the capacity to assist a person with a mental health issue (Jorm, 2012). Therefore, knowledge is not the sole component of MHL since it is connected to beliefs, and recognition of resources together form MHL.

Literature about the function of MHL reveals that it influences attitudes about seeking psychological help (Cheng et al., 2018; Wang et al., 2022; Whyte, 2016). Prior research has investigated the link between mental health literacy and attitudes about the use of psychological services (Cheng et al., 2018; Wang et al., 2022; Whyte, 2016), stigma (Cheng et al., 2018) or stigmatizing attitudes (Crisp et al., 2000), particular psychological problems (Swami et al., 2008) and psychological treatment preferences (Holzinger et al., 2015). When these findings are considered, it is feasible to conclude that one's level of MHL may be utilized to recognize one's attitudes and actions about seeking psychological help thru relevant instruments.

Multiple tools were used to measure MHL, stigma linked with psychological health, and connected variables, including the interview that was used for the Australian nationwide assessment (Jorm et al., 2007), Mental Illness Attitudes Questionnaire (Luty et al., 2006), and the Schedule of Mental Health Knowledge (Evans-Lacko et al., 2010). Most presently accessible tests assess either specific psychological health apprehensions

**CORRESPONDING AUTHOR** H. Deniz GÜNAYDIN, [dgunaydin@gmail.com](mailto:dgunaydin@gmail.com), ORCID: 0000-0002-2062-4246, Konya Food and Agriculture University, Konya, Turkey

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counselling and Guidance Association

or diseases, such as despair and schizophrenia, or specific characteristics of MHL, such as awareness and stigmatizing ideas. In light of the recently revised model of MHL and the limitations of earlier measurement methods, evaluating this model in Turkish culture seems like a reasonable course of action.

In light of theoretical perspectives, the impact of MHL on psychological help-seeking behaviors may be explored. The help-pursuing paradigm potentially explains the underlying processes for the connections between MHL and mental disorders (Rickwood et al., 2015), which is a continuum, and one's conduct in this area constantly links with one's intentions and views about help-seeking. Understanding mental health issues and symptoms might boost help-seeking. Self-awareness of symptoms has a more significant influence on early diagnosis and help-seeking. Because of this, it is much simpler to comprehend why MHL is beneficial to mental health. For instance, a crucial component of MHL is the awareness of symptoms, which influences timely intervention and forecasts help-seeking behavior (Jorm, 2012). Consequently, those with greater levels of MHL may have a better ability to regulate their mental health (Jorm, 2012) proactively.

MHL Scale was created by Jung and colleagues (2016), relying on the multidimensional structure assumption. The MHL scale consists of three dimensions, namely MHL-Knowledge, MHL-Beliefs, and MHL-Resources, which assess the suggested qualities of Jorm et al. (1997). The measure's structural validity and internal consistency reliability have received strong support (Jung et al., 2017). The findings of model fit values showed that the reliability analysis was adequate, and the model fit was good (Wang et al., 2022). Besides general samples, the MHL Scale has been validated for assessing MHL in various settings (Sullivan et al., 2021; Wang et al., 2021). Despite this, few studies (Göktaş et al., 2019) have been conducted on Turkish individuals' mental health.

The earlier research required further cross-validation using various samples (Göktaş et al., 2019). Cross-validation of a measure in various populations and cultures is crucial since the outcomes of exploratory and confirmatory factor analysis may vary. It is also vital for scholars to comprehend how diverse cultural settings shape and impact lay perceptions of mental health illnesses. Different conceptual frameworks regarding health and the causes of the disorder may result, particularly if social groups disagree or dispute concerning a pattern of illness signs (Kermode et al., 2009). There is currently little information to support the development and adaptation of MHL measures for the Turkish population. Finally, understanding MHL behavior and attitudes for research and intervention requires culturally relevant tools to fit a population's requirements. As a result, the current study will expand the study of MHL and its implementations in Turkey and other nations with comparable cultural traditions. The objectives of the present research were (a) to examine the MHL structure in a Turkish sample and (b) to cross-validate the model's structure and evaluate the psychometric qualities of the MHL using a separate sample of Turkish participants.

## Materials and Method

### Participants

Two separate samples were utilized, and respondents were reached using the data-gathering company. Sample 2 functioned as the validation sample, while Sample 1 functioned as the calibration for the research purpose to determine the best structure for MHL. Outliers for all categories were inspected in the data using Box Plot analysis and Mahalanobis values and removed from the data. After outliers were removed, the initial sample included 633 respondents, 483 (76.3%) females and 150 (23.7%) men, varying between 18 and 62 years old ( $M = 26.65$ ;  $Sd = 9.25$ ). The second validation sample comprised 812 participants, 538 (%66.3) females and 274 (%33.7) males, and they were 18 to 70 years old (mean: 27.80; SD: 10.11).

### Instruments

**MHL Scale.** Jung and their colleagues (2016) created the original MHL Scale, of which 22 items from the three subscales were scored. The Knowledge-Oriented subscale of the original MHL scale included ten items (items 1-10), the Beliefs-Oriented subscale had eight items (items 11-18), and the Resource-Oriented subscale had four items (19-22). In the first two subscales, 18 items are scored on a Likert six-point scale: "strongly agree (5), agree (4), neutral (3), disagree (2), severely disagree (1), and unsure (0)." The resource oriented MHL subscale consists of four "yes" and "no" items. The replies "strongly agree," "agree," and "yes" each get one point, while all other responses receive zero points. Items 11-18 of the beliefs-oriented subscale are scored

and coded reversely. Cronbach's alpha reliability values varied from .71 to .74. In the present research, Cronbach values ranged from .73 to .78 for the KOMHL, BOMHL, and ROMHL subcategories.

***The Scale of Life Satisfaction.*** Diener et al. (1985) developed the scale, which was adapted to Turkish by Köker (1991). The scale has five items linked to satisfaction with life. Questions are answered on a scale that ranges from one to seven points (1: not appropriate at all – 7: extremely appropriate). The scale aims to assess life satisfaction; researchers can use it for all ages. Because of the item examination, the Pearson correlation between the scores obtained from items was sufficient. The internal reliability using Cronbach's alpha analysis was revealed to be .85. In the present study, it was also determined to be .85.

***Scale of Seeking Psychological Help Stigma.*** Vogel et al. (2006) developed the scale to measure individuals' stigmatization levels when seeking psychological help. Five-point Likert scale has ten items. High scores indicate that self-stigmatization increases in seeking psychological help. The Cronbach's Alpha value of internal reliability was calculated as 0.91, and the test-retest reliability was computed as 0.72. Acun-Kapıkıran and Kapıkıran (2013) adapted the scale to Turkish, and Cronbach's Alpha internal reliability was calculated as .71 (Kapıkıran & Kapıkıran, 2013). In the current study, the Cronbach Alpha value was .80.

### Procedure

Two scholars who were both native Turkish speakers and English speakers translated the MHL scale. A qualified translator from the ELT department then back translated the translated versions separately. Linguists examined the semantic precision of the original and the back-translated text. In the end, the meanings of a few different nouns were elaborated upon and rephrased.

The data-gathering firm was used to contact both Sample 1 and Sample 2 participants. It was clarified to the participants how important it was for them to participate in the study voluntarily. Participants used the URL that was supplied by the researcher in order to complete the survey forms. Participants were informed that their answers would remain anonymous and that only aggregate data would be shared. The individuals in both samples received no rewards or incentives for participating in the research.

### Data Analysis

SPSS version 25 for Mac was used for all preliminary, descriptive, and interpretive analyses. Amos 26.0 was used to conduct confirmatory factor analyses (CFA) using maximum likelihood (ML) prediction and associated fit statistics. Exploratory factor analyses (EFA) were used to analyze the MHL's factor structure, and they were run on the initial sample (n = 633) of participants. A correlation matrix and Kaiser-Meyer-Okin (KMO) value were employed to assess whether the current data fit the analysis. To confirm the MHL scale validity, a CFA was performed on the second sample (n = 812). We assessed Model fit utilizing four different indices (Hu & Bentler, 1999), which were CFI (comparative fit index), GFI (goodness-of-fit index), the TLI (Tucker Lewis index), AGFI (adjusted goodness-of-fit index), RMSEA (root mean squared error of approximation), and SRMR (standard root mean root ratio). Test-retest reliability and to compute the effect of gender on KOMHL, BOMHL, and ROMHL, the alpha coefficient, correlations, and linear regression were used in order to establish internal consistency. Data input accuracy, normality, and multivariate assessments for both samples were examined for research variables before analysis. Skewness and kurtosis scores were between -.009 to -.872 and -.586 to .980, demonstrating that the scale items met the requirements for the multivariate analyses' assumptions.

### Results

Before the analysis, the assumptions were examined. The skewness and kurtosis values were computed for normality assumption, and the results were within a normal distribution's satisfactory values. The numeric variables were transformed to their average z-score values to identify univariate outliers, and those lower than -3 and bigger than +3 were removed. Finally, the linearity and homogeneity of variance presumptions were verified. Table 1 provides the scale means and standard deviations for both samples for all the MHL items. The table shows that the items in Sample 1 and Sample 2 have similar mean scores.

**Table 1.** Descriptives of the Scale of Mental Health Literacy (MHL) for Samples 1(n=632) and 2 (n=802)

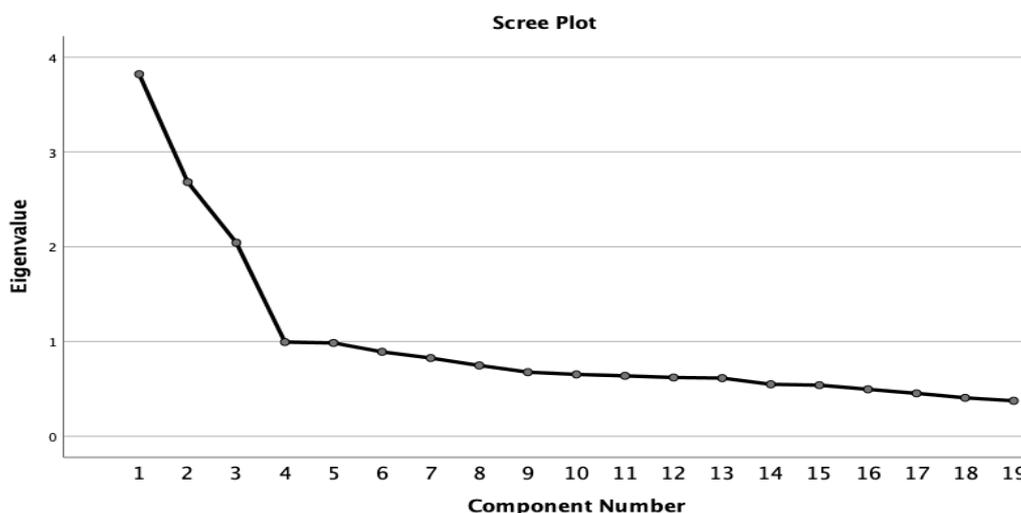
		Sample 1			Sample 2		
		<i>M</i>	<i>Std. Dev.</i>	Range	<i>M</i>	<i>Std. Dev.</i>	Range
KOMHL	Item 1:	3.91	1.07	1-5	3.78	1.11	1-5
	Item 2:	3.53	1.47	1-5	3.42	1.48	1-5
	Item 3:	4.10	1.06	1-5	3.95	1.09	1-5
	Item 4:	3.37	1.38	1-5	3.31	1.35	1-5
	Item 5:	3.55	1.28	1-5	3.33	1.42	1-5
	Item 6:	3.59	1.34	1-5	3.40	1.44	1-5
	Item 7:	3.42	1.60	1-5	3.34	1.59	1-5
	Item 8:	3.50	1.17	1-5	3.35	1.29	1-5
	Item 9:	3.63	1.51	1-5	3.66	1.36	1-5
	Item 10:	3.67	1.45	1-5	3.62	1.36	1-5
BOMHL	Item 11:	2.20	1.27	1-5	2.29	1.26	1-5
	Item 12:	1.86	1.01	1-5	1.95	1.05	1-5
	Item 13:	1.71	.92	1-5	1.77	1.00	1-5
	Item 14:	2.99	1.57	1-5	3.00	1.49	1-5
	Item 15:	1.96	.99	1-5	2.09	1.08	1-5
	Item 16:	3.08	1.33	1-5	3.06	1.31	1-5
	Item 17:	2.29	1.22	1-5	2.32	1.25	1-5
ROMHL	Item 18:	2.14	1.04	1-5	2.13	1.08	1-5
	Item 19:	.94	.24	1-5	.83	.37	1-5
	Item 20:	.48	.50	1-5	.47	.50	1-5
	Item 21:	.83	.38	1-5	.72	.50	1-5
	Item 22:	.77	.42	1-5	.74	.44	1-5

Note. \*Potential range for MHL and its items

### Structural Validity

CFA revealed unsatisfactory model indices with the current data. To investigate the 22-item MHL structure, EFA (exploratory factor analysis) was conducted. Kaiser's assessment of the data's suitability for factor analysis showed a sample adequacy rating of .82. I conducted principal-component studies following Oblimin rotation with eigenvalues larger than one and multiple item loading (Table 1). In addition, the results of the Barlett test of sphericity were statistically significant ( $p < .001$ ). The components' eigenvalues varied from 0.37 to 3.82, accounting for 45% of the variation. The scree plot and fit indices indicated a three-factor, 19-item model (Table 2, Figure 1).

**Figure 1.** Scree Plot



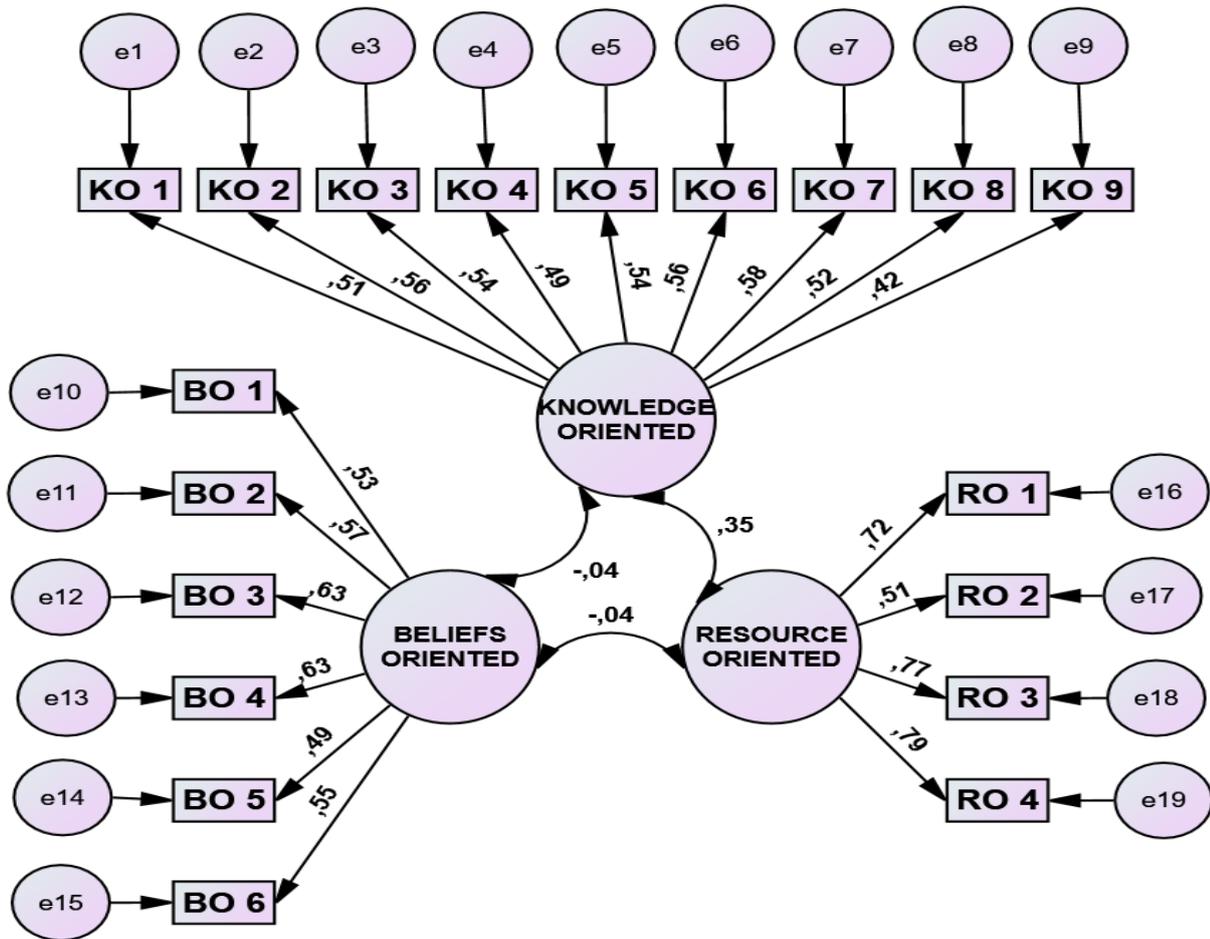
Items 9, 14, and 16 with low loadings (.40) were removed from the scale (Comrey & Lee, 2013). The 19-item, three-factor model was proposed as the best solution. A nine-item factor was created using the KOMHL assessment items. The nine items (1, 2, 3, 4, 5, 6, 7, 8, and 10) explained 20.1% of the variation. Six components (items 11, 12, 13, 15, 17, and 18) composed factor 2 (BOMHL), which accounted for 14.1% of the variance. Items 19, 20, 21, and 22 composed factor 3, ROMHL, which accounted for 10.8% of the variation.

**Table 2.** Exploratory Factor Analyses

Items	KOMHL	BOMHL	ROMHL	Variance explained (%)
Item 1: Psychological counseling is a useful treatment for depression.	.540	-.121	.077	20.108
Item 2: People with schizophrenia see things that aren't there.	.618	.109	-.009	
Item 3: Early diagnosis of mental health diseases can increase the chances of recovery.	.608	-.126	-.009	
Item 4: Peer support groups can help to recover from psychological problems.	.534	.139	.076	
Item 5: Inexplicable bodily pain or exhaustion can be an indication of depression.	.639	.089	-.077	
Item 6: CBT can alter how a person reasons and responds to stress.	.609	.076	.074	
Item 7: A person who experiences bipolar disorder can experience intense changes in their attitude.	.699	.041	-.060	
Item 8: It is useful to use the drugs prescribed by doctors for mental health diseases.	.564	-.060	.042	
Item 10: The person with an anxiety disorder has excessive worry and fear.	.612	-.135	-.037	
Item 11: People who are more committed to their beliefs do not develop a mental health disorder.	-.022	.625	-.098	14.116
Item 12: Mental health illnesses are short-term illnesses.	-.017	.654	.049	
Item 13: Recovery from psychological illnesses is typically reliant on luck or fate.	-.115	.694	-.031	
Item 15: Mental health disorders will improve over time without treatment.	.019	.696	.025	
Item 17: A person can stop the hoarding disease (things etc.) at any time.	.102	.614	.007	
Item 18: A depressed person will recover on their own without any treatment.	.044	.635	.040	
Item 19: I can access to mental health help.	.121	-.094	.746	10.750
Item 20: I know the phone number to prevent suicide.	-.135	.142	.703	
Item 21: I know where I can find useful information about mental health diseases.	.034	-.046	.827	
Item 22: I know the place for the psychological health service unit where I live.	.047	-.042	.820	
Total Variance Explained MHL				44.974

A 19-item and three-factor model was examined using CFA on the second sample of data using the maximum likelihood approach to generalize and validate the model based on the findings of the EFA. The outcomes displayed that the revealed model yielded satisfactory fit values ( $\chi^2/df = 3.25$ , GFI = .94, AGFI = .92, CFI = .90, RMSEA = .05, SRMR = .07). The CFA output is presented in Figure 2.

**Figure 2.** Factor structure of Mental Health Literacy (MHL)



**Convergent Validity**

The connections between life satisfaction and MHL were used to assess convergence validity (KOMHL, BOMHL, and ROMHL, Table 3). Life satisfaction was positively and substantially correlated with KOMHL and ROMHL.

**Table 3.** Correlations among KOMHL, BOMHL, ROMHL, Stigma, and Life Satisfaction.

	1	2	3	4	5	6
1.KOMHL	1					
2. BOMHL	-.026	1				
3. ROMHL	.249*	.010	1			
4.Self-Stigma	-.331*	.368*	-.114	1		
5. Life Satisfaction	.167*	.063	.180*	-.101	1	

\*P< 0.001, \*\*p<.01

**Divergent Validity**

Correlation studies were carried out to examine the connection between total KOMHL, BOMHL, ROMHL, and stigma to establish the divergent validity of the scale (Table 3). It was discovered that whereas the Stigma and the KOMHL, and ROMHL had negative correlations with one another, the BOMHL had a positive and substantial correlation.

### Predictive Validity

The connections between the KOMHL, BOMHL, and ROMHL and gender were reported to demonstrate the predictive validity of these measures since prior research has shown that gender may have a significant impact on MHL (Cotton et al., 2006). The analysis of linear regression showed that the female gender significantly impacted the KOMHL and ROMHL ( $\beta = .176$ ,  $R^2 = .03$ ,  $F(1-810) = .25.79$ ,  $p = .001$ ), as well as the BOMHL ( $\beta = -.147$ ,  $R^2 = .02$ ,  $F(1-810) = 17.88$ ,  $p = .001$ ).

### Reliability

Using Cronbach's Alpha to determine internal consistency values, the KOMHL, BOMHL, and ROMHL exhibited correspondingly internal consistencies of .79, .73, and .78. Pearson's correlation was utilized to examine test-retest reliability and establish the temporal consistency of the KOMHL, BOMHL, and ROMHL. The test-retest correlation was determined between the average score of the KOMHL, BOMHL, and ROMHL using information from 25 participants who completed the scale twice over two weeks and were randomly selected from the third sample. For KOMHL, BOMHL, and ROMHL, the correlation values were  $r = .87$ ,  $.94$ , and  $.89$ , respectively, indicating that temporal consistency was satisfactory.

### Discussion

The current study evaluated MHL's component structure and psychometric features on Turkish volunteers over 18 years old. The findings of the current investigation validated the MHL original with three scales and 19 items. Even though several indicators were substantial, CFA with the original MHL produced an unsatisfactory fit to the current data. Thus, various EFA on calibration and CFA were run on a cross-validation sample. Consistent with the original MHL, the Turkish adaptation of the MHL was constructed with three factors similar to 19 item Chinese MHL (Wang et al., 2022) and Iranian MHL (Nejatian et al., 2021) with a few changes regarding the number of items in KOMHL and BOMHL, which may be linked to social and cultural disparities.

EFA divulges that three items from MHL's KOMHL and BOMHL factors exhibit the main difference. In contrast, MHL has 10 KOMHL items and eight BOMHL items. However, no difference was yielded in ROMHL items, in which EFA indicated a four-item model as in the original one. As a result of EFA, items 9, "Drinking alcohol can worsen the symptoms of mental health disorders" from the KOMHL factor and items 14, "A depressed person should not be asked if they have suicidal thoughts," and 16, "Recuperating from a psychological illness is the similar to getting better" with poor loadings from the BOMHL factor of MHL were removed from the scale in the current study. In conclusion, the factor structure revealed in the Turkish sample was similar to Chinese MHL but with few distinctions. The current sample and Turkish culture may be to reason for the primary difference. Regarding question 9 of the KOMHL, individuals may not have evaluated the influence of alcohol on mental health issues since they do not typically use alcohol. Due to their young age (mean = 26 years), the participants may not have the counseling knowledge or experience to evaluate items 14 and 16 on the link between depression and suicidal thoughts.

Correlations between life satisfaction and the MHL were examined to examine the convergent validity of the MHL. Consistent with the existing research, general satisfaction with life was significantly and positively associated with KOMHL and ROMHL (Li et al., 2022; Sequeira et al., 2022). According to the Theory of Reasoned Action (Fishbein & Ajzen, 1977), positive attitudes might influence one's intention to behave positively. People who are satisfied with their lives may fully comprehend themselves, use their resources, and vigorously regulate one-self to reduce external pressure. The constructive thoughts and behaviors positively influence their motivations for the treatment and avoidance of potential psychological issues, significantly raising their MHL.

Additional correlation tests were conducted to determine the divergent validity by exploring the association between stigma, KOMHL, BOMHL, and ROMHL. While the Stigma, KOMHL (Hadlaczky et al., 2014), and ROMHL (Kutcher & Wei, 2014) each exhibited negative relationships with one another, the BOMHL had a positive and significant association (Kutcher et al., 2016). Accordingly, BOMHL can raise stigma, while KOMHL and ROMHL have the potential to lower stigma. So, a lack of knowledge can be seen as a cause of negative attitudes, including stigma, affecting how people act when they need psychological help.

The scale's predictive validity was demonstrated by establishing linkages between the KOMHL, BOMHL, ROMHL, and gender. According to the linear regression analysis findings, the female gender substantially influenced the KOMHL, BOMHL, and ROMHL. These findings confirmed the earlier research results (Cotton et al., 2006). MHL has been linked to more females, which may account for gender variations in the usage of psychology facilities (Mackenzie et al., 2006). Similarly, Ratnayake and Hyde (2019) discovered that women reported greater MHL. Generally, females demonstrated greater mental health literacy levels, keeping with existing findings (Campos et al., 2016). The outcomes of the scale's predictive validity establishing links between the KOMHL, BOMHL, ROMHL, and gender were subsequently verified by the current research.

Cronbach's Alpha studies revealed good internal consistencies for the KOMHL (0.79), BOMHL (0.73), and ROMHL (0.80) in terms of adapted MHL reliability (.78). In addition, Pearson's product-moment correlations for KOMHL ( $r=0.87$ ), BOMHL ( $r=0.94$ ), and ROMHL ( $r=0.89$ ) demonstrated a high degree of test-retest reliability. In addition, the scale means and standard deviations for both calibration and validation samples indicate that the mean scores for both samples were comparable. Thus, we can conclude that Cronbach's alpha values were substantial (Nunnally & Bernstein, 1994), and test-retest MHL reliability at two stages was likewise acceptable, showing that the MHL's longitudinal consistency was excellent (Hair et al., 1995). The present findings revealed that the reliability was adequate for test-retest and internal consistency.

### **Limitations and Long-Term Effects**

The current research includes several shortcomings that need to be addressed. First, since the data were gathered in various contexts, the conclusions may need to be more objective. Different environments may have impacted the findings and participant behavioral patterns. Second, only online survey and convenience sampling methods were used in this research; however, future studies may include alternative data-gathering methods to compile a complete set of information. Third, the research used solely a cross-sectional approach for its analysis. Even though two of the sample groups had similar features, the cross-sectional methods still needed to propose an understandable picture of the development process. Cross-sectional models yield data on the population's present state, but the cross-sectional model doesn't permit the establishment of cause-and-effect linkages. It might be proposed that a longitudinal paradigm, which involves surveying the same group repeatedly, be used. Only the Life Satisfaction and Self-Stigma Scales were employed in this investigation for convergent and divergent validity. Nonetheless, future research should include measures like Public Stigma and Seeking Psychological Help Attitudes. Finally, most participants had access to social networking sites and other pertinent online resources. Therefore, individuals from other data-gathering sources should also be included in a future study. Future research may examine the MHL in various populations.

### **Conclusion**

Overall, the Mental Health Literacy Scale (MHL) was detected as a viable and consistent tool for assessing mental health knowledge, beliefs, and resource in Turkish society. Consequently, the outcomes of the current study propose that MHL can be used in future research in Turkey without compromising confidentiality. More research on the MHL's application in Turkish and various cultures and regions is necessary to increase its generalizability and provide further empirical support for its validity.

**Acknowledgment:** I would like to thank my colleagues and family who supported me in this work.

**Author Contributions:** The author acknowledges full responsibility for the following tasks: conceptualizing and designing the research, collecting and analysing data, interpreting the findings, and preparing the publication.

**Funding Disclosure:** This study did not get any particular financial support from any public, commercial, or not-for-profit organizations.

**Conflicts of Interest:** The authors do not have any conflicts of interest to disclose.

**Data Availability:** The paper contains all the data that underpins the results; no additional source data is necessary.

**Ethical Disclosure:** The participants provided their consent, obtained by the Declaration of Helsinki's guidelines. It was made clear to all participants what the aim of the study was, and they were assured that their responses would only be used in an anonymized, unidentified form for research. Finally, University Ethics Committee reviewed the measures employed in the research and, with the decision of the University Senate dated 25.06.2020 and numbered 044/01 granted, that they complied with ethical standards.

### References

- Acun Kapıkıran, N., & Kapıkıran, Ş. (2013). Psikolojik yardım aramada kendini damgalama ölçeği: Geçerlik ve güvenilirlik (Self-stigmatization scale in seeking psychological help: Validity and reliability). *Turkish Psychological Counseling & Guidance Journal*, 5(40), 131-141. <https://dergipark.org.tr/en/pub/tpdrd/issue/21460/230035>
- Campos, L., Dias, P., Palha, F., Duarte, A., & Veiga, E. (2016). Development and psychometric properties of a new questionnaire for assessing mental health literacy in young people. *Universitas Psychologica*, 15(2), 61-72. <https://doi.org/10.11144/Javeriana.upsy15-2.dppq>
- Cheng, H. L., Wang, C., McDermott, R. C., Kridel, M., & Rislin, J. L. (2018). Self-stigma, mental health literacy, and attitudes toward seeking psychological help. *Journal of Counseling & Development*, 96(1), 64-74. <https://doi.org/10.1002/jcad.12178>
- Cotton, S. M., Wright, A., Harris, M. G., Jorm, A. F., & McGorry, P. D. (2006). Influence of gender on mental health literacy in young Australians. *Australian & New Zealand Journal of Psychiatry*, 40(9), 790-796. <https://doi.org/10.1080/j.1440-1614.2006.01885.x>
- Crisp, A.H., Gelder, M.G., Rix, S., Meltzer, H.I., & Rowlands, O.J. (2000). Stigmatisation of people with mental illnesses. *British Journal of Psychiatry*, 117, 4-7. <https://doi.org/10.1192/bjp.177.1.4>
- Diener, E., Emmons, R. A., Larsen, R. J. & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71-75. [https://doi.org/10.1207/s15327752jpa4901\\_13](https://doi.org/10.1207/s15327752jpa4901_13)
- Evans-Lacko, S., Little, K., Meltzer, H., Rose, D., Rhydderch, D., Henderson, C., & Thornicroft, G. (2010). Development and psychometric properties of the mental health knowledge schedule. *The Canadian Journal of Psychiatry*, 55(7), 440-448.
- Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention and behaviour: an introduction to theory and research. addison-wesley, reading ma. *Philos. Rhetoric*. 41, 842-844. <https://doi.org/10.2307/4393175>
- Göktaş, S., IŞIKLI, B., Önsüz, M. F., Yenilmez, Ç., & Metintaş, S. (2019). Ruh sağlığı okuryazarlığı ölçeği'nin (rsoy ölçeği) türkçe geçerlilik ve güvenilirliğinin değerlendirilmesi [Evaluation of the Turkish validity and reliability of the mental health literacy scale (MHL Scale).]. *Konuralp Medical Journal*, 11(3), 424-431.
- Hadlaczky, G., Hökby, S., Mkrtchian, A., Carli, V., & Wasserman, D. (2014). Mental Health First Aid is an effective public health intervention for improving knowledge, attitudes, and behaviour: A meta-analysis. *International Review of Psychiatry*, 26(4), 467-475. <https://doi.org/10.3109/09540261.2014.924910>
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). Multivariate data analysis with readings. *Prentice-Hall*.
- Holzinger, A., Mastchinger, H., & Angermeyer, M. (2012). What to do about depression? Self-help recommendations of the public. *International Journal of Social Psychiatry*, 58, 343-349. <https://doi.org/10.1177/002076401039726>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia*, 166(4), 182-186. <https://doi.org/10.5694/j.1326-5377.1997.tb140071.x>
- Jorm, A. F., Wright, A., & Morgan, A. J. (2007). Beliefs about appropriate first aid for young people with mental disorders: findings from an Australian national survey of youth and parents. *Early Intervention in Psychiatry*, 1(1), 61-70. <https://doi.org/10.1111/j.1751-7893.2007.00012.x>

- Jorm, A. F. (2012). Mental health literacy: empowering the community to take action for better mental health. *American psychologist*, 67(3), 231. <https://doi.org/10.1037/a0025957>
- Jung, H., von Sternberg, K., & Davis, K. (2016). Expanding a measure of mental health literacy: Development and validation of a multicomponent mental health literacy measure. *Psychiatry research*, 243, 278-286. <https://doi.org/10.1016/j.psychres.2016.06.03>
- Jung, H., von Sternberg, K., & Davis, K. (2017). The impact of mental health literacy, stigma, and social support on attitudes toward mental health help-seeking. *International Journal of Mental Health Promotion*, 19(5), 252-267. <https://doi.org/10.1080/14623730.2017.1345687>
- Kermode, M., Bowen, K., Arole, S., Pathare, S., & Jorm, A.F. (2009). Attitudes to people with mental disorders: A mental health literacy survey in a rural area of Maharashtra, India. *Social Psychiatry and Psychiatric Epidemiology* 1, 44, 1087-1096. <https://doi.org/10.1007/s00127-009-0031-7>
- Köker, S. (1991). Normal ve sorunlu ergenlerin yaşam doyumu düzeyinin karşılaştırılması [Comparison of life satisfaction levels of normal and problematic adolescents]. (Unpublished Master Thesis, Ankara University).
- Kutcher, S., & Wei, Y. (2014). School mental health literacy: a national curriculum guide shows promising results. *Education Canada*, 54(2), 22-26.
- Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental health literacy: Past, present, and future. *The Canadian Journal of Psychiatry*, 61(3), 154-158. <https://doi.org/10.1177/0706743715616609>
- Li, S., Sheng, Y., & Jing, Y. (2022). How social support impact teachers' mental health literacy: a chain mediation model. *Frontiers in Psychology*, 13, 851332. <https://doi.org/10.3389/fpsyg.2022.851332>
- Luty, J., Fekadu, D., Umoh, O., & Gallagher, J. (2006). Validation of a short instrument to measure stigmatised attitudes towards mental illness. *Psychiatric Bulletin*, 30(7), 257-260. <https://doi.org/10.1192/pb.30.7.257>
- Mackenzie, C. S., Gekoski, W. L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: The influence of help-seeking attitudes. *Aging & Mental Health*, 10, 574-582. <https://doi.org/10.1080/13607860600641200>
- Martínez-Zambrano, F., García-Morales, E., García-Franco, M., Miguel, J., Villellas, R., Pascual, G., ... & Ochoa, S. (2013). Intervention for reducing stigma: assessing the influence of gender and knowledge. *World Journal of Psychiatry*, 3(2), 18. <https://doi.org/10.5498/wjp.v3.i2.18>
- Nejatian, M., Tehrani, H., Momeniyan, V., & Jafari, A. (2021). A modified version of the mental health literacy scale (MHLS) in Iranian people. *BMC psychiatry*, 21, 1-1. <https://doi.org/10.1186/s12888-021-03050-3>
- Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory*. McGraw Hill.
- O'Connor, M., Casey, L., & Clough, B. (2014). Measuring mental health literacy—a review of scale-based measures. *Journal of mental health*, 23(4), 197-204. <https://doi.org/10.3109/09638237.2014.910646>
- Ratnayake, P., & Hyde, C. (2019). Mental health literacy, help-seeking behaviour and wellbeing in young people: implications for practice. *The Educational and Developmental Psychologist*, 36(1), 16-21. <https://doi.org/10.1017/edp.2019.1>
- Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian E-journal for the Advancement of Mental health*, 4(3), 218-251. <https://doi.org/10.5172/jamh.4.3.218>
- Sequeira, C., Sampaio, F., Pinho, L. G. D., Araújo, O., Lluch Canut, T., & Sousa, L. (2022). Mental health literacy: How to obtain and maintain positive mental health. *Frontiers in Psychology*, 6633. <https://doi.org/10.3389/fpsyg.2022.1036983>
- Sullivan, P., Murphy, J., & Blacker, M. (2021). The psychometric properties of the multicomponent mental health literacy measure with a sample of student-athletes and student-athletic therapists. *Journal of Applied Sport Psychology*, 33(3), 343-356. <https://doi.org/10.1080/10413200.2019.1702119>
- Swami, V., Furnham, A., Kannan, K., & Sinniah, D. (2008). Lay beliefs about schizophrenia and its treatment in Kota Kinabalu, Malaysia. *International Journal of Social Psychology*, 54, 164-179. <https://doi.org/10.1177/002076400708466>
- Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of Counseling Psychology*, 53(3), 325. <https://doi.org/10.1037/0022->

[0167.53.3.325](#)

- Wang, X., Liang, W., Liu, J., Zhang, C. Q., Duan, Y., Si, G., ... & Zhao, D. (2022). Further Examination of the Psychometric Properties of the Multicomponent Mental Health Literacy Scale: Evidence from Chinese Elite Athletes. *International Journal of Environmental Research and Public Health*, 19(19), 12620. <https://doi.org/10.3390/ijerph191912620>
- Whyte, M. (2021). *Mental Health Literacy and Its Relationship with Help-Seeking Behaviours in Adolescents: A Retrospective Study* (Doctoral dissertation, Adler University).



## RESEARCH ARTICLE

# A Phenomenological Analysis of the Life Experiences of Elderly Individuals

Esra ERDOĞAN<sup>a</sup> , İrem Nur GÜRSOY<sup>a</sup> , Hatice KUMCAĞIZ<sup>a</sup>  & Oğuzhan YILDIRIM<sup>b</sup> 

<sup>a</sup>Ondokuz Mayıs University, Samsun, Turkey; <sup>b</sup> Ministry of National Education, Turkey

## ARTICLE HISTORY

**Received:** 06.08.23  
**Accepted:** 16.12.23

## KEYWORDS

Old Age, Aging, Life Experience, Aging Experience

## ABSTRACT

This study is intended to make sense of the life experiences of elderly individuals over 65 years living in Samsun. The study was designed with phenomenology, one of the qualitative research methods. The participants constitute 15 elderly individuals, determined with the snowball sampling technique. The semi-structured interviews were done, and content analysis was performed through the MAXQDA. Three themes emerged: family life, education life, and social life. Based on these themes, it was revealed that the family was an essential support for elderly individuals that made them happy or sad in their life course. The other social interactions satisfied elderly individuals; they did not feel lonely in this way. In those ages, they had different hobbies like gardening or religious activities. These gave them peace. Besides, they gained importance to education, and some regretted their education process. These regrets arose from problems like low-income levels, family issues, and wrong choices.

Aging is a gradual decrease in physiological functions, social opinions, intellectual abilities, and the ability to adapt to an individual's environment (Erdoğan & Dinç, 2020; Kalyoncu & Tekinsoy, 2021). The World Health Organization (2015) considers 65 years as the threshold for aging. It defines it as a gradual decrease in physical and mental capacity, a growing risk of disease, and an increase in dependence on other people. Elderliness can vary according to sex, economic conditions, social factors, and individual situation (Kalyoncu & Tekinsoy, 2021; Varışlı, 2020). The concept of old age is defined in different ways at different perspectives. Biologically, old age refers to the changes observed in the basic functioning of an entire organism, from a single cell to the physical health status. On the other hand, old age as a social concept is defined as the changes in social roles and functions within society. As a psychological concept, it encompasses cognitive and mental changes (Samancı-Tekin & Kara, 2018).

The longer an individual lives, the more life experiences they gain (Kiremitçi & Akçay, 2019). Individuals experience many life events that may originate from themselves, others, or natural circumstances. Some of these experiences are more significant than others and can be positive or negative (Şahin, 2018). It is essential to focus on the experiences gained until this period, rather than experiences from their time as an older person since many factors, such as hobbies, occupations, social relationships, and regrets, determine how an individual lives their old age. Each individual has a different emotional life, experiences, and

**CORRESPONDING AUTHOR** Oğuzhan YILDIRIM, [oguzhanyildirim.pdr@gmail.com](mailto:oguzhanyildirim.pdr@gmail.com), ORCID: 0000-0002-8174-9640, Ministry of National Education, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counseling and Guidance Association

thoughts (Akış & Korkmaz-Yaylagül, 2021; Tereci et al., 2016). How individuals evaluate the situations and events they experience is essential in how these events positively or negatively impact them (Şahin, 2018).

As an important phenomenon, aging is studied in different disciplines, especially in the medical field. In this field, studies are generally related to diseases (Greicius et al., 2004; Hsu et al., 2003; Miller et al., 2011). However, aging is also a social phenomenon. People in their life course have experiences with people, somewhere and sometimes. These experiences have different life outcomes. Sometimes it is possible to change behavior, and sometimes to change the social environment. These changes or decisions have an impact on later life. For this reason, focusing on elderly individuals' life experiences from different perspectives has different implications for other people.

Studies on the life experiences of elderly individuals have received considerable attention in international literature. A study of 64 elderly individuals in China revealed how smart cities can be shaped based on their life experiences (Li & Woolrych, 2021). In a similar study in Holland, elderly individuals were asked how the municipalities could organize cities for them (Van Hoof et al., 2022). Hsu and McCormack examined the hospitalization experiences of elderly individuals and found that the data could be used to improve services and practices (Hsu & McCormack, 2011). In Uzbekistan, elderly individuals' experiences, daily routines, nourishment, personalities, leisure time activities, bad habits, and physical activities were examined by Inakov et al. (2020). The results revealed that when elderly individuals divorce or lose their spouses, they do not care for their health; nevertheless, living with a relative can have a positive effect (Inakov et al., 2020). These studies show that studying elderly individuals helps event municipalities to improve their actions.

Similar research interests can be observed when the national literature is examined. For example, Cantekin (2020) attempted to determine whether city opportunities suit elderly individuals and put forth appropriate and ideal options. Görgün-Baran et al. (2020) researched to determine the relationships of elderly individuals with their surroundings and their expectations from the connections to reveal their experiences regarding their feelings of trust, participation in society, and ability to join sociocultural activities. Consequently, families and neighbors can make older individuals feel happy and diminish their sense of loneliness; however, trust is key to these relationships. The common observation in the literature is that elderly individuals have an important place in the lives of younger people. As Canatan points out, 'By transferring the results of their experiences, elderly individuals ensure the continuation of cultural values and knowledge' (Canatan, 2008). The literature also has a concept called "successful aging." Bowling and Dieppe (2005) explain it in terms of biomedical and psychosocial theories. As viewed through biomedical theories, successful aging is primarily characterized by achieving optimal life expectancy while minimizing physical and mental decline and disability. These theories emphasize the importance of factors such as the absence of chronic diseases and risk factors for diseases, overall good health, and maintaining high levels of independent physical functioning, performance, mobility, and cognitive abilities. Psychosocial theories prioritize life satisfaction, active social participation, functioning, and psychological resources, encompassing personal growth and development. When a person gets age healthily and happily, it means successful aging. However, these definitions are based on theoretical assumptions. Therefore, it is essential to focus on the experiences of elderly individuals to plan the next step toward successful aging in the future, which will pave the way for significant research on the subject. As a result of the need for further research, this study aims to explain the essence of the life experiences of elderly individuals over 65 years in terms of their family, education, and social relationships, to evaluate how these experiences affect their current lives. Accordingly, the following questions were explored.

1. What is the essence of the life experiences of elderly individuals concerning their family lives?
2. What is the essence of the life experiences of elderly individuals concerning their educational background?
3. What is the essence of the life experiences of elderly individuals concerning their social lives?

## **Method**

### **Research Design**

This research is designed as a phenomenological design, one of the qualitative research designs. In phenomenological research, the researcher attempts to interpret participants' experiences from their

perspectives. In these studies, participants' perceptions of the phenomenon, how they experienced it, what they felt, and how they conveyed or interpreted it to different individuals are highly significant (Patton, 2018). Individuals should have shared experiences with the phenomenon. In this research, elderliness was determined as a phenomenon, and the life experiences of elderly individuals regarding this phenomenon, in terms of family, social relationships, and educational background, were evaluated. Thus, the essence of elderliness was tried to be made sense.

### Participants

The participants comprised 15 elderly individuals over 65 living in Samsun, Turkey. Snowball sampling, a qualitative sampling method, was employed. Individuals aged 65 and over who are literate and have no diagnosed psychiatric disorders were included in the study. First, a pre-interview was conducted with eight individuals who agreed to participate in the study. Then, with the help of three participants during the pre-interview, the researchers recruited seven more participants. Participants' sociodemographic characteristics are presented in Table 1.

**Table 1.** Findings on Socio-Demographic Characteristics (n=15)

Gender	Age	Education	Income rate	Person living with
K1	66	Primary School	Middle	Husband
K2	70	Primary School	Middle	Husband
K3	66	High School	Middle	Husband
K4	66	High School	Middle	Husband
K5	68	High School	Middle	Husband
K6	72	Middle School	Middle	Husband
E1	66	University	Middle	Wife
E1	70	University	Middle	Wife
K7	66	University	Middle	Husband
K8	66	High School	Low	Husband and child
E3	72	High School	Low	Wife and child
K9	67	Associate Degree	Middle	Daughter
K10	69	High School	Low	Alone
K11	78	Primary School	Middle	Alone
K12	77	High School	Middle	Alone
AgeX±SS	69.2±3.9			

Table 1 reveals that the participants belong to the middle/low-income level. There is diversity in educational backgrounds, but most participants graduated from high school. Only three live alone, and the others have a life partner. The eldest person is 78, and women constitute the majority.

### Data Collection

A personal information form, including five questions about age, gender, economic status and housemates, was used to gather socio-demographic data. This data is necessary since family, education, and social relationships are important for the research aim. The primary data collection tool was a semi-structured interview form prepared by the researchers. The semi-structured interview comprised eight questions on the participants' past and current life experiences. The sample questions can be seen below.

- Could you think about your school days when you were approximately 11 years old and describe how that time in your life prepared you for adulthood?
- Do you believe that the education you received brought out the existing potential within you? If so, please explain.
- When you think about your life, what event or situation brings you happiness?

First, the interview questions were created by conducting a literature review and forming a pool. Particularly, questions were narrowed down while considering the absence of leading or guiding aspects and the

sensitivity of topics concerning the elderly. Then, the questions were presented to experts for their approval regarding appropriateness, and thus, they were finalized accordingly. Additional questions were asked when there was necessary information regarding the phenomenon. Pilot interviews were not conducted due to the limited number of participants. The interviews were conducted during January and February 2022. Before the interviews, the participants were provided informed consent covering the study’s purpose and that the analysis would be carried out for scientific research, that the information would be kept confidential and private, and that they could leave at will.

The interviews were conducted in a quiet room at the participants’ homes. Each participant was individually interviewed once and recorded, each lasting almost 20 minutes. The notes and voice records were transferred to a computer and reviewed before the analysis. At the end of the interviews, 20 pages of interview transcripts and notes were gathered.

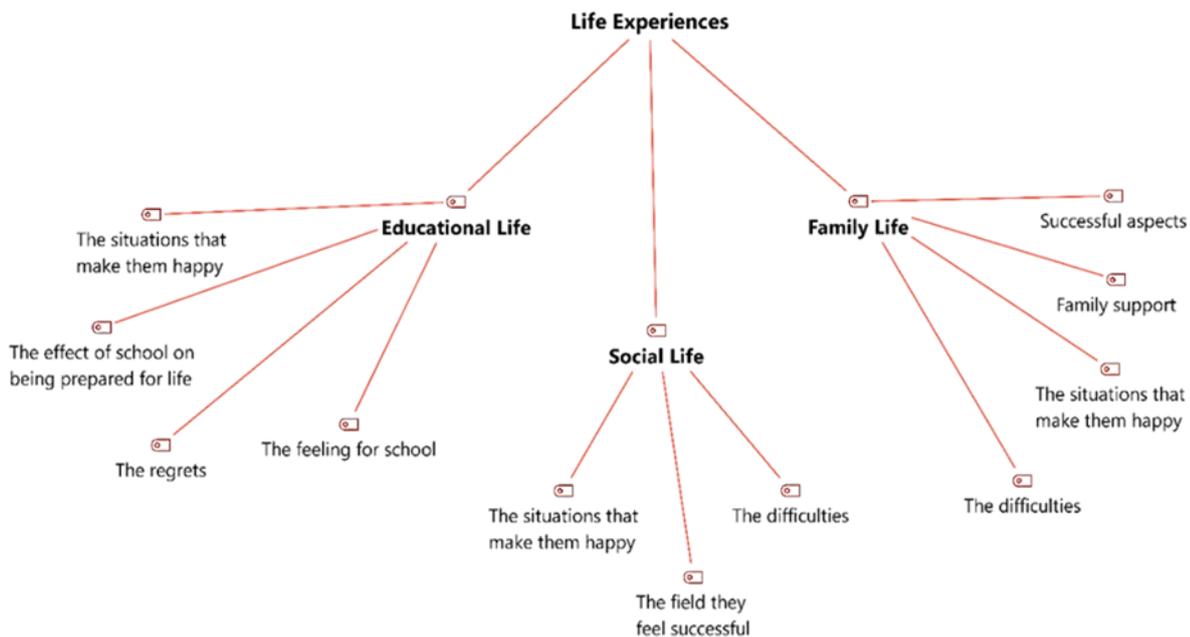
**Data Analysis**

The content analysis was made through MAXQDA 2020. Content analysis involves the in-depth analysis of collected data, aiming to uncover previously undisclosed themes and dimensions (Yıldırım & Şimşek, 2021). First, the collected data were read to be familiar with it. After reading, the codes and categories were developed for the first participant, followed by the second participant, and the analysis proceeded cumulatively. Second, the descriptive codes, based on the theoretical framework of the research, were determined; then, the codes and themes were integrated. The male participants were coded E1, E2, and E3; the female participants were coded K1, K2, and K3. The analysis was presented to experts to achieve reliability in coding and, after evaluation, was entered into the final version. In qualitative research, validity and reliability are approached differently compared to quantitative research (Yıldırım & Şimşek, 2021). To ensure credibility (validity) throughout the study, in-depth interviews were conducted, direct quotations were included, and experts' opinions were sought in the data collection and analysis process. The entire process has been transparently explained to achieve transferability and detailed descriptions have been provided. Additionally, purposive sampling was utilized. To ensure consistency (reliability), the data obtained from participants were analyzed comparatively.

**Results**

When the life experiences of the participants were evaluated, three themes were identified: ‘educational background,’ ‘social life,’ and ‘family life.’ The themes and categories of the analysis are presented in Figure 1.

**Figure 1.** The Code Tree of Life Experiences of Elderly Individuals



The ‘family life’ theme includes family support, events/situations that make them happy, difficulties, and success. The categories of the subthemes of family life and some of the codes are presented in Figure 2.

**Figure 2.** The Code Tree of Family Life Experiences of Elderly Individuals

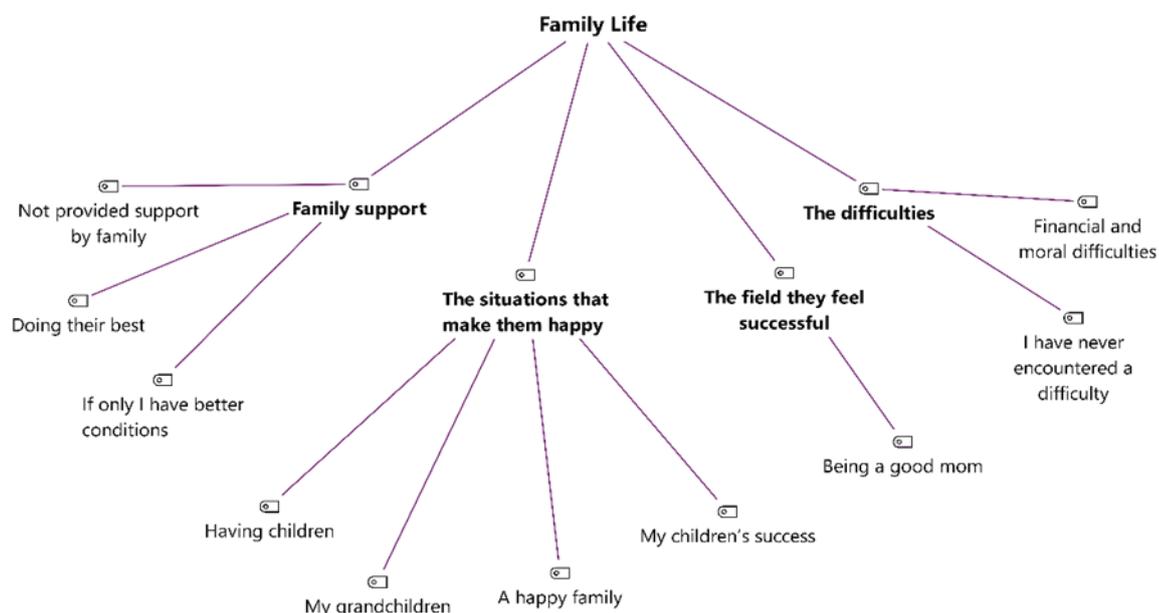


Figure 2 shows that under the ‘family support’ category, elderly individuals opined that their families had done their best for them. Families included mothers, fathers, siblings, and close relatives. Some of their statements are as follows:

*“My elder siblings became a guide to me. My elder sister made an effort for me growing up.” (E1)*

*“I’m aware of that, especially my father tried so hard for his daughters to attend school. So, I cannot say anything negative to my family about their effort.” (K2)*

*“My uncles, especially, supported and guided me in choosing this profession.” (E3)*

The participants primarily provided answers concerning how their families supported their educational life and their choice of profession. Specifically, the emphasis on fathers’ support for girls’ education is significant. Other participants stated within other categories, such as ‘not supported by their families’ and ‘if only I had better conditions.’ K4 emphasized her wish for better conditions, saying, “We didn’t have separate rooms. We had only two rooms, but I used to wake up early and study for my exam on my bed. If I had better conditions, I’d be somewhere else”. This shows that she tried to study hard even if she did not have better conditions. Participant K6 stated that because they lived in the village, her mother could not care for her too much. Her father wanted her to go to school, but responsibilities, such as animal husbandry, prevented her. This reveals that struggling to earn a living dominates her education. Contrary to K6’s father, K8’s father did not want his daughter to go to school or work; though she was accepted to Midwifery School, he prevented her. The participant expressed sadness, saying, ‘I have always felt down about that.’

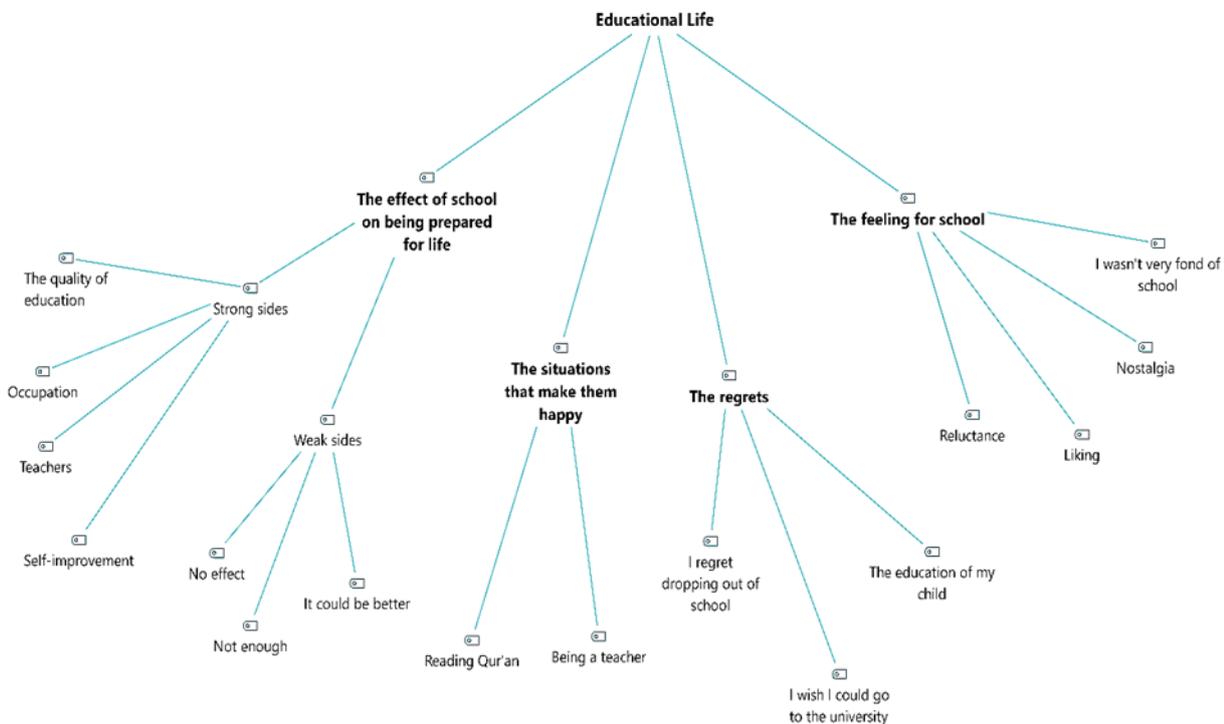
Under the ‘family life’ theme, there are various opinions within sub-categories, such as ‘the events/situations that make them happy,’ ‘my children’s success,’ ‘my grandchildren,’ and ‘a happy family.’ K9 and K10 expressed their happiness about their children’s success: “The happiest moment for me is when I am with my children and see them standing on their feet.” It can be said that elderly individuals support their children in earning a living. Having grandchildren is another aspect that brings them happiness. Therefore, the participants showed emotional dependence on their families.

In the context of ‘the difficulties, they encountered’ in their lives, categories, such as ‘I have never encountered a difficulty’ and ‘financial and moral difficulties’ were observed. Some participants stated never encountering difficulties, whereas others focused on financial and moral difficulties. Participants K2, K3, and K7 made similar statements: “I had both financial and moral difficulties while my children were going to school.” Nevertheless, they contributed to their children’s education, even though this was difficult. Another participant stated that they encountered difficulties but were not unhappy: ‘We had some difficulties as my family’s financial situation was bad. However, I do not regret it. Fortunately, I succeeded. I feel pleased and grateful about that’ (K4). This opinion reveals that difficulties may result in people having different experiences. Still, the difficulty level may change: “Financial difficulties make life difficult from time to time. It was only me that was working. We suffered a lot. As we did not have money, we could not do many of the things we wanted to do” (K10, K2). Another participant stated that the first years of her working life were quite difficult; additionally, in the later periods of life, when she lost her husband, she felt lonely and reencountered problems. Examining the opinions revealed that participants used first-person plural sentences when discussing difficulties, pointing out that they faced trouble as a family.

In the context of the category ‘I have never encountered a difficulty,’ there was an emphasis on family. Two participants emphasized never having faced moral difficulties with their children or husbands (K5 and K6). While two male participants expressed difficulties, they also mentioned they had the power to overcome them (E1 and E3). When all the opinions on this theme were evaluated, it could be discerned that there are positive and negative experiences in family life; negative experiences can be regarded as a lesson, while positive experiences bring happiness and tranquility. The relationships among the family are important from the beginning of life.

Regarding the ‘education life’ theme, categories such as ‘the effect of school on being prepared for life,’ ‘the feeling for school,’ ‘the events/situations that make them happy,’ and ‘the regrets’ were determined. The code tree for these categories is presented in Figure 3.

**Figure 3.** The Code Tree of Education Life Experiences of Elderly Individuals



The first category in educational life is ‘the events/situations that make them happy.’ The participants expressed their opinions on different occupational/educational issues in this category. Participant K3 said she found happiness in being a teacher to be a unique and sacred aspect, whereas E2 expressed his happiness at ‘the success of his students.’ K11 emphasized that reaching an occupational goal would make her happy.

Focusing on religious education, participant K6 expressed: “The most important event that makes me happy is reading Qur’an. I love reading Qur’an a lot. That is the place where I feel most happy. I cannot live without it.” This means that she finds happiness and inner peace by reading the sacred text of her religion, thanks to her religious education.

In contrast to happy situations, some situations lead to regret. In terms of ‘regrets,’ participant K7 expressed her wish under the category ‘I wish I could go to the university’: “I had an occupation and became an officer. However, I believe my life would have turned out differently if I could have gone to the university.” Participant K1 expressed regret about leaving school: ‘I regret dropping out. If I could finish school, I would be more successful; maybe I would have become a teacher.’ She expressed her abilities: “I was good at painting.”

Under the ‘the effect of school on being prepared for life’ category, the codes were sub-categorized into ‘weak sides’ and ‘strong sides.’ Under ‘weak sides,’ participant K4 evaluated her school experience: “It did not have much effect. We went to the teacher’s training school, and here we are.” Participant K12 said: “With better education and support, I could have had better conditions.” This shows her dissatisfaction with her current status and living conditions. Under ‘strong sides,’ there were opposing opinions on the same issues. Those who assumed they had a profession as a result of their education said:

*“Those were the good times. The education was much better; the people were much better. It helped me be where I am today and have a profession.” (K7)*

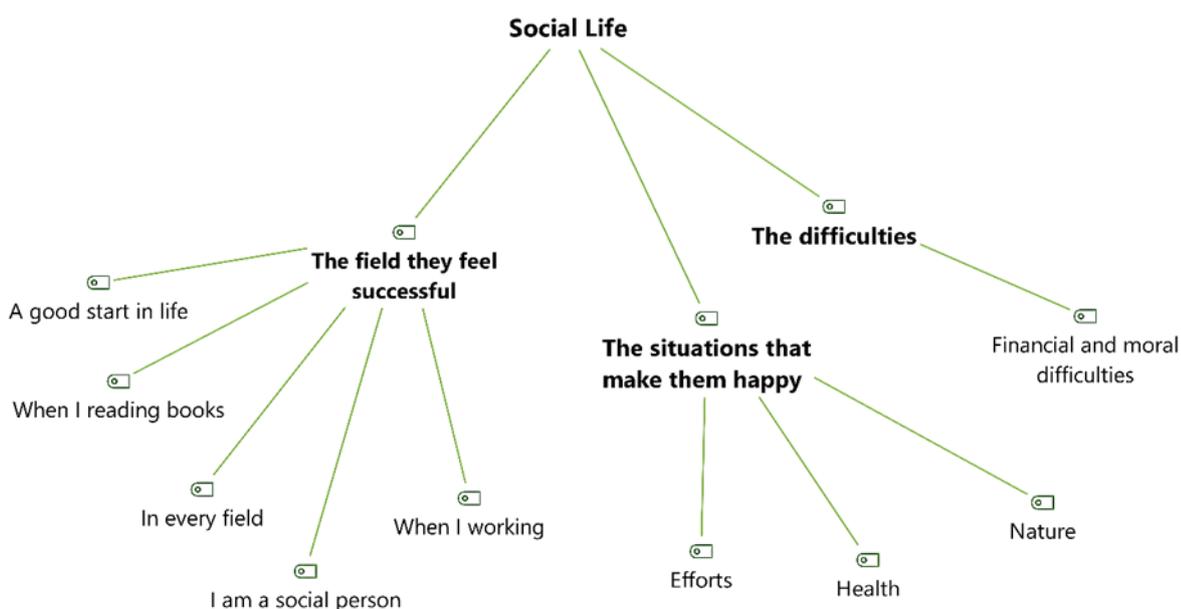
*“The education I received guaranteed my future and enabled me to have a profession.” (E3)*

The opinions reveal that they felt gratitude towards their educational process, because of which they have a profession and lead their lives. They also expressed nostalgia in terms of education and society. Another vital aspect was the contribution of education towards self-improvement. Participant K6 emphasized the importance of education in terms of professional experience and confidence.

*“If I did not go to school, my life would mean nothing. What happens when you are illiterate? If I had not continued my education, I could not get a job, and my life would have worsened. I would have become more experienced and confident in my life.”*

*‘Social life experiences’ was another theme, whose categories included ‘the field they feel successful,’ ‘the events/situations that make them happy,’ and ‘the difficulties they encountered.’ The code tree for these categories is shown in Figure 4.*

**Figure 4.** The Code Tree of Social Life Experiences of Elderly Individuals



The first sub-dimension under the ‘the events/situations that make them happy’ concerns the participants’ health. Participant K8 expressed happiness in her social relationships and life: “I enjoy good health; I can go anywhere. I raised my children to become good. This makes me so happy. I feel quite peaceful.” Moreover, the participants stated that nature makes them happy; most dreamt of having a house with a garden. For example, participant K5 expressed her love for nature: “Waking up happy, saying good morning to my friends, saying good morning to my flowers and watering them make me happy. When I say good morning to my neighbors, I feel happy. I feel happy with the stones, birds, and flowers.”

One of the categories was ‘I am a social person,’ under which participants emphasized their social relationships and activities. Participant K1 said: “I am a social person. For years, I worked in important organizations, and was part of the administration. I effectively maintain relationships in every field.” Participant K3 emphasized her success in human relations, stating she had good relationships with her neighbors, which made her happy. Under the ‘I am good at everything’ category, participant K4 emphasized her interest and success in art: “I used to create magnificent paintings. I am good at everything. I can achieve anything I want.” Participant K5 spoke about the field in which she felt successful: “If I read books every day, I feel successful. If I cannot read, I feel incomplete.” Participant K6 emphasized her self-confidence and self-efficacy: “When I work, I feel more successful. I get through all the things I can manage.” Moreover, she links working hard to success. Similarly, three participants added that they missed the time they worked and said they could refresh themselves when working (K7, K9, E2).

### **The Essence of the Aging Phenomenon**

According to the results, the phenomenon of aging can be summarized as follows: Aging is the culmination of experiencing positive and negative events throughout life in interaction with one’s environment, which includes institutions that either contribute to or hinder these events. As a result, aging entails a sense of completeness or incompleteness based on accumulated habits in the current position. Deaths represent a sense of loss during aging, while births and nurturing symbolize feeling proud. Fulfilling oneself leads to successful aging. In this process, the happiness of the elderly individuals makes them take up new hobbies and embrace life. At the same time, regrets serve as valuable lessons to be passed on as advice to future generations.

### **Discussion & Conclusion**

The results show that some elderly individuals did not live as they wanted because of financial problems and lack of familial support. In their study, Kalaycı and Özkul asked the elderly about the issues they had trouble with the most and what they wanted to change; they found various answers, such as ‘having a good profession,’ ‘ensuring social security,’ and ‘better financial conditions for themselves and their families.’ Individuals prefer a good and comfortable life (Kalaycı & Özkul, 2017). In Çicek et al.’s (2021) study, older women gave various reasons for leaving their education life: ‘insufficiency of family’s financial situation,’ ‘father’s unwillingness for their daughters to go to school,’ and ‘the obligation to work in the fields’ (Çicek et al., 2021). This study shows that women may have educational problems because of their families especially fathers.

In addition to the physical, spiritual, and social problems, losing a spouse negatively affects elderly individuals’ quality of life. As spouses support each other both financially and morally, the loss of their spouses results in them encountering many problems in their lives (Kalaycı & Özkul, 2017; İçli, 2010). Similarly, this study highlights that spouses support each other to cope with difficulties. In their study of people who lost their spouses, Kiremitçi and Akçay (2019) stated that when their spouses were alive, they took responsibility and did things together; however, when they passed away, they had to do all the things alone. Akbayrak and Aysan (2022) emphasized in their research on successful aging in elderly individuals that marriage positively contributes to successful aging. Participants believed that being married is essential for maintaining social relationships and leading a regular and healthy lifestyle. In a different study, phenomenological research focused on never-married elderly individuals. As a result of the study, all participants perceived “relying on nobody” as their independence, leading to a sense of peace and reduced marital tensions. This independence allowed them to maintain personal integrity and confidently engage in social acts. While all participants spent more time alone compared to others, their experiences varied.

Voluntarily single individuals adapted well to living alone and accepted loneliness as part of life. Involuntarily single participants, especially men, viewed loneliness as the most bitter aspect of their singleness. Participants had to rely on their abilities and avoid seeking help from others and build self-efficacy to solve problems independently. Close relations with family and friends played a significant role in overcoming loneliness. Women benefited from larger social networks and regular meetings with old friends, while men relied more on close family connections. Stigmatization was experienced differently among participants, with voluntary singles being less affected by negative views compared to involuntary singles, particularly women who experienced feelings of grief and loss due to others' opinions (Hamedanchi et al., 2021). It shows that marriage has different pros and cons in later life.

Some participants expressed that reading books and the Qur'an, creating paintings, and having social relationships made them feel more successful and happier. In their study, Görgün-Baran et al. (2020) stated that a 74-year-old woman said she loved reading and that it made her feel better. A similar study with 17 elderly individuals showed that they tended to engage in religious activities and spent their spare time reading religious texts and engaging in religious activities (Yüksel et al., 2014). Studies conducted indicate that the importance of religious beliefs and practices increases in later life, and elderly individuals tend to turn more towards religion. Additionally, it is stated that engaging in religious activities comforts them (Kılavuz, 2005; Zorn & Johnson, 1997). Similarly, Chen et al. (2023) highlighted the significant mediating role of religious attendance in the connection between living arrangements and subjective well-being. Elderly individuals promoted their well-being by attending religious activities. A strong sense of religiosity provides individuals with a sense of purpose and fulfillment in life, leading to a feeling of accomplishment, happiness, and inner peace. It gives them a profound meaning in life and satisfies them across all aspects of their existence (Tabatabaei & Ebrahimi, 2023).

Healthy aging can be ensured by being productive, creating social relationships, and participating in activities (Öztürk & Kayıhan, 2018). Therefore, social life is important for healthy aging experiences. Although family and relative relationships are important support for elderly individuals, research shows that social relationships may be more critical (Akbarak & Aysan, 2022; Görgün-Baran et al., 2020; Softa-Kaçan et al., 2016). For elderly individuals, the social environment is as important as the physical environment. Elderly individuals often continue their lives in their familiar social environments even if the physical conditions and facilities are unsuitable for their current needs. Having a peer group with a similar sociocultural background and establishing quality communication makes them feel better and more integrated into society (Akbarak & Aysan, 2022). Studies have indicated that elderly individuals like to chat with their friends and spend time in parks (İçli, 2010; Softa-Kaçan et al., 2016). Social relationships are necessary to improve the personality, positive identity, and self-respect of elderly individuals and to strengthen their social efficiency (İçli, 2010). Individuals withdraw and feel lonely as their social circle diminishes with age (Softa-Kaçan et al., 2016). Therefore, increasing social opportunities for elderly individuals is necessary. Gusdal et al. (2021) conducted a Delphi study about prerequisites for a healthy and independent life with older adults. The results revolved around three interconnected areas of significance: social life, safety, and freedom of choice. Unsurprisingly, having a social life emerged as one of the top three prerequisites, with 97 percent of the participants strongly agreeing that participating in organized social activities is crucial. The social environment is even important for a healthy life. The findings of a study suggest that residing in a positive social environment can potentially decrease the risk of depression in elderly individuals with diabetes and multiple chronic illnesses. This risk reduction is attributed to the enhancement of their social support, reinforcement of their sense of life purpose, and recognition of the capabilities of all older individuals to attain valued functioning (Yeung et al., 2022).

When life experiences concerning educational life are evaluated, it can be seen that the educational life of elderly individuals prepares them for life. It was generally held that the quality of education was better in the past. However, they were not content with how it is now. This can be interpreted as a concern for both their children and grandchildren. According to Ng et al. (2017), there is a noteworthy correlation between education level and life satisfaction among the oldest in China. Therefore, educational life had an impact on

both past and present life. When they received a quality education, they not only became content with their current positions but also constantly sought the quality of their past experiences. However, with quality education, they also came to appreciate the person they have become today. In sum, the essence of aging arising from the experiences of elderly individuals reflects complex emotions and behaviors. It includes many sad or happy events, many people, and acts with some outcomes. Adams-Price, Henley & Hale (1998) found what aging was for young and elderly individuals. In the perception of younger adults, aging is linked to significant life events, and despite these events being mostly positive, aging is viewed negatively. Younger individuals tend to associate aging with growing responsibilities and diminished freedom. On the other hand, elderly individuals associate aging with everyday occurrences or no particular events and hold a positive outlook on aging. (Adams-Price, Henley & Hale, 1998). Therefore, it can be said that aging is that every moment is precious.

### **Limitations**

This study is limited to 15 elderly individuals with different socioeconomic levels. It is conducted with a small group in a specific region. It is important for participants to possess health conditions suitable for participation based on their age and to be open to communication. In the study, the number of participants has been limited from this perspective. However, considering qualitative research, this limited number is appropriate for achieving data saturation. The inclusion of only elderly individuals from one province is related to the areas accessible to the researcher. Therefore, individuals who are relevant to the purpose and accessible within the boundaries of one province have been included in the study. It is known that social and cultural factors are influential in the life experiences of elderly individuals. It is recommended that further studies be conducted with larger samples in different regions. Furthermore, the themes have been limited to specific areas within the life cycles of elderly individuals. In future studies, the meaning attributed to old age can be explored through different dimensions. In this study, interview questions were developed for three dimensions identified through a literature review (education, social life, family life), and since elderly individuals did not touch upon dimensions outside of these, the study delved into these three dimensions. Additionally, inter-coder reliability was not calculated during the coding process; instead, expert opinions on coding were sought.

Future research should focus on the fact that elderly individuals of today and the future are different. Appropriate activities for their conditions should be supported and encouraged to support their social lives. Social interaction in the 21st century is based on technology. A study on social media interactions among elderly individuals and their effects on their lives can be done from different perspectives. In addition, the parent-child relationship seems vital. Families need to support and raise awareness about their children's education. Such programs should be developed to improve children's social activities and peer relationships and develop their personality right from primary and elementary schools.

**Author Contributions:** All authors have a joint contribution to the research.

**Funding Disclosure:** No funding was provided for this study

**Conflict of Interest:** The authors declare that they have no conflicts of interest.

**Data Availability:** The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request

**Ethical Approval.** This research was carried out under the principles of the Declaration of Helsinki (2016). It was guaranteed that the data gathered from the participants would never be used for other purposes and would be used only for scientific purposes. Furthermore, the participants' identities would remain anonymous. The authors declare that they obey the principles of publication ethics. Before the data collection process, ethics committee approval was obtained from the Social and Human Sciences Research Ethics Committee of the university to which the authors belong (31.12.2021, 2021-1022).

## References

- Adams-Price, C. E., Henley, T. B. & Hale, M. (1998). Phenomenology and the meaning of aging for young and old adults. *The International Journal of Aging and Human Development*, 47(4), 263-277. <https://doi.org/10.2190/BM9Q-XKN5-4N3L-PP9W>
- Akış, A.G., & Korkmaz-Yaylagül, N. (2021). Life-course perspective and old age. *Adiyaman University Journal of Social Sciences Institute*, 14(8), 278-297. <https://doi.org/10.14520/adyusbd.867560>.
- Akbayrak, E., & Aysan, U. (2022). Proper and successful aging from the perspective of the elderly. *Journal of Social Policy Studies*, 22(55), 399-427. <https://doi.org/10.21560/spcd.vi.1053840>
- Bowling, A., & Dieppe, P. (2005). What is successful ageing and who should define it? *BMJ*, 331, 1548 <https://doi.org/10.1136/bmj.331.7531.1548>
- Canatan, A. (2008). Social values and the elderly. *Elderly Issues Research Journal*, 1(1), 62-71.
- Cantekin, Ö. F. (2020). Elderly views on the suitability of urban life opportunities for the elderly. *Turkish Journal of Social Research*, 24(1), 29-40. <https://dergipark.org.tr/tr/pub/tsadergisi/issue/53617/688152>
- Chen, Y., Zhao, L. & Xie, B. (2023). Living arrangements and subjective well-being of elderly Chinese Tibetan people: the mediating role of religion. *Journal of Religion and Health*. <https://doi.org/10.1007/s10943-023-01753-3>
- Çicek, B., Şahin, H. & Erkal, S. (2021). Active aging experiences of the elderly: a qualitative study. *International Journal of Society Studies*, 17(33), 371-384. <https://doi.org/10.26466/opus.773745>.
- Erdoğan, E. & Dinç, S. (2020). As we get older, our lives are a lesson, In N. Gürhan (Ed.), *Psychiatric nursing in the pandemic* (pp. 49-53). Turkey Clinics.
- Greicius, M. D., Srivastava, G., Reiss, A. L. & Menon, V. (2004). Default-mode network activity distinguishes Alzheimer's disease from healthy aging: evidence from functional MRI. *Proceedings of the National Academy of Sciences of the United States of America*, 101(13), 4637-4642. <https://doi.org/10.1073/pnas.0308627101>
- Görgün-Baran, A., Günay, B., Bereketli, B. & Işık, I. (2020). A qualitative research on the life experiences of the elderly in terms of social capital, trust and loneliness. *Journal of Research on Elderly Issues*, 13(2), 72-89. <https://doi.org/10.46414/yasad.775885>.
- Gusdal, A., Johansson-Pajala, R., Zander, V. & Von Heideken Wågert, P. (2021). Prerequisites for a healthy and independent life among older people: A Delphi study. *Ageing & Society*, 41(9), 2171-2187. <https://doi.org/10.1017/S0144686X20000306>
- Hamedanchi, A., Zanjari, N., Khankeh, H. & Abolfathi Momtaz, Y. (2021). What does it mean to be never married in later life? Application of phenomenology in an aging study. *The Qualitative Report*, 26(4), 1232-1247. <https://doi.org/10.46743/2160-3715/2021.4652>
- Hsu, M.Y. & McCormack, B. (2011). Using narrative inquiry with older people to inform practice and service developments. *Journal of Clinical Nursing*, 21, 841-849. <https://doi.org/10.1111/j.1365-2702.2011.03851.x>.
- Hsu, A. L., Murphy, C. T. & Kenyon, C. (2003). Regulation of aging and age-related disease by DAF-16 and heat-shock factor. *Science (New York, N.Y.)*, 300(5622), 1142-1145. <https://doi.org/10.1126/science.1083701>
- Inakov, S.A., Mamatkulov, B.B., Kosimova, K., Saidalikhuaeva, S. & Shoyusupova, K.B. (2020). Social and demographic characteristics of elderly and their lifestyle in developing countries: on the example of Uzbekistan. *Indian Journal of Forensic Medicine and Toxicology*, 14(4), <https://doi.org/7418-7425>. [10.37506/ijfmt.v14i4.12821](https://doi.org/10.37506/ijfmt.v14i4.12821)
- İçli, G. (2010). Elderly and the evaluation of old age: a qualitative research on Denizli province. *Elderly Issues Research Journal*, 1, 1-13. <https://dergipark.org.tr/tr/pub/yasad/issue/21795/234243>
- Kalyoncu, S., & Tekinsoy-Kartin, P. (2021). Active aging and nursing care. *Journal of ERU Faculty of Health Sciences*, 8(1), 26-32. <https://dergipark.org.tr/en/pub/erusaglik/issue/64150/858162>

- Kalaycı, I., & Özkul, M. (2017). I wish I could protect my traditional position, be modern: elderly experiences in modernization process. *Suleyman Demirel University The Journal of Visionary*, 8(18), 90-110. <https://doi.org/10.21076/vizyoner.308309>
- Kılavuz, M. A. (2005). The Importance of the Religious Activities in Aging from the Point of Diminution the Solitude and Friendship Relation in Western Culture. *Journal of Uludag University Faculty of Theology*, 14(2), 25-39. <https://dergipark.org.tr/en/pub/uluifd/issue/13489/162984>
- Kiremitçi, S., & Akçay, S. (2019). Current social work studies. In M. Kırloğlu & H.H. Tekin (Eds.), *A qualitative study on the loss of spouse of the elderly: The case of Konya* (pp. 22-33). Cartoon Bookstore.
- Li, M. & Woolrych, R. (2021). Experiences of older people and social inclusion in relation to smart “age-friendly” cities: a case study of Chongqing, China. *Frontiers in Public Health*, 9(779913), 1-17. <https://doi.org/10.3389/fpubh.2021.779913>.
- Miller, G. E., Chen, E. & Parker, K. J. (2011). Psychological stress in childhood and susceptibility to the chronic diseases of aging: moving toward a model of behavioral and biological mechanisms. *Psychological Bulletin*, 137(6), 959–997. <https://doi.org/10.1037/a0024768>
- Ng, S.T., Tey, N. P. & Asadullah, M. N. (2017). What matters for life satisfaction among the oldest-old? Evidence from China. *PLOS ONE*, 12(2), e0171799. <https://doi.org/10.1371/journal.pone.0171799>
- Öztürk, M. E. & Kayıhan, D. (2018). Healthy aging. *Science Harmony*, 1(1), 51-53. <https://dergipark.org.tr/tr/pub/bilar/issue/41115/500281>
- Samancı-Tekin, Ç. & Kara, F. (2018). Aging in the world and Turkey. *International Journal of Scientific Research*, 3(1), 219-229. <https://dergipark.org.tr/tr/pub/ibadjournal/issue/31095/370584>
- Softa-Kaçan, H., Bayraktar, T., & Uğuz, C. (2016). Factors affecting the perceived social support systems and healthy lifestyle behaviors of elderly individuals. *Elderly Issues Research Journal*, 9, 1-12. <https://dergipark.org.tr/tr/pub/yasad/issue/23911/254821>
- Şahin, S. (2018). *The relationship of life experiences with self-esteem, resilience and meaning given to life in adults*. [Master Thesis, Kocaeli University] Yöktez.
- Tabatabaei, S. Z., & Ebrahimi, F. (2023). religion and subjective well-being among the female elderly people: A focused ethnography. *Middle East Journal of Rehabilitation and Health Studies*, 10(3). <https://doi.org/10.5812/mejrh-129593>
- Tereci, T., Turan, G., Kasa, N., Öncel, T., & Arslansoyu, N. (2016). A look at the concept of old age. *Beyond the Horizon Science Journal*, 16(1), 85-102. <https://dergipark.org.tr/tr/pub/uobild/issue/42561/513077>
- Varişlı, B. (2020). Old age experience and intersectionality: The case of Istanbul. *International Journal of Society Studies*, 16(30), 2553-2561. <https://doi.org/10.26466/opus.693033.693033>
- Van Hoof, J., van den Hoven, R.F.M., & Hess, M., van Staaldunen, W. H., Hulsebosch-Janssen, L. M. T. & Dikken, J. (2022). How older people experience the age-friendliness of The Hague: A quantitative study. *Cities*, 124, 1-10. Doi: <https://doi.org/10.1016/j.cities.2022.103568>.
- Yeung, P., Severinsen, C., Good, G. & O'Donoghue, K. (2022) Social environment and quality of life among older people with diabetes and multiple chronic illnesses in New Zealand: Intermediary effects of psychosocial support and constraints. *Disability and Rehabilitation*, 44(5), 768-780, <https://doi.org/10.1080/09638288.2020.1783375>
- Yıldırım, A. & Şimşek, H. (2021). *Nitel araştırma yöntemleri* (12. Bsk.) [Qualitative research methods (12nd Ed.)]. Seçkin Yayıncılık.
- Yüksel, M.Y., Dincer, F., Buyukkose, H.T., & Lale, Z.H. (2014). A review on the leisure time of the elderly. *Journal of Education and Training Research*, 3(1), 107-114. <https://doi.org/10.1371/journal.pone.0225006>
- Zorn, C. R., & Johnson, M. T. (1997). Religious well-being in noninstitutionalized elderly women. *Health Care for Women International*, 18(3), 209-220. <https://doi.org/10.1080/07399339709516276>



## RESEARCH ARTICLE

# Career Counseling in Public Schools through the Eyes of Counselors in Turkey

Samet ŞAHİN<sup>a</sup> , Dilek Yelda KAĞNICI<sup>b</sup> , Diğdem Müge SİYEZ<sup>a</sup> , Serkan DENİZLİ<sup>b</sup>  & İlkem BAŞARAN<sup>a</sup> 

<sup>a</sup>Dokuz Eylül University, İzmir, Turkey; <sup>b</sup>Ege University, İzmir, Turkey.

## ARTICLE HISTORY

**Received:** 10.08.23  
**Accepted:** 05.09.23

## KEYWORDS

Career, career counseling, competencies, school, qualitative research

## ABSTRACT

In this study, the views of counselors on career counseling services carried out in Turkish schools were examined. 15 counselors working on career issues in schools, in Guidance and Research Centers (GRCs) and in universities participated in the study. As one of the qualitative research methods, case study was used, and the data were analyzed using content analysis. Based on the analysis, the findings were discussed under seven main themes: (1) meaning of career, (2) student's career-related problems, (3) students' career-related needs, (4) effective career counseling, (5) effective career counselor, (6) facilitating factors in career counseling, and (7) complicating factors in career counseling. The findings were discussed in the light of career counseling literature.

Career counseling has a history of approximately seventy years in Turkey. The seeds of career counseling were planted with the efforts that trace back in the beginning of guidance services in the Turkish education system in the early 1950s. In the early 1990s, the changes in the field of vocational guidance started to find reflection over time on the practices in the Ministry of National Education (MEB), and the emphasis on “vocational choice” was replaced with the emphasis on “career development process” and “career development tasks” (Yeşilyaprak et al., 1995).

Career counseling is an occupational counseling process that focuses on the client's career development problems. In this process, various career problems, such as choosing a occupation, making various career-related decisions, coping with job stress or looking for a job, are discussed (Niles & Harris-Bowlsbey, 2016). In order to deal with all these problems effectively, career counseling competencies are necessary in addition to counselor competencies. Although career counseling competencies vary from country to country, the basic competencies that are generally accepted are as follows; 1) career development theory; 2) individual and group counseling skills; 3) individual/group assessment; 4) knowledge/resources; 5) program management and implementation; 6) consultation; 7) diverse populations; 8) supervision; 9) ethical/legal issues; 10) research/evaluation; and 11) technology (National Career Development Association, The National Career Development Association [NCDA], 2009).

Career counseling services in Turkey are mainly provided by school counselors. While there are differing policies around the globe, counselors can offer career counseling services once they graduate from the Guidance and Counseling (GC) undergraduate program. In the present GC undergraduate programs (Higher

**CORRESPONDING AUTHOR** Samet ŞAHİN, sametsahin\_@hotmail.com, ORCID: 0000-0001-5961-9447, Dokuz Eylül University, İzmir, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counseling and Guidance Association

Education Council – Yüksek Öğretim Kurulu [YÖK], 2018), the counselor candidates take the theoretical course “Vocational Guidance” in the 5th semester and the applied course “Vocational Guidance Practices” in the 6th semester. Although career counseling can be found in GC undergraduate programs, it is only elective and differs in content across university curriculums.

In addition, these compulsory courses have been included in the program only since 2007-2008 and therefore, there are many counselors and non-field guidance teachers who were appointed without having taken these courses. In fact, in a study conducted in 2021 with 70 guidance teachers working in primary schools (Ulaş-Kılıç & Demirtaş-Zorbaz, 2021), it has been shown that approximately one-quarter of these teachers (22.4%) graduated from departments other than GC, and only 18% of 70 teachers took a relevant applied course. Moreover, even if counselors have taken these courses as compulsory courses, they start to work at four different levels upon graduation and public personnel selection examination: preschool, primary school, middle school and high school.

Being able to provide career counseling to individuals in different developmental stages requires certain competencies. In another recent study (Ulaş-Kılıç & Demirtaş-Zorbaz, 2021), only 15.4% of the counselor participants stated that the courses taken in the undergraduate program is contentwise sufficient for providing career services in primary school. In another study (Çivilidağ et al., 2015), researchers investigated the views of school principals, school counselors and adolescents were examined. They showed that the most common activity for vocational guidance was to apply tests and scales. However, career counseling is not only a process of using only tests and scales, but a much more comprehensive service. Significantly, the 2023 Education Vision of the Turkish Ministry of National Education points to a vision that emphasizes life-long career development, a vision that goes beyond mere assessment-based career services and requires quality career counseling.

As Büyükgöze Kavas, Şanlı and İslam (2021) stated, the number of studies revealing career self-efficacy of counselors in Turkey is limited. But one of these limited studies (Küçüktepe, 2014) showed that one of the areas where counselors felt most inadequate was vocational guidance. Also, when the findings of the two current studies mentioned above are taken into account, it becomes clear that school-based career counseling services should be examined comprehensively, the deficiencies thereof should be determined, and improvement efforts should be carried out.

In this study, the views of counselors working with career issues in schools, in guidance and research centers (GRC) and universities on career counseling services in schools were examined. When the literature in Turkey is examined, no current research has been found on this subject. With the changing world conditions, career needs are also changing, and it is thought that the views of counselors on the current status of career counseling services in schools will contribute to improvement efforts.

## Method

### Research model

In the present study, case study method was used. Case study is an empirical method that examines a phenomenon in its real context (Yin, 2018). The phenomenon in this study was career counseling services in Turkish public schools.

### Participants

The participants consisted of school counselors, GRCs and universities. The participants were purposefully sampled. The main criterion was that the counselors participating in this study would be working with career-related issues. Working in different education levels (preschool, primary school, middle school, anatolian high school and anatolian imam hatip high school) was also a criterion for participation. A total of 15 counselors, including five (1 male, 4 female) school counselors, five (4 men, 1 woman) counselors working in GRCs, and five (2 men, 3 women) counseling academicians, participated in the study.

### **The interview form**

A semi-structured interview form developed by the researchers was used. While preparing this form, first of all, the literature on career and career self-efficacy was examined in detail. Related measurement tools were reviewed, and a draft form was created. Afterwards, the draft form was finalized by taking the opinions of a faculty member who is competent in the field of career counseling. The questions in the semi-structured form were as follows: “What does career mean to you?”, “What are the primary career problems of students?”, “What are the primary career needs of students?”, “What does effective career counseling look like?”, “What does an effective career counselor look like in terms of personality characteristics, knowledge, skills and attitudes?”, “What are the factors that facilitate effective career counseling services?” and “What are the factors that complicate effective career counseling services?”

### **Process**

The ethics committee approval required for the study was obtained from Dokuz Eylül University on 07.02.2022. Focus group interviews within the scope of the study were conducted online by the first author. An informed consent form was sent to the participants digitally before the focus group interview. Focus group interviews were held separately for each group, with each interview lasting between 50-70 minutes. In order to improve the data transcription process, audio and video recordings were taken with the consent of the participants during the online focus group interviews.

### **Data analysis**

First, the recorded video and audio data were transcribed and made ready for analysis. Then, the transcribed data were analyzed by the two researchers of the study. Content analysis was made separately based on the data from each first participant of three different focus group interviews (school, GRC, university). Thus, approximately 20% of the total data (3 participants out of 15) were coded. In qualitative studies, instead of coding all the data by two separate people, coding 15-20% of the data and then, once the intercoder reliability is in place, one of them continuing to code, is among the suggestions in the literature (O'Connor & Joffe, 2020). Upon coding the data from the three participants, the intercoder reliability was calculated using the Miles and Huberman Model (1994). The intercoder reliability ratios for the school, GRC and university groups were 84%, 81% and 81%, respectively. Achieving values above 80%, the intercoder reliability was accepted as adequate (see Miles & Huberman, 1994). Thus, the analysis of the data from the remaining 12 participants was continued and completed by the fifth researcher.

Lastly, sub-themes that emerged were detected the main themes, which were determined in advance according to the semi-structured interview form questions. In order to increase the reliability, the data were presented with frequencies and direct quotations. The participants were given code names for direct quotations to ensure confidentiality. The first number in the code names correspond to the participants' group (1 = school, 2 = GRC and 3 = university), whereas the second number corresponds to the participants themselves (e.g., P.3.2 - the second participant of the university group).

### **Validity and reliability measures**

Ensuring validity and reliability in qualitative research are sought by way of meeting criteria such as credibility, transferability, consistency and confirmability in ensuring validity and reliability (Yıldırım & Şimşek, 2018). In this study, taking these criteria into account, care was taken to establish a clear relationship with the participants, to use probing questions, to present the data as they were without adding comments, to cite direct quotations from different participants, and to the keep data safe. Thus, measures were taken to act in accordance with the nature of scientific research, ensuring validity and reliability.

### **Role of the researcher**

All the interviews were conducted by the first researcher, who is a PhD candidate in GC, and data analysis was carried out within the collaboration of the first and the fifth researchers, of which the latter is a master's student in GC. The first researcher holds a previously published qualitative research, a qualitative master's thesis

completed, and a qualitative data analysis training. Also, the researcher tried to preserve the quality of the process by taking care to use active listening skills and to stick to the semi-structured interview form throughout the interviews.

### Results

Seven main themes were determined from the semi-structured interview questions. These were as follows; 1) meaning of career, 2) students' career-related problems, 3) students' career-related needs, 4) effective career counseling, 5) effective career counselor, 6) facilitating factors in career counseling, and 7) complicating factors in career counseling. The first question was not asked to the university group, so six main themes were determined in that group. Sub-themes appearing under these main themes are shown in Table 1 below.

**Table 1.** Main Themes and Emerging Sub-Themes Across Counselor Groups

Main Theme	School (n = 5)	GRC (n = 5)	University (n = 5)
1. Meaning of career	Financial gain (n=3) Status (n=3) Progress (n=2) Finding a job (n=1) Life satisfaction (n=1) Journey (n=1)	Lifestyle (n=3) Occupational success (n=2)	
2. Students' career-related problems	Deficiency (n=4) Uncertainty (n=3) Money-centeredness (n=3) Sexism (n=2) Exam-centeredness (n=1)	Deficiency (n=5)	Deficiency (n=5) Academic achievement-centeredness (n=1)
3. Students' career-related needs	Knowing self (n=5) Knowing occupations (n=4) Knowing schools (n=2)	Knowing self (n=4) Career planning (n=3) Knowing occupations (n=2) Getting help from competent experts (n=2) Family work (n=1) Increasing opportunities (n=1)	Knowing self (n=3) Knowing occupations (n=3) Gaining career awareness (n=2) Increasing opportunities (n=2) Work experience before university (n=2) Increasing efficacy expectations (n=2) Gaining transferable skills (n=1) Gaining a future-oriented time perception (n=1)
4. Effective career counseling	Individual and group counseling (n=5) Consultation (n=3) Getting to know and assessing the individual (n=2) Multiculturalism (n=1)	Individual and group counseling (n=4) Getting to know and assessing the individual (n=3) Consultation (n=1) Program development and implementation (n=1)	Individual and group counseling (n=3) Getting to know and assessing the individual (n=3) Multiculturalism (n=3) Career development theories (n=3) Professional development and ethics (n=3)
5. Effective career counselor	Skill (n=4) Knowledge (n=4) Personality characteristic (n=3) Attitude (n=1)	Personality characteristic (n=4) Skill (n=2) Knowledge (n=2) Attitude (n=2)	Skill (n=4) Personality characteristic (n=4) Attitude (n=4) Knowledge (n=3)
6. Facilitating factors in career counseling	Useful materials (n=4) Digital opportunities (n=3) Collaboration (n=2) Characteristics of counselor (n=1)	Useful materials (n=4) Tests (n=2) Client's openness to innovations (n=1) Availability of services (n=1)	Seminars/trainings (n=4) Supervision/teamwork (n=4) Digital opportunities (n=3) Useful materials (n=1)
7. Complicating factors in career counseling	Systemic deficiencies (n=5) Lack of awareness and motivation (n=4) Lack of materials (n=3) Reluctance of clients (n=1)	Lack of awareness and motivation (n=3) Lack of materials (n=2) Systemic deficiencies (n=2) Incompetent counselor (n=2)	Lack of awareness and motivation (n=4) Incompetent counselor (n=3) Systemic deficiencies (n=3)

#### Meaning of career

When the school counselors were asked about the meaning of career, they defined career as financial gain, status, progress, finding a job, life satisfaction and journey, as financial gain and status were the prominent

answers. GRC counselors defined career as lifestyle and occupational success. The views of some of the participants were as follows:

*“Actually, career is a journey... Surely, an individual’s status and income are actually an important process that affects life satisfaction and affects at least half of our lives.” (P.1.1)*

*“For me, it’s career advancement. Improving yourself. On the one hand, gaining a title and on the other hand, getting satisfaction with your education or where you are progressing.” (P.1.2)*

*“I think it’s in a way determining lifestyles. Because when you choose a occupation, you also determine your lifestyle.” (P.2.3)*

### **Students’ career-related problems**

Counselors in all groups mentioned the current deficiencies at the very beginning of the students’ career-related problems. Here, especially students’ lack of knowledge about occupations and themselves came to the fore. One participant commented, *“Children do not have full awareness of what they like to do inside or outside of school. The process actually starts with this... Again, children do not know about occupations...” (P.1.1)*, while another participant stated, *“It is very important for our children to recognize their own interests, talents, tendencies and to know themselves” (P.2.3)*. Another participant said, *“I think that in general, students at all levels have difficulty in knowing themselves” (P.3.1)*.

On the other hand, school and GRC counselors mentioned the lack of social support, and counseling academicians mentioned the lack of knowledge about today’s career paradigm. Two participants expressed their views as follows:

*“They lack support to model and create motivation.” (P.2.4)*

*“I think it applies to all levels: Not being able to understand the paradigm of the day regarding the career process... In the standard classical decision-making process, there are 3-4 options, and we reduce them, focusing on one option. On the contrary, in today’s paradigm there is a very serious need to expand [one’s options].” (P.3.2)*

In addition to these deficiencies, school counselors included uncertainty, money-centeredness, sexism and exam-centeredness among students’ career-related problems, whereas counseling academicians mentioned academic achievement-centeredness.

### **Students’ career-related needs**

In connection to the students’ lack of knowledge about occupations and themselves, counselors in all groups expressed the most basic career needs of students in terms of knowledge about occupations and about self. One participant said, *“I think one of the basic needs is to know about occupations and also recognizing their interests and talents” (P.1.2)*. Other participants similarly said, *“First of all, they need to know themselves so that they can make choices accordingly” (P.1.3)*, *“We must help them recognize their interests and talents” (P.2.5)*, *“I think they need knowledge... about occupations and [they need] self-discovery” (P.3.1)*.

In addition, school counselors emphasized knowing the schools that students may prefer in the future, while GRC counselors emphasized career planning, getting help from competent experts, family work and increasing opportunities. Counseling academicians underlined the need of improving career awareness, increasing opportunities, work experience before university, increasing efficacy expectations, gaining transferable skills and gaining a future-oriented time perception. Some participants expressed their views as follows:

*“Individual career planning is also one of the indispensable works.” (P.2.5)*

*“First of all, [one needs to] to improve career awareness. I mean, why should I choose an occupation?” (P.3.4)*

### **Effective career counseling**

Counselors in all groups defined effective career counseling primarily as good counseling and mentioned knowledge and skills in individual and group counseling. Here, they especially emphasized the importance of informing the individual about career-related variables. School counselors and GRC counselors mostly

expressed the importance of having the client know their own characteristics and occupations. On the other hand, school counselors placed significant emphasis on introducing the national examination systems to the client, while GRC counselors placed significant emphasis on teaching the client to set goals. Under this theme, the participants shared their views as follows:

*“You have to master [career] knowledge, the current system, current occupations, occupations for ten years [or] maybe twenty years from now. But more than that, accepting that we cannot know everything, and being open to learning, knowing the ways to access knowledge and showing them to the student.” (P.1.4)*

*“[You need] to know the student, help the student know themselves and recognize the occupational fields, and secondly, [you need] to understand the reasons that affect their choice of occupation and the reasons that provide motivation, [and you need to] raise awareness [in the student] about the working fields following graduation.” (P.2.4)*

*“A good career counselor is first and foremost a good counselor. In fact, we do pretty much the same thing, except that we focus more on career problems.” (P.3.2)*

Secondly, counselors in all groups mentioned tests and non-test techniques under the category of knowing and assessing the individual. One participant said, *“It is necessary to proceed by applying scales and questionnaires” (P.1.2)*, whereas another participant similarly said, *“I think they should be able to go beyond classical measurement tools and have a good grasp of qualitative methods” (P.3.4)*.

In addition, school counselors and counseling academicians mentioned the importance of multiculturalism for effective career counseling, while school and GRC counselors mentioned consultation in the context of parent/guardian work. Professional development and ethics and career development theories were also viewed as significant elements of effective career counseling, as mentioned by counseling academicians. In addition, program development and implementation were mentioned by one GRC counselor.

### **Effective career counselor**

Counselors largely agreed that an effective career counselor should have certain personality characteristics, knowledge, skills, and attitudes. Here, a prominent personality characteristic in each group was openness to development/innovation. In addition, counseling academicians especially mentioned cooperativeness. Being patient was another personality characteristic emphasized by school counselors. Two of the participants stated the following:

*“[It entails] being open to innovation as a personality characteristic, following the developments, constantly following the age with the young people, looking to the future without being stuck in the past.” (P.1.4)*

*“Being open to innovations and learning, prone to cooperation.” (P.3.5)*

Apart from personality characteristics, counselors in all three groups stated that an effective career counselor should possess knowledge about occupations and the changing business life. On the other hand, school counselors emphasized knowledge about the national examination systems, while counseling academicians emphasized knowledge about career development and counseling theories. One participant said, *“Robots have started to be used more... Here comes the metaverse... It is necessary to have [knowledge about] them. New fields are emerging” (P.2.1)*. Other views were as follows:

*“We need to know the examination systems in our country.” (P.1.2)*

*“Career theories [and] counseling theories... One needs to have knowledge and skills in those.” (P.3.3)*

When it came to skills, all counselors stated that an effective career counselor should firstly have basic counseling skills, while counseling academicians also mentioned counseling process skills such as getting to know the individual, setting goals, and case conceptualization. Their views were as follows:

*“I never thought it was necessary to have a completely different skill in a career.” (P.1.3)*

*“To have basic psychological counseling skills, communication skills, to establish a secure bond...” (P.2.4)*

*“He should be able to dominate the whole career-related field. I think he should know not only the assessment tool, but how to choose this assessment tool or whether it is necessary, sometimes where to stop*

*or how to continue in the counseling process, how to conceptualize the case, what a career development story means.” (P.3.1)*

Finally, under the category of attitude, one school counselor mentioned cultural sensitivity. And GRC counselors talked about being trustworthy and caring, whereas counseling academicians talked about openness to consultation/supervision and ethics.

### **Facilitating factors in career counseling**

Counselors in all groups mentioned that useful materials in career counseling would be facilitating. Here, one participant working as preschool counselor mentioned toys, while others mentioned books/booklets/manuals. Some of their statements were as follows:

*“There may be a booklet for primary, secondary and high schools by the Directorate General for Special Education and Guidance Services, where we can get ideas from field experts, who have written articles and theses in career guidance.” (P.1.2)*

*“We do not have a package program to use as an instrument. We do not have a structured training process. We don’t even have a roadmap to follow.” (P.2.1)*

*“Simple materials, easily accessible and easy to use, where [counselors] can look at as to what they can do... In fact, the Ministry of National Education actually has such studies. We recently worked on a project... on a booklet. I think [these resources] can make career counseling process a lot easier.” (P.3.2)*

School counselors and counseling academicians also emphasized digital opportunities and stated that there was a need for testing scales and educational videos for counselors. GRC counselors also indicated that valid and reliable tests would be facilitating, although they did not mention digital materials as did the other two groups. One participant said, *“You know, there is e-rehberlik (e-guidance) in MEBBİS (Ministry of National Education Data Processing Systems). There we can see whether a middle-school student has met with the counselor, and if so, what the agenda was. Therefore, perhaps such a system can be created for career services” (P.1.5)*. Another participant said, *“Measuring tools should definitely be in our hands and should exist in all education levels. Starting from there, it would be easier to convince the families at least” (P.2.3)*.

In addition, some of the school counselors said that collaboration with students and counselors is facilitating. A school counselor, emphasizing the characteristics of the counselor, said that the career counselor should be engaging: *“People who are experts in the occupations of the future can introduce their occupation to us, so that we can pass it on to our students” (P.1.2)*.

In addition, some of the GRC counselors stated that the client’s openness to innovations would be a facilitating factor, while one of them emphasized service accessibility.

*“[It would facilitate the career counseling process if] the client has various options and is open to differences.” (P.2.4)*

*“I can only add one thing: Could we facilitate the accessibility of the services?” (P.2.5)*.

Finally, most of the counseling academicians mentioned seminars/trainings and supervision/teamwork as facilitating factors. One participant expressed his opinion as follows: *“When I think about facilitating factors in the process, giving additional trainings and providing supportive trainings about the supervision processes... All this would actually be significant, it would make things easier” (P.3.3)*.

### **Complicating factors in career counseling**

Finally, counselors were asked about complicating factors in career counseling, and most of the participants in all groups mentioned lack of awareness and motivation observed particularly in families. School counselors also mentioned lack of awareness and motivation observed in teachers/administrators in school contexts. Some of the views were as follows:

*“The parents impose their own expectations, ignoring [the student’s] interests and talents” (P.2.4)*.

*“When we look at it culturally, it is a process that always goes hand in hand with the family. There is a critical moment at the end of high school, which is a very chaotic moment. The exam result is on one side,*

*the child on the other, the parents on the other. Again, you are working at the extremes. I think this is a serious obstacle.” (P.3.2)*

*“From my point of view, one of the most difficult things for me –working in primary school– is the attitudes of teachers... When we tell them that we will provide career services to children, we ask teachers for their class hours, since there is no legal class hour [for guidance purposes]. Most of them ask, ‘What is up with career in this age?’” So we are faced with such a perception.” (P.1.2)*

In addition, a significant part of the participants in all groups stated that counselors could run into time problems in providing career counseling services at schools, referring to systemic deficiencies. One participant described the problem along the lines of *“not being able to spare enough time for the client in the school environment”* (P.2.4). Another participant said, *“Now we all know the problems related to the school and the system. [There are] too many students, but not enough counselors”* (P.3.1).

School counselors also emphasized that there was a lack of career focus in the current school system, mentioning lack of emphasis on career, lack of age-specific activities and limited career routes. Similarly, a GRC counselor drew attention to unstable guidance policies. Counseling academicians also mentioned lack of material support for guidance services, ongoing myths about career counseling and deficiencies in university-based counselor education as systemic deficiencies. In addition, in parallel with the facilitating factors, some of the school and GRC counselors emphasized that lack of up-to-date measurement tools and lack of ready-made package programs could also be challenging. In addition, GRC counselors and counseling academicians explained that sometimes counselor incompetence would be a complicating factor as well. Finally, one school counselor drew attention to client reluctance as a complicating factor.

### **Discussion and Conclusion**

In this study, opinions on career counseling services carried out in schools were examined. The findings were covered under seven main themes: (1) meaning of career, (2) students’ career-related problems, (3) students’ career-related needs, (4) effective career counseling, (5) effective career counselor, (6) facilitating factors in career counseling and (7) complicating factors in career counseling.

In light of the findings, counselors working in schools and GRCs explained career in terms of financial gain, status, progress and lifestyle, and these concepts were in line with the basic variables suggested by traditional career development theories. However, traditional career development theories mostly reflect the Euro-American perspective (Gsyberg, Heppner, & Johnston, 2003), whereas for individuals in many cultures, occupation only serves to meet basic needs and is not at the center of life (Kağnıcı, 2020). In this regards, it could be said that it is necessary for counselors working in schools and GRCs to be able to look at the concept of career from a broader perspective, particularly in light of current counselor roles such as advocacy.

It is seen that school counselors and GRCs explain career with concepts such as financial gain, status, success, and lifestyle, and these concepts are in line with the basic variables put forward by traditional career development theories. However, traditional career development theories mostly reflect the Euro-American perspective (Gsyberg, Heppner, & Johnston, 2003), and or individuals in many cultures, occupation only serves to meet basic needs and is not at the center of life (Kağnıcı, 2020). In this context, it is thought that it is necessary for school counselors and GRCs to have a broader perspective on the concept of career, considering their current roles as advocacy.

The counselors who participated in the study defined the main career-related problems of students as lack of knowledge about professions and themselves, lack of social support, uncertainty, money-, exam- and academic achievement-centeredness. It could be seen that the problems identified were mainly evaluated in the context of Parsons’ basic factors, whereas social phenomena such as sexism were given relatively little attention. However, according to Pope’s (2000) classification of the developmental stages of career counseling, in the sixth (that is, the last) stage, in the years after 1990, with the effect of multiculturalism, variables such as race, being an ethnic minority, being a woman, being an individual with a disability started to be included in the theories developed about career (Siyez, 2020).

In parallel with the problems mentioned, psychological counselors working in schools and GRCs defined the needs of students as knowing occupations, knowing self, career planning, getting help from competent experts

and family work, whereas counseling academicians defined the needs of students as gaining career awareness, increasing opportunities, work experience before university, increasing efficacy expectations, gaining transferable skills and gaining future-oriented time perception, in addition to knowing self and knowing occupations. It could be said that the traces of the matching-focused theoretical perspective were evident here, where the needed career service was seen mainly along the lines of getting to know the individual and professions and then matching the two. This finding seems to support Yeşilyaprak's (2019) view that vocational guidance services in Turkey have come to be provided as "selection guidance", where the counselor helps a last grade middle- or high-school student only select and list various high schools (or universities) upon the reception of a nation-wide exam result. However, it was noteworthy that counseling academicians mostly emphasized helping the client gain current career skills.

Counselors in all groups defined effective career counseling in terms of having knowledge and skills in individual and group counseling, getting to know and assessing the individual, introducing professions and the examination system to the client, teaching the client to set goals, and multiculturalism. Although all of these overlap with the career counseling competencies defined by the National Career Development Association (NCDA, 2009), it was observed that counselors, especially counseling academicians, emphasized professional development and ethics and theoretical knowledge as well.

When it came to effective career counselors, the participants suggested that they should be open to development/innovation, culturally sensitive, collaborative, patient; have knowledge about occupations and changing work life, national examination systems, theories of career development and counseling; have basic counseling skills and process skills, be open to consultation/supervision and work ethically. One of the striking findings was that counselors working in schools and CRCs focused mainly on basic level skills. Process skills were emphasized only by counseling academicians. This finding could be considered as a warning message that career counseling in schools may not be perceived as a process-oriented comprehensive service.

In light of facilitating and complicating factors in career counseling, useful materials, digital opportunities, scales/tests, educational videos and supervision were viewed by the participants as facilitating. On the other hand, lack of awareness and motivation observed in families and teachers, systemic deficiencies (lack of time and lack of career focus in the current school system), lack of material support, myths about career counseling and deficiencies in university-based counselor education were complicating factors. The facilitating contribution of useful materials in career counseling was emphasized by the counselors working in schools and GRCs. Similarly, Köse and Diker (2015) observed that counselor performance increased when they were provided with necessary materials. The participants in the study seemed to point to the same direction, and based on their responses, there seems to be a significant need to produce and spread valid and reliable measurement tools, books/booklets and career information resources. In addition to providing materials, it seems important to help school counselors gain competence in program development, its management and its implementation, which is one of the competencies in career counseling. Moreover, another previous study in Turkey showed that counselors were not at the desired level in terms of their engagement in receiving supervision (Ergüner-Tekinalp, Leuwerke & Terzi, 2009). And significantly, among the three participant groups in the present study, supervision was emphasized as a facilitating factor only by counseling academicians.

When it comes to systemic deficiencies, which were stated among the complicating factors, it is believed that they need to be taken into account, particularly by the Turkish Ministry of National Education. The shortage of time in the career services carried out in schools was an issue underlined by all of the three groups of counselors. Reintroducing guidance and counseling hours in school curricula could help overcome the difficulties experienced in this regard.

When all the findings were evaluated together, it was seen that school counselors and GRC counselors approached career counseling more in terms of vocational guidance in the light of traditional theories and approaches. And this observation revealed the particular need to support professional development, which again is one of the competencies in career counseling, also underlined by the counseling academicians. As the world is changing rapidly, career-related problems and needs are becoming diverse. It is observed that the trait-

factor theories commonly used by career counselors are not sufficient to cope with today's diverse problems (Bacanlı & Büyükoze Kavas, 2022). As a result, many current theories, approaches and models are emerging. However, as Öztemel (2020) states, counselors need to use theoretical approaches that can meet the changes required by today's changing digital age. In this respect, it seems essential for school counselors to be aware of these current theories, approaches and models and to carry out their services beyond vocational guidance services in light of current counselor roles.

In conclusion, based on the present findings, it is recommended that current theories, approaches and models should be taught in undergraduate programs, and counselor candidates should be helped in gaining current counselor roles, so that career services in schools might be improved. As indicated by previous study (Camadan & Sarı, 2021), school counselors are most in need of professional training on career development. Therefore, the competencies of school counselors in Turkish K-12 settings should be improved considering current competencies with in-service trainings, in addition to undergraduate programs.

**Special Thanks:** This work was supported by TÜBİTAK within the TÜBİTAK 1001 project numbered 221K245 and titled "Development of School Counselors' Career Counseling Self-Efficacy Levels." We would like to thank TÜBİTAK for their support.

**Author Contributions:** S.Ş.: data collection, analysis and interpretation, literature review, manuscript preparation; D.Y.K.: data interpretation and discussion; D.M.S.: concept, design; S.D.: discussion; İ.B.: data analysis.

**Funding Disclosure:** This work was funded by TÜBİTAK.

**Conflicts of Interest:** The authors have no conflicts of interest to declare.

**Data Availability:** The data sets are available from the corresponding author upon reasonable request.

**Ethics Approval and Consent to Participate:** The ethics committee approval of the study was obtained from Dokuz Eylül University's Scientific Research and Publication Ethics Board on 01/02/2022 (Protocol no: 15).

## References

- Bacanlı, F. & Büyükoze Kavas, A. (Ed.) (2022). *Kariyer psikolojik danışmasında çağdaş kuramlar, yaklaşımlar ve modeller*. Pegem Akademi.
- Büyükoze Kavas, Şanlı, E., & İslam, Ü. Y. (2021). Kariyer Psikolojik Danışmanlığı Öz-Yeterlik Ölçeği Türkçe Formu: Geçerlik ve Güvenirlik Çalışması [*Career Counseling Self-Efficacy Scale Turkish Form: Validity and Reliability Study*]. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 58, 105-130. <https://doi.org/10.21764/maeuefd.790078>
- Camadan, F. & Sarı, S. V. (2021). Psikolojik danışmanların mesleki gelişimlerinin incelenmesi üzerine nitel bir araştırma [*A Qualitative research on professional development of psychological counselors*]. *Trakya Eğitim Dergisi*, 11(3), 1274-1293. <https://doi.org/10.24315/tred.804137>
- Çivilidağ, A., Günbayı, İ., & Yörük, T., (2015). Mesleki rehberlik çalışmalarına ilişkin nitel bir analiz: Antalya örneği [*A qualitative analysis with respect to vocational guidance: A case study in Antalya*]. *Uluslararası Sosyal Araştırmalar Dergisi*, 8, 573-594.
- Del Corso, J. J., Rehfuss, M. C., & Galvin, K. (2011). Striving to adapt: Addressing Adler's work task in the 21st century. *The Journal of Individual Psychology*, 67(2), 88-106.
- Erguner-Tekinalp, B., Leuwerke, W., & Terzi, S. (2009). Emergence of national school counseling models: Views from the United States and Turkey. *Journal of School Counseling*, 7, 33.
- Gysbers, N.C., Heppner, M. J., & Johnsnton, J.A (2003). *Career counseling. Process, issues and techniques*. Allyn & Bacon.
- Kağmcı, D. Y. (2020). Kariyer psikolojik danışmanlığında çokkültürlülük, sosyal adalet ve hak savunuculuğu. D. Y. Kağmcı (Ed). *Dezavantajlı gruplarla kariyer psikolojik danışmanlığı içinde* (s. 33-54). Pegem.
- Köse, A., & Diker, Y. (2015). Okul psikolojik danışmanlarının sürekli eğitim ihtiyaçlarının incelenmesi [*Analysis of School Counselors' Continuing Education Needs*]. *International Journal of Curriculum and Instructional Studies*, 5(9), 105-122.
- Miles, M. B. & Huberman, A. M. (1994). *An expanded sourcebook: Qualitative data analysis* (2nd ed). Thousand Oaks, CA: SAGE Publications, Inc

- MEB. (2019). 2023 Eğitim Vizyonu. Retrieved from [https://2023vizyonu.meb.gov.tr/doc/2023\\_EGITIM\\_VIZYONU.pdf](https://2023vizyonu.meb.gov.tr/doc/2023_EGITIM_VIZYONU.pdf)
- O'Connor, C. & Joffe, H. (2020). Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines. *International Journal of Qualitative Methods*, 19, 160940691989922. <https://doi.org/10.1177/160940691989922>
- Öztemel, K. (2020). Dördüncü sanayi devriminde çalışmanın anlamı ve kariyer psikolojik danışmanlığı [*The Meaning of Working in the Fourth Industrial Revolution and Career Counseling*]. *Kariyer Psikolojik Danışmanlığı Dergisi*, 3(2), 1-24.
- Pope, M. (2000). A brief history of career counseling in the United States. *The Career Development Quarterly*, 48(3), 194-211.
- Siyez, D. M. (2020). Kariyer psikolojik danışmanlığı. D. Y. Kağnıcı (Ed) *Dezavantajlı gruplarla kariyer psikolojik danışmanlığı* içinde (s. 6-29). Pegem.
- Ulaş-Kılıç, Ö. & Demirtaş-Zorbaz, S. (2021). İlkokullarda sunulan kariyer psikolojik danışması hizmetlerine yönelik bir inceleme [*A review of the career counseling practices with primary education student*]. *Türk Sosyal Bilimler Araştırmaları Dergisi*, 6(1), 1-16.
- Yeşilyaprak, P. D. B. (2019). Türkiye’de mesleki rehberlik ve kariyer psikolojik danışmanlığı hizmetleri: Güncel durum ve öngörüler [*Vocational Guidance and Career Counselling Services in Turkey: Recent Advances and Future Prospects*]. *Kariyer Psikolojik Danışmanlığı Dergisi*, 2(2), 73-102.
- Yeşilyaprak, B., Güngör, A., & Kurç, G. (1995). *Eğitsel ve mesleki rehberlik*. Varan Matbaası.
- Yıldırım, A. & Şimşek, H. (2018). *Sosyal bilimlerde nitel araştırma yöntemleri*. Seçkin Yayıncılık.
- YÖK. (2018). *Rehberlik ve Psikolojik Danışmanlık Lisans Programı*. Retrieved from [https://www.yok.gov.tr/Documents/Kurumsal/egitim\\_ogretim\\_dairesi/Yeni-Ogretmen-Yetistirme-Lisans-rogramlari/Rehberlik\\_ve\\_Psikolojik\\_Danismanlik\\_Lisans\\_Programi.pdf](https://www.yok.gov.tr/Documents/Kurumsal/egitim_ogretim_dairesi/Yeni-Ogretmen-Yetistirme-Lisans-rogramlari/Rehberlik_ve_Psikolojik_Danismanlik_Lisans_Programi.pdf)



## RESEARCH ARTICLE

# Family Context of Attitude toward Children with special Needs among Households with Children with special Needs in Southeast Nigeria: Implication to Sustainable Development

Onyedikachi, C. NNAMCHI<sup>a</sup> , Samuel, O. OKAFOR<sup>a</sup> , Samuel KALU<sup>a</sup> , Peace ADUBI<sup>a</sup> , Ogechi IKEM<sup>a</sup> 

<sup>a</sup>University of Nigeria, Nsukka, Nigeria.

## ARTICLE HISTORY

**Received:** 10.08.23

**Accepted:** 06.10.23

## KEYWORDS

Children living with disability, Family relationship, Inclusive society, Siblings relationship, Sustainable development.

## ABSTRACT

Disability has come to stay with humanity, placing demand on our technological, scientific, spiritual and humanitarian management capability in adapting and managing it as global community. However, there are different levels and contexts at which people with disability practically require our cooperation and assistance, such as family setting. In sub-Saharan Africa and other developing nations, families of children with disability have found it a difficult task to meet their needs. This study investigated the relationship challenges faced by children with disability among their siblings among households having children with disability in southeast Nigeria. The study applied cross-sectional survey design, while one hundred and eighteen (118) adolescent participants that have at least, one sibling with any form of physical disability took part in the study. Attitude towards disabled sibling scale developed by the researchers using some adaptations from the Attitude Scale of Parents towards their mentally retarded children (Govender, 2002) was used in data collection. A 2 x 3 x 2 Analysis of Variance (Three-way ANOVA) technique from unequal sample size was used to analyze the data. According to the major findings from the study, there is significant interaction of birth order and Parental level of Education (PLoE) on attitude of siblings towards their physically disabled brother/sister,  $F(1,108)=7.568$ ,  $p<.05$ . Participants who are firstborn with less educated parents 64.40 (SD=7.82), midborns with educated parents 71.87 (SD=6.39) and lastborns with less educated parents 59.20 (SD=11.30) all have significantly lower positive attitude towards their physically disabled brother/sister. In conclusion, the study raises concern about the institutionalization of social stigma against people with disability in southeast Nigeria as the product of the family and household relationship with the children with disability.

Individual wellbeing, especially in the developing nations such as among sub-Saharan African nations, is heavily dependent on the family circles. The family circle, which starts with the household circle and extends to extended family circles of different degrees, positively and negatively affects the overall wellbeing of children, youth and elderly in this region. By implication, this holds sway in the overall understanding of individual wellbeing in sub-Saharan Africa and other developing nations. The family relationship in this part of the world goes from the parents and children to the sibling and the extended relatives at different degrees, depending on the nature of cultural heritage by the people in question. The uniqueness of family relationship has been proven by a number of studies revealing the essence of common genetic and cultural heritage

**CORRESPONDING AUTHOR:** Samuel, O. OKAFOR, [samuelokey200@gmail.com](mailto:samuelokey200@gmail.com), ORCID: 0000-0001-8584-5616 University of Nigeria, Nsukka, Nigeria.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counselling and Guidance Association

among family members including siblings (Volkom et al., 2017; Soysa, 2016; Hovland&Hean, 2021). Irrespective of individual differences obtainable at the family context, siblings relationship continue to appear as a lasting family connection owing to the fact that siblings are more uniquely attached to each other than the bond other family relationships can create like marriage, families and friends (Volkom et al., 2017). In view of family instability issues involving husbands and wives, and increasing rate of migration causing geographical disconnections, siblings are the only stable channel of maintaining family and intergenerational existence. More so, the ongoing global population management has in a great way, affected to cohesion of the family structure thereby making siblings more intact and strongly connected than before (Katz & Hamama, 2018; Krejčová, Chýlová&Rymešová, 2023; Barnett, 2022). Therefore, in sibling relationship where one sibling has a disability, there is potential for a long standing influence on the lives of both siblings.

Physical disability at any age is debilitating and its effects far reaching following the societal perception of same and the overall demand and expectations societies place on their members (Babik& Gardner, 2021; Devkota, Kett&Groce, 2019; Wang et al., 2021). Disability in childhood takes on a particular enmity because of the expectations for youth; this is to say that the children with disability are not able to meet certain expectations. In addition to suffering from the physical disability, the child may undergo substantial restrictions in daily activities in an effort to adhere to health management requirements (Zhong et al., 2020; Seligman, 1999; Junaidi& Dewantoro, 2020). Social relationships at school may be damaged when the child incurs difficulties with participating in extracurricular activities. Management of the disability such as visits to hospitals and specialists necessitates excessive time constraints and often leads to financial and family stresses (Wondemu et al., 2022; Junaidi& Dewantoro, 2020). Consequently, physical disability of a child in the family often affects all members of the family, including healthy siblings.

Physical disability has been captured by a number of researchers as a limitation on a person's physical functioning, mobility, dexterity or stamina. It pertains to total or partial loss of a person's bodily functions (eg walking, gross motor skills, bladder control etc) and total or partial loss of a part of the body (eg a person with an amputation) (Shields & Synnot, 2016; Alghamdi, & Alsaigh, 2023). Other physical disabilities include impairments which limit other facets of daily living such as respiratory disorders, blindness and epilepsy (David et al., 2014; Olusanya et al., 2020; Tataryn et al., 2017). Numerous forces have come together to increase the number of children with disabilities, this is because, advances in neonatal care technology have dramatically increased the survival rates of very low birth weight infants and infants with severe birth defects who are at high risk for long-term health problems or cognitive deficits (Fernando & Botelho, 2021). Improvements in assistive technology have resulted in greater proportions of disabled and chronically ill children being mainstreamed—that is, living at home and attending school (Fernando & Botelho, 2021). These trends suggest that more households than ever before have children with disability.

The sibling relationship is unique in its permanency; it is so much connected to the overall wellbeing and survival of the children from childhood, to adolescent and adult stages of their lives. The connectivity and strong bond among the siblings play out in the situation of disability of any of the children as they are all affected at once in different areas and dimensions. How brothers and sisters react to having a sibling with disability could depend on the kind of disability, their age, the age of the child with disability and how it is managed in the family. It could also depend on how parents support all the children in the family (Kaur, 2010; Downey, 2016; Tigere&Makhubele, 2019). There are some complexities in siblings relationship at the family context, which can contradict positive emotional attachments as expected and can be altered from the expected long term family relationship. The situation is also obtainable in the context of family with children and siblings with disabilities who may require a continuous amount of parental attention. Among the children in the family with children having one disability of one form or the other, there is multidimensional issue of attention seeking both from the children with disability and their siblings. To meet these multidimensional needs, the parents are usually confronted with the challenges of which child to first attend to among the two sets of siblings (Modula, 2022; Manomano& Kumalo, 2016; Pakingham, 2016). Siblings with disability may have negative experience from their own siblings who have no disability in the family

context due to some varying factors (Siminghalam, Aubi, Hajian&Alibakhshi, 2018; Burke, 2010; Jajodia& Roy, 2022). A number of studies have reported siblings experiences, which range from positive experience from the siblings who have no disability to that of negative experience from the siblings with no disability; this can occur either way and in some cases can be neutral (Mc Adams, 2016; Hanvey, Malovic & Ntontis, 2022; Luijkx, van der Putten&Vlaskamp, 2016). As such, there are some levels of complexities in siblings relationship at the family context, which can be influence by other sociodemographic factors such as age, birth order, parents' relationship, etc.

Gender of the adult sibling has been captured as a factor in the relationship with the siblings with disability; sisters showed more positive attitude towards the disability of their sibling than brothers did, while children of the same gender who are close in age can feel more companionship, as their greater closeness may provide an opportunity for more conflict and embarrassment (Hanvey, Malovic & Ntontis, 2022; Meltzer & Kramer, 2016; Park, Ryu & Yang, 2021; Watson, Hanna & Jones, 2021; Hayden et al., 2023; Gettings, Franco & Santosh, 2015). In relation to birth order, younger siblings to the siblings with disability are more likely to misunderstand their siblings with disability more especially when the disability is obvious (Park, Ryu & Yang, 2021; Hayden, Hastings, Totsika& Langley, 2019; Hayden et al., 2023). Porter and Mckenzie (2000) maintained in the study that siblings of the children with disability are prone to express stigma and self blame towards their siblings with disability. Equally, whe the younger siblings of the children with disability perceived themselves as outperforming their siblings with disability, they tend to develop sense of guilt. On the contrary, when the older siblings of the children with disability see themselves as outperforming their younger siblings with disability, they tend to display acceptance attitude due to the feeling that such is the way the family ought to be (Porter &Mckenzie, 2000).

Parental level of education is very vital in determining the attitude of siblings towards their disabled brother/sister. This is because, the helplessness of the human infant requires a long period of nurture and protection and it is the natural duty of the parents to transmit their experience, knowledge and understanding to their children. Parents are the primary educational agents of their children, on the one hand, the educated parent may have more to impart than the less educated and this influences the children's general attitude especially towards one another (Wondemu et al., 2022; Bones, Bates, Finlay & Campbell, 2022). On the other hand, less educated parents may be unaware of government agencies and their policies that may be of help to their family; they may also be unaware of the type of professional help to seek for their children with disability making them susceptible to quacks. This becomes a concern in the case of parents who have children with disability who are in a delicate balance to secure the wellbeing of their children who may be in need of special care and attention.

World over, the number of children with disability are increasing owing to the improvement of global health system in saving more lives that could have been terminated by chronic ailments. More importantly, advances in neonatal care technology have dramatically increased the survival rates of very low birth weight infants and infants with severe birth defects who are at high risk for long-term health problems or cognitive deficits. As a global phenomenon and global socioeconomic and health burden, disability has been captured in about 13 Sustainable Development Goals (SDGs) such as poverty and hunger (SDGs1&2), health and well-being (SDG3), education (SDG4), gender equality and empowerment of women and girls with disabilities (SDG5), availability of water and sanitation (SDG6), access to energy (SDG7), employment and decent work (SDG8), inequality (SDG10), inclusive cities and human settlements (SDG11), disasters, shocks and climate change (SDG13) and, violence against persons with disabilities, inclusive societies and institutions, representative decision-making, birth-registration and access to justice and to information (SDG16) (United Nations Department of Economic and Social Affairs, 2019).

Globally, the number of children with disability is an extremely difficult figure to ascertain due to definitional ambiguities and lack of adequate data to derive estimates; however, it is estimated that 244million (5%) children live with disability of different forms and severity globally (UNICEF, 2021) this is observed in sub-Saharan Africa as about 6.4% of the children in the region live with disability. In the case of Nigeria, the documentation is lacking due to lack of interest in the situation, and government continuous neglect of this special population. Because a national health information database does not exist for Nigeria,

estimates of the prevalence of and changes in rates of disabled persons are generally based on survey data. As such more researches are needed to bridge the gaps in literature and to provide extant documentations. More importantly, the case of children with disability and the challenges they pass through still remain some dark figures due to dearth of research in this area, warranting a specialized study as the present study was designed to achieve.. In view of the issues raised above, the present study answered the following research questions:

- a. Will birth order and parental level of education interaction significantly influence the attitude of healthy sibling towards their brother/sister with disability?
- b. Will gender and birth order interaction significantly influence the attitude of healthy sibling towards their brother/sister with disability?
- c. Will parental level of education and gender interaction significantly influence the attitude of healthy sibling towards their brother/sister with disability?

## Methodology

### Participants

One hundred and eighteen (118) adolescent participants that have at least one sibling with any form of physical disability took part in the study. Participants were drawn from 23 secondary schools within Enugu metropolis in Enugu State. Participants were selected using purposive sampling technique with focus on the important variables to the study. the participants in the study sampling included (gender): 41 males and 77 females, (birth order): 26 first born, 35 middle born and 57 last born; (parental level of education): 48 of more educated parents and 70 of less educated parents. in the classification of disabilities, the study selected 14 participants who have siblings with visual impairment, 49 participants with siblings who are deaf and dumb, 25 participants who have siblings with cerebral palsy and 22 participants who have siblings with mobility disability issues. Eight (8) participants had siblings with more than one disability. Their age ranged from 13 – 18 years with a mean of 15 years.

### Instrument

The instrument used in this study was *attitude towards disabled sibling scale* as developed by the researchers. The questionnaire comprising of twenty one (21) statements of a Likert-type scale served as the measuring instrument. This questionnaire was developed by the researcher using some adaptations from the *Attitude Scale of Parents towards their mentally retarded children* due to lack of instruments that specifically assessed the particular study area. *Attitude Scale of Parents towards their mentally retarded children* was initially developed by Govender (2002) to assess attitude of parents in rural South African communities of Zululand towards their mentally retarded children. This instrument was adapted by the researchers as it suits the present study, and assesses the psychosocial factors influencing attitude of siblings towards their brother/sister with disabilities. The initial instrument as developed by Govender (2002) contained 50 items however, due to the study terrain, which required some level of familiarization with the study population in consideration of their socioeconomic status and the overall developmental stage of the population, the instrument was adjusted. This was done with considerate statistical permutation as well as expert advice after pilot study.

A total of 33 items were removed as follows; Item 1: It could not be modified to reflect a sibling relationship. Item 2: the item could not be modified to reflect physical disability in a sibling relationship; item 3: removed by item analysis. Item 4: item could not be modified to reflect a sibling relationship; Item 5: removed by item analysis; Items 8 and 9: removed by item analysis. Item 10: item could not be modified to reflect the study as physical disability does not constitute danger to the society. Item 13: removed by item analysis; Item 15: it could not be modified to reflect a sibling relationship in the culture of the sample population. Item 16: it could not be modified to reflect a sibling relationship; Item 19: the item could not be modified to reflect physical disability in a sibling relationship. Items 20, 21, 24, 27, 28 and 29: removed by item analysis. Item 30: item could not be modified to reflect a sibling relationship; Item 32: the item could not be modified to reflect physical disability. Items 33, 35 and 36: removed by item analysis; Items 37 and 38: they could not be modified to reflect a sibling relationship. Item 40: did not show much of positive or negative attitude and

could not be modified to reflect a sibling relationship; Items 41, 42 and 45: removed by item analysis. Item 46: was not relevant in the present study; Items 48, 49 and 50: removed by item analysis.

A total of 17 items were modified and adapted to portray sibling relationship and physical disability in order to suit the present study. These include items: 6, 7, 11, 12, 14, 17, 18, 22, 23, 25, 26, 31, 34, 39, 43, 44 and 47. A total of 4 items were added, which survived the item analysis to make the “attitude towards disabled sibling scale” by Nnamchi (2014). In the instrument, these include the following: Item 8: was added to identify intense sibling rivalry. Item 15: was added to identify the feeling of jealousy evident in many sibling relationships. Item 17: was added to identify negative attitude and feeling of resentment. Item 21: was added to identify sibling rivalry. The instrument is scored on a 5 point Likert-type scale of strongly agree =5, agree =4, unsure =3, disagree =2 and strongly disagree =1. The negatively structured items are scored to the reverse of the above order. The negatively structured items are 14 and the positively structured items are 7.

The reliability of the instrument was evaluated in terms of internal consistency reliability using 60 adolescents with physically disabled siblings from 16 secondary schools within Enugu metropolis and Cronbach’s Alpha of .724 was obtained which means that the instrument was found to be reliable for the present study. The pilot study revealed certain problems in the drafted questionnaire, which were resolved. The problems were in respect of, for example, the structure of some questions and ambiguity of some words as regards the ages of the participants.

**Procedure**

The researcher obtained a letter of identification from the Department of Psychology, Enugu State University of Science and Technology. Thereafter, the researcher obtained individual permission from principals of 23 secondary schools in Enugu included in the study, to address their students. The schools have high student population which increased the chances of getting participants. In some schools, the vice principals acted as research assistants while in others, teachers acted by assisting in distributing the questionnaires to the designated student participants. One hundred and fifty five (155) copies of the questionnaires were given out, one hundred and thirty one (131) was returned, thirteen (13) was incorrectly filled, one hundred and eighteen (118) was correctly filled. A total of 84.5 percent of the questionnaires were returned while a total of 76.1 percent of the questionnaires were utilized for analysis.

**Design / statistics**

The design used in this study was a cross-sectional survey design. A 2 x 3 x 2 Analysis of Variance (Three-way ANOVA) technique from unequal sample size was used to analyze the collected data. This choice was influenced by the assumption that ANOVA studies the effect of multiple factors and their interaction (Jones, 2014). This assumption postulates that ANOVA identifies the variations within groups and the interaction effect of each variable on the other.

**Findings of the study**

**Table 1.** Three-way ANOVA table showing the influence of gender, birth order and parental level of education on the attitude of siblings towards their brother/sister with disability; dependent Variable: Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5267.941(a)	9	585.327	4.955	.000
Intercept	190879.976	1	190879.976	1616.020	.000
Gender	287.836	1	287.836	2.437	.121
Birth Order	31.334	2	15.667	.133	.876
PLoE	260.473	1	260.473	2.205	.140
Gender * Birth Order * PLoE	.000	0	.	.	.
Birth Order * PLoE	1787.780	2	893.890	7.568	.001
Gender * Birth Order	731.084	2	365.542	3.095	.049
Gender * PLoE	31.700	1	31.700	.268	.605
Error	12756.669	108	118.117		
Total	529396.000	118			
Corrected Total	18024.610	117			

**R Squared = .292 (Adjusted R Squared = .233)**

The result of ANOVA in table1 above indicates non-significant influence of gender on attitude of siblings towards their brother/sister with disability,  $F(1,108) = 2.437, p > .05$ ; this means that there is no significant difference between males and females attitude towards their siblings with disability. The result also indicates non-significant relationship between birth order and siblings attitude towards their siblings with disability,  $F(1,108) = 0.133, p > .05$ ; this means that there is no significant difference among first, mid and lastborn in attitude of siblings towards their brother/sister with disability. The table also indicates non-significant influence of (PLoE) Parental level of Education on the attitude of siblings towards their brother/sister with disability,  $F(1,108) = 2.205, p > .05$ ; this means that there is no significant difference between adolescents with educated and less educated parents on attitude of siblings towards their brother/sister with disability. Thus, hypothesis 3 is rejected. The table indicates significant interaction of birth order and Parental level of Education (PLoE) on attitude of siblings towards their brother/sister with disability,  $F(1,108)=7.568, p < .05$ ; this means that birth order interacted with Parental level of Education (PLoE) to influence attitude of siblings towards their brother/sister with disability.

An examination of the marginal means (Birth order \*PLoE) shows that, when the child is a first born of more educated parents, they show more positive attitude ( $M=76.00$ ); when the child is Midborn of less-educated parents, they show more positive attitude ( $M= 71.87$ ), and when the child is lastborn of educated parents, they show more positive attitude ( $M=71.00$ ). The table indicates significant interaction of gender and Birth order on attitude of sibling towards their brother/sister with disability,  $F(1,108) = 3.095, p < .05$ . The marginal means (Birth order \* gender) shows that, when the firstborn is male, all siblings show more positive attitude ( $M=71.100$ ); when the midborn is female, all siblings show more positive attitude ( $M=71.78$ ), but when the last born is male, siblings show relatively equal positive attitude ( $65.13$ ). The table also indicates non-significant interaction of (PLoE) Parental level of Education and gender,  $F(1,108) = .268, p > .05$ ; this means there is no significant influence of parental level of education and gender interaction on the attitude of siblings towards their brother/sister with disability.

**Table2.** Means showing the influence of Gender, Birth order and Parental level of education and the interaction effects on the attitude of siblings towards their brother/sister with disability.

Gender	BirthOrder	PLoE	Mean	Std. Deviation	N
Male	Firstborn	Lesseducated	71.1000	2.23358	10
		Total	71.1000	2.23358	10
	Midborn	Educated	59.3333	4.24264	9
		Lesseducated	68.4286	1.98806	7
		Total	63.3125	5.73549	16
	Lastborn	Educated	65.1333	9.88409	15
		Total	65.1333	9.88409	15
	Total	Educated	62.9583	8.59969	24
		Lesseducated	70.0000	2.47487	17
		Total	65.8780	7.57032	41
	Female	Firstborn	Educated	76.0000	.
Lesseducated			59.9333	6.95359	15
Total			60.9375	7.82704	16
Midborn		Educated	69.3000	6.76675	10
		Lesseducated	74.5556	7.43490	9
		Total	71.7895	7.39804	19
Lastborn		Educated	77.7692	22.48390	13
		Lesseducated	59.2069	11.30543	29
		Total	64.9524	17.62613	42
Total		Educated	74.1667	17.30460	24
		Lesseducated	62.0189	11.10005	53

		Total	65.8052	14.38753	77
Total	Firstborn	Educated	76.0000	.	1
		Lesseducated	64.4000	7.82624	25
		Total	64.8462	7.99846	26
	Midborn	Educated	64.5789	7.55216	19
		Lesseducated	71.8750	6.39661	16
		Total	67.9143	7.86418	35
	Lastborn	Educated	71.0000	17.79097	28
		Lesseducated	59.2069	11.30543	29
		Total	65.0000	15.87113	57
	Total	Educated	68.5625	14.65621	48
		Lesseducated	63.9571	10.30328	70
		Total	65.8305	12.41195	118

### Dependent Variable: Attitude

The results of mean in table2 above show that male participants obtained a total mean 65.87 (SD=7.57) on attitude of siblings towards their brother/sister with disability while female participants obtained a relatively equal total mean of 65.80 (SD = 14.38). The two groups however, have relatively equal positive attitude towards their brother/sister with disability. The table shows that firstborns obtained a total mean of 64.84 (SD=7.99), while middleborn obtained a total mean of 67.91 (SD=7.86) and lastborn obtained a total mean of 65.00 (SD=15.87) on attitude of siblings towards their brother/sister with disability. The three groups have positive attitude with middleborns showing fairly more positive attitude towards their brother/sister with disability. The table also shows that participants with more educated parents obtained a total mean of 68.56 (SD=14.65) on attitude of siblings towards their brother/sister with disability while participants with less educated parents obtained a total mean of 63.95 (SD=10.30) on attitude of siblings towards their brother/sister with disability. The two groups however, have positive attitude towards their disabled brother/sister. Participants with educated parents relatively have more positive attitude than participants with less-educated parents. The table shows that participants who are firstborn with educated parents obtained a total mean of 76.00 on attitude of siblings towards their brother/sister with disability, while participants who are firstborn with less-educated parents obtained a total mean of 64.40 (SD=7.82). Participants who are midborn with less-educated parents obtained a total mean of 71.87 (SD=6.39) on attitude of siblings towards their brother/sister with disability, while participants who are middle born with educated parents obtained a total mean of 64.57 (sd=7.55). Participants who are lastborn with educated parents obtained a total mean of 71.00 (sd=17.79) on attitude of siblings towards their brother/sister with disability, while participants who are lastborn with less educated obtained a total mean of 59.20 (SD=11.30).

The six groups show a significant influence of birth order/parental level of education interaction on attitude of siblings towards their brother/sister with disability. They have positive attitude towards their brother/sister with disability however, firstborns with less educated parents, midborns with educated parents and lastborns with less educated parents all have significantly lower positive attitude. The table shows that participants who are firstborn males obtained a total mean of 71.10 (SD=2.23) on attitude of siblings towards their physically disabled brother/sister while participants who are firstborn females obtained a total mean of 60.93 (SD=7.82). Participants who are midborn females obtained a total mean of 71.78 (SD=7.39) on attitude of siblings towards their brother/sister with disability while midborn males obtained a total mean of 63.31 (SD=5.73). Participants who are lastborn males obtained a total mean of 65.13 (sd=9.88) on attitude of siblings towards their brother/sister with disability, while participants who are lastborn females obtained a relatively equal mean of 64.95 (SD=17.62). The six groups show a significant influence of the birth order/gender interaction. However, they have positive attitude towards their brother/sister with disability but firstborn females and midborn males have significantly lower positive attitude. The table shows that male participants with educated parents obtained a total mean of 62.95 (SD=8.59) on attitude of siblings towards their brother/sister with disability, while males with less-educated parents obtained a total mean of 70.00 (SD=2.47). Female participants with educated parents obtained a total mean of 74.16 (sd=17.30) on attitude of siblings towards their brother/sister with disability, while female participants with less educated parents

obtained a total mean of 62.01 (sd=11.10). The four groups show no significant influence of gender/parental level of education interaction on the attitude of siblings towards their brother/sister with disability.

### Discussion and Conclusion

Disability among the developing nations is one of the most neglected issues with humanitarian, socioeconomic and political consequences. Although the level of poverty among these nations has made this problem less concern, the problem in the recent times has received attention owing to the intervention of the United Nations via the Sustainable Development Goals agenda. Disability as a global problem but with regional and developmental disparities in terms of approaches, has been captured in about 13 United Nations Sustainable Development Goals (SDGs) such as poverty and hunger (SDGs1&2), health and well-being (SDG3), education (SDG4), gender equality and empowerment of women and girls with disabilities (SDG5), availability of water and sanitation (SDG6), access to energy (SDG7), employment and decent work (SDG8), inequality (SDG10), inclusive cities and human settlements (SDG11), disasters, shocks and climate change (SDG13) and, violence against persons with disabilities, inclusive societies and institutions, representative decision-making, birth-registration and access to justice and to information (SDG16) (United Nations Department of Economic and Social Affairs, 2019). These were to harmonize approaches and strategies in managing the problem for result oriented policies nationally, regionally and globally.

In the developing regions such as Nigeria, the social stigmas attached to disability are more institutionalized than individualized. For instance, Nigeria is one of the places in Africa, where virtually every institution lacked disability-friendly policies and design, making it difficult for the people with disability to access certain basic facilities and services. However, this challenge has not been empirically investigated to track the origin of the social stigma institutionalized against the people living with disability. In the present study, family relationship among the households with children with disability was examined to understand how family relationships contributed to the overall institutionalized stigma against people living with disability in southeast Nigeria. Factors included for investigation are birth order, parental education, gender and other related variables. From the finding of the study, being educated or not being educated among the parents of the siblings with brother/sister with disability did not significantly influence the attitude of the siblings towards the sibling with disability among the household with children with disability in southeast Nigeria. The finding quite contradicted other findings from other regions of the globe such as the findings of the studies by Caliendo et al. (2020), Burke (2010), Park, Ryu and Yang (2021), which indicated that education of the parents, played a role in mediating the attitude of the siblings towards the sibling with disability. This contradiction is perhaps as a result of the nature of education and exposure of the parents. For instance, in southeast Nigeria, disability has nothing to do with the kind of education people received. More importantly, the parents may not see the human right of the children living with disability as important owing to the fact that they do not contribute to the wealth accumulation of the family network, as every child in southeast Nigerian households is considered based on his/her futuristic impact on the family economy.

Southeast Nigeria as majorly Igbo ethnic group, do value children based on their prospect of enhancing the family wealth accumulation and distribution network (Okafor et al., 2021). The situation seems to be playing out in every dimension of their existence including the relationship with the children with disability. For instance, currently, the regions segmented into five administrative states, has no specific laws protecting or including the people with disability in the public and private institutions. The absence of laws and policies for the inclusion and participation of people with disability triggers chain reactions. For instance, beginning from the family of birth, the people with disability are played down and this is what individuals collectively promote in the society unconsciously in the places of decisions that affect the lives of people with disability. In extension, this is institutionalized by deactivating the consciousness towards the people with disability in the public and social institutions such as the education. For instance, the educational institutions in the developing nations such as Nigeria, lack in the basic educational curricular, the knowledge about the conventional ethics in the relationship of the individuals and public with the people with disability. Owing to this situation, the issue of people with disability seems to remained mute in the ongoing society, hence

education of the parents not significantly contributing to the attitude of their children towards their siblings with disability.

The influence of birth order on the attitude of the siblings towards their brother/sister with disability as found in this study corroborated other studies on siblings living with siblings with disability. For instance, according to the study by Park, Ryu and Yang (2021), Kim and Han (2016), Jensen, Whiteman and Fingerman (2018) older siblings tend to be more positive in attitude towards the young siblings with disability, while the younger siblings tend to show negative attitude or neutral attitude towards the older siblings with disability. All these are equally dependent on the environment the children or rather the family are located. As evidence of inclusivity, most developed nations have created the atmosphere of inclusivity for people with disability. This is done through the societal awareness bringing the population together for common understanding of the humanitarian issues in the society as well as extant policies and laws across social institutions mandating the public on the basic rights of the citizens according to their statuses and peculiarities.

Nevertheless, the finding for this study points to more complex issues around people with disability in southeast Nigeria; this is in view of the fact that environmental and other socioeconomic factors combined to build a multidimensional interactions with disability. Although other studies have confirmed the expectations from the siblings, which can be disappointed if the sibling with disability is older than other siblings Begum and Blacher (2011), Paul et al. (2022), Burbidge and Minnes (2014), in southeast Nigeria the cultural outfit is more of the problem than the intra individual feelings about such. For instance, line of inheritance and other honors bestowed in the family tend to fuel some level of competition among the siblings in the family and this in extension can affect the attitude of the siblings towards the siblings with disability especially when the sibling with disability is older than his/her siblings. In southeast Nigeria, one of the elimination methods for the siblings to dominate in the line of inheritance is to technically caption the people with disability as invalid in the process so as to douse the threat of competition especially when it involves male children with disability. This is evidence in the finding of this study, which showed that the middle born males had lower positive attitude towards the older male sibling with disability.

The study raises some concern about the institutionalization of social stigma against the people living with disability in southeast Nigeria as a product of the families and households relationship with the children with disability. Due to the way families and households with children with disability treat their situation as a trivial matter, the pains of these children, which are better understood by their parents and siblings and can be properly communicated to the larger society by same, are buried with the family grudges which ends up with the households and families with children living with disability. And this is transferred to the public domain as no one takes the situations of the children with disability with any form of seriousness. At worst, in southeast Nigeria the problem of the people with disabilities in different categories and stages of life are being turned into business opportunities by few who claim to be helping them in different situations.

Social inclusivity and wellbeing for all, which are part of the cardinal points of the United Nations Sustainable Development Goals, are technically at stake in terms of actualization; this is in view of the extent of institutionalized stigmatization in the region such as southeast Nigeria. The case may be same in other developing regions and nations such Turkey, but for the sake of dearth of empirical information this is out of public knowledge. In any case, there is a startling challenge of de-institutionalizing poor and negative attitude towards the children with special needs. As indicators of institutionalized behavioural pattern, families having children with special needs in places such as southeast Nigeria relegate these children to the background such that most children with special needs in this part of the world are not sent to school. Across the major roads, streets and vehicle boarding stations, children with special needs are treated as accessories and source of income for many families who use these children for street begging. These activities are connected to the problem of poor attitude towards the children with special needs beginning from the families and institutionalized in the society.

### Limitations and Future Suggestions

This study unveiled the hitherto, issue of children with special needs especially in the family context where this matter is swept under the carpet with the impression that the children have no right to determine how the parents and siblings should relate with them. From this study, the socioeconomic status of the parents of the children with disability was specifically tested to understand the role of this factor in the overall issues of siblings' relationship with the children with special needs. Over the years, the socioeconomic status of the parents has been a bone of contention in the analysis of their relationship with their wards with special needs as well as how these as part of family context influence the siblings' relationship with their brothers/sisters with special needs. These factors though are discovered to be significant and at various degrees in the study in southeast Nigeria, they can also be applicable to other regions especially the developing nations where the social institutions are generally weak in the management of humanitarian issues involving the people with disability and specifically the children with special needs. With the findings and strength of the study, there are still some limitations to the study; for instance, the study of this pedigree ought to cover some large population across regions for comparative analysis, however due to the logistics issues, the study was restricted to southeast Nigeria and among the families having children with special needs. Policy wise, the study did not expand to probe the role of policies in extant social institutions to understand the direct role of the obtainable social and humanitarian policies on the family context of interaction with the children with special needs. Equally, there are other factors that could influence the siblings relationship with their brothers/sisters with special needs order than the factors included in the study.

In view of the above, the study suggests further studies in the areas of social policies and humanitarian issues involving children with special needs. The study also suggests further studies focusing on comparative evaluation of siblings' relationship with children with special needs across cultures and developmental benchmarks.

**Author Contributions:** This study was conceived by the first author. All the authors contributed to the development, design of the study as well as data collection and analysis. All the authors read and approved the final manuscript.

**Funding Disclosure:** No funding was provided for this study.

**Conflicts of Interest:** The authors declare that they have no conflict of interest.

**Data Availability:** Data is available upon request from the corresponding author.

**Ethics Approval and Consent to Participate:** Authors declared that the study was carried out within ethical rules. Participants were given informed consent form and volunteered to participate in the study. Ethic committee approval was obtained from the University of Nigeria Faculty of the Social Sciences Ethics Committee.

### References

- Alghamdi, S. & Alsaigh, R. (2023). Determinants of physical activity among children with disabilities. *Healthcare (Basel)*, 11(4):494 <https://doi.org/10.3390/healthcare11040494>
- Babik, I., & Gardner, E. S. (2021). Factors affecting the perception of disability: A developmental perspective. *Frontiers in psychology*, 12, 702166. <https://doi.org/10.3389/fpsyg.2021.702166>
- Barnett, K. (2022) If ever there was someone to keep me at home: theorizing screen representations of siblinghood through a case study of *into the wild* (2007). *Quarterly Review of Film and Video*, 39(4), 842-866. <https://doi.org/10.1080/10509208.2021.1886823>
- Begum, G., & Blacher, J. (2011). The siblings relationship of adolescents with and without intellectual disabilities. *Research in developmental disabilities*, 32(5), 1580–1588. <https://doi.org/10.1016/j.ridd.2011.01.056>

- Bones, U. O., Bates, J., Finlay, J. & Campbell, A. (2022). Parental involvement during COVID-19: experiences from the special school. *European Journal of Special Needs Education*, 37(6), 936-949, <https://doi.org/10.1080/08856257.2021.1967297>
- Burbidge, J., & Minnes, P. (2014). Relationship quality in adult siblings with and without developmental disabilities. *Family Relations*, 63(1), 148–162. <http://www.jstor.org/stable/43695337>
- Burke, P. (2010). Brothers and sisters of disabled children: the experience of disability by association. *The British Journal of Social Work*, 40(6), 1681–1699. <http://www.jstor.org/stable/43687565>
- Caliendo, M., Lanzara, V., Vetri, L., Roccella, M., Marotta, R., Carotenuto, M., Russo, D., Cerroni, F., & Precenzano, F. (2020). Emotional-behavioral disorders in healthy siblings of children with neuro developmental disorders. *Medicina (Kaunas, Lithuania)*, 56(10),491. <https://doi.org/10.3390/medicina56100491>
- David, M., Dieterich, K., Billette de Villemeur, A., Jouk, P. S., Counillon, J., Larroque, B., Bloch, J., & Cans, C. (2014). Prevalence and characteristics of children with mild intellectual disability in a French county. *Journal of intellectual disability research:JIDR*, 58(7), 591–602. <https://doi.org/10.1111/jir.12057>
- Devkota, H. R., Kett, M. & Groce, N. (2019). Societal attitude and behaviours towards women with disabilities in rural Nepal: Pregnancy, childbirth and motherhood. *BMC Pregnancy Childbirth*, 19, 20. <https://doi.org/10.1186/s12884-019-2171-4>
- Downey, T. N. (2016). *Children with Special Needs and the Effect on the Family* (Dissertation no: 2518)[Masters Dissertation, Eastern Illinois University]. Eastern Illinois University Repository. <https://thekeep.eiu.edu/theses/2518>
- Fernando, H. & Botelho, F. (2021). Childhood and assistive technology: growing with opportunity, developing with technology. *Assistive Technology*, 33(1), 87-93, <https://doi.org/10.1080/10400435.2021.1971330>
- Gettings, S., Franco, F. & Santosh, P. J. (2015). Facilitating support groups for siblings of children with neuro developmental disorders using audio-conferencing: a longitudinal feasibility study. *Child Adolesc Psychiatry Ment Health*, 9, 8. <https://doi.org/10.1186/s13034-015-0041-z>
- Hanvey, I., Malovic, A. & Ntontis, E. (2022). Glass children: The lived experiences of siblings of people with a disability or chronic illness. *Journal of Community and Applied Social Psychology* 32(5), 936-948 <https://doi.org/10.1002/casp.2602>
- Hayden, N. K., Hastings, R. P., Kassa, C. & Frances, D. (2023). Subjective poverty moderates the association between carer status and psychological outcomes of adult siblings of people with intellectual and developmental disabilities. *J Autism Dev Disord*, 53, 987–999. <https://doi.org/10.1007/s10803-022-05520-3>
- Hayden, N. K., Hastings, R. P., Totsika, V. & Langley, E. (2019). A population-based study of the behavioral and emotional adjustment of older siblings of children with and without intellectual disability. *J Abnorm Child Psychol* 47, 1409–1419. <https://doi.org/10.1007/s10802-018-00510-5>
- Hayden, N. K., Hastings, R. P. & Bailey, T. (2023). Behavioural adjustment of children with intellectual disability and their sibling is associated with their sibling relationship quality. *Journal of Intellectual Disability Research*, 67(4), 310-322. <https://doi.org/10.1111/jir.13006>
- Hovland, W. & Hean, S. (2021). The quality and developmental pathways in sibling relationships: A qualitative study of Norwegian children admitted to child welfare service care. *Child and family social work*, 26(4),559-571. <https://doi.org/10.1111/cfs.12838>.
- Jajodia, P., & Roy, P. (2022). Sibling Issues in Disability: A Thematic Analysis of Sibling, Parent & Expert Perspectives. *International Journal of Disability, Development and Education*, 70(7), 1392–1409. <https://doi.org/10.1080/1034912X.2022.2060948>
- Jensen A. C., Whiteman S. D. & Fingerman K. L. (2018). Can't live with or without them: transitions and young adults' perceptions of sibling relationships. *J. Fam. Psychol.* 32, 385–395. <https://doi.org/10.1037/fam0000361>

- Junaidi, A. R & Dewantoro, D. A. (2020). Parents' perceptions of children with disabilities. *Advances in Social Science, Education and Humanities Research*, 508, 14-19.
- Katz, C., & Hamama, L. (2018). The sibling relationship in the context of child maltreatment: what do we know? What are the directions for the future? *Trauma, Violence & Abuse*, 19(3), 343–351. <https://www.jstor.org/stable/26638205>
- Kim D. H. & Han J. H. (2016). A study on the psychological phenomenon of the non-disabled siblings with intellectually disabled brother. *Korea J. Couns.* 17, 357–375.
- Krejčová K, Chýlová H, & Rymešová P (2023) Analysis of siblings' relationship and parenting style using structure modelling approach. *PLoS ONE*, 18(2), e0281266. <https://doi.org/10.1371/journal.pone.0281266>
- Luijckx, J., van der Putten, A. J. & Vlaskamp, C. (2016). I love my sister, but sometimes I don't: A qualitative study into the experiences of siblings of a child with profound intellectual and multiple disabilities. *Journal of Intellectual & Developmental Disability*, 41(4), 279-288, <https://doi.org/10.3109/13668250.2016.1224333>
- Manomano, T. & Kumalo, S.E.E. (2016). Discovering the child's disability: challenges with parenting and implications for social work practice in South Africa. *J Sociology SocAnth*, 7(4), 202-206
- Mc Adams, A. (2016). *The experiences of siblings of individuals with disabilities: A holistic view* [Doctoral Dissertation, Chapman University]. Chapman University Repository. <https://doi.org/10.36837/chapman.000024>
- Meltzer, A., & Kramer, J. (2016). Siblinghood through disability studies perspectives: Diversifying discourse and knowledge about siblings with and without disabilities. *Disability & Society*, 31(1), 17–32. <http://doi.org/10.1080/09687599.2015.1127212>
- Modula, M. J. (2022). The support needs of families raising children with intellectual disability. *African Journal of Disability*, 11(0), a952. <https://doi.org/10.4102/ajod.v11i0.952>
- Olusanya, B. O., Wright, S. M., Nair, M. K. C., Boo, N. Y., Halpern, R., Kuper, H., Abubakar, A. A., Almasri, N. A., Arabloo, J., Arora, N. K., Backhaus, S., Berman, B. D., Breinbauer, C., Carr, G., de Vries, P. J., Del Castillo-Hegyí, C., Eftekhari, A., Gladstone, M. J., Hoekstra, R. A., Kancherla, V. & Global Research on Developmental Disabilities Collaborators (GRDDC) (2020). Global burden of childhood epilepsy, intellectual disability, and sensory impairments. *Pediatrics*, 146(1), e20192623. <https://doi.org/10.1542/peds.2019-2623>
- Okafor, S. O., Onu, J. C. & Nwaeze, V. C. (2021). Rural small-scale women farmers and preference for family size in south-east Nigeria. *Comparative Population Studies*, 46, 35-68
- Packingham, K. A. (2016). Raising a child with a severe disability: The impact on parents and siblings. *Culminating Projects in Special Education*. 10. [https://repository.stcloudstate.edu/sped\\_etds/10](https://repository.stcloudstate.edu/sped_etds/10)
- Park, S., Ryu, W., & Yang, H. (2021). A Study on the life experiences of adolescents who grew up with younger siblings with developmental disabilities: Focusing on phenomenological analysis methods. *Brain sciences*, 11(6), 798. <https://doi.org/10.3390/brainsci11060798>
- Paul, A. M., Hussey, M. M., Woodman, A. C, Smith, A. L. & Shriver, T. P. (2021). Experiences of siblings of people with intellectual disabilities: Multiregional perspectives. *Family Relations Interdisciplinary Journal of Applied Family Science*, 71(2), 671-685. <https://doi.org/10.1111/fare.12608>
- Selda, F. & Soysa, Ö. (2016). A study on sibling relationships, life satisfaction and loneliness level of adolescents. *Journal of Education and Training Studies*, 4(4), 58-67.
- Seligman, M. (1999). Childhood disability and the family. In: Schwean, V.L., Saklofske, D.H. (eds) *Handbook of psychosocial characteristics of exceptional children*. Springer Series on Human Exceptionality. Springer, Boston, MA. [https://doi.org/10.1007/978-1-4757-5375-2\\_5](https://doi.org/10.1007/978-1-4757-5375-2_5)
- Shields, N. & Synnot, A. (2016). Perceived barriers and facilitators to participation in physical activity for children with disability: A qualitative study. *BMC Pediatr*, 16(9). <https://doi.org/10.1186/s12887-016-0544-7>

- Siminghalam M, Aubi K, Hajian A. & Alibakhshi H. (2018). The quality of life of siblings of children with severe developmental disabilities children. *Iranian Rehabilitation Journal*, 16(3), 233-238. <http://dx.doi.org/10.32598/irj.16.3.233>
- Tataryn, M., Polack, S., Chokotho, L., Mulwafu, W., Kayange, P., Banks, L. M., Noe, C., Lavy, C., & Kuper, H. (2017). Childhood disability in Malawi: A population based assessment using the key informant method. *BMC Pediatr*, 17, 198. <https://doi.org/10.1186/s12887-017-0948-z>
- Tigere, B., & Makhubele, J. C. (2019). The experiences of parents of children living with disabilities at Lehlaba Protective Workshop in Sekhukhune district of Limpopo province. *African journal of disability*, 8(0), 528. <https://doi.org/10.4102/ajod.v8i0.528>
- Volkom, M. V., Guerguis, A. J. & Kramer, A. (2017). Sibling relationships, birth order, and personality among emerging adults. *Journal of Psychology and Behavioral Science*, 5(2), 21-28
- Wang, Z., Xu, X., Han, Q., Chen, Y., Jiang, J. & Ni, G. (2021). Factors associated with public attitudes towards persons with disabilities: A systematic review. *BMC Public Health*, 21, 1058. <https://doi.org/10.1186/s12889-021-11139-3>
- Watson, L., Hanna, P. & Jones, C. J. (2021). A systematic review of the experience of being a sibling of a child with an autism spectrum disorder. *Clinical Child Psychology and Psychiatry*, 26(3), 734-749. <https://doi.org/10.1177/13591045211007921>
- Wondemu, M. Y., Joranger, P., Hermansen, A. & Brekke, I. (2022). Impact of child disability on parental employment and labour income: a quasi-experimental study of parents of children with disabilities in Norway. *BMC Public Health*, 22, 1813. <https://doi.org/10.1186/s12889-022-14195-5>
- Yadwinder, K. (2010). Family support model for the management of disabled children. *Studies on Home and Community Science*, 4(3), 179-184. <https://doi.org/10.1080/09737189.2010.11885320>
- Zhong, X., Zhao, X., Liu, Z., Guo, Y. & Ma, L. (2020). Childhood disability and its associated perinatal characteristics in Bao'an district of Shenzhen, China. *BMC Public Health*, 20, 1540. <https://doi.org/10.1186/s12889-020-09623-3>



## RESEARCH ARTICLE

## Failure as an Obstacle or a Support: The Failure Beliefs Scale Development Study

Sabire KILIÇ<sup>a</sup> , Galip YÜKSEL<sup>a</sup> <sup>a</sup> Gazi University, Ankara, Turkey

## ARTICLE HISTORY

Received: 14.08.2023

Accepted: 19.09.2023

## KEYWORDS

Failure Beliefs, Implicit Theory, Scale Development.

## ABSTRACT

This scale development study aims to measure the failure beliefs of adults in Turkish culture by exploring failure concept through Carol Dweck's implicit theories. In the study, the stages of the scale development process were followed with a mixed method approach. Firstly, qualitative data was gathered through literature review and focus groups. Subsequently, exploratory analysis and confirmatory analyses was performed on quantitative data gained from totally 887 adults. The findings revealed that Failure Beliefs Scale was generated with eight items in two factors: one factor assesses the belief that failure is debilitating, while the other evaluates the belief that failure is enhancing. The gender-based measurement invariance was assessed, and its reliability was verified through the calculation of internal consistency and stability coefficients. Scale showed appropriate validity and reliability for evaluating adults' failure beliefs. The use of the scale in studies related to failure in different fields such as education and work will contribute to future studies in Türkiye.

Is failure an obstacle or support? It can be said that studies on failure in the motivation literature for many years have centered around this question. Since the early studies, failure has been intensively addressed within the concepts of failure avoidance and fear of failure (Elliot & Covington, 2001). As a matter of fact, Martin and Marsh (2003) posed a similar question for fear of failure and stated that the answer to this question differs among individuals based on the need for success approach. In this context, while fear of failure is positive for some individuals and leads them to succeed in the face of difficulties, for others it can be negative, and cause learned helplessness and high anxiety (Martin, 2002).

Differences in individuals' motivation to avoid failure have been tried to be explained in many different conceptual frameworks such as implicit motives (Atkinson, 1957; McClelland, 1965), temperament (Elliot & Trash, 2002), causal attributions (Weiner, 1972) and orientations (Conroy & Elliot, 2004). One of the approaches to explain this situation was developed by Carol Dweck. Dweck, who first associated the motivation to avoid failure with goal orientations and then with implicit beliefs, explained the fear of failure with meaning-making systems involving individuals' beliefs (Hong et al., 1999).

In their first studies on learned helplessness, Dweck and his colleagues revealed that some individuals are willing to take risks and take on difficult tasks and are resilient against failures and difficulties, while others avoid especially difficult tasks and give up after these situations by feeling excessive anxiety against failure situations (Elliott & Dweck, 1988). Dweck argued that these different reactions and behaviors that individuals

**CORRESPONDING AUTHOR** Sabire KILIÇ, [sabirekilig@gazi.edu.tr](mailto:sabirekilig@gazi.edu.tr), ORCID: 0000-0001-8378-205X, Gazi University, Ankara, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counselling and Guidance Association

show in the face of failure are related to implicit beliefs. In this context, individuals' beliefs serve as a cognitive lens for them and affect their perception of failure situations and indirectly their coping behaviors in these situations (Dweck, 2006; Dweck & Molden, 2006).

Haimovitz and Dweck (2016) basically defined two related but also different failure beliefs: beliefs that failure is debilitating and beliefs that failure is enhancing. As a matter of fact, these two different beliefs about failure are similar to the beliefs of different researchers in the literature that failure is a threat or a challenge (Berger & Freud, 2012; Crocker et al., 2006; Nishimura et al., 2017).

Believing that failure is positive sees failure as a source of improvement in various areas like performance, achievement and productivity. This positive side of failure beliefs includes the positive evaluation of the effects of failure and the idea that one should benefit from failed experiences. In addition, individuals who adopt this belief intensely think that failures also increase performance and productivity and contribute to learning and development. On the other hand, beliefs that failure is debilitating view failure as a threat with negative consequences and one should try her/his best to avoid it (Haimovitz & Dweck, 2016). As a result, seeing failure as a learning opportunity means defining it as a chance for development and learning, while accepting failure as a negative experience includes beliefs that it causes feelings such as shame and disappointment (Ikeda & Misawa, 2012).

Failure beliefs are seen as an important determinant of individuals' motivation for success and failure, especially in the field of education (Robins & Pals, 2002). However, these beliefs can be effective not only for individuals' own failure situations but also for their relations with others. For example, when examined in the role of parent, these beliefs may influence people's reactions to failure situations of their children. Indeed, Haimovitz and Dweck (2016) found that parents' beliefs of failure have predictive power on their responses to failure situations of children, plus intelligence beliefs. In addition, when failure beliefs were examined in the organizational context, teams in the same organization were found to vary in their beliefs, and shared beliefs about failure were associated with group performance (Cannon & Edmondson, 2001; Martignoni & Keil, 2021). Therefore, it can be said that the belief that failure is positive or negative is an important concept that has reflections on different fields such as education, family, and organization. However, in the current failure literature, failure beliefs have only recently started to be studied and the studies are mostly based on fear of failure (Caraway et al., 2003; Conroy et al., 2002; Elliot & Thrash, 2004; Neff et al., 2005). Beliefs of failure, on the other hand, are similar to but different from the concepts of failure avoidance and fear of failure. These beliefs define how failure is perceived and interpreted and include basic beliefs about whether failure as an opportunity or threath (Haimovitz & Dweck, 2016).

Fear of failure has many descriptions but shortly is used for the motivation to avoid failure and its possible negative consequences (Elliot, 1999) and is often measured by addressing individuals' beliefs about the failure consequences (Conroy, 2001). However, there remains a notable absence in the works on fear of failure, particularly regarding the exploration of beliefs focusing on the positive side of failure. Additionally, not all people with low fear of failure see failure as enhancing, and some do not consider failure as a threatening factor due to apathy or lack of motivation (De CasTella et al., 2013).

To summarize, examining how individuals evaluate failure is important in terms of understanding failure in all its aspects and contributing to studies to increase the resilience and perseverance of individuals in cases of failing (Yeager & Dweck, 2012). In addition, since these beliefs will reveal how failure is conceptualized by individuals, it may enhance comprehension of causal attributions attributed to failure and fearing failure, as extensively explored topics.

Examining international studies, one scale developed by Haimovitz and Dweck (2016) to measure parents' mindsets about failure in US appears to be most relevant, as it is similar to the purpose of the study. Although their conceptualization of failure and the structure of the scale provided substantial resource for this study, decision for development of a new scale over adaptation was made mainly considering the importance of cultural, social, and developmental context in the belief systems. Hence, several studies indicate differences in implicit theories across various cultural contexts and suggest that examination of these complex belief systems without reference to the cultural aspects would be incomplete to understand the construct itself (Choi & Nisbett, 2000; Ji et al., 2000; Nisbett et al., 2001). Besides its cultural importance, developing a new scale of

failure beliefs is also important to address the controversial issues concerning the measurement of implicit theories in the literature (Lüftenegger & Chen, 2017).

When it is examined in Turkish culture, although there are few studies investigating the concepts related to the failure beliefs of individuals, it is seen that measurement tools for fear of failure or failure attributions are mostly used in these studies. However as stated earlier, these scales are based on the conceptualization of failure avoidance or fear of failure which theoretically differ from failure beliefs, especially the beliefs that includes “failure is enhancing”. To illustrate more, scales measuring fear of failure are about why people worry or afraid of failing and based on the models showing the aversive consequences of failure. For example, Inventory of Performance Failure Appraisal, one of widely utilized scales for measuring failure fear, evaluates individuals’ thoughts regarding outcomes of failure. They may include concerns about experiencing shame, apprehensions about losing social effects, and worry over disappointing significant people (Kahraman & Sungur, 2016). Although these beliefs are similar to the beliefs that failure is harmful, they focus on the negative consequences of failure in different areas and most importantly lack to measure the positive conceptualization of failure. As other examples of the failure scales, there are many to measure failure attributions, mainly based on Weiner’s attribution model (Güneş, 2022; Sucuoğlu, 2014). However, unlike beliefs about the nature of the failure as in failure beliefs, these scales assess what kind of causal factors people attribute their failures to such as their skills, effort, chance etc. (Weiner, 2010).

To sum up, reviewing the current literature, no specific scale measuring failure beliefs independently of the concepts as fear of failure or failure attributions are found in Turkish literature. Therefore, there is a need to develop a scale of failure beliefs by taking cultural factors into account for the future studies to be carried out in the field in the country. Regarding this deficiency in the studies, this work set out to create Failure Beliefs Scale within the implicit beliefs proposed by Dweck (1999, 2006) to contribute to the research of failure beliefs.

### **Methodology**

The focus of this research is to generate "Failure Beliefs Scale (FBS)" within the implicit belief framework. In the study, a sequential exploratory strategy of mixed method designs is used as suggested when researchers need to develop a new measurement tool (Creswell, 2017, p. 226). Adopting the three-phase approach of sequential exploratory strategy, firstly qualitative data obtained from a literature review and after that, focus groups were gathered. Building from their results, an item pool was generated for the development of the intended scale, and lastly, it was implemented with samples (Creswell & Plano Clark, 2018, p. 127).

### **Study Groups**

The study included adults who were reached through the convenience sampling method and who volunteered to participate in the study (Erkuş, 2011).

This scale development study includes several samples consisting of qualitative and quantitative groups. To gather qualitative data, two focus groups were conducted, the first with 9 participants and the second with 15 participants. For the quantitative data of the study, there were mainly two separate groups, including a total of 887 adults. Sample size adequacy was determined in line with Worthington and Whittaker’ (2006) suggestions as having at least 300 participants and 10:1 ratio of participants to number of parameters in the study groups. Therefore, the first quantitative data sample encompass 569 adults for the Exploratory Factor Analysis (EFA) to reveal the scale framework. The second quantitative sample consisted of a total of 318 adults who were reached for Confirmatory Factor Analysis (CFA) to verify the scale structure uncovered in EFA. Lastly, a group of totally 37 adults were reached to establish test-retest reliability over time intervals. Demographic characteristics of participants in study is given in Table 1 below.

**Table 1.** Sample Demographics

Study Groups	Characteristics		N	%	Mean Age
Focus Groups	Gender	F	15	62,5	21.12 (SD= 0,95)
		M	9	37,5	
EFA Group	Gender	F	405	71,2	24.61 (SD= 6,819)
		M	162	28,5	
	Educational Status	Lower than Bachelor's	298	52,3	
		Bachelor's Degree	230	40,4	
		Postgraduate Degree	20	3,5	
	Socio-economic status	Low	64	11,2	
		Middle	447	78,6	
		High	22	3,9	
Employment Status	Employed	254	44,6		
	Unemployed	315	55,4		
CFA Group	Gender	Female	237	74,5	24.31 (SD= 6,036)
		Male	80	25,2	
	Educational Status	Lower than Bachelor's	154	48,4	
		Bachelor's Degree	157	49,4	
		Postgraduate Degree	5	1,6	
	Socio-economic status	Low	34	10,7	
		Middle	254	79,9	
		High	8	2,5	
Employment Status	Employed	116	36,5		
	Unemployed	176	55,3		
Test-retest Group	Gender	Female	33	89,2	21,78 (SD= 0,85)
		Male	4	10,8	

Note. Missing data are not included in numbers and percentages.

Table 1 shows participants' demographic characteristics. However, research sample is mostly female, and the self-perceived socio-economic status of the individuals is at the middle level. In addition to the characteristics mentioned in the table, 57 (10%) of them in the EFA and 22 (6.9%) of them in the CFA group were parents, and 73 (12.8%) of them in the EFA group and 31 (9.7%) of them in the CFA group were married.

### Data Collection

During the data collection, firstly ethical approval was ensured (ethical approval information is given in the last section of the study in detailed.) After getting ethical approval, for the qualitative data gathering, face to face groups were arranged and the group interviews were done by the researchers and lasted approximately 30-35 minutes. For quantitative data collection, scale was organized both online and as a pencil and paper application and filling the form of the scale lasted approximately 5-10 minutes. Based on the participants preference, both online "google forms" and pencil and paper applications were used to accumulate quantitative data.

### Development of Scale Procedure

The study implemented a series of procedural steps in developing the scale (DeVellis, 2017; Erkuş, 2012) and the stages followed in this process are given below.

**Reviewing the related literature and defining the construct to be measured.** In the literature, different conceptual approaches reveal individuals' thoughts and beliefs about failure. In this study, implicit beliefs were preferred because it creates a mental framework for cognitive systems and includes beliefs that include the definition of failure both as a support and an obstacle. In this context, failure beliefs, as in the focus, include core beliefs that express how individuals perceive, define, and interpret failure.

**Writing behavioral indicators and creating the item pool.** A two-stage process was conducted in the creation of the item pool. Since there is a basic theoretical framework in the literature on failure beliefs, items based on the theory were written in the first stage. Then, the pool of items was expanded following interviews with

focus group. Together with interviews, whether the theoretical construct based on failure beliefs is relevant in the culture and whether there is a need to make additions to the items written based on the theory were critiqued. As a matter of fact, interviews and focus groups, in addition to literature reviews, is considered important and recommended in the conceptualization of the construct, item writing, and dimension determination processes (Devellis, 2017).

**Literature review in creating item pool.** In the first stage of creating the item pool, the theoretical foundations of the construct to be measured were examined and its behavioral indicators were noted by reviewing the literature on the implicit theories of failure. In this context, individuals' beliefs that "failure is enhancing" or "failure is debilitating" were examined. As indicators of these beliefs, the failure beliefs that best represent and reflect these implicit constructs that individuals have were found and these beliefs were transformed into item expressions and an item pool including 38 items was obtained and given in Table 2 below.

**Table 2.** Resources, Implicit Beliefs, Behavior Indicators, and Written Scale Items.

Resource	Implicit Beliefs	Behavior Indicators	Related Scale Items
(Chiu et al.1997), (Dweck, 1986, 1999, 2006), (Dweck & Master, 2008, 2009) (Dweck & Leggett, 1988)	"Failure is enhancing."	Evaluating failure as a positive experience; evaluating failure as an opportunity for development, learning and progress; believing that failure increases performance, productivity, and motivation; benefiting from failure	M-2, M-4, M-6, M-7, M-9, M-13, M-16, M-18, M-19, M-22, M-23, M-25, M-26, M-29, M-31, M-34, M-36, M-37
(Dweck et al., 1995), (García-Cepero & McCoach, 2009) (Haimovitz & Dweck, 2016), (Lee, 1996)	"Failure is debilitating."	Evaluating failure negatively; seeing failure as an obstacle to development, learning and progress; believing that failure reduces performance, productivity, and motivation; avoiding failure	M-1, M-3, M-5, M-8, M-10, M-11, M-12, M-14, M-15, M-17, M-20, M-21, M-24, M-27, M-28, M-30, M-32, M-33, M-35, M-38

**Focus groups on expanding item pool.** For the group interviews, the following questions were created by investigating the similar qualitative studies. In the groups, the generated following questions were asked to the participants and their definitions and experiences of failure were obtained.

- What is the definition of failure for you? If you had to define failure, how would you define it?
- If you had to evaluate failure positively or negatively, which way would your opinion be? Why?
- Can you recall a situation in which you failed and share with us your experiences in that situation? How did you feel, what did you think and what did you do in that situation?

In the data obtained from the groups, it was seen that the participants' beliefs about failure were compatible with the differences in the failure beliefs discussed in the theoretical framework. In this context, it was seen that failure was intensively evaluated as an obstacle in the views of the participants. However, in parallel with the literature, there were also views on defining failure as a positive and developmental experience. In the views of some participants, the idea that the meaning of failure as positive or negative can change depending on the situation was found.

Similar to the theoretical belief that failure is enhancing, participants stated the following:

*(Participant 8 from the 2nd Focus Group, FG2.P8) "Failure is not getting what I want, and it is positive because failure makes me more ambitious. Being very successful does not give me much."*

*(FG2.P7) "Failure is what I feel when I do not do the work we need to do in a planned and programmed way. Failure is positive because I think that every work that could not be done leads to better work next time."*

Unlike the participant statements above, some participants' views reflect the theoretical beliefs that failure is debilitating. In this context, examples of participant views are presented below:

(FG1.P7) "Failure is the situation in which the expectations are not met in an area where the individual feels competent and has various expectations. Failure is negative ... It causes a loss of hope and disappointment. When I fail, my self-confidence is damaged, and I may despair and not think of trying again."

(FG2.P13) "Failure is not being able to do things that are doable, that are not impossible to do, because of our own shortcomings. Failure is negative because it leaves negative traces in our lives. It leaves us behind; it means falling behind in areas such as education and social life."

(FG2.P14) "Failure is not getting what I want, not achieving what I have worked hard for. Failure is negative in my opinion because when I fail in something I have worked hard for, I first get discouraged and then I don't want to work with the hopelessness of being tired."

Examples of views that failure can be both positive and negative are presented below:

(FG1.P8) "Failure is not achieving my goals. I think it is both positive and negative. Positive because we can see our shortcomings and focus on them. People are not always perfect in every way. It provides awareness of this. Negative because I don't achieve my goal. It's bad to not be able to accomplish something we could have done."

(FG2.P9) "Failure is when the things that I put time and effort into turn out to be negative. Failure can be positive or negative. Positively it can encourage you to work harder, psychologically it can make you pessimistic."

Through transcripts of interviews analyzed via content analysis, 10 items were incorporated into item pool, resulting in a total of 48 items. To summarize the content analysis of focus group data, the details regarding the codes, themes and items added to the item pool are given Table 3 below.

**Table 3.** Codes, Themes, and Number of Added Items

Codes	Themes	Added Items
Learning experience, preparing for the better, set an example	Opportunity	2 items
Prevent from pursuing dreams or goals	Obstacle	2 items
Self-respect, loss of respect, self-efficacy, loss of efficacy	Self-confidence	2 items
Pessimism, hopeless, disappointment, negative trace, permanent trace	Negative effects	1 item
Discouragement, ambition, not able to sustain	Motivation	1 item
	Total	8 items

**Deciding on assessment format, item type, and response categories.** Initially, the most appropriate assessment format for the scale construct was examined (Erkuş, 2012). Individual items were formulated as propositional statements for attaining the participants' level of agreement with these statements with Likert-type response options, which stands out as an effective format for measuring individuals' thoughts, beliefs, and attitudes. Thus, the 6-point Likert style was preferred in order to avoid a midpoint expressing individuals' ambivalence (DeVellis, 2017).

**Obtaining expert opinion.** Item pool was evaluated by experts (Erkuş, 2012), and details of getting expert opinion in the study are included in the Tablo 4 below.

**Table 4.** Details of Getting Expert Opinion

The field of experts	Criteria for choosing the expert	Number of Experts
Assessment and Evaluation	Have at least a master's degree in the field and have taken at least one course on scale development	2
Psychological Counseling and Guidance	Have at least a graduate degree in the field and have taken at least one course including the topics of cognitive structures as beliefs and implicit theories	5
Turkish Language and Literature	Have at least a graduate degree in the field	1
	Total	8

Regarding expert opinions, the items evaluated by at least one expert as having "low" power to represent the construct and the items with suggestions were examined in detail. They were evaluated within the theoretical framework of implicit theories and how many items should be removed or revised were determined accordingly.

For revision of the items, four of them were reworded based on expert opinion and for the elimination, both

expert opinion and the ideal number of items in the pool were considered. At this point, although scales currently in use to measure constructs of implicit theories such as intelligence or personality (Dweck, 1999), and also failure beliefs (Haimovitz & Dweck, 2016) are short as around six indicating that a large item pool might not be required, DeVellis's (2017, p.131) suggestion of redundancy with respect to the construct was adopted and a 40-item pool was finalized by removing only eight items evaluated as low to represent the construct by experts.

### **Preparing Data for Analysis**

Firstly, wrong data entry was checked on the data obtained from the participants, and it was observed that there was no wrong coding or data entered. After that, the examination of missing data and normality examinations were carried out as preliminary studies (Erkuş, 2012).

### **Data Analysis**

**Qualitative data analysis.** Initially, a literature review was conducted on the implicit theories and failure beliefs, and keywords as "failure", "implicit theories" and "scales" were used to reach the relevant literature on Web of Science and the studies conducted on similar theoretical base and had open access were selected for investigation. The details about these relevant studies and the behavior indicators of the construct written based on the investigation of these studies were given in Tablo 2.

Secondly, data from the focus groups underwent content analysis, with researchers collaboratively coding and categorizing themes. Coding was done mainly based on the participant expressions and themes were obtained by revealing the main ideas of similar codes considering both participant expressions and literature review on failure beliefs (Creswell, 2007). Details concerning the analysis including codes and themes were given in Table 3.

**Quantitative data analysis.** For the quantitative data, the data from the first sample were subjected to Exploratory Factor Analysis (EFA), followed by Confirmatory Factor Analysis (CFA) on data from the second sample to test and validate the scale construct (DeVellis, 2017).

Testing main assumptions of normality to perform maximum likelihood (ML) as an extraction method in EFA, skewness values and kurtosis values spanned between .012 and -1.207, showing proof for normally distributed data. Providing further evidence for multivariate normality, univariate normality checks were done in both samples. Z-scores for all variables were checked and found that they fell within the range of  $\pm 3.29$ . Additionally, Chi-Squared Q-Q plots were examined and indicated an underlying normally multivariate distribution. (Tabachnik & Fidell, 2007).

After obtaining evidence for meeting the assumption of normal distribution, Kaiser-Meyer Olkin (KMO) coefficient was investigated and found .97. For second assumption in analyzing factors, Bartlett Sphericity test were performed and found significant ( $\chi^2(780) = 13859,271; p=0.00$ ), providing evidence to perform factor analysis (Tabachnik & Fidell, 2007). In addition to these values, examining the anti-image correlations of the items showed additional evidence to perform factor analysis on the basis of the item, where the lowest value was .942.

In EFA, with ML extraction method, factor structure of the scale was clarified by using direct oblimin which is the oblique rotation method recommended for the related factors (Osborne, 2015). The number of factors was reached using eigenvalues suggested by Kaiser (1960), plus scree plot method introduced by Cattell (1966), and also parallel analysis by Horn (1965). Pearson Product-Moment Correlation performed in the examination of the relationship among factors. As Hair and colleagues (2014) pointed out, research calculated Average Variance Extracted (AVE), plus Composite Reliability. For item discrimination of the scale, t-test analysis were run.

For CFA, steps provided by Schumacher and Lomax (2010) for conducting CFA were applied. In the confirmatory factor analysis, after model specification and identification on EFA findings, with ML estimation, model testing was made by assessing the model fit by various indexes such as absolute fit indexes, and comparative fit index. While there are plenty of criteria, in this work mainly chi-square, RMSEA, plus SRMR were provided with additional indexes as emphasized by Schumacher and Lomax (2010) and given in Table

9.

Whether the measured construct maintains equivalence across genders was assessed by measurement invariance through sequential evaluation of fit between specified model and observed data. Fitness of model was evaluated by using multiple fit statistics as suggested by many recent studies (Kline, 2015).

For the reliability analysis of the scale, along with Cronbach's alpha, MacDonald's omega were computed for the estimation of internal consistency and omega was generated by using Hayes omega macro (Hayes & Coutts, 2020). Test-retest reliability was estimated with coefficient of stability by calculating Pearson Product-Moment Correlation.

As the data analysis programs, Excell 2010, SPSS 27.0 and for CFA, Amos 22.0 package programs were utilized in this research.

## Results

### Findings Regarding the Validity of the Scale

**Construct validity: Exploratory factor analysis.** For the construct validity, EFA was conducted using ML extraction method. In the first analysis, no rotation method was used to understand the overall structure of the scale. As a result of the first analysis, a 5-factor structure with an eigenvalue greater than one explaining 56.19% of the total variance was found and presented in Table 5.

**Table 5.** Factor structure in the first EFA results.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18,265	45,664	45,664	17,836	44,591	44,591
2	2,508	6,271	51,934	2,102	5,254	49,845
3	1,502	3,755	55,689	,989	2,473	52,318
4	1,316	3,290	58,979	,889	2,223	54,540
5	1,137	2,843	61,822	,659	1,648	56,188
6	,982	2,454	64,276			

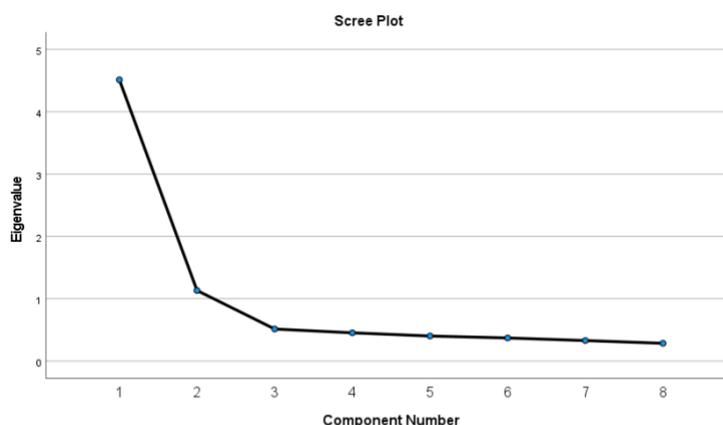
In light of these initial findings indicating a multi-factor structure, the item loadings of the items on the factors were clarified by using direct oblimin (Osborne, 2015), which is the oblique rotation method recommended for the related factors among the rotation methods in the exploratory factor analysis, and after the rotation, the item factor loadings of the items were examined one by one.

For each item in the scale, evaluations were made based on item loads, and the scale structure was investigated in detail. In this context, items that gave high loads to more than one factor, had a factor load of less than .40, and that the difference between the factor loadings given to two different factors was less than .15 were removed from the scale (Worthington & Whittaker, 2006). In this elimination process, while the main applied criteria were significant loading magnitude and cross loadings of the items, theoretical convergence was also considered critical. In this respect, examining the highest inter-item correlations, item eliminations were conducted to ensure that the scale does include items theoretically distinct enough to avoid artificially inflating reliability levels. Lastly, the number of items per factor was taken into consideration through the item deletion process, and each factor was extracted to include at least three items (Carpenter, 2018).

As a result of the examinations made on the basis of the criteria as factor loading magnitudes, cross loadings, inter-item correlations, theoretical convergence and number of items per factor, 8 items that best represented the construct of the scale were obtained. As a result of item examinations and eliminations, it was seen that these items remaining in the scale were grouped under two factors and that the two-factor structure explained 61% of the total variance.

In addition to evaluating the factors based on eigenvalues suggested by Kaiser (1960), the scree plot suggested by Cattell (1966) was also examined in the study. The scree plot for the 8-item scale is given in Figure 1 below.

**Figure 1.** Failure Beliefs Scale scree plot.



When the scree plot is examined, it is seen that there is one dominant factor in the scale construct, but the second factor is also important and contributes considerably to the construct. However, it is seen that the flattening in the graph occurs in the third factor with an eigenvalue less than 1. In this case, the parallel analysis method proposed by Horn (1965) was used to provide additional evidence for determining the factors of the scale. Based on the criticism that the eigenvalue greater than 1 method is affected by sampling errors in correlation matrices in determining the factors, this method states that more than the required number of factors can be determined in eigenvalue-based factor determination (Hayton et al., 2004).

In this method, which is carried out in the SPSS program with syntax developed by O'Connor (2000), eigenvalues in the 95% confidence interval are calculated in the 1000-person data set randomly generated from the data set. The point where the eigenvalues of the parallel data are greater than the eigenvalues in the actual data set is used to determine the number of significant factors. The eigenvalues and number of factors determined by parallel analysis are given in Table 6.

**Table 6.** Eigenvalues and number of factors determined by parallel analysis method.

Eigenvalue	Factor 1	Factor 2	Factor 3
Raw Data	4,513174	1,132610	0,514241
Parallel Data	1,179398	1,113079	1,062829

n=1000

When Table 6 is examined, it is seen that the values produced from the parallel data in the third factor are larger than the values produced from the raw data, so the parallel analysis method supports the 2-factor structure. The factor loadings for the 8 items and the two-factor scale supported by the analyses described above are presented in Table 7.

**Table 7.** Item factor loadings of Failure Beliefs Scale.

Factors	Items	Factor 1	Factor 2
Failure is Enhancing	Item 18	.708	
	Item 23	.801	
	Item 26	.864	
	Item 31	.765	
Failure is Debilitating	Item 14		.848
	Item 17		.824
	Item 27		.610
	Item 40		.728
	Eigenvalue	4,128	.756
	Explained Variance	51,597	9,444
	Total Variance Explained	61,041	

Note: loadings < 0.11 suppressed

DeVellis (2017) stated that an item should have a factor loading of at least .40 in order to be represented in a factor. When the factor loadings in Table 7 are examined, it is seen that the factor loadings of all items are above .61. However, as a result of the examination of the items on the basis of the literature, it is seen that the loadings of all items in the first factor called belief as "failure is enhancing" are above .76 and explain 51.6% of the total variance. Similarly, for the second factor, the contents of the items were analyzed based on the literature and the factor was named "belief that failure is debilitating". The items in this factor had values between .61 and .85 and explained 9.4% of the total variance. Naming of the factors as "enhancing and debilitating" were based on the investigation of the items and also literature which item pool was built upon. To exemplify, enhancing failure beliefs factor includes the belief statements such as failure as an opportunity or supporting development whereas debilitating failure belief items contain statements as failure as a negative trace or decreasing motivation.

As a result of correlation between the factors, a moderate negative correlation  $r(552) = -.60, p < .001$  was found between the two factors.

**Convergent validity.** Convergent validity was used to provide evidence for the quality of the scale by calculating the AVE and CR values. For the 1st factor, the AVE value was .62, and the CR value was .87. For the 2nd factor, the AVE value was .58, and the CR value was .84. Considering the criteria of  $AVE > .50$  and  $CR > .70$  (Hair et al., 2014), it can be said that convergent validity of the scale is satisfied.

#### Findings related to item validity.

Item validity analyses were conducted in investigation of whether each item in scale measures the construct and determine the discrimination levels. In this direction, the significance of the difference between the item scores of two groups on total score was calculated. The findings are stated in Table 8.

**Table 8.** Findings Related to Item Validity.

Factor	Items	Group	n	$\bar{x}$	SD	t	p
Debilitating	Item14	Upper %27	150	5,05	0,89	-36,580	.000
		Lower %27	150	1,68	0,70		
	Item 17	Upper %27	150	4,97	0,76	-31,910	.000
		Lower %27	150	1,91	0,89		
	Item 27	Upper %27	150	4,55	0,99	-23,623	.000
		Lower %27	150	1,94	0,93		
	Item 40	Upper %27	150	4,91	0,92	-33,510	.000
		Lower %27	150	1,65	0,75		
Enhancing	Item 18	Upper %27	150	5,73	0,48	-22,445	.000
		Lower %27	150	3,49	1,12		
	Item 23	Upper %27	150	5,77	0,42	-27,435	.000
		Lower %27	150	3,23	1,06		
	Item 26	Upper %27	150	5,55	0,56	-29,367	.000
		Lower %27	150	2,89	0,96		
	Item 31	Upper %27	150	5,73	0,46	-31,151	.000
		Lower %27	150	2,95	0,99		
		Lower %27	150	1,65	0,75		

n=554

Table 8 shows that because groups' mean scores differed significantly for each item (Kelley, 1939), scale comprises items that measure scale construct and are discriminative.

#### Construct validity: Confirmatory factor analysis.

The structure of the Failure Beliefs Scale was tested with CFA in the second stage to examine the accuracy of the scale structure found in the first study with EFA (Tabachnick & Fidell, 2007).

The fit indices obtained for the two-factor "Failure Beliefs Scale" consisting of eight items were examined and given in Table 9 below.

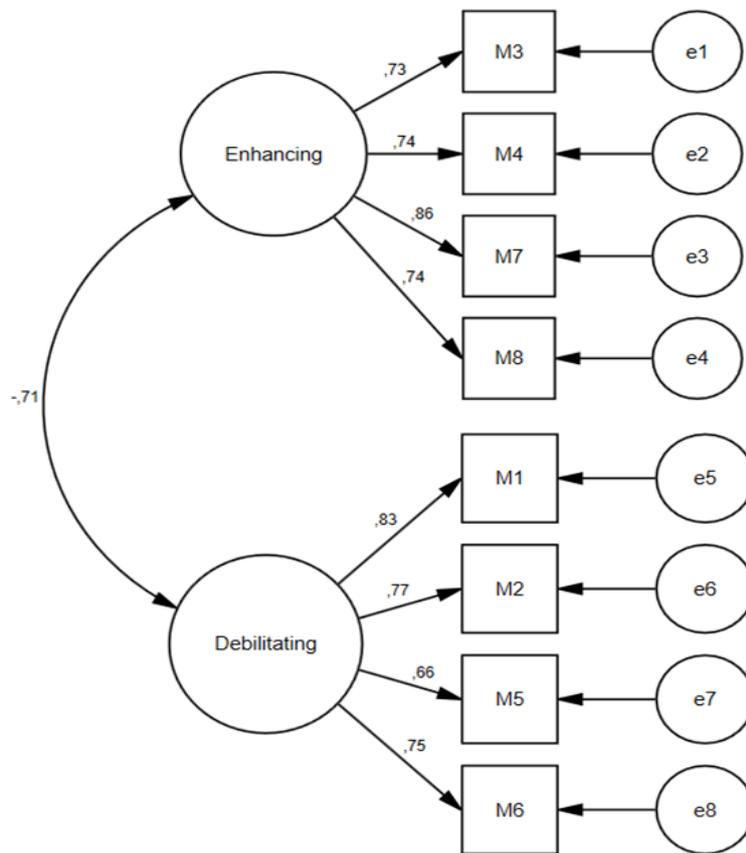
**Table 9.** Failure Beliefs Scale Goodness of Fit Indices.

$\chi^2$	Sd	$\chi^2/sd$	RMSEA	Pclose	CFI	NFI	GFI	AGFI	RMR	SRMR
27,457	19	1,445	,037	,732	,993	,977	,979	,960	,045	,026

The fit values given in Table 9 shows that the goodness of fit indices obtained from the CFA results of the Failure Beliefs Scale indicates a good fit by considering the cut-off values suggested by Marcoulides and Schumacher (2001) and Schermelleh-Engel, Moosbrugger and Müller (2003). Since evaluation of the overall fit indices indicated good fit of the model, a model modification was not needed.

The path diagram obtained with CFA for the eight-item Failure Beliefs Scale is given in Figure 2. Figure 2 shows that the factor loadings of the 8 items in the Failure Beliefs Scale vary between .66 and .86 and are sufficient in terms of the criteria specified for factor loadings (DeVellis, 2017). In conclusion, the goodness-of-fit indices and factor loadings obtained with the analyses provide evidence that the FBS is a valid scale.

**Figure 2.** Failure Beliefs Scale path diagram.



**Measurement invariance.** A step-up approach in examination of different measurement invariance forms respectively as configural, metric, scalar and strict was adopted across genders and the results were reported according to the suggestions made by Punick and Bornstein (2016) in Table 10.

**Table 10.** Measurement Invariance Fit Indexes.

Model	$\chi^2$ (df)	CFI	RMSEA 90% CI	SRMR	TLI	$\Delta\chi^2$ ( $\Delta$ df)	$\Delta$ CFI	$\Delta$ RMSEA	Decision
M1. Configural	40.590 (38)	.998	.021 (.00-.061)	.028	.997	-	-	-	-
M2. Metric	50.293 (44)	.995	.030 (.00-.063)	.053	.993	9.703 (6)	-.003	.009	Accept
M3. Scalar	56.657 (50)	.994	.029 (.00-.061)	.053	.994	6.364 (6)	-.001	-.001	Accept
M4. Strict	71.060 (58)	.989	.038 (.00-.065)	.056	.989	14.403 (8)	-.005	.009	Accept

Note. N = 316; group 1(female) n = 236; group 2(male) n = 80.

When Table 10 is examined and model comparison statistics including the comparisons of M1 to M2, M2 to M3, and finally M4 to M3, were evaluated, it is evident that each comparison met the statistical criteria for changes in chi-square, in addition to alternative fit indices, confirming satisfactory model fit.

### Findings Regarding the Reliability of the Scale

Reliability calculations were made in the two study groups reached in the study. As reliability analysis, Cronbach's alpha, along with McDonald's omega were calculated for both factors for internal consistency.

**Table 11.** Reliability Types and Coefficients.

	Cronbach's alpha		McDonald's Omega		Stability
	EFA Group	CFA Group	EFA Group	CFA Group	Test-retest
First Subscale	.86	.85	.87	.85	.88
Second Subscale	.85	.84	.85	.84	.80

As it is summarized in Table 11, the  $\alpha$  coefficient of the first factor was found .86 in EFA sample and .85 in CFA sample. The  $\alpha$  coefficient of second factor was .85 in EFA and .84 in CFA sample. As a result, since these values are above .70, FBS is found to be internally consistent and reliable (Creswell, 2012).

In addition to the internal consistency evaluation, with a test and retest application, scale reliability over time was ensured. In this context, 37 adults were recruited for this application at three-week intervals, considering the time intervals recommended in the literature (Tavşancıl, 2005). In analysis finding, test-retest reliability of two factors were .88 and .80. Values above .70 provided evidence that the scale was reliable over time (Robinson, Shaver, & Wrightsman, 1991).

## Discussion

This scale development study aims to measure the failure beliefs of adults in Turkish culture by addressing failure, as widely investigated topic in the literature for many years, based on Dweck's implicit theories. Research analyses revealed the eight-item, two-factor Failure Beliefs Scale as an accurate tool in measurement of adults' beliefs about failure within the scope of implicit theories. In this respect, study provides several evidence regarding scale validation. Firstly, qualitative data collection and analysis were conducted with reviewing relevant works, plus participants by focus groups. Building upon these qualitative investigations, scale factor structure was investigated with EFA and CFA and with item discriminative analysis, scale validity was supported. Furthermore, in measurement invariance, scale ensured psychometric equivalence of the construct across genders. Lastly, calculating internal consistency and stability coefficients as alpha, and omega, the scale showed strong reliability evidence.

As the scale structure, two factors in the scale are found to be negatively and moderately related to each other. The first factor of the scale measures the belief that failure is enhancing based on the literature with four items. High scores obtained from this subscale express individuals' beliefs that failure is enhancing. The second factor comprises four items and shows the belief that failure is debilitating. High scores obtained from this subscale indicate individuals' beliefs that failure is debilitating. A minimum score of 4 with a maximum of 24 is obtained from each subscale. No reverse items are included in the tool and two subscales are scored within themselves.

Failure Beliefs Scale with two separate factors seems to create a critical issue that needs to be discussed in the context of implicit theories. In this study, failure beliefs were defined in two different constructs as enhancing and debilitating failure beliefs based on implicit theory research, and in parallel, the scale findings provided evidence for these two different factors. However, it is seen in the literature that the debate on unidimensionality and bidimensionality in measuring implicit beliefs continues (Lüftenegger & Chen, 2017).

The first definitions of these two beliefs within the scope of implicit theory research treat these beliefs with an understanding of two constricting extremes in one single dimension (Dweck et al., 1995). The treatment of these beliefs as two opposite views has manifested itself in the use of unidimensional scales in their measurement. In unidimensional scales used to measure these beliefs, one of the two beliefs is perceived as a reverse item and added to the total score (Blackwell et al., 2007; Crum et al., 2013; Dweck, 2008).

Within implicit theory framework, seeing these two different beliefs as opposite ends of a unidimensional structure is criticized both theoretically and methodologically. Theoretically speaking, Dweck, Chiu, and Hong (1995) stated in their study that people may hold both of these seemingly opposite beliefs at the same time. Indeed, Anderson (1995) mentioned that these beliefs can be easily accessible knowledge structures for people and argued that people can access these beliefs depending on which beliefs are made more visible by specific contexts. Methodologically speaking, considering implicit beliefs as two opposite poles of a single dimension may lead to negative results such as loss of variance between individuals, loss or exaggeration in effect size, or decrease in reliability of scale depending on the method and analysis (MacCallum, 2002). However, similar to this current study results, statistical methods used in other current scale development studies supported the two-dimensional structure for these beliefs. For example, Dupeyrat and Marine (2005) found evidence for two separate factors in their study using exploratory factor analysis. Besides, Tempelaar et al. (2014) found that, using confirmatory factor analysis, structure with two separate factors showed a superior fit compared to others in their study. Summing up, many other studies using new statistical methods presents evidence to support the two-dimensional structure found in this study (De Castella & Bryne, 2015; Spinath et al., 2003).

### Conclusion

Consequently, FBS generated in this research provided accurate proof to be a valid and reliable scale, in the measurement of adults' failure beliefs. Regarding this context, it is thought that this scale will offer significant theoretical insights and practical implementations to the related literature. This scale will contribute to works that will examine individuals' perceptions and experiences of failure in the fields of education and career. Moreover, testing the scale in different sample groups may be offered as a contribution to addressing failure in different contexts. Finally, there are some limitations in this scale development study. It is seen that most of the study groups consisted of women and individuals from middle social economic status. In this context, to overcome this limitation, it may be recommended to ensure more intensive participation of men and individuals from different social economic levels in different studies to be conducted in the future.

**Author Contributions:** All authors have worked together and cooperatively in the study and each of them substantially contributed to the work.

**Funding Disclosure:** Authors did not receive any funding regarding this research.

**Conflicts of Interest:** There is no conflict of interest.

**Data Availability:** The data is available from the corresponding researcher.

**Ethics Approval and Consent to Participate:** The ethical committee of Gazi University approved this research on December 7, 2021 (No:2021-1113).

### References

- Anderson, C. A. (1995). Implicit theories in broad perspective. *Psychological Inquiry*, 6(4), 286–290. Retrieved from <https://www.jstor.org/stable/1448941>
- Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review*, 64(1), 359–372. <https://doi.org/10.1037/h0043445>

- Berger, S., & Freud, A. M. (2012). Fear of failure, disorganization, and subjective well-being in the context of preparing for an exam. *Swiss Journal of Psychology*, 71(2), 83–91. <https://doi.org/10.1024/1421-0185/a000074>.
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78(1), 246–263. <https://doi.org/10.1111/j.14678624.2007.00995.x>
- Cannon, M. D., & Edmondson, A. C. (2001). Confronting failure: Antecedents and consequences of shared beliefs about failure in organizational work groups. *Journal of Organizational Behavior*, 22(2), 161–177. <https://doi.org/10.1002/job.85>.
- Caraway K., Tucker C. M., Reinke W. M. & Hall C. (2003). Self-efficacy, goal orientation, and fear of failure as predictors of school engagement in high school students. *Psychology in the Schools*, 40(1), 417–427. <https://doi.org/10.1002/pits.10092>
- Cattell, R. B. (1966). The screen test for the number of factors. *Multivariate Behavioral Research*, 1(2), 245–276. [https://doi.org/10.1207/s15327906mbr0102\\_10](https://doi.org/10.1207/s15327906mbr0102_10)
- Chiu, C. Y., Hong, Y. Y. & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology*, 73(1), 19–30. <https://doi.org/10.1037/00223514.73.1.19>
- Choi, I., & Nisbett, R. E. (2000). Cultural psychology of surprise: Holistic theories and recognition of contradiction. *Journal of Personality and Social Psychology*, 79(6), 890–905. <https://psycnet.apa.org/doi/10.1037/0022-3514.79.6.890>
- Conroy, D. E., & Elliot, A. J. (2004). Fear of failure and achievement goals in sport: Addressing the issue of the chicken and the egg. *Anxiety Stress and Coping*, 17(3), 271–285. <https://doi.org/10.1080/10615800412336427>
- Conroy, D. E., (2001). Progress in the development of a multidimensional measure of fear of failure: The performance failure appraisal inventory (PFAI). *Anxiety, Stress, and Coping*, 14(1), 431–452. <https://doi.org/10.1080/10615800108248365>
- Conroy, D. E., Willow, J. P., & Metzler, J. N. (2002). Multidimensional measurement of fear of failure: The Performance Failure Appraisal Inventory (PFAI). *Anxiety, Stress & Coping*, 14, 431–52. <https://doi.org/10.1080/10413200252907752>
- Creswell, J. W. & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research*. (3. Ed.) Sage
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. (2 Ed.). Sage.
- Creswell, J. W. (2017). *Araştırma deseni: Nitel, nicel ve karma yöntem yaklaşımları*. (S. B. Demir, Trans. Edt.). Eğiten Kitap.
- Crocker, J., Brook, A. T., Niiya, Y., & Villacorta, M. (2006). The pursuit of self-esteem: Contingencies of self-worth and self-regulation. *Journal of Personality*, 74(6), 1749–1772. <https://doi.org/10.1111/j.1467-6494.2006.00427.x>.
- Crum, A. J., Salovey, P., & Achor, S. (2013). Rethinking stress: The role of mindsets in determining the stress response. *Journal of Personality and Social Psychology*, 104(4), 716. <https://psycnet.apa.org/doi/10.1037/a0031201>
- De Castella, K., & Byrne, D. (2015). My intelligence may be more malleable than yours: the revised implicit theories of intelligence (self-theory) scale is a better predictor of achievement, motivation, and student disengagement. *European Journal of Psychology of Education*, 30(3), 245–267. <https://doi.org/10.1007/s10212-015-0244-y>
- De Castella, K., Byrne, D., & Covington, M. (2013). Unmotivated or motivated to fail: A cross-cultural study of achievement motivation, fear of failure, and student disengagement. *Journal of Educational Psychology*, 105(3), 861–880. <https://doi.org/10.1037/a0032464>.
- DeVellis, R. F. (2017). *Scale development: Theory and applications* (27. Eds.). Sage.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(1), 1087–1101. <https://psycnet.apa.org/doi/10.1037/0022-3514.92.6.1087>

- Dupeyrat, C., & Mariné, C. (2005). Implicit theories of intelligence, goal orientation, cognitive engagement, and achievement: A test of Dweck's model with returning to school adults. *Contemporary Educational Psychology*, 30(1), 43–59. <https://doi.org/10.1016/j.cedpsych.2004.01.007>
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41(10), 1040-1048. <https://psycnet.apa.org/doi/10.1037/0003-066X.41.10.1040>
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Psychology Press.
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House.
- Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current Directions in Psychological Science*, 17, 391–394. <https://doi.org/10.1111/j.1467-8721.2008.00612.x>
- Dweck, C. S., & Master, A. (2009). Self-theories and motivation: Students' beliefs about intelligence. In K.R. Wentzel and A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 123-140). Routledge.
- Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: a world from two perspectives. *Psychological Inquiry*, 6(4), 267-285. Retrieved from <https://www.jstor.org/stable/1448940>
- Dweck, C.S. & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273. <https://doi.org/10.1037/0033295X.95.2.256>
- Dweck, C.S. & Master, A. (2008). Self-theories Motivate Self-Regulated Learning. In D. Schunk & B. Zimmerman (Eds). *Motivation and Self-Regulated Learning: Theory, Research, and Applications* (pp. 31-51). Erlbaum.
- Dweck, C.S. & Molden, D. (2006). Self-theories: their impact on competence motivation and acquisition. In A. Eliot and C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 122-140). The Guilford Press.
- Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, 34(3), 169-189. [https://doi.org/10.1207/s15326985ep3403\\_3](https://doi.org/10.1207/s15326985ep3403_3)
- Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review*, 13(1), 73–92. <https://doi.org/10.1023/A:1009009018235>
- Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: approach and avoidance temperaments and goals. *Journal Of Personality and Social Psychology*, 82(5), 804-818. <https://doi.org/10.1037//0022-3514.82.5.804>
- Elliot, A.J., & Thrash, T.M. (2004). The intergenerational transmission of fear of failure. *Personality and Social Psychology Bulletin*, 30(1), 957-971. <https://doi.org/10.1177/0146167203262024>
- Elliott, E. S., & Dweck, C. S. (1988). Goals: an approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54(1), 5-12. <https://doi.org/10.1037/0022-3514.54.1.5>
- Erkuş, A. (2011). *Davranış bilimleri için bilimsel araştırma süreci*. Seçkin.
- Erkuş, A. (2012). *Psikolojide ölçme ve ölçek geliştirme*. Pegem.
- Güneş, Ö. (2022). Failure attributions and metacognitive awareness of EFL learners. *Language Awareness*, 31(1), 53-72. <https://doi.org/10.1080/09658416.2021.1960538>
- Güneş, Ö. (2022). Failure attributions and metacognitive awareness of EFL learners, *Language Awareness*, 31(1), 53-72, <https://doi.org/10.1080/09658416.2021.1960538>
- Haimovitz, K., & Dweck, C. S. (2016). What predicts children's fixed and growth intelligence mindsets? Not their parents' views of intelligence but their parents' views of failure. *Psychological Science*, 27(1), 859–869. <https://doi.org/10.1177/0956797616639727cle2017>.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. *But... Communication Methods and Measures*, 14(1) 1-24. <https://doi.org/10.1080/19312458.2020.1718629>
- Hayton, J. C., Allen, D. G & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, 7(2), 191-205. <https://doi.org/10.1177/1094428104263675>

- Hong, Y. Y., Chiu, C. Y., Dweck, C. S., Lin, D. M. S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology*, 77(3), 588-599. <https://doi.org/10.1037/0022-3514.77.3.588>
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, 30(2), 179-185. <https://doi.org/10.1007/BF02289447>
- Ikedo, M., & Misawa, R. (2012). Conceptualization and measurement of beliefs about failure. *Japanese Journal of Educational Psychology*, 60(4), 367-379. <https://doi.org/10.5926/jjep.60.367>.
- Ji, L.-J., Peng, K., & Nisbett, R. E. (2000). Culture, control, and perception of relationships in the environment. *Journal of Personality and Social Psychology*, 78(5), 943-955. <https://doi.org/10.1037/0022-3514.78.5.943>
- Kahraman, N., & Sungur, S. (2016). Adaptation of the Performance Failure Appraisal Inventory (PFAI) into Turkish. *Journal of Kirsehir Education Faculty*, 17(3), 223-239. <https://doi.org/10.1080/1750984X.2021.1901299>
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20(1), 141-151. <https://doi.org/10.1177/001316446002000116>
- Kelley T. L. (1939). The selection of upper and lower groups for the validation of test items. *Journal of Educational Psychology*, 30(1), 17-24. <https://psycnet.apa.org/doi/10.1037/h0057123>
- Kline, R. B. (2015). *Principles and practice of structural equation modeling*. (4<sup>th</sup> Ed.) Guilford.
- Lee, K. (1996). A study of teacher responses based on their conceptions of intelligence. *Journal of Classroom Interaction*, 31(2), 1-12. Retrieved from <https://www.jstor.org/stable/23870415>
- Lüftenegger, M., & Chen, J. A. (2017). Conceptual issues and assessment of implicit theories. *Zeitschrift für Psychologie*, 225(2), 99-106. <https://doi.org/10.1027/2151-2604/a000286>
- MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, 7(1), 19-40. <https://doi.org/10.1037//1082-989X.7.1.19>
- Marcoulides G., Schumacher R. (2001). *New developments and techniques in structural equation modeling*. Lawrence Erlbaum.
- Martignoni, D., & Keil, T. (2021). It did not work? Unlearn and try again—Unlearning success and failure beliefs in changing environments. *Strategic Management Journal*, 42(6), 1057-1082. <https://doi.org/10.1002/smj.v42.610.1002/smj.3261>
- Martin, A. J. & Marsh, H. W. (2003) Fear of failure: Friend or foe?, *Australian Psychologist*, 38(1), 31-38, <https://doi.org/10.1080/00050060310001706997>
- Martin, A. J. (2002). Motivation and academic resilience: Developing a model of student enhancement. *Australian Journal of Education*, 46(1), 34-49.
- McClelland, D. C. (1965). Toward a theory of motive acquisition. *American Psychologist*, 20(1), 321-333. <https://doi.org/10.1037/h0022225>
- Neff, K. D., Hsieh, Y.-P., & Dejjterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity*, 4(3), 263-287. <https://doi.org/10.1080/13576500444000317>
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108(2), 291-310. <https://doi.org/10.1037//0033-295X.108.2.291>
- Nishimura, T., Seo, M., Uesaka, Y., Manalo, E., Tanaka, E., & Ichikawa, S. (2017). Development of a scale about failure beliefs in academic activities. *Japanese Journal of Educational Psychology*, 65(2), 197-210. <https://doi.org/10.5926/jjep.65.197> .
- O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments and Computers*, 32(3), 396-402. <https://doi.org/10.3758/BF03200807>
- Osborne, J. W. (2015). What is rotating in exploratory factor analysis?. *Practical Assessment, Research, and Evaluation*, 20(1), 2. <https://doi.org/10.7275/hb2g-m060>
- Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, 41(2016), 71-90. <https://doi.org/10.1016/j.dr.2016.06.004>

- Robins, R. W. & Pals, J. L. (2002). Implicit Self-Theories in the academic domain: implications for goal orientation, attributions, affect and self-esteem change. *Self and Identity*, 1(4), 313-336. <https://doi.org/10.1080/15298860290106805>
- Robinson, J. P., Shaver, P. R. ve Wrightsman, L. S. (1991). *Criteria for scale selection and evaluation, in measures of personality and social psychological attitude*. Academic Press.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2), 23-74.
- Schumacher, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modeling* (3rd ed.). Routledge.
- Spinath, B., Spinath, F. M., Riemann, R., & Angleitner, A. (2003). Implicit theories about personality and intelligence and their relationship to actual personality and intelligence. *Personality and Individual Differences*, 35(4), 939-951. [https://doi.org/10.1016/s0191-8869\(02\)00310-](https://doi.org/10.1016/s0191-8869(02)00310-)
- Sucuoglu, H. (2014). Construct validity of success/failure attribution scale among Turkish university students. *Educational Research and Reviews*, 9(11), 326-339. <https://doi.org/10.5897/ERR2014.1768>
- Sucuoglu, H. (2014). Construct validity of success/failure attribution scale among Turkish university students. *Educational Research and Reviews*, 9(11), 326-339. <https://doi.org/10.5897/ERR2014.1768>
- Tabachnick, B. G. ve Fidell, L. S. (2007). *Using multivariate statistics*. Allyn and Bacon.
- Tavşancıl, E. (2005). *Tutumların ölçülmesi ve SPSS ile veri analizi*. (2. baskı) Nobel.
- Tempelaar, D. T., Rienties, B., Giesbers, B., & Gijselaers, W. H. (2014). The Pivotal role of effort beliefs in mediating implicit theories of intelligence and achievement goals and academic motivations. *Social Psychology of Education*, 18(1), 101-120. <https://doi.org/10.1007/s11218-014-9281-7>
- Todd, F. L. (2017). Evidence regarding the internal structure: Confirmatory factor analysis. *Measurement and Evaluation in Counseling and Development*, 50(4), 239-247, <https://doi.org/10.1080/07481756.2017.1336929>
- Weiner, B. (1972). *Theories of motivation: From mechanisms to cognition*. Markham.
- Weiner, B. (2010). The development of an attribution-based theory of motivation: A history of ideas, *Educational Psychologist*, 45(1), 28-36, <https://doi.org/10.1080/00461520903433596>
- Worthington R. L., Whittaker T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(1), 806 – 838. <https://doi.org/10.1177/0011000006288127>
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, 47(4), 302-314. <https://doi.org/10.1080/00461520.2012.722805>

## Appendix

## Başarısızlık İnançları Ölçeği

1'den 6'ya doğru ifadelere katılım düzeyi artmaktadır.

N.	Ölçek Maddeleri	Kesinlikle katılımıyo	Katılmıyo rum	Biraz katılımıyo	Biraz katılımıyo	Katılıyor m	Kesinlikle katılımıyo
1	Başarısız olmak kendime güvenimi olumsuz etkiler.	1	2	3	4	5	6
2	Bir işte başarısız olmak o işi yapmaya yönelik motivasyonumu düşürür.	1	2	3	4	5	6
3	Başarısızlıktan kaçınmak yerine faydalanmak gerektiğine inanıyorum.	1	2	3	4	5	6
4	Başarısızlıklar gelişmeme destek olur.	1	2	3	4	5	6
5	Başarısızlıklar hayatımızda olumsuz izler bırakır.	1	2	3	4	5	6
6	Başarısız olmak performansımı düşürür.	1	2	3	4	5	6
7	Başarısızlık deneyimlerimin her biri benim için bir fırsattır.	1	2	3	4	5	6
8	Başarısızlıklarımın beni daha iyi başarılarla hazırladığını düşünüyorum.	1	2	3	4	5	6



## RESEARCH ARTICLE

# The Efficacy of EMDR-Focused Group Counseling Program Applied to Primary School Students with PTSD Symptoms in Grief Process

Esra TEKE<sup>a</sup>  Selahattin AVŞAROĞLU<sup>b, c</sup> 

<sup>a</sup>Malatya Turgut Ozal University, Malatya, Turkey, <sup>b</sup>Necmettin Erbakan University, Konya, Turkey,

<sup>c</sup>Akhmet Yassawi University, Turkistan, Kazakhstan

## ARTICLE HISTORY

**Received:** 26.08.2023

**Accepted:** 25.11.2023

## KEYWORDS

Grief, PTSD, EMDR,  
Group Counseling  
Program.

## ABSTRACT

The purpose of the paper is to examine the efficacy of the EMDR-focused group counseling program applied to primary school students who show PTSD symptoms in grief process. The research is quasi-experimental, pretest posttest and follow-up design with a control group. Participants were 12 students; each of the experimental group and the control group consisted of 6 students. Child PTSD Symptom Scale (CPSS) was utilized in the research. EMDR-focused group counseling program was applied to the experimental group students. For data analysis, Mann Whitney U Test was used for intergroup comparisons; Friedman Test and Wilcoxon Signed Rank Test were used for intragroup comparisons. The result of the analysis revealed that in intragroup comparisons, the mean scores of the entire subscales of CPSS, which are reexperiencing ( $p<0.05$ ), avoidance ( $p<0.05$ ) and hyperarousal ( $p<0.05$ ), of the experimental group students who participated in the EMDR-focused group counseling program differed significantly. In order to identify the measurements causing the difference, multiple comparison tests were conducted. It is detected that the reexperiencing ( $p<0.05$ ) and hyperarousal ( $p<0.05$ ) subscales score means of the experimental group students decreased significantly from the pretest to the follow-up test, the mean score of the avoidance ( $p<0.05$ ) subscale decreased significantly from the pretest to the posttest. Regarding the intragroup comparisons, it was found that follow-up measures of reexperiencing ( $p<0.05$ ), avoidance ( $p<0.05$ ) and hyperarousal ( $p<0.05$ ) scores of the experimental group decreased significantly. Based on the results, the EMDR-focused group counseling program is effective in reducing the symptoms of primary school students who show PTSD symptoms in grief process. The current study ought to be examined and supported by further research.

Three concepts are noticeable for the process experienced following the loss of a beloved one; bereavement, mourning and grief. Although these concepts are used interchangeably, they differ from each other in sense (Gordon, 2013). The first concept bereavement is the expression of loss of a beloved one (Gizir, 2006). It is being in a distressing situation and the realization of the deficiency of something important which devastate one's life. The second concept is mourning which is the outer reflection of inner grief experience. Mourning is socially and culturally constructed, as every society has its own methods and rituals for expressing sadness. The final concept, grief is both a process and a consequence. It is deprivation and painful separation from a beloved one unexpectedly (Abi-Hashem, 2017). Besides, mourning is a natural reaction of individuals following a loss (Avcı, 2019; Bildik, 2013; Dyregrov & Dyregrov, 2008; Önal & Yalçın, 2019; Savaş, 2020).

**CORRESPONDING AUTHOR** Esra TEKE, [esradogru1@gmail.com](mailto:esradogru1@gmail.com), ORCID: 0000-0002-8436-2169, Malatya Turgut Ozal University, Malatya, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counseling and Guidance Association

Loss responses are universal since it concerns all the people to lose someone loved which is an unavoidable experience that frequently occurs. However the responses may vary in some way such as length and intensity. Because the form and course of grief is individual (Neria & Litz, 2004). To illustrate; the closeness of the people (Balcı & Korkmaz, 2020), the type of loss experienced, the personality traits of the people who are grieving, their coping levels and methods, the quality of the relationship with the deceased person, how the death occurred and the age of the mourner (Savaş, 2020) can be effective in the formation of individual differences and the diversification of the responses of individuals.

Reactions of people can be emotional, physical, cognitive and behavioral in grief process (Bildik, 2013; Di Ciacco, 2008). In general, emotional reactions such as shock, denial, sadness, anxiety, loneliness, anger, helplessness, guilt, hopelessness; physical symptoms such as heart ache, sensitivity to noise, shortness of breath, weakness; cognitive responses such as hallucinations, forgetfulness, distraction, negative thoughts; behavioral reactions such as sleeping and eating problems, using alcohol or another substance (drugs), avoiding social environment and stimuli reminding the deceased person and/or not being able to separate from these stimuli, rejecting the fact of death and seek the deceased person can be seen (Fitzgerald, 2013; Oltjenbruns, 2013; Talwar, 2011; Zara, 2011). In addition; social interpersonal dynamics as well as financial changes; search for spiritual meaning and existential suffering can be seen (Winokuer & Harris, 2016).

The variety of people's reactions caused the formation of concepts, such as normal grief, complex grief and traumatic grief defined in the literature (Balcı & Korkmaz, 2020). Grief is natural and as a natural consequence of loss, various reactions are seen in individuals which means normal grief. However, cases in which the normal grief process is incomplete and cannot be completed, normal grief can evolve into complex grief or disordered psychiatric conditions (for example, severe depression and anxiety) (Abi-Hashem, 2017). Occasionally; sudden, unexpected, terrible losses affect the normal grief process and traumatic grief occur as a consequence (Parkes, 2001). In such cases, adults and children may show post-traumatic stress disorder (PTSD) symptoms after losses (Hall, 2014; Kissane & Parnes, 2014). Post-traumatic stress disorder is the disorder that individuals expose a traumatic event through witnessing or experiencing as well as experience the trauma with the initial day intensity even after a long period (Davison & Neale, 2004; Deblinger et al., 1999), and the situation becomes chronic (Işıklı & Keser, 2020).

Children, in particular, may experience many traumatic experiences because their coping skills are not well developed and they are vulnerable (Gordon & Wraith, 1993; Li & Cui, 2020) and they may show signs of PTSD (Molero et al., 2019; Olivier et al., 2022). For children, the death of a beloved one is a difficult situation to cope with. In addition, children who witness the traumatic death of their beloved ones may develop PTSD symptoms (Banoğlu & Korkmazlar, 2022; Jarero et al., 2008; Jayatunge, 2008). The meaning they attribute to the trauma and the developmental periods they are in can be effective on these symptoms developed by children (Zara, 2011).

Primary school children can experience intense feelings during trauma. Hesitation can be seen on cognitive functions due to their death threat perceptions. The children may find it difficult to distinguish the fears and other feelings they experience. They may state that they do not feel anything and may show post-traumatic avoidance symptoms (Uslu & Kılıç, 2000). In addition to avoiding reminders of the deceased person (such as their birthday, talking about them), children may relive the traumatic memory (such as recurrent thoughts or dreams regarding the troubling memory, how the person died), and may show hyperarousal reactions (e.g., increased timidity, reaction to loud noises and anger). Furthermore, children may suffer from emotional, behavioral and cognitive disorders (such as pessimism, difficulty in concentrating, having new fears), blame themselves hence their school performance may decrease (Cohen & Mannarino, 2011). Because of the fact that the children's coping skills are underdeveloped and vulnerable (Gordon & Wraith, 1993; Li & Cui, 2020), they need support in reducing PTSD symptoms in grief process (Zara, 2011).

The grief has been extensively studied in recent years. Many studies have focused on effectiveness of therapies on grief. For instance; narrative therapy in the grieving process (Neimeyer, 1999), acceptance and commitment therapy (Davis et al., 2020; Jones et al., 2022), emotion-focused therapy (Jianxiu, 2009), cognitive-behavioral therapy (Lacasta & Cruzado, 2023; Trembl, 2021) and EMDR therapy (Solomon & Rando, 2007). In particular,

EMDR stands out as an effective approach in reducing PTSD symptoms in a meaningful way in grief process and in reaching positive memories regarding the deceased person (Sprang, 2001).

EMDR therapy refers to the psychological counselor's imaginative revealing the past or traumatic experiences of the clients via eye movements and other bilateral stimuli (two-way sound or tactile stimuli) (Denizli, 2008). The therapy desensitizes individuals to traumatic events and enables them to reprocess their traumatic memories and create new meanings (Korkmazlar et al., 2020). EMDR utilizes different therapy approaches and possesses standard treatment procedures (Gomez, 2020). Developed by Shapiro, the therapy method enables simultaneous cognitive, emotional and somatic information processing via accessing different aspects of trauma memories (Gomez, 2020). EMDR therapy can be performed on both adults and children (Merdan-Yıldız et al., 2021).

Application of EMDR on children, diverse to adults, is performed in a more flexible manner, considering their developmental periods. "Developmental EMDR" protocol is used in applications implemented regarding the developmental levels of children (Banoğlu & Korkmazlar, 2022). In applications for children, it is significant to develop their resources. In addition, attention spans of children vary depending on their developmental level, and their attention spans are shorter in comparison to adults. Hence short bilateral stimulation (BLS) sets are applied in the studies. Meanwhile, families are also included in the studies conducted with children (Gomez, 2020), and the process involves the use of various techniques, including play therapy, family therapy, and art therapy. (Korkmazlar & Uğurlu, 2021).

The EMDR therapy is implemented in eight phases (Shapiro, 1999; Solomon & Shapiro, 2008). The phases are; taking the client's story, preparation, assessment, desensitization, installation, body scanning, completion and reevaluation (Kavakcı et al., 2010; Shapiro, 2016). The eight phases of EMDR therapy followed in individual counseling are identically followed in group EMDR counseling. In this context, the first step of the eight phases followed in the EMDR Group Protocol (EMDR-GP/C) developed for children is acquaintance. At this phase, children are informed on the nature of the trauma and group rules. The second phase is the preparation phase. At this phase, resource studies are fulfilled to develop children's support systems. In the third phase, the assessment phase, the worst image is drawn and the current feelings, sensations and thoughts of the client are taken. SUD and VOC levels are determined. In the fourth phase, desensitization, drawings are made on different papers accompanied by bidirectional stimuli. In the installation phase which is the fifth phase, placement is performed with a healing story. In the sixth phase, body scanning, positive body sensations are reprocessed. In the seventh phase, the completion and the future template phase, is the phase of strong closure with artwork. The eighth phase is the phase of reevaluation (Banoğlu & Korkmazlar, 2022).

EMDR provides a rapid and effective treatment in reducing the negative symptoms observed in children after critical events. Lack of effective treatment cause their personalities to be shaped around the traumatic event and their risk of developing psychological disorders increases in the later stages of life. Even after a long period since the traumatic event, the experiences may have a serious negative effect on their psychological functioning (Fernandez, 2007). Therefore it is essential to approach the situation both professionally and promptly.

Numerous national and international evaluations have demonstrated the efficacy of EMDR therapy (Abdi et al., 2021; Acartürk et al., 2015; Aduriz et al., 2011; Aydın, 2015; Barron et al., 2019; Chen et al., 2018; Denizli, 2008; Edmond et al., 1999; Every-Palmer et al., 2019; Fernandez et al., 2003; Güçlü & Alkar, 2021; Jarero et al., 2006; Karadağ et al., 2021; Karadağ et al., 2010; Lehnung et al., 2017; Meentken et al., 2020; Mukba et al., 2020; Perilli et al., 2019; Tarquinio et al., 2012; Yurtsever et al., 2018; Zaghrou-Hodali et al., 2008). Besides, individual and group EMDR studies with children, involving bereaved children, report that EMDR is effective in reducing PTSD symptoms (Ahmad et al., 2007; Bayhan et al., 2022; Hurn & Barron, 2018; Jarero et al., 2008; Korkmazlar-Oral & Pamuk, 2002; Korkmazlar et al., 2020). Moreover, several studies have reported that EMDR therapy provides effective treatment and assert that its implementation in schools can be significant in terms of reaching a substantial number of children promptly (Chemtob et al., 2002; Fernandez et al., 2003).

Studies have reported that disasters and epidemic periods can lead to adverse outcomes together with traumatic experiences (Goldmann & Galea, 2014) and EMDR therapy is suggested to be employed for post-traumatic counseling practices at schools (Denizli, 2008). In this context, considering the losses experienced following the earthquake and flood disasters that deeply affected our country, as well as the COVID-19 epidemic, and the PTSD symptoms that emerged in grief process following the losses, the importance of the intervention studies to be implemented in schools for disaster and epidemic periods is realized. In this case, the current study can be suggested as a qualified model for intervention studies to be performed in schools.

Examining the research in the literature in which the EMDR group protocol was applied for children it is evident that these research were generally carried out in disaster areas. Moreover, group work in these regions is generally completed in three hours, with a break every ninety minutes (Korkmazlar-Oral & Pamuk, 2002). However, this study, in which an EMDR-focused group counseling program applied to students who showed signs of PTSD in grief process, was carried out in a primary school. The sessions involved comprehensive reference work, activities were organized considering the requirements of the students and the problem situation. The implementations were seven-week sessions and each session lasted for 50 minutes. In this aspect, the research is considered to be a significant resource for researchers and consultants for further studies. In addition, via applying this study in schools, countless number of students can be reached, as well as the positive effects of the group (individual's feeling not being alone, feeling of confidence and comfort, learning and practicing new behaviors) can be benefited by participants. As a result, the aim of this paper is to examine the efficacy of the EMDR-focused group counseling program applied to primary school students showing PTSD symptoms during the grief process.

## Methodology

### Study Design

This paper aims to examine the efficacy of the EMDR-focused group counseling program applied to primary school students who show PTSD symptoms in grief process. The research is quasi-experimental, pretest posttest and follow-up design with a control group. In the 2x3 split-plot design, used in the research, independent treatment groups (experimental and control) are shown in the first factor, and repeated measurements of the dependent variables (pretest-posttest-follow up test) are shown in the second factor (Büyüköztürk et al., 2012). The model used in the research is given in Table 1.

**Table 1.** Research Model

Group	Pretest	Process	Posttest	Follow-up test (Three months later)
Experiment	CPSS implementation	EMDR-focused group counseling program	CPSS implementation	CPSS implementation
Control	CPSS implementation	---	CPSS implementation	CPSS implementation

Note. CPSS: Child PTSD Symptom Scale

The independent variable of the research is EMDR-focused group counseling program while the PTSD symptom levels of primary school students in grief process is the dependent variable. Following the experimental and control groups were formed in the research, pretests were administered to all participants in the groups. Subsequently the students in the experimental group were applied an EMDR-focused group counseling program for a 7-week period and following the completion of the experimental process, posttests were administered to all the participants. The follow-up tests were administered to all participants three months following the posttest measurements.

### Participants

The research population was formed with 3<sup>th</sup> and 4<sup>th</sup> grade primary school students from Selçuklu, Konya in the 2021-2022 academic year. To be able to determine the subjects to participate in the study, a trauma screening was conducted initially. In this regard, the researcher explained the term "trauma" at classrooms, subsequently requested the students to write their any traumatic experiences on the papers distributed in advance. 86 students out of 305 students wrote down their traumatic experiences on the papers. 54 of the

students stated death (mother, father, uncle, grandfather, grandmother, death of a pet and so forth) as a traumatic experience. The researcher administered the personal information form and Child PTSD Symptom Scale to all 41 students who wrote the death of their mother, father, grandmother and grandfather as a single trauma, with whom they had an attachment relationship.

Following the administration of the scales, the score of each student was computed and the scores were listed. The psychometric properties of the scale were considered for the assessment of the scale scores and the students in the experimental and control groups were determined by random assignment among the students with high scores. The opinions of the teachers and the families of the students were taken and the students who might have a high PTSD symptom level were clarified. Consequently, there were six students in both experimental group and in the control group.

Inclusion criteria were also considered for the determination of the subjects within the scope of the study. Inclusion criteria were determined as "volunteering to work", "not using medication", "not having any diagnosis" and "not receiving precedent treatment". However, it is a considerable point that in experimental studies, controlling the possible effects of confounding factors, of which effects are not investigated in the research, affect dependent variables (Ulaşan, 2018). Thus, the risk was tried to be eliminated by using a control group that could be comparable to the experimental group in the study.

The study ensured that there was balance between students in the experimental and control groups in terms of age, grade levels, traumatic experiences and genders. In this context, four female and two male students were recruited in both experimental group and control group. Table 2 shows how the students in the study sample are distributed by gender.

**Table 2.** Distribution of The Students According to the Experimental and Control Groups

Groups	Female		Male		Total	
	N	%	N	%	N	%
Experimental Group	4	66.7	2	33.3	6	100
Control Group	4	66.7	2	33.3	6	100

As presented in Table 2, four (66.7%) of the six students in the experimental group were female and two (33.3%) were male students. Likewise, four (66.7%) of the six students in the control group were female and two (33.3%) were male students.

The initial analysis involved using the Mann Whitney U Test to ascertain any significant differences between the experimental and control groups so as to be able to select eligible students to the experimental group and control group for the research. The Mann Whitney U Test scores of the Child PTSD Symptom Scale pretest scores administered to the experimental and control groups are presented in Table 3.

**Table 3.** Mann Whitney U Test Results Regarding the Pretest Scores of the Experimental and Control Groups

Dependent Variable	Group	N	Rank Mean	Rank Total	U	z	p
Reexperiencing	Experimental	6	7.50	45.00	12.00	-0.978	0.394
	Control	6	5.50	33.00			
Avoidance	Experimental	6	6.08	36.50	15.50	-0.405	0.699
	Control	6	6.92	41.50			
Hyperarousal	Experimental	6	6.08	36.50	15.50	-0.408	0.699
	Control	6	6.92	41.50			

As observed in the Table 3; there is no significant difference between the scores of reexperiencing (U=12.00, p>.05), avoidance (U=15.50, p>.05) and hyperarousal (U=15.50, p>.05), which are the subscales of the Child PTSD Symptom Scale administered as pretests to the experimental and control groups. The findings emphasized that the students in the experimental group and control group were equivalent prior to the experimental implementation in terms of pretest scores so that they fulfilled the prerequisite of the experimental implementation.

### Instruments

Personal Information Form and Child PTSD Symptom Scale were utilized to collect data for the research.

**Personal Information Form.** It was created by the researchers for demographic information of the students. The personal information form involves information regarding the gender, age, grade level and traumatic experiences of the students.

**Child PTSD Symptom Scale (CPSS).** The scale was developed by Foa et al. (2001) and adapted to Turkish by Kadak et al. (2014). The scale is for children and adolescents aged between 8 and 18. It consists of three subscales: avoidance, hyperarousal and reexperiencing. The Cronbach Alpha internal consistency coefficient of the scale was 0.89 for the overall score of the scale; for the subscales it was calculated; 0.77 for reexperiencing, 0.77 for avoidance, and 0.70 for hyperarousal. The CPSS showed not only good convergent validity with PTSD Response index scores but also good divergent validity with the State-Trait Anxiety Inventory for Children and the Child Depression Inventory. The CPSS was able distinguish individuals with low PTSD symptoms from those with high PTSD symptoms which is evidence for a significant discriminant validity (Kadak et al., 2014).

### Development and Administration Process of EMDR-Focused Group Counseling Program

The main purpose of the EMDR-focused group psychological counseling program is to decrease the PTSD symptom levels of primary school students who show symptoms of PTSD in grief process. The program has been prepared based on the "EMDR Group Protocol for Children" developed by Ümran Korkmazlar. In addition, the program is structured considering "Worden's Grief Tasks Model" as well as the avoidance, hyperarousal and reexperiencing subscales of PTSD.

Prior to developing the EMDR-focused group counseling program, the researcher received EMDR adult and child training, supervision and EMDR Group Protocol training. Subsequently considering the age and developmental characteristics of the students, the "EMDR Group Protocol for Children" developed by Ümran Korkmazlar and the studies and group sessions on EMDR, PTSD and grief were examined and the relevant national and international evaluations were reviewed (Adler-Tapia & Settle, 2020; Banoğlu & Korkmazlar, 2022; Bayhan et al., 2022; Çitil Akyol, 2021; Gençtürk, 2019; Gomez, 2020; Heegaard, 2011; Knipe, 2020; Korkmazlar, 2017; Korkmazlar-Oral & Pamuk, 2002; Korkmazlar et al., 2020; Külahçioğlu, 2017; Olivier et al., 2022; Önel & Yalçın, 2019; Shapiro, 2016; Van der Kolk, 2000; Worden, 2003; Yılmaz Dinç, 2021). Following the reviews, a further supervision from Ümran Korkmazlar was received and the draft of the program was created. In addition, the draft of the program was presented to school counselors working with primary school students as well as to faculty members of different universities working on EMDR and group counseling. In this context, the target behaviors in the program, the activities included in the program, the duration and the general flow of the sessions were examined by experts. As a result of their feedback several amendments were fulfilled. Consequently, the preliminary application of the developed program was performed.

Following the preliminary application, the necessary revisions were carried out with the aid of expert opinion. Due to the fact that some activities wasted plenty of time, they were shortened. In addition, it was observed that the instructions of some activities were not entirely comprehended and necessary arrangements were fulfilled. Moreover, in the evaluations conducted at the end of each session, it was detected that the targeted behaviors were acquired however some activities were not sufficient in terms of suitability for the goals, and thus the activities were re-arranged. Some of the activities used in this context were selected and adjusted from original activities, while some were developed by the researcher.

Following the revision studies, the main program was developed. Each session of the program is designed in line with the determined goals and target behaviors. The program consisted of 7 sessions and per session was 50 minutes. Table 4 shows the brief content covered in the 7 sessions for the experimental group.

**Table 4.** Content of the EMDR-Focused Group Counseling Program

Session	Contents
Session 1	<ul style="list-style-type: none"> <li>- "Introduce yourself" activities</li> <li>- Informing group members concerning group counseling sessions</li> <li>- Determination of group rules</li> <li>- "Extend a hand" story</li> <li>- Information concerning the association between grief and traumatic processes and EMDR</li> <li>- Dance cubes</li> </ul>
Session 2	<ul style="list-style-type: none"> <li>- "Building bonds" game</li> <li>- "Altering is natural" exercise</li> <li>- Breathing exercise</li> <li>- "Safe place" exercise</li> </ul>
Session 3	<ul style="list-style-type: none"> <li>- "Guess the feeling" exercise</li> <li>- "Vitalize the feeling" exercise</li> <li>- The Gingerbread person feelings map</li> <li>- "Bond of love" exercise</li> </ul>
Session 4	<ul style="list-style-type: none"> <li>- Circle the feelings</li> <li>- Feelings in grief process</li> <li>- Support box</li> </ul>
Session 5	<ul style="list-style-type: none"> <li>- EMDR-GP/C- Assessment and desensitization phase</li> <li>- Box exercise</li> <li>- "Safe place" exercise</li> <li>- Assessment</li> </ul>
Session 6	<ul style="list-style-type: none"> <li>- Healing story: "baby green tree that continues its life"</li> <li>- Farewell letter</li> <li>- Body scan</li> <li>- Assessment</li> </ul>
Session 7	<ul style="list-style-type: none"> <li>- Six-piece story making</li> <li>- Goodbye cards</li> <li>- Assessment</li> </ul>

The implementation of the program, presented in Table 4, to the experimental group took approximately one and a half months. Following completion of the sessions, a posttest was administered to the experimental group and control group. Besides, the opinions and observations of the teachers and parents regarding students (concerning the emotional and behavioral alteration of the students, the differences in the eating and sleeping patterns, and so forth) were obtained. Also students rated their SUD levels prior to the desensitization phase, following the desensitization phase and in the final session. Consequently, the students in the experimental group and control group were administered the follow-up test three months following the research.

### Measures

In line with the research; initially, trauma screening was performed to the third and fourth grade students, studying in a primary school. Students with similar traumas (mourning) were identified following the trauma screening and the Personal Information Form and Child PTSD Symptom Scale (CPSS) were administered to the cited students.

For the implementation, the students were allocated groups of ten people and provided with informative explanations. Every group of students completed the scale and the Personal Information Form in 20 minutes approximately. Trauma screening and administration of scales were completed within a week at different course hours.

Among the students with high PTSD symptom levels, 6 students formed each the experimental group and the control group. In the study, the experimental group was applied EMDR-focused group counseling program, as 50-minute sessions. Following the administration of the program, immediate CPSS was applied to the

experimental and control groups thus the posttest scores of the students were obtained.

Following the implementation of the program, opinions and observations of teachers and parents (concerning the emotional and behavioral alteration of the students, the differences in the eating and sleeping patterns, and so forth) were obtained. Also students rated their SUD levels prior to the desensitization, following the desensitization phase and in the final session. Consequently, the follow-up test was administered to the students in the experimental group and control group three months following the research.

### Data Analysis

The pretest scores of the students were achieved by applying Child PTSD Symptom Scale. Following the sessions the scale was reapplied and thus the posttest scores of the groups were obtained. Three months following the posttest, follow-up test scores were obtained by reapplying the scale. The data of the research were computed and analyzed by the "SPSS 25.0" package program.

Initially, the data was tested in terms of distribution for normality. Since the sample size was less than 50, Shapiro-Wilks test was used for normality analysis (Büyüköztürk, 2010). The results of the analysis of whether the pretest, posttest and follow-up test scores of the groups meet the normal distribution assumption are presented in Table 5.

**Table 5.** Distribution of the Scores of the Students in the Experimental and Control Groups From the Pretest, Posttest And Follow-Up Tests and the Results of the Normality Test

Dependent variable	Measurement	Group	N	$\bar{X}$	SS	Skewness	Kurtosis	Shapiro Wilks
Reexperiencing	Pretest	Experimental	6	9.67	3.08	1.03	1.57	0.57
		Control	6	8.17	1.72	0.68	0.81	0.83
Avoidance	Pretest	Experimental	6	10.00	4.15	1.19	0.34	0.12
		Control	6	9.50	2.07	-0.81	1.10	0.70
Hyperarousal	Pretest	Experimental	6	6.83	1.72	0.03	-2.37	0.22
		Control	6	7.17	1.94	0.64	-1.24	0.45
Reexperiencing	Posttest	Experimental	6	3.66	3.08	0.78	-1.68	0.11
		Control	6	9.50	1.64	0.81	-1.03	0.20
Avoidance	Posttest	Experimental	6	4.33	1.97	1.68	2.67	0.03
		Control	6	10.67	2.50	-1.62	2.85	0.14
Hyperarousal	Posttest	Experimental	6	5.17	2.40	0.88	-0.50	0.32
		Control	6	7.83	2.40	1.20	0.85	0.10
Reexperiencing	Follow-up test	Experimental	6	1.83	1.72	1.44	2.72	0.21
		Control	6	10.00	1.90	0.00	-2.69	0.11
Avoidance	Follow-up test	Experimental	6	3.00	1.41	0.00	0.30	0.96
		Control	6	13.17	2.79	0.99	1.51	0.53
Hyperarousal	Follow-up test	Experimental	6	3.00	1.90	0.00	2.69	0.11
		Control	6	8.17	2.31	0.86	0.14	0.30

Note.  $\bar{X}$ : Arithmetic mean; SS: Standard deviation

As presented in Table 5; examining the pretest, posttest and follow-up test as well as the normality tests of the experimental and control groups, the distribution of the scores indicate that the value obtained from the avoidance subscale of the experimental group is significant (0.03,  $p < 0.05$ ). In addition, the data was not normally distributed because the kurtosis (2.67) value was above the recommended threshold value of  $\pm 1.96$  for normal distribution (Mayers, 2013).

For data analysis non-parametric tests were employed because of the non-normal data distribution and the low number of participants ( $n < 30$ ) (Karasar, 2009; Kul, 2014). In this context, availability of significance between the pretest, posttest and follow-up measurements of the experimental and control groups was analyzed via the Friedman Test. Wilcoxon Signed Ranks Test was employed for pairwise comparisons to determine the possible difference between the measurements. The Mann Whitney U Test, was utilized to compare the test scores between the experimental and control groups.

**Results**

As data analysis, the test results of the students in experimental and control groups, regarding time dependent intragroup as well as intergroup alteration of the reexperiencing subscale scores of the Child PTSD Symptom Scale are presented in Table 6.

**Table 6.** Intragroup And Intergroup Analysis of the Time Dependent Alteration of the Reexperiencing Mean Scores of the Experimental and Control Groups

Measurement	Experimental Group (n=6)			Control Group (n=6)			Intergroup Analysis		
	$\bar{x}$	SD	Median	$\bar{x}$	SD	Median	U	P	
1. Pretest	9.67	3.08	9.00	8.17	1.72	8.00	12.00	0.394	
2. Posttest	3.67	3.08	2.50	9.50	1.64	9.00	1.00	0.004	
3. Follow-up test	1.83	1.72	1.50	10.00	1.90	10.00	0.00	0.002	
Reexperiencing Intragroup Analysis	sd	2			2				
	$\chi^2$	11.57			6.62				
	p	0.003			0.037				
	Significant Difference <sup>a</sup>	1-2	1-3	2-3	1-2	1-3	2-3		
	p	0.027	0.027	0.039	0.109	0.066	0.180		

Note.  $\bar{x}$ : Arithmetic mean; SD: Standard deviation; <sup>a</sup>Wilcoxon Signed Rank Test was used for multiple comparisons.

The Friedman test results are presented in Table 6 regarding whether the mean scores of the pretest, posttest and follow-up test of the reexperiencing subscale of the Child PTSD Symptom Scale of the experimental and control group students, who showed symptoms of PTSD in grief process, differed significantly. The analysis showed that the mean of the reexperiencing scores of the experimental group students, who participated in the EMDR-focused group counseling program, differed significantly ( $p < 0.01$ ). Conducting Wilcoxon Signed Rank Test to identify the measurements causing the difference, a significant decrease in the mean reexperiencing scores of the experimental group students was detected from the pretest to the follow-up ( $p < 0.05$ ). In addition, the Mann Whitney U Test results, used for the intergroup comparison, showed statistically significant difference between reexperiencing, posttest and follow-up test scores of students in favor of the experimental group ( $p < 0.01$ ). Consequently, the result reveals the significant decrease in the mean re-experiencing scores of the experimental group students, who participated in the EMDR-focused group counseling program, compared to the control group students who were not in the program, and the decrease continued in the follow-up measurements.

The results of the analysis concerning the time-dependent intragroup and intergroup alteration of the avoidance subscale score of the Child PTSD Symptom Scale of the students, participating in both groups, are presented in Table 7.

**Table 7.** Intragroup And Intergroup Analysis of The Time-Dependent Alteration of the Avoidance Mean Scores of the Experimental and Control Groups

Measurement	Experimental Group (n=6)			Control Group (n=6)			Intergroup Analysis		
	$\bar{x}$	SD	Median	$\bar{x}$	SD	Median	U	p	
1. Pretest	10.00	4.15	8.00	9.50	2.07	9.50	15.50	0.699	
2. Posttest	4.33	1.97	3.50	10.67	2.50	11.50	1.00	0.004	
3. Follow-up test	3.00	1.41	3.00	13.17	2.79	13.00	0.00	0.002	
Avoidance Intragroup Analysis	sd	2			2				
	$\chi^2$	11.14			9.29				
	p	0.004			0.010				
	Significant Difference <sup>a</sup>	1-2	1-3	2-3	1-2	1-3	2-3		
	p	0.027	0.027	0.109	0.180	0.043	0.041		

Note.  $\bar{x}$ : Arithmetic mean; SD: Standard deviation; <sup>a</sup>Wilcoxon Signed Rank Test was used for multiple comparisons.

The Friedman test results are presented in Table 7 regarding whether the mean scores of the pretest, posttest and follow-up test of the avoidance subscale of the Child PTSD Symptom Scale of the experimental and control group students, who showed symptoms of PTSD in grief process, showed significant difference. The analysis showed that the mean of the avoidance scores of the experimental group students differed significantly ( $p < 0.01$ ). In order to identify which measurements caused the difference, Wilcoxon Signed Rank Test was

used and it was revealed that the mean of the avoidance scores of the experimental group students decreased significantly from the pretest to the posttest ( $p < 0.05$ ). Additionally; the results of the Mann Whitney U Test, conducted for the intergroup comparison of experimental and control group students, showed statistically significant difference between avoidance posttest and follow-up test scores of students in favor of the experimental group ( $p < 0.01$ ). Consequently, the result reveals a significant decrease in the mean avoidance scores of the experimental group students, participated in the EMDR-focused group counseling program, compared to the control group students who were not in the program.

The results of the analysis regarding the time-dependent intragroup and intergroup alteration of the hyperarousal subscale score of the Child PTSD Symptom Scale of the students, participating in the experimental group and control group, are presented in Table 8.

**Table 8.** Intragroup And Intergroup Analysis of the Time-Dependent Variation of the Hyperarousal Mean Scores of the Experimental and Control Groups

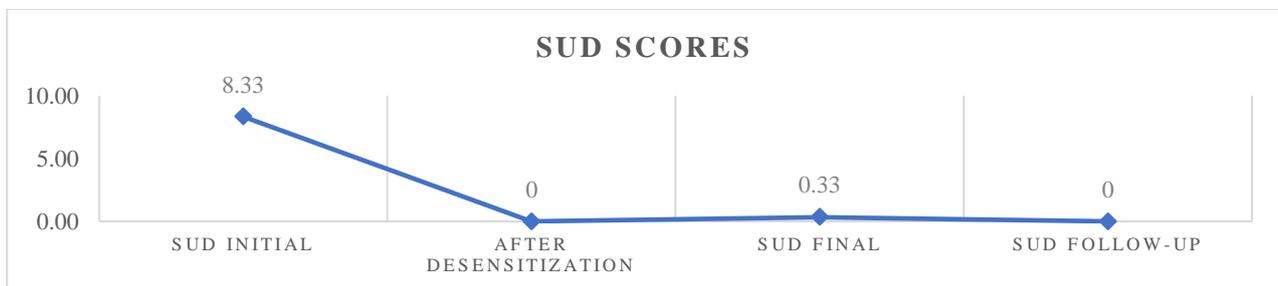
Measurement	Experimental Group (n=6)			Control Group (n=6)			Intergroup Analysis		
	$\bar{x}$	SD	Median	$\bar{x}$	SD	Median	U	p	
1. Pretest	6.83	1.72	7.00	7.17	1.94	6.50	15.50	0.699	
2. Posttest	5.17	2.40	4.50	7.83	2.40	7.00	7.50	0.093	
3. Follow-up test	3.00	1.90	3.00	8.17	2.32	8.00	0.00	0.002	
Hyperarousal Intragroup Analysis	sd	2			2				
	$\chi^2$	11.00			6.62				
	p	0.004			0.037				
	Significant Difference a	1-2	1-3	2-3	1-2	1-3	2-3		
	p	0.039	0.020	0.039	0.102	0.063	0.157		

Note.  $\bar{x}$ : Arithmetic mean; SD: Standard deviation; <sup>a</sup>Wilcoxon Signed Rank Test was used for multiple comparisons.

The Friedman test results are presented in Table 8 regarding whether the pretest, posttest and follow-up test mean scores of the hyperarousal subscale of the Child PTSD Symptom Scale of the experimental and control group students, who showed symptoms of PTSD in grief process, showed significant difference. The analysis showed that the mean of the hyperarousal scores of the experimental group students differed significantly ( $p < 0.01$ ). In order to identify which measurements caused the difference, Wilcoxon Signed Rank Test was used and the mean of the hyperarousal scores of the experimental group students was detected to decrease significantly from the pretest to the follow-up test ( $p < 0.05$ ). Besides; the Mann Whitney U Test results, conducted for the intergroup comparison of experimental and control group students, showed statistically significant difference for hyperarousal follow-up test scores of students in favor of the experimental group ( $p < 0.01$ ). The result shows that the EMDR-focused group counseling program is permanent in decreasing the individuals' hyperarousal levels who were administered the experimental procedure.

The change in SUD scores obtained from the experimental group students at the beginning of EMDR applications after desensitization and in the final session are presented in Figure 1.

**Figure 1.** Change in SUD scores of students



The change between the average of SUD initial ( $\bar{x}=8.33$ ), after desensitization ( $\bar{x}=0.00$ ), SUD final ( $\bar{x}=0.33$ ) and SUD follow-up ( $\bar{x}=0.00$ ) scores of the students in experimental group is seen in Figure 1. It was observed that the average of SUD scores obtained from students at four different times decreased from SUD initial to SUD follow-up.

Following the implementation of the EMDR-focused group counseling program, the statements of the class teachers and parents of the students regarding the changes they observed concerning the students are presented in Table 9.

**Table 9.** Teacher-Parent Opinions

Student 1	Teacher	He is more compliant, obeys the classroom rules, acts more harmoniously in class and with his friends. He did not use to tell about his feelings but now he can express her feelings and open himself up. He can talk about himself. He learned to control his emotions. He used to cry when he got bad grades and mess up, now he is not. He greets more calmly and his outbursts of anger are over.
	Parent	Thank you very much, he has changed a lot. He used to hide his feelings, now he is expressing his feelings. He says now I feel it. Also when he is broken, he tells us about it, too. The "chest" is so special to him, he put it in his room. Normally, he doesn't let us check the chest, however even if I don't ask; "Would you like to read the contents?" he said. He opened the chest and showed the contents one by one. There is a picture of his grandfather in his room, he used to be very sad to see him. But now he accepts the situation.
Student 2	Teacher	He expresses himself better now. Generally he was not an active child and he was introverted, now he is not. He expresses himself well and defends his rights. He did very well in the BILSEM exam and his school success increased.
	Parent	He speaks more comfortably with others now, opens himself up and expresses his feelings. He used to ask a lot of questions about his father's death, now his questions are over, he accepted... It's as if he said goodbye to him. Outbursts of anger used to happen occasionally when I was at home, no more. His sleeping and eating patterns are better.
Student 3	Teacher	He was already a good student. His compatibility continues, but he seems to be getting better at opening up his own feelings.
	Parent	He used to express himself before. Now he express even more comfortably. He used to have nightmares about his grandfather, saying that his grandfather wanted something from him and scared him. He doesn't have such dreams anymore. His sleep pattern is very good at the moment.
Student 4	Teacher	He became more comfortable about expressing himself. He expresses his feelings. He hugs me. Before your investigation, he had sudden reactions, anger, resentments, and outbursts of anger. Now that he is compatible, these reactions are over.
	Parent	In the beginning he had become aggressive, now it is over. In the last two weeks, there have been changes in this direction in particular. He was probably suppressing his grandfather's death before. We were also suppressing and at the beginning of the process, his emotions came out. Recently, he started to make his own decisions saying, "I want it this way, I'm going to wear this." It was as if he was starting to feel more confident and stronger. He used to eat a lot, now his eating pattern has improved.
Student 5	Teacher	He is happier, he can tell that his mother is dead. Now he is more active, he used to sit in physical education class, he did not want to move, now he plays with his friends.
	Parent	When he saw the pain (that others are experiencing) as well; "Something like this have happened to others," he said. He normalized it, accepted it a little bit. He can say that "my mother is dead" even to people he has just met. He comes to school more comfortably. He had problems with his friends, he overcame it. His timidity lessened. If he has a different opinion, he says, "No, it will be like this." The number of friends increased. When he has trouble with someone, he doesn't say he won't go to school, he can play with the other friends.
Student 6	Teacher	She was already a good student. Her compatibility continues, but she seems to be getting better at opening up her own feelings.
	Parent	He was already a calm child, but now he is more willing to open his emotions. He used to pass it off, used to shut himself down, reacted harshly, and he blushed. Now he speaks longer, expresses his feelings. He tells in more detail. He used to have a lot of nightmares; wars, fights, etc. He no longer has nightmares, his sleep is more regular.

Evaluating the statements of the teachers and parents in Table 9, it is seen that the adaptation, acceptance, self-expression, self-disclosure, emotional awareness levels and emotion regulation skills of students increased after the sessions. While negative behaviors decreased, academic performances improved. Besides it is indicated that the problems related to eating and sleeping decreased, and the nightmares disappeared.

### Discussion and Conclusion

The present study aimed to assess the efficacy of the EMDR-focused group counseling program applied to primary school students showing PTSD symptoms in grief process. The basic hypothesis of the research conducted for this purpose was expressed as "statistically significant decrease will be found in the PTSD scores

of the experimental group students, who participated in the EMDR-focused group counseling program, compared to the control group students, who were out of the program, and the decrease will also be detected in the follow-up measurement". As a result of the research, it was revealed that the students in the experimental group who participated in the EMDR-focused group counseling program had a decrease in their PTSD scores and the decrease continued in the follow-up measurements.

Many studies in the literature have reported that EMDR therapy is efficient in reducing PTSD symptoms (Abdi et al., 2021; Acartürk et al., 2015; Aydın, 2015; Barron et al., 2019; Chen et al., 2018; Denizli, 2008; Every-Palmer et al., 2019; Güçlü & Alkar, 2021; Karadağ et al., 2021; Kavakcı et al., 2010; Lehnung et al., 2017; Meentken et al., 2020; Tarquinio et al., 2012; Yurtsever et al., 2018; Zaghrou-Hodali et al., 2008) and that this effectiveness continues after therapy (Çitil Akyol, 2021; Edmond et al., 1999; Fernandez et al., 2003; Jarero et al., 2006; Molero et al., 2019). The results are in line with the conclusions drawn from our research.

Bayhan et al. (2022) regarding children who lost their fathers in the mine accident and mothers who lost their husbands, Korkmazlar-Oral and Pamuk (2002) regarding 16 children aged between 10 and 11 who survived the earthquake, Hurn and Barron (2018) regarding eight children exposed to various traumas such as the death of the father, Perilli et al. (2019) regarding 14 child refugees, Korkmazlar et al. (2020) regarding 41 children in early intervention, 25 children in late intervention who lost their fathers, Aduriz et al. (2011) 124 children in grief process and Jarero et al. (2008) ) 16 children in grief process; found that the EMDR group studies they conducted were effective in reducing the children's PTSD symptoms. Notably, in parallel with the stated results, in the current study, an EMDR-focused group counseling program was applied to primary school students and it was found that the program was effective in reducing PTSD symptoms in grief process.

In the study, in which the efficacy of the EMDR-focused group counseling program applied to primary school students showing PTSD symptoms in grief process was assessed, sub-hypotheses were proposed based on the subscales of PTSD reexperiencing, avoidance, and hyperarousal. In the analysis performed following testing the hypotheses, a significant difference was found in the reexperiencing subscale in all pairwise intragroup comparisons and in all the intergroup measurements of the posttest and follow-up. Accordingly, the most effective results were found in the reexperiencing sub-subscale. Likewise, Ahmad et al. (2007) reached a similar result in their study. The reason for similar results may be due to the fact that EMDR allows the memories stored in original form to reprocess (Loewenthal, 2022; Shapiro & Maxfield, 2002; Vucina, 2021).

Although considerable research has been devoted to EMDR, rather less attention has been paid to EMDR group studies on students. Besides no recent studies have focused on group practices in schools. On the other hand, several previous research have concentrated on children in disaster areas implemented in a single day (Korkmazlar-Oral & Pamuk, 2002). The current study which was designed as seven sessions and applied in a primary school can be accepted as a guide for subsequent EMDR-focused group counselling program in schools.

Among group-focused EMDR evaluations in the literature, the studies that use the EMDR Integrative Group Protocol (EMDR IGTP) and the EMDR Group with Children Protocol (EMDR GP/C) are noticeable. Although both EMDR-GP/C and EMDR-IGTP contain eight phases of the standard EMDR protocol, the content of the phases of EMDR-GP/C acquaintance, preparation, installation and closure is divergent from EMDR-IGTP and is built on according to the traumatic event. For example, ice breaker games and resource exercises are selected according to the nature of the trauma during the acquaintance and preparation phases. In the installation phase an original story is prepared for the trauma. In the closure phase; for experiencing trauma, different artworks are selected (Korkmazlar et al., 2020). The present study was designed and implemented considering the EMDR GP/C procedure developed by Korkmazlar. The sessions were completed in seven weeks and resource exercise was comprehensively held. Emotion-based activities were created for students to develop insights concerning themselves, express themselves clearly, and realize their emotions. In addition, a healing story peculiar to the traumatic event was developed by the implementer. As in the present study, EMDR GP/C was concluded with different populations and it was detected to be effective (Banoğlu & Korkmazlar, 2022; Bayhan et al., 2022; Korkmazlar-Oral & Pamuk, 2002; Korkmazlar et al., 2020). The current study yielded effective results in parallel with the studies in the literature.

Examining the relevant studies focusing the implementation of the EMDR group protocol, it is noticed that the participants of the studies are those who have experienced different traumas (Banoğlu and Korkmazlar, 2022; Hurn and Barron, 2018; Olivier et al., 2022). However the participants of the current study are confined to the individuals experiencing grief. Thus via the study, the efficacy of the EMDR-focused group counseling program on the PTSD symptom levels of students in the grief process can be assessed.

The current paper argues that the cited EMDR-focused group counseling sessions reduced the symptoms of PTSD in a short period, and the findings of the study are coherent with the results of national and international research (Abdi et al., 2021; Acartürk et al., 2015; Aydın, 2015; Chen et al., 2018; Denizli, 2008; Edmond et al., 1999; Every-Palmer et al., 2019; Karadağ et al., 2021; Kavakcı et al., 2021., 2010; Lehnung et al., 2017; Tarquinio et al., 2012; Yurtsever et al., 2018).

SUD (Subjective Units of Disturbance) scores of the students were obtained, prior to desensitization phase, following the desensitization phase, and in the final session. Students rated their subjective disturbance level from 0 (no disturbance) to 10 (severe disturbance). The students' SUD scores prior to desensitization phase, following the desensitization phase, and in the final session are respectively as follows; 8-0-0; 10-0-0; 6-0-0; 10-0-2; 9-0-0; 7-0-0. In addition, in the follow-up test students were required to rate by a score that would precisely reflect the severity of their disturbance. It was seen that SUD scores of all students were "0". Regarding the evaluation based on feedbacks of students, resetting their Subjective Units of Disturbance (removal of the disturbance) is consistent with the results of the research and parallel with previous studies in the literature (Banoğlu & Korkmazlar, 2022; Korkmazlar et al., 2020; Mukba et al., 2020).

After the sessions; in the interviews, the teachers and parents stated that in general the adaptation of students, acceptance, self-expression, self-disclosure, emotional awareness levels and emotion regulation skills increased; negative behaviors decreased; academic performance improved; school, eating and sleep related problems lessened and nightmares have disappeared. The statements of teachers and parents supported the findings of the research. It also showed compatibility with the findings in the literature (Çitil Akyol, 2021; Olivier et al., 2021).

Decreased SUD scores of students, positive feedback from teachers and parents, positive observed alterations of students during the sessions, positive session indicators such as acceptance, adaptation and improvement of students, significant difference in pretest, posttest and follow-up test scores of students who participated the program; revealed that the study was effective and that the effect continued in the long term.

### **Implication**

The EMDR-focused group counseling program was applied to students with PTSD symptoms in grief process in a primary school and the program was found to be effective. In this regard, school counselors can apply these sessions to students who are observed to have PTSD symptoms in grief process.

The study consisted of an experimental group participating in the EMDR-focused group counseling program and a control group participating merely in pretest, posttest and follow-up test applications with no intervention. By forming a placebo control group within the research, unrelated activities can be performed and the results can be compared.

### **Limitations**

In terms of evaluating the results of the research, it should be considered that the research has limitations. To illustrate, the study is limited with the experimental and control groups consisting of six participants for each. Further research can be conducted with larger study groups which may be useful to generalize the results and evaluate their effectiveness. Thus, the current program can contribute to reducing the PTSD symptoms of primary school students during the grief process. Consequently the program can be an effective instrument, especially for school counselors.

**Author Contributions:** This study was produced from the dissertation prepared by first author under the supervision of second author. All authors contributed to the conception and design of the study. First author performed the experimental applications and data collection and wrote the paper. Second author supervised all

the research process and provided feedback and reviewed the paper. All authors read and approved the final manuscript

**Funding Disclosure:** The authors did not receive financial support from any institution for this study.

**Conflicts of Interest:** The authors declare that they have no conflict of interest.

**Data Availability:** The datasets generated and analyzed during the current study are available from the corresponding author on request.

**Ethics Approval and Consent to Participate:** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and its later amendments or comparable ethical standards. This study was approved by the University of Necmettin Erbakan Social and Humanitarian Sciences Scientific Research and Publication Ethics Committee on 10.09.2021 (Decision No: 2021/450).

**Author's Note:** This article is produced from the doctoral thesis of the first author, conducted under the supervision of second author, who guided first author in all stages of the study.

## References

- Abdi, N., Malekzadeh, M., Fereidouni, Z., Behnammoghadam, M., Zaj, P., Mozaffari, M. A., Rostaminejad, A., & Salehi, Z. (2021). Efficacy of EMDR therapy on the pain intensity and subjective distress of cancer patients. *Journal of EMDR Practice and Research*, 15(1), 18-28. doi: 10.1891/EMDR-D-20-00036
- Abi-Hashem, N. (2017). Grief, bereavement, and traumatic stress as natural results of reproductive losses. *Issues in Law & Medicine*, 32(2), 245-254.
- Acartürk, C., Konuk, E., Çetinkaya, M., Senay, I., Sijbrandij, M., Cuijpers, P., & Aker, T. (2015). EMDR for Syrian refugees with posttraumatic stress disorder symptoms: Results of a pilot randomized controlled trial. *European Journal of Psychotraumatology*, 6(1), 27414. doi: 10.3402/ejpt.v6.27414
- Adler-Tapia, R. & Settle, C. (2020). *EMDR ve Çocuklarla Psikoterapi Sanatı* (C. Gökçen, S. Ç. Bilginer ve M. Karadağ, Çev. Ed.). Say Yayınları.
- Aduriz, M. E., Bluthgen, C., & Knopfler, C. (2011). Helping child flood victims using group EMDR intervention in Argentina: Treatment outcome and gender differences. *International Perspectives in Psychology: Research, Practice, Consultation*, 1(S), 58-67. doi: 10.1037/2157-3883.1.S.58
- Ahmad, A., Larsson, B., & Sundelin-Wahlsten, V. (2007). EMDR treatment for children with PTSD: Results of a randomized controlled trial. *Nordic Journal of Psychiatry*, 61(5), 349-354.
- Avcı, M. (2019). Yas sürecindeki ergenlerin dissosiyatif yaşantıları ve psikolojik belirtilerinin incelenmesi. *The Journal of Social Science*, 3(6), 565-582. doi: 10.30520/tjsosci.605792
- Aydın, Ş. (2015). *Travma sonrası stres bozukluğu tedavisinde travma odaklı bilişsel ve davranışçı terapiler, göz hareketleriyle duyarsızlaştırma ve yeniden işleme (EMDR) ve farmakolojik tedavilerin etkinliğine yönelik karşılaştırmalı bir meta-analiz* [Yayımlanmamış Yüksek Lisans Tezi]. Haliç Üniversitesi.
- Balcı, B. B. & Korkmaz, L. (2020). Yas sürecine ilişkin sosyal temsiller üzerine niteliksel bir çalışma. *Nesne*, 8(16), 95-111. doi: 10.7816/nesne-08-16-07
- Banoğlu, K., & Korkmazlar, Ü. (2022). Efficacy of the eye movement desensitization and reprocessing group protocol with children in reducing posttraumatic stress disorder in refugee children. *European Journal of Trauma & Dissociation*, 6(1), 1-9. doi: 10.1016/j.ejtd.2021.100241
- Barron, I. G., Bourgaize, C., Lempertz, D., Swinden, C., & Darker-Smith, S. (2019). Eye movement desensitization reprocessing for children and adolescents with posttraumatic stress disorder: A systematic narrative review. *Journal of EMDR Practice and Research*, 13(4), 270-283. doi: 10.1891/1933-3196.13.4.270
- Bayhan, B. B., Tarquinio, C., Rydberg, J., & Korkmazlar, Ü. (2022). The study of the group intervention containing EMDR therapy for children and mothers in the field of trauma after a mine explosion in Turkey. *European Journal of Trauma & Dissociation*, 6(1), 100248. doi: 10.1016/j.ejtd.2021.100248
- Bildik, T. (2013). Ölüm, kayıp, yas ve patolojik yas. *Ege Tıp Dergisi*, 52(4), 223-229.
- Büyüköztürk, Ş. (2010). *Sosyal bilimler için veri analizi el kitabı*. Pegem.

- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., Demirel, F. (2012). *Bilimsel araştırma yöntemleri*. Pegem.
- Chemtob, C. M., Nakashima, J. P., & Hamada, R. S. (2002). Psychosocial intervention for postdisaster trauma symptoms in elementary school children: a controlled community field study. *Archives of pediatrics & adolescent medicine*, 156(3), 211-216. doi:10.1001/archpedi.156.3.211
- Chen, R., Gillespie, A., Zhao, Y., Xi, Y., Ren, Y., & McLean, L. (2018). The efficacy of eye movement desensitization and reprocessing in children and adults who have experienced complex childhood trauma: A systematic review of randomized controlled trials. *Frontiers in Psychology*, 9, 534. doi:10.3389/fpsyg.2018.00534
- Cohen, J. A., & Mannarino, A. P. (2011). Supporting children with traumatic grief: What educators need to know. *School Psychology International*, 32(2), 117-131. doi: 10.1177/0143034311400827
- Çitil Akyol, C. (2021). *Göz hareketleri ile duyarsızlaştırma ve yeniden işleme (EMDR) yaklaşımının çocuklarda çevrimiçi kullanımı: Vaka çalışması* [Yayımlanmamış Doktora Tezi]. İnönü Üniversitesi.
- Davis, E. L., Deane, F. P., Lyons, G. C., Barclay, G. D., Bourne, J., & Connolly, V. (2020). Feasibility randomised controlled trial of a self-help acceptance and commitment therapy intervention for grief and psychological distress in carers of palliative care patients. *Journal of Health Psychology*, 25(3), 322-339. doi: 10.1177/1359105317715091
- Davison, G. C., & Neale, J. M. (2004). *Anormal psikolojisi (Abnormal psychology)*, (İ. Dağ, Çev.). Türk Psikologlar Derneği Yayınları.
- Deblinger, E., Steer, R. A., & Lippmann, J. (1999). Two-year follow-up study of cognitive behavioral therapy for sexually abused children suffering post-traumatic stress symptoms. *Child Abuse & Neglect*, 23(12), 1371-1378. [https://doi.org/10.1016/S0145-2134\(99\)00091-5](https://doi.org/10.1016/S0145-2134(99)00091-5)
- Denizli, S. (2008). Göz hareketleriyle duyarsızlaştırma ve yeniden işleme: Yaklaşımın etkililiği ve bugünkü durumu. *Ege Eğitim Dergisi*, 9(2), 79-92.
- Di Ciacco, J. (2008). *The colors of grief: Understanding a child's journey through loss from birth to adulthood*. Jessica Kingsley Publishers.
- Dyregrov, A., & Dyregrov, K. (2008). *Effective grief and bereavement support: The role of family, friends, colleagues, schools and support professionals*. Jessica Kingsley Publishers.
- Edmond, T., Rubin, A., & Wambach, K. G. (1999). The effectiveness of EMDR with adult female survivors of childhood sexual abuse. *Social Work Research*, 23(2), 103-116. doi: 10.1093/swr/23.2.103
- Every-Palmer, S., Flewett, T., Dean, S., Hansby, O., Colman, A., Weatherall, M., & Bell, E. (2019). Eye movement desensitization and reprocessing (EMDR) therapy for posttraumatic stress disorder in adults with serious mental illness within forensic and rehabilitation services: A study protocol for a randomized controlled trial. *Trials*, 20(1), 642. doi: 10.1186/s13063-019-3760-2
- Fernandez, I. (2007). EMDR as treatment of post-traumatic reactions: A field study on child victims of an earthquake. *Educational and Child Psychology*, 24(1), 65.
- Fernandez, I., Psychol, C., Gallinari, E., & Lorenzetti, A. (2003). A school-based eye movement desensitization and reprocessing intervention for children who witnessed the Pirelli Building airplane crash in Milan, Italy. *Journal of Brief Therapy*, 2(2), 129-136.
- Fitzgerald, H. (2013). *The grieving child: A parent's guide*. Simon and Schuster.
- Foa, E. B., Johnson, K. M., Feeny, N. C., & Treadwell, K. R. (2001). The Child PTSD Symptom Scale: A preliminary examination of its psychometric properties. *Journal of Clinical Child Psychology*, 30(3), 376-384. doi: 10.1207/S15374424JCCP3003\_9
- Gençtürk, M. (2019). *Sınav kaygısı yaşayan lise öğrencilerinde EMDR terapinin etkisinin incelenmesi* [Yayımlanmamış Yüksek Lisans Tezi]. Necmettin Erbakan Üniversitesi.
- Gizir, C. A. (2006). Bir kayıp sonrasında zorluklar yaşayan üniversite öğrencilerine yönelik bir yas danışmanlığı modeli. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 2(2), 195-213.
- Goldmann, E., & Galea, S. (2014). Mental health consequences of disasters. *Annual Review of Public Health*, 35, 169-183. doi: 10.1146/annurev-publhealth-032013-182435

- Gomez, A. M. (2020). *EMDR terapisi ve çocuklarla ilgili tamamlayıcı yaklaşımlar*, (H. Demirci ve D. Altınay, Çev. Ed.). Universal Dil Hizmetleri ve Yayıncılık.
- Gordon, R., & Wraith, R. (1993). Responses of children and adolescents to disaster. Wilson, J.P., Raphael, B. (eds) In: *International handbook of traumatic stress syndromes* (pp. 561-575). Springer.
- Gordon, T. A. (2013). Good grief: Exploring the dimensionality of grief experiences and social work support. *Journal of Social Work in End-of-Life & Palliative Care*, 9(1), 27-42. doi: [10.1080/15524256.2012.758607](https://doi.org/10.1080/15524256.2012.758607)
- Güçlü, A., & Alkar, Ö. Y. (2021). Travma sonrası stres bozukluğunda EMDR uygulamalarının etkililiğine ilişkin çalışmaların gözden geçirilmesi. *Türk Psikoloji Yazıları*, 24(47), 62-75. doi: 10.31828/tpy1301996120210108m000032
- Hall, C. (2014). Bereavement theory: Recent developments in our understanding of grief and bereavement. *Bereavement Care*, 33(1), 7-12. doi: [10.1080/02682621.2014.902610](https://doi.org/10.1080/02682621.2014.902610)
- Heegaard, M. E. (2011). *Çok sevdiğim bir yakınımı kaybettim* (C. Kınık, Çev.). İletişim.
- Hurn, R., & Barron, I. (2018). The EMDR integrative group treatment protocol in a psychosocial program for refugee children: A qualitative pilot study. *Journal of EMDR Practice and Research*, 12(4), 208-223. doi: 10.1891/1933-3196.12.4.208
- Işıklı S., & Keser E. (2020). Travma sonrası stres bozukluğunda duygular ve duygu düzenleme. S. Vatan (Ed.), *Duygu düzenleme (1. Baskı, ss. 55-63)*. Türkiye Klinikleri.
- Jarero, I., Artigas, L., & Hartung, J. (2006). EMDR integrative group treatment protocol: A postdisaster trauma intervention for children and adults. *Traumatology*, 12(2), 121-129. doi: [10.1177/1534765606294561](https://doi.org/10.1177/1534765606294561)
- Jarero, I., Artigas, L., Montero, M., & Lena, L. (2008). The EMDR integrative group treatment protocol: Application with child victims of a mass disaster. *Journal of EMDR Practice and Research*, 2(2), 97-105. doi: 10.1891/1933-3196.2.2.97
- Jayatunge, R. M. (2008). Combating tsunami disaster through EMDR. *Journal of EMDR Practice and Research*, 2(2), 140-145. doi: 10.1891/1933-3196.2.2.140
- Jianxiu, G. (2009). Application of emotion-focused therapy in bereavement: A case study. *Canadian Social Science*, 2(3), 90-93. doi: [10.3968/j.css.1923669720060203.014](https://doi.org/10.3968/j.css.1923669720060203.014)
- Jones, K., Methley, A., Boyle, G., Garcia, R., & Vseteckova, J. (2022). A systematic review of the effectiveness of acceptance and commitment therapy for managing grief experienced by bereaved spouses or partners of adults who had received palliative care. *Illness, Crisis & Loss*, 30(4), 596-613. doi: [10.1177/10541373211000175](https://doi.org/10.1177/10541373211000175)
- Kadak, M. T., Boysan, M., Ceylan, N., & Çeri, V. (2014). Psychometric properties of the Turkish version of the Child PTSD Symptom Scale. *Comprehensive Psychiatry*, 55(6), 1435-1441. doi: [10.1016/j.comppsy.2014.05.001](https://doi.org/10.1016/j.comppsy.2014.05.001)
- Karadağ, M., Gökçen, C., & Sarp, A. S. (2020). EMDR therapy in children and adolescents who have post-traumatic stress disorder: A six-week follow-up study. *International Journal of Psychiatry In Clinical Practice*, 24(1), 77-82. doi: [10.1080/13651501.2019.1682171](https://doi.org/10.1080/13651501.2019.1682171)
- Karadağ, M., Topal, Z., Ezer, R. N., & Gokcen, C. (2021). Use of EMDR-derived self-help intervention in children in the period of COVID-19: A randomized-controlled study. *Journal of EMDR Practice and Research*, 15(2), 1-14. doi: 10.1891/EMDR-D-20-00054
- Karasar, N. (2009). *Bilimsel araştırma yöntemi*. Nobel Yayın Dağıtım.
- Kavakcı, Ö., Doğan, O., & Kuğu, N. (2010). EMDR (Göz hareketleri ile duyarsızlaştırma ve yeniden işleme): Psikoterapide farklı bir seçenek. *Düşünen Adam: Journal of Psychiatry & Neurological Sciences*, 23(3), 195-205.
- Kissane, D. W., & Parnes, F. (2014). *Bereavement care for families*. Routledge.
- Knipe, J. (2020). *EMDR alet çantası* (Ö. Kavakcı, A. B. Yaşar ve A. Yurtsever, Çev. Ed.). Universal Dil Hizmetleri ve Yayıncılık.
- Kokanovic, I., & Hasanovic, M. (2018). Would the well-timed use of EMDR therapy in the school system save the mental health of youth? Case reports. *Psychiatria Danubina*, 30(5), 276-281.
- Korkmazlar, Ü. & Uğurlu, B. A. (2021). Çocuklarla online EMDR. M. Teber (Ed.), *Çocuklarla online terapi* (s.49-65). Yenikapı Yayınları.

- Korkmazlar, Ü. (2017). *Ayvacık depremi psikolojik destek el kitabı*. EMDR-TR Travma İyileştirme Grubu yayını.
- Korkmazlar, Ü., Bozkurt, B., & Tunca, D. T. (2020). EMDR group protocol with children: A field study. *Journal of EMDR Practice and Research*, 14(1), 13-30. doi: 10.1891/1933-3196.14.1.13
- Korkmazlar-Oral, Ü. & Pamuk, S. (2002). Group EMDR with Child Survivors of the Earthquake in Turkey. Morris-Smith, J. (Ed.), In: *EMDR: Clinical applications with children* (pp. 47-50). The Association for Child Psychology and Psychiatry.
- Kul, S. (2014). Uygun istatistiksel test seçim kılavuzu. *Plevra Bülteni*, 8(2), 26-29.
- Külahçioğlu, E. (2017). Yas danışmanlığı. Ö. Erdur-Baker & İ. Aksöz-Efe (Ed.) *Yas danışmanlığı* içinde (s. 113-148). Anı Yayıncılık.
- Lacasta, M. A., & Cruzado, J. A. (2023). Effectiveness of a cognitive-behavioral group therapy for complicated grief in relatives of patients with cancer: A randomized clinical trial. *Palliative & Supportive Care*, 1-7. doi: [10.1017/S147895152300010X](https://doi.org/10.1017/S147895152300010X)
- Lehning, M., Shapiro, E., Schreiber, M., & Hofmann, A. (2017). Evaluating the EMDR group traumatic episode protocol with refugees: a field study. *Journal of EMDR Practice and Research*, 11(3), 129-138. doi: 10.1891/1933-3196.11.3.129
- Li, Y. & Cui, Y. (2020). How to safeguard children's mental health during emergencies. *Pediatric Investigation*, 4(02), 150-151.
- Mayers, A. (2013). *Introduction to statistics and SPSS in psychology*. Pearson.
- Meentken, M. G., van der Mheen, M., van Beynum, I. M., Aendekerck, E. W., Legerstee, J. S., van der Ende, J., del Canho, R., Lindauer, R. J. L., Hillegers, M. H. J., Moll, H. A., Helbing, W. A., & Utens, E. M. (2020). EMDR for children with medically related subthreshold PTSD: Short-term effects on PTSD, blood-injection-injury phobia, depression and sleep. *European Journal of Psychotraumatology*, 11(1), 1705598. doi: [10.1080/20008198.2019.1705598](https://doi.org/10.1080/20008198.2019.1705598)
- Merdan-Yıldız, E. D., Kumpasoğlu, G. B., Eltan, S., & Tutarel-Kışlak, Ş. (2021). Çocuk ve ergenlerde EMDR: Travma sonrası stres bozukluğu tedavisindeki etkililiği üzerine bir derleme. *Klinik Psikoloji Dergisi*. doi: [10.5455/kpd.26024438m000041](https://doi.org/10.5455/kpd.26024438m000041)
- Molero, R. J., Jarero, I., & Givaudan, M. (2019). Longitudinal multisite randomized controlled trial on the provision of the EMDR-IGTP-OTS to refugee minors in Valencia, Spain. *American Journal of Applied Psychology*, 8(4), 77-88. doi: 10.11648/j.ajap.20190804.12
- Mukba, G., Tanrıverdi, S., & Tanhan, F. (2020). Investigation of the efficacy of EMDR in earthquake trauma: Case report. *Cukurova University Faculty of Education Journal*, 49(1), 477-500.
- Neimeyer, R. A. (1999). Narrative strategies in grief therapy. *Journal of Constructivist Psychology*, 12(1), 65-85. doi: [10.1080/107205399266226](https://doi.org/10.1080/107205399266226)
- Neria, Y., & Litz, B. T. (2004). Bereavement by traumatic means: The complex synergy of trauma and grief. *Journal of Loss and Trauma*, 9(1), 73-87. doi: 10.1080/15325020490255322
- Olivier, E., de Roos, C., & Bexkens, A. (2022). Eye movement desensitization and reprocessing in young children (ages 4–8) with posttraumatic stress disorder: A multiple-baseline evaluation. *Child Psychiatry & Human Development*, 53(6), 1391-1404. doi: [10.1007/s10578-021-01237-z](https://doi.org/10.1007/s10578-021-01237-z)
- Oltjenbruns, K. A. (2013). Life span issues and loss, grief, and mourning: Childhood and adolescence. D. K. Meagher ve D. E. Balk (Ed.), In *Handbook of thanatology: The essential body of knowledge for the study of death, dying, and bereavement* (pp. 149-155). Routledge.
- Önal, A. A., & Yalçın, İ. (2019). Yas sürecinin grupla psikolojik danışmada ele alınması üzerine bir inceleme. *Turkish Psychological Counseling and Guidance Journal*, 9(55), 1013-1051.
- Parkes, C. M. (2001). A historical overview of the scientific study of bereavement. Stroebe, M.S., Hansson, R.O., Stroebe, W., & Schut H. (Eds.), In: *Handbook of bereavement research: Consequences, coping, and care* (pp. 25-46). APA.
- Perilli, S., Giuliani, A., Pagani, M., Mazzoni, G. P., Maslovaric, G., Maccarrone, B., Mahasneh, V. H., & Morales, D. (2019). EMDR group treatment of children refugees—A field study. *Journal of EMDR Practice and Research*, 13(2), 143-155. doi: 10.1891/1933-3196.13.2.143

- Savaş, E. (2020). Covid-19 sürecinde yas. *Türkiye Sosyal Hizmet Araştırmaları Dergisi*, 4(3), 82-89.
- Shapiro, F. (1999). Eye movement desensitization and reprocessing (EMDR) and the anxiety disorders: Clinical and research implications of an integrated psychotherapy treatment. *Journal of Anxiety Disorders*, 13(1-2), 35-67. doi: [10.1016/S0887-6185\(98\)00038-3](https://doi.org/10.1016/S0887-6185(98)00038-3)
- Shapiro, F. (2016). *EMDR: Göz hareketleri ile duyarsızlaştırma ve yeniden işleme temel prensipler, protokoller ve prosedürler*, (M. Şahzade ve I. Sansoy, Çev.). Okyanus Yayınları.
- Solomon, R. M., & Rando, T. A. (2007). Utilization of EMDR in the treatment of grief and mourning. *Journal of EMDR Practice and Research*, 1(2), 109-117. doi: 10.1891/1933-3196.1.2.109
- Solomon, R. M., & Shapiro, F. (2008). EMDR and the adaptive information processing model potential mechanisms of change. *Journal of EMDR Practice and Research*, 2(4), 315-325. doi: 10.1891/1933-3196.2.4.315
- Sprang, G. (2001). The use of eye movement desensitization and reprocessing (EMDR) in the treatment of traumatic stress and complicated mourning: Psychological and behavioral outcomes. *Research on Social Work Practice*, 11(3), 300-320. doi: [10.1177/104973150101100302](https://doi.org/10.1177/104973150101100302)
- Talwar, V. (2011). Talking to children about death. V. Talwar, P. Harris ve M. Schleifer (Ed.), In *Children's understanding of death: From biological to religious conceptions* (pp. 98-115). Cambridge University Press.
- Tarquinio, C., Brennstuhl, M. J., Rydberg, J. A., Schmitt, A., Mouda, F., Lourel, M., & Tarquinio, P. (2012). Eye movement desensitization and reprocessing (EMDR) therapy in the treatment of victims of domestic violence: A pilot study. *European Review of Applied Psychology*, 62(4), 205-212. doi: [10.1016/j.erap.2012.08.006](https://doi.org/10.1016/j.erap.2012.08.006)
- Trembl, J., Nagl, M., Linde, K., Kündiger, C., Peterhänsel, C., & Kersting, A. (2021). Efficacy of an Internet-based cognitive-behavioural grief therapy for people bereaved by suicide: A randomized controlled trial. *European Journal of Psychotraumatology*, 12(1), 1-14. doi: [10.1080/20008198.2021.1926650](https://doi.org/10.1080/20008198.2021.1926650)
- Ulaşan, H. (2018). *Çözüm odaklı yaklaşıma dayalı psikoeğitim programının sosyal duygusal öğrenme becerilerine etkisi* [Yayımlanmamış Doktora Tezi]. Necmettin Erbakan Üniversitesi.
- Uslu, R., & Kılıç, E. Ö. (2000). Çocukların travmatik bir olaya ilişkin yaşantıları: Betimleyici bir çalışma. *Kriz Dergisi*, 8(2): 1-16.
- Van der Kolk, B. (2000). PTSD and the nature of the trauma. *Dialogues in Clinical Neuroscience*, 2(1), 7-22. doi: [10.31887/DCNS.2000.2.1/bvdkolk](https://doi.org/10.31887/DCNS.2000.2.1/bvdkolk)
- Winokuer, H. R., & Harris, D. (2016). *Principles and practice of grief counseling*. Springer Publishing Company.
- Worden, J. W. (2003). *Yas danışmanlığı ve yas terapisi*. (B. Öncü, Çev.) Ankara üniversitesi Basımevi.
- Yılmaz Dinç, S. (2021). *EMDR odaklı çevrimiçi grupla psikolojik danışmanın üniversite öğrencilerinde psikolojik ihtiyaç doyumu, psikolojik sağlamlık, psikolojik iyi oluş ve küçük 't' travma üzerindeki etkisi* [Yayımlanmamış Doktora Tezi]. Eskişehir Osmangazi Üniversitesi.
- Yurtsever, A., Konuk, E., Akyüz, T., Zat, Z., Tükel, F., Çetinkaya, M., Savran, C., & Shapiro, E. (2018). An eye movement desensitization and reprocessing (EMDR) group intervention for Syrian refugees with post-traumatic stress symptoms: Results of a randomized controlled trial. *Frontiers in Psychology*, 9, 493. doi: [10.3389/fpsyg.2018.00493](https://doi.org/10.3389/fpsyg.2018.00493)
- Zaghrou-Hodali, M., Alissa, F., & Dodgson, P. W. (2008). Building resilience and dismantling fear: EMDR group protocol with children in an area of ongoing trauma. *Journal of EMDR Practice and Research*, 2(2), 106-113. doi: 10.1891/1933-3196.2.2.106
- Zara, A. (2011). Krizler ve travmalar. A. Zara (Ed.), *Yaşadıkça psikolojik sorunlar ve başa çıkma yolları içinde* (s. 91-121). İmge.



## RESEARCH ARTICLE

# Does Grit and Perceived Social Support Predicts Adolescents' Future Expectations in COVID 19 Pandemic?

Meyrem Ayça POLAT<sup>a</sup> , Muhammet YILDIZ<sup>b</sup> , Emrah IŞIKTAŞ<sup>c</sup> , Ramin ALIYEV<sup>d</sup> 

<sup>a</sup>Ministry of Education, Gaziantep, Turkey, <sup>b</sup>Ministry of Education, Gaziantep, Turkey, <sup>c</sup>Ministry of Education, Diyarbakır, Turkey, <sup>d</sup>Hasan Kalyoncu Üniversitesi, Gaziantep, Turkey.

## ARTICLE HISTORY

**Received:** 29.08.23

**Accepted:** 25.11.23

## KEYWORDS

Adolescent, Covid-19, Grit, Perceived Social Support, Positive Expectations Towards Future.

## ABSTRACT

Studies on the pandemic period focus on the negative effects of the pandemic on adolescents. However, the present research aims at examining variables that could be protective factors for adolescents during the pandemic period. The purpose of this study is to determine the level of grit and perceived social support in predicting adolescents' future expectations during the pandemic period. The sample of the research conducted with the correlational model consisted of 573 high school students. Demographic information form, Positive Future Expectation Scale, Grit Scale and Ecological Education Value Perception Scale were used to collect data. The results show that there is a positive and significant relationship between positive future expectations and grit, and there is also a positive and significant relationship between positive future expectations and perceived social support. Finally, it was concluded that grit and perceived social support significantly predicted positive future expectations, while grit predicted positive future expectations at a higher level than perceived social support. These findings suggest that positive future expectations are associated with grit and perceived social support. Practitioners who want to positively influence adolescents' future expectations can assist them in these areas.

In Turkey, as a result of the COVID-19 pandemic, a distance education system has been introduced at all levels of education as of March 23, 2020 (MEB, 2020). Social distancing rules, curfews and school closures caused by the COVID-19 pandemic cause disruptions in student development (Shevlin et al., 2020; Williams et al., 2020). The pandemic has especially affected the future expectations of adolescents adversely (Kaplan et al., 2021). The transition to distance education has caused serious psychological problems in adolescents/students. These problems include loneliness, anxiety, social stagnation (Karaman et al., 2021; Sundarasan et al., 2021), frustration (Aristovnik et al., 2020), panic, avoidance, fear of death, fear of isolation, and suicide (Kumar & Nayar, 2021) and symptoms of stress, anxiety, and depression (Zhang et al., 2020). Similarly, in children and adolescents during the pandemic period, various emotional reactions (Banerjee, 2020) and a widespread sense of uncertainty about the future (Commodari & La Rosa, 2020) can be seen, which can be misinterpreted as "regressive" behaviors such as irritability, loneliness, or aggression. Future time orientation refers to the attitude of the person towards the future (İmamoğlu & Güler-Edwards, 2007), the image of the future, and life events that are considered important that give direction and meaning to the individual's life (Seginer, 2019). While making decisions about the future, personality, age, and cultural environment are influential.

**CORRESPONDING AUTHOR** Meyrem Ayça POLAT, polatayca0610@gmail.com, ORCID: 0000-0002-7864-352X, Ministry of Education, Gaziantep, Turkey.

This is an article under the terms of the Creative Commons Attribution License. As the original work is properly cited, reproduction in any medium is permitted.

© 2024 The Authors. Turkish Journal of Counseling Psychology and Guidance is published by Turkish Psychological Counseling and Guidance Association

Adolescence is a critical period before making big decisions about the future (Arnett, 2000), and this period is important for future decisions about life goals such as education, career, and family formation (Seginer, 2008). Young people's decisions about the future can be positive or negative. However, positive expectations about the future cause the individual to mentally enjoy the results and to approach them in a smooth and effortless way to realize their expectations (Oettingen & Mayer, 2002). Adolescents' future expectations shape their identities and self-formation. Studies on this subject can be considered as cognitive interests, abstract thinking and creativity, emotional state, self-perception and locus of control, socioeconomic and sociocultural factors (Artar, 2003).

Adolescents' future expectations are affected by various factors. One of these factors is the family environment in which the adolescent grows up. Family environment, parental relationship, and a positive family life contribute to adolescents' positive expectations about the future (Nurmi, 1991; Nurmi & Pulliainen, 1991). The social support provided by parents, siblings, peers, and teachers ensures that the self-evaluation of the adolescent is positive and that he has positive expectations about the future (Seginer, 2019). In studies on positive future expectations of adolescents, adolescents with average or higher grades have positive future expectations compared to their peers with lower grades (Dursun, Özkan & Başkaya-Körler, 2018), and the subjective well-being levels of adolescents with positive future expectations increase (Eryılmaz, 2011), it is seen that the future hopes, life satisfaction and future expectation scores of children living separately from their parents are low (Su et al., 2017). It has been determined in some studies in the literature that positive future expectation is a protective factor for adolescents (Chen & Vazsonyi, 2012; Prince et al., 2019). In these studies, it was observed that as the level of positive future expectation of adolescents increased, the probability of engaging in problematic behaviors decreased, and their perceptions of substance use, delinquency, and threats to their safety decreased. Considering that the COVID-19 pandemic period is an external factor that affects young people and creates stress (Erden & Aliyev, 2022), it becomes clear how important environmental support is. If young people perceive more social support, they are more likely to work passionately towards long-term goals and show courage as they overcome tough obstacles along the way (Clark et al., 2019). Family and environment are effective in the psychological development of a child. The developing person interacts with the surrounding people, objects, and symbols (Koller et al., 2020). These findings in the literature point out the importance of social support during the pandemic period. Bronfenbrenner's Ecological Systems Theory clarifies this issue, especially the systems in which people are and the interaction between these systems. Ecological systems theory examines the processes of mutual adaptation that occur throughout life between people and their close environment. This is because the development of people is affected by the environments they are in and the relationships that are achieved between broader social contexts (Bronfenbrenner, 1977).

The theory especially focuses on youth and family development, via an integrative and interdisciplinary perspective on childhood and adolescence (Bronfenbrenner & Morris, 2006). The first people children interact with on a regular basis are their parents. But as children get older, other people, such as caregivers, relatives, siblings, and peers, take on this role. These are soon followed by teachers or counselors at other activities, followed by close friends, romantic partners, and co-workers. According to Bronfenbrenner and Morris (2006), some environmental systems are beneficial to an individual's psychological development. This effect extends from the closest environment in which individuals interact directly to the wider cultural environment and occurs within a certain process. In order for a person to develop emotionally, socially, and morally, there must be a strong mutual commitment and lifelong dependence on each other's well-being and development (Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 2006). Perceived social support from family, friends or other adults during adolescence is important for adolescent mental health (Wight et al., 2006). Kiss et al. (2022) concluded in their research that social attachment and family relationships during the pandemic period were the strongest determinants of well-being. Adolescence is the period when a person most needs to feel the support of the environment and family (Arslan, 2009). It is thought that social support has a significant impact on people's lives and that the physical and psychological health of people who have supportive social networks and can establish close personal relationships is positively affected by this situation (Ateş, 2012).

In their research on positive future expectations of adolescents, Sulimani-Aidan and Benbenishty (2011) stated that adolescents have higher positive expectations regarding social support and commitment than other areas. Many protective factors can be mentioned for a positive future, such as optimism, self-esteem (Smokowski

et.al., 2013), resilience and social cohesion (Verdugo & Sanchez-Sandoval, 2018). One of these protective factors is grit. In order to reach long-term goals, people need to overcome obstacles, be determined and make an effort (Duckworth et al., 2007). Grit has been defined as the will and persistence in achieving a goal and purpose in the long run (Aliyev, 2021; Duckworth & Quinn 2009). In literature grit was found to be positively related with courage (MacCann & Roberts, 2010; Von Culin et al., 2014); fortitude and academic success (Kwon, 2018); self-efficacy, motivation, time management (Wolters & Hussain, 2014). Determined individuals focus on maintaining effort and passion to achieve long-term success (Datu et al., 2019). It is observed that reaching goals for the future and focusing on goals are related to grit. In this way, grit enables people to stick to their future goals and to increase the energy available to reach their future goals (Jachimowicz et al., 2018).

In addition to the studies in the literature stating that there is a significant relationship between the concepts of grit and positive emotion (Singh & Jha, 2008), there are also studies that conclude that there is no significant relationship between positive concepts such as hope for the future, searching for meaning, and grit (Vela et al., 2015). In a study on high school students examining the relationship between grit and perceived social support, it was concluded that supportive and encouraging close relationships with parents, teachers, and other people who received social support positively predicted grit (Datu, 2017).

The development of positive traits such as grit is important throughout life but is especially critical during adolescence. Because, while stress tends to increase during these developmental years, there is a decrease in self-esteem, perceived ability, school engagement, and academic success (Jacobs et al., 2002; Park et al., 2020; Sundblad et al., 2008; Watt, 2004). Since this type of normative development can have lifelong consequences, it is important to discover the features that predict students' future expectations during this period. While there is limited research that predicts future expectations in adolescence, nothing is known about how social support and grit (Park et al., 2018) will contribute to this process. One of the factors that disrupts the future expectations of students is the COVID-19 pandemic. However, Bono et al. (2020) revealed that grit is effective in coping with the difficulties of the pandemic and protecting the subjective well-being of students.

The pandemic will have inevitable consequences that will be experienced for generations (Garagiola et al., 2022). For this reason, it is vital to understand the consequences of the pandemic and determine protective factors, especially in adolescence, which is a critical decision-making period for the rest of life. In the literature, social support and grit are regarded as important protective factors for adolescence. Considering the negative impact of the pandemic on adolescents' future expectations, it is thought that social support and grit will be effective factors in coping with uncertainties regarding the future. Although research on the effects of the pandemic generally focuses on negative consequences (Karataş, 2020; Öncü, 2022), this research focuses on factors that will reduce the negative effects of the pandemic. Negative life events that lead to stress in adolescents' lives, such as pandemic, cause negative psychological consequences (LeMoult et al., 2020). In this regard, it is thought that the results of the research will guide researchers and practitioners in studies aimed at reducing the effects of negative life events in adolescence. The aim of this study is to determine the relationship between the environmental support perceived by adolescents when coping with uncertainties during the pandemic period and the level of grit necessary to reach their long-term goals with their positive future expectations. In the study, it was first examined whether future expectations differed significantly according to the variables of gender, school type, class level, witnessing the lives of individuals receiving coronavirus treatment, having a close relative who was treated for coronavirus, and thinking about when the pandemic would end. Secondly, how grit and perceived social support predict future expectations was examined. For these purposes, the following hypotheses were examined:

H1: There is a positive relationship between adolescents' future expectations, perceived social support and grit levels.

H2: Grit and perceived social support will significantly predict future expectation.

## Methodology

### Research Pattern

A correlational research model was used in the research. Correlational research is research in which the relationship between two or more variables is examined without any interference with these variables (Fraenkel & Wallen, 2006).

### Study Group

Approval for the research was obtained from the university ethics committee (Hasan Kalyoncu University, E-804.01-2104060040) and permission from the Ministry of National Education. The sample group of the research consisted of 573 high school students in the southeast of Turkey. In this context, considering the number of variables in the study, missing data and extreme values, it was thought that a sample of 500 people would be sufficient (Green, 1991; Tabachnick & Fidell, 2007 ). By the end of the time allotted to answer the scales online, 573 people had been reached and the data collection process was terminated. In the research, the sample group was determined by the convenient sampling method, where easily accessible units were selected, taking into account time, money and labor issues (Büyüköztürk et al., 2020). Due to the pandemic, all data were collected online.

Since the research was conducted during the pandemic period, the scales were applied to the participants online. Since schools continued distance education, school principals and school counselors were contacted and scale links were sent to the participants they referred. For this purpose, help was sought from school psychological counselors, teachers and school administrators, who especially give online lessons and actively meet with online students. The online links to the scales were delivered to the participants as a result of the interviews with the school principals and teachers. In the research, we tried to reach different types of schools. For the research, they showed the participation of students from vocational high schools that provide profession and train intermediate staff at the end of high school education and from Anatolian high schools, which is a type of school that prepares students for higher education programs. Since the number of Anatolian high schools and vocational high schools in Turkey is higher than other types of schools, participants from Anatolian high schools and vocational high schools participated more than other types of schools. Information about the participants is shown in Table 1.

**Table 1.** Descriptive Statistics

Variable	N	%
Female	442	77.1
Male	131	22.9
Anatolian high schools	314	54.8
Vocational high schools	259	45.2
Grade 9	156	27.2
Grade 10	145	25.3
Grade 11	80	14
Grade 12	192	33.5

### Data Collection Tools

In this research, "Positive Future Expectations Scale", "Grit Scale", "Ecological Education Value Perception Scale" and the Demographic Information Form developed by the researchers were used.

**Demographic Information Form.** While collecting the data, the participants were asked to ask questions such as gender, school type, grade level apart from the standard questions; "Have you ever listened to or watched the lives of individuals who have been treated for coronavirus regarding their illness and treatment process?", "Have you had a relative (family member, relative or friend) from your close circle who was treated in hospital due to coronavirus?", "When do you think the pandemic will end?". In the preliminary interviews with the adolescents, it was determined that there were problems with their future expectations. The source of these problems was the uncertainties in the Covid 19 process. They said that it is not clear when the pandemic will

end and the losses they suffered in their relatives affected them. Therefore, expert opinion was sought on this subject and it was necessary to ask these questions in the demographic information form.

**Positive Future Expectation Scale.** Future Expectation Scale was developed by İmamoğlu and Guler-Edwards (2007). The scale aims to measure the degree of positivity of individuals' expectations regarding their personal future. As sample scale items "I am quite optimistic about my personal future" and "I believe that I will eventually achieve my goals." can be given. The scores that can be obtained from the scale consisting of five items vary between 5 and 25. The sum of alpha reliability was stated to be 0.85 and 0.92, and for the current study it was determined as 84.

**Grit Scale.** The Grit Scale was developed by Aliyev and Ayaz (2021). An increase in the score obtained from the scale means that the person shows a high level of grit. As sample scale items "I am quite optimistic about my personal future" and "I believe that I will eventually achieve my goals." can be given. There are no reverse scored items in the scale consisting of ten items. The correlation coefficient of the scale is .81 and the internal consistency coefficient is .86. The item-total correlation coefficients of the items in the scale are between .44 and .66. In the current study, the alpha coefficient was determined to be .77.

**Ecological Education Value Perception Scale (EEVPS).** The Ecological Education Value Perception Scale was developed by Aliyev, Akbaş and Özbay (2021). EEVPS measures the level of university students' perceptions of social support regarding their academic/educational development. There are no items to be reverse scored on the 5-point Likert type scale consisting of 6 items. High scores from the scale indicate high perceived social support. As sample scale items "I am quite optimistic about my personal future" and "I believe that I will eventually achieve my goals." can be given. As a result of applying the scale with an interval of 2 weeks, it was determined that the correlation coefficient between the scores was .80 and the internal consistency coefficient was .71. The alpha coefficient in the current study is .74.

CFA was applied to the data obtained from 400 students in order to test whether the EEVPS developed for university students can also be applied to high school students.

**Figure 1.** Measurement Model for Ecological Education Value Perception Scale

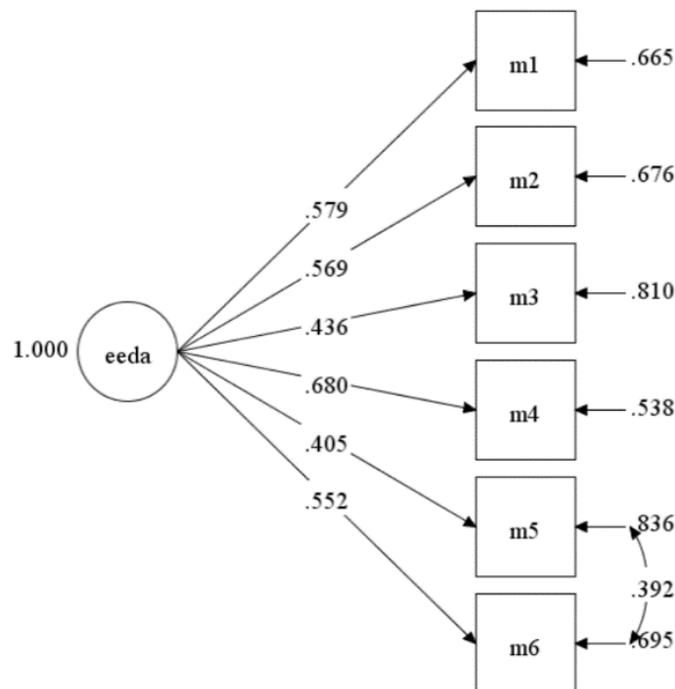


Figure 1 shows the measurement model for the EEVPS. When the measurement model was examined, it was

determined that the structure consisting of a single factor consisting of six items showed good agreement (RMSEA= .081, CFI= .95, TLI= .91, SRMR= .037). Obtained values show that EEVPS can also be used in high school students.

## Results

### Analysis of Data

Hierarchical regression analysis was conducted to examine whether the variables in the study predicted students' positive future expectations. In order to determine whether the positive future expectation scale scores differ according to gender, school type, whether or not to receive COVID-19 treatment in a close environment, and to witness coronavirus experiences, the t-test was performed to determine whether it differs according to grade level and the thought of when the pandemic will end. Analyzes were made by accepting the confidence interval as .05.

Descriptive statistics and correlation values of the participants' scores are shown in Table 2.

**Table 2.** Descriptive Statistics and Correlations

Score	N	Mode	Mean	Median	Standard deviation	Skewness	Kurtosis	Correlations		
								Grit	PSS	PFE
<b>Grit</b>	573	45.00	40.56	41.00	.23	-.74	-.00	.1	-	-
<b>PSS</b>	573	22.00	20.58	21.00	.19	-.24	-.30	.51**	1	-
<b>PFE</b>	573	19.00	19.24	20.00	.17	-.75	.24	.37**	.40**	1

\*p < .05, \*\*p<.01, **PSS:** Percieved Social Support, **PFE:** Positive Future Expectations

As seen in Table 2, the central tendency measures for grit, perceived social support, and positive future expectation are quite close to each other and show a normal distribution; the kurtosis and skewness coefficients are in the range of [-1, +1].

The results shows that there is a moderate, positive, and significant relationship between positive future expectations and grit ( $r=.509$ ,  $p<.001$ ), and a moderate, positive and significant relationship between positive future expectation and perceived social support ( $r=.400$ ,  $p<.001$ ) and a moderate, positive and significant relationship ( $r=.371$ ,  $p<.001$ ) between grit and perceived social support.

T-test analysis results, positive future expectation shows a significant difference according to gender [ $t(571)=2.12$ ;  $p=.034$ ] and positive future expectation scores of female students are higher than male students. ( $M_{female}=19.44$   $M_{male}=18.56$ ). Positive future expectation showed a significant difference according to school type [ $t(571)=2.35$ ;  $p=.019$ ] and the positive future expectation of Vocational and Technical Anatolian High School students is higher than that of Anatolian High School students ( $M_{vocational\ and\ technical}=19.69$ ;  $M_{anatolian}=18.87$ ). Positive future expectation also differs significantly according to the status of having a relative who is treated for coronavirus [ $t(571)=1.61$ ;  $p=.107$ ]. Positive future expectation did not differ significantly compared to witnessing/listening to the lives of individuals treated for coronavirus [ $t(571)=.525$ ;  $p=.600$ ]. According to the Anova results, the expectation for a positive future differs significantly from the thought for the end of the pandemic period [ $F(3,486)=.016$ ;  $p=.016$ ]. This difference in the positive future expectation scale is in favor of thinking that the pandemic will end between 1 year and 2 years. This result shows that students with high positive future expectations have a belief that the pandemic will end in a shorter time. Positive future expectation differs significantly according to grade level [ $F(3,569)=8.04$ ;  $p<.001$ ]. Tukey test results, in the positive future expectation scale, between the 9th and 11th grades, in favor of the 9th grade; Between the 9th and 12th grades, in favor of the 9th grade; There is a significant difference between the 10th and 12th grades in favor of the 10th grade. According to these results, it is seen that the students in the lower class have higher positive future expectations.

Table 3 shows the hierarchical regression analysis assumptions regarding the prediction of positive future expectations.

**Table 3.** Hierarchical Regression Analysis Assumptions Regarding the Prediction of Positive Future Expectation Variable

PFE	Independent variables	Tolerans	VIF	CI	Durbin-Watson
	Gender	.992	1.008	4.138	
	Grade Level	.992	1.008	8.144	
	Gender	.987	1.013	4.726	
	Grade Level	.986	1.014	7.385	
	Grit	.989	1.011	21.597	
	Gender	.985	1.015	5.192	1.938
	Grade Level	.984	1.016	7.398	
	Grit	.854	1.171	13.541	
	PSS	.859	1.165	24.209	

According to the results, the tolerance value was higher than .20, the variance amplification factor (VIF) values were lower than 10, and the condition index (CI) values were lower than 30, indicating that there was no multicollinearity problem. Table 4 shows the results of the hierarchical regression analysis regarding the predictors of gender, grade level, courage and perceived social support variables that predict positive future expectations.

**Table 4.** Hierarchical Regression Analysis Results for Predicting Positive Future Expectations

	B	Standard error	Beta	t	R <sup>2</sup>	ΔR <sup>2</sup>
<b>Blok 1</b>						
Gender	-1.061	.407	-.107	-2.607**	.051	.051
Grade Level	-.716	.141	-.208	-5.067***		
<b>Blok 2</b>						
Gender	-.698	.353	-.070	-1.977*	.290	.240
Grade Level	-.584	.123	-.169	-4.759***		
Grit	.370	.027	.492	13.862***		
<b>Blok 3</b>						
Gender	-.792	.341	-.080	-2.323*	.340	.050
Grade Level	-.548	.118	-.159	-4.628***		
Grit	.303	.028	.403	10.928***		
PSS	.216	.033	.240	6.527***		

\*p<.05, \*\*p<.01, \*\*\*p<.001

Gender and grade level variables were included in the analysis in the first block. As seen in Table 4, positive future expectations were found to be significantly predicted by these two variables and explained by 5% [F(2,570) = 15,200; p<.001].

The grit variable was added to the analysis as the second block. Positive future expectations were significantly predicted by grit and explained 24% of the variance [F (3,569) = 77.588; p<.001].

The perceived social support variable was added to the analysis in the third block. Positive future expectations were found to be significantly predicted by perceived social support, with 5% of the variance explained [F(4,568) = 73.094; p<.001]. Thus, the total variance explained increased to 34%. These findings support the research hypothesis.

### Discussion

In this study, the predictive power of gender, grade level, when the pandemic will end, grit, and perceived social support variables for positive future expectations was examined. The first finding of the study is that these variables explain 34% of the variance in positive future expectation scores. When other variables were kept constant, it was concluded that only grit and perceived social support variables explained 29% of the variance in positive future expectation scores. It was seen that the greatest contribution to the explained variance was grit. Jin et al. (2019) concluded that high positive future expectations are associated with high

grit. Other studies conducted during the pandemic period conclude that grit positively affects mental health. For example, one study reveals that grit has a positive effect on students' well-being (Kareem et al., 2023). Likewise, there are other studies that conclude that grit is positively related to well-being during the pandemic period (Bono et al., 2020). In another study conducted with adolescents, courage is associated with post-pandemic well-being and post-traumatic growth (Casali et al., 2023). Lytle and Shin (2023) state in their research that undergraduate students with higher levels of grit during the pandemic period felt less anxiety about their future academic and career goals. Erarslan's (2023) research shows the importance of grit in coping with and adapting to the challenges created by the pandemic period in teaching environment. These results demonstrate the importance of grit in coping with the effects of the pandemic. Since expectations about the future are created by individuals, it is expected that an internal variable such as grit included in the research will have a high contribution to future expectations. In addition, the perceived social support of adolescents may cause them to develop positive emotions and have a more positive outlook on the future.

As a result of the regression analysis, it was observed that perceived social support explained the positive future expectation variance at a rate of approximately 5%. Considering the relationship between perceived social support and future expectations of adolescents, they usually share their future plans with their parents, siblings, peers, and teachers, which is important for a stronger future orientation (Crespo et al., 2013) and individuals are confronted with stressful events. The most important factor that positively affects the health of an individual is the social support that individuals perceive from their families and close people (Terzi, 2008). Karaca, Karakoç, Bingöl, Eren, and Andsoy (2016) stated in their research that non-working adolescents who score higher in family relationships and relationships with important people have higher future expectations than working adolescents. The importance of social support for mental health is an important factor, especially during difficult life events such as pandemics. A study conducted during the pandemic period states that perceived social support is an important protective factor for the mental health of children and adolescents (Shoshani & Kor, 2022). In another study, it was expressed that social support perceived by adolescents who could better cope with the pandemic was at a high level, and the low level of perceived social support during this period negatively affected mental health (Liu et al., 2022). Another study conducted with adolescents determined that there was a positive and significant relationship between perceived social support and well-being during the pandemic (Kurudirek et al., 2022). Similarly, another study concluded that as perceived social support increased during the pandemic period, psychological distress decreased (Radhakrishnan et al., 2022). Zhuo et al. (2021) assessed in their research that the social support perceived by students returning to school during the COVID-19 period could moderate the relationship between intolerance of uncertainty and anxiety and depression. Although these results show the necessity and importance of social support during the pandemic period, there are different views in the literature on understanding the relationships between future expectations and social support. While there are studies stating that perceived family and peer support is associated with positive future expectation (Dubow et al., 2001), there are also studies stating that family and peer group support contribute little to shaping the future expectations of adolescents (Iovu, 2013; Iovu, 2014; Iovu, Hărăguș & Roth, 2016). In addition, there were findings showing that lonely adolescents score lower in future orientation than socially introverted adolescents (Seginer & Lilach, 2004).

Another finding of the study is to examine whether positive future expectation scores according to gender show a significant difference. In the study, it was revealed that positive future expectations show a difference in favor of female students. Similarly, there are studies in the literature stating that girls have more positive expectations about their future than boys (Brown, Teufel, Birch & Kancherla, 2006; Mello & Swanson, 2007; Tuncer, 2011b; Iovu, 2013; Iovu, 2014; Iovu, Hărăguș & Roth, 2016). Additionally, Seginer and Lilach (2004) found that males living alone have lower future expectations than females living alone. On the contrary, Tuncer and Bahadır (2018) found that male students had higher expectations than female students. In addition, Bayoğlu and Purutçuoğlu (2010) found that adolescents' future expectations are mostly related to education, work, and economic issues and that their future expectations of the adolescents participating in the research regarding social life are low. From this point of view, it can be said that the future expectation in favor of girls is due to the fact that the peer groups of female adolescents have less risk than male adolescents, that families generally display a more protective and caring attitude when raising girls culturally, and the roles given to girls from an early age in terms of gender roles.

It has been observed that school type affects students' positive future expectations. It can be said that vocational and technical Anatolian high school students have higher positive future expectations compared to students studying in other high school types. Similarly, Uluçay, Özpolat, İşgör and Taşkesen (2014) discovered that the future expectations of adolescents differ significantly depending on the type of school.

Positive future expectations also differ significantly by grade level. It was observed that as the grade level increased, the positive future expectation decreased. The reasons, such as the increase in responsibilities as age increases in adolescence (Rice & Dolgin, 2005), the necessity of making important life decisions, and the increase in the expectations of the environment from the adolescent as age increases, may be the reason for the change in future expectations according to the grade level. Contrary to this result, Kaplan et al. (2021) indicate in their research that future expectation scores increase as age increases. Rafaelli and Koller (2005) stated that age differences did not arise in their future expectations. Likewise, Israelashvili (1997) revealed that grade level alone is not a predictor of students' future expectations.

Positive future expectations do not differ significantly due to witnessing and listening to the lives of individuals receiving coronavirus treatment and having a relative receiving treatment. Since adolescents are open to their own experiences and peer influence when evaluating life, listening/witnessing the coronavirus experience may have been ineffective in shaping adolescents' future expectations. Commodari and La Rosa (2020), who investigated the effects of quarantine on adolescents, stated that the quarantine experience and various health and social distance rules that must be followed lead to a feeling of uncertainty about the future. These negative experiences during the COVID-19 period also have a negative impact on adolescents' future plans (Tuncer, 2011).

In addition, the adolescents participating in this study think that the pandemic will end sooner as their positive future expectations increase. Positive future expectation appears to be a protective factor against negative thoughts about the pandemic. It has been found that when young people have hope and purpose, their future prospects are more positive (Stoddard & Pierce, 2015), and hope, meaning, and life satisfaction are effective in coping with COVID-19 (Trzebiński, Cabański & Czarnecka, 2020).

This research shows that grit and perceived social support levels in adolescents are important variables that predict positive future expectations. Positive future expectation is positively related to being determined, having high perceived social support, being female, having a low grade level, attending a vocational and technical Anatolian high school, and thinking that the pandemic will end in a shorter time, but it is not related to the presence of a relative who has been treated for coronavirus in the immediate environment and witnessing the lives of individuals who have been treated for coronavirus.

### **Limitations**

If this study was associated with academic success, different results could be obtained and interpreted differently. However, because the study was carried out during the COVID-19 period, the data were collected online, and the academic achievements of the students were not very realistic as they received distance education during this period, which limited the study. Furthermore, because data were difficult to obtain during this time period, data were collected from only a few school types. If data were collected from different school types and different regions, whether private or state, different results could be obtained. In addition, since the study was conducted during the COVID-19 period, the chance to choose the sample can be regarded as a limitation, since 77% of the group participating in the study is female.

### **Implications**

With this study, it has been revealed that the pandemic period negatively affects positive future expectations. Therefore, practical studies should be conducted with adolescents to reduce the negative effects of the COVID-19 period. In addition, longitudinal studies can be conducted to observe how the effect of grit and perceived social support in predicting positive future expectations changes over time because there is literature suggesting that those with a strong sense of social support overcome many negative situations without harm (Cobo-Rendón et al., 2020). In addition, in this study, adolescents' future expectations were only measured in the context of grit and perceived social support. Since positive future expectation also includes the state of

being hopeful, it is thought that it will contribute a lot to the literature if it is investigated by associating it with different internal and external protective factors, both cognitive and non-cognitive.

**Author Contributions:** The first author carried out the planning, introduction, findings, discussion and analysis of the study. All authors contributed to the writing of the introduction, findings, and discussion sections. The authors have read and approved the final version of the study.

**Funding Disclosure:** This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Conflicts of Interest:** The authors declares that they have no conflict of interest.

**Data Availability:** The data set are available from the corresponding author on reasonable request.

**Ethics Approval and Consent to Participate:** Ethichs committee approval from the local university and research permissions from the Ministry of National Education were obtained for the research. The research was carried out with only voluntary participants.

## References

- Aliyev, R. (2021). Azim. B. Ergüner-Tekinalp & Ş. Işık (Ed.), *Eğitimde pozitif psikoloji uygulamaları*. (5. Baskı, s.221-251). Pegem Akademi.
- Aliyev, R., & Ayaz, A. (In review). Grit and academic self-efficacy: The mediating role of perceived social support
- Aliyev, R., Akbaş, U., & Özbay, Y. (2021). Mediating role of internal factors in predicting academic resilience. *International Journal of School & Educational Psychology*, 9(3), 236-251. <https://doi.org/10.1080/21683603.2021.1904068>
- Aristovnik, A., Kerzic, D., Ravselj, D., Tomazevic, N., & Umek, L. (2020). Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability*, 12(20), 8438. <https://doi.org/10.3390/su12208438>
- Arnett, J. J. (2000). High hopes in a grim world: Emerging adults' views of their futures and "Generation X." *Youth & Society*, 31(3), 267–286. <https://doi.org/10.1177/0044118X00031003001>
- Arslan, Y. (2009). *Lise Öğrencilerinin Algıladıkları Sosyal Destek İle Sosyal Problem Çözme Arasındaki İlişkinin İncelenmesi*[Yayınlanmamış Yüksek Lisans Tezi]. Selçuk Üniversitesi.
- Artar, M. (2003). Depremi yaşayan ergenlerin gelecek beklentilerinin içeriği. *Kriz Dergisi*, 11(3), 21-27. [https://doi.org/10.1501/Kriz\\_0000000195](https://doi.org/10.1501/Kriz_0000000195)
- Ateş, B. (2012). Ortaöğretim öğrencilerinin sosyal destek algılarının bazı değişkenlere göre incelenmesi. *Akademik Bakış Dergisi*, 30(3), 1-16.
- Banerjee D. (2020). The COVID-19 outbreak: Crucial role the psychiatrists can play. *Asian Journal of Psychiatry*, 50, 102014. <https://doi.org/10.1016/j.ajp.2020.102014>
- Bayoğlu, A. S., & Purutçuoğlu, E. (2010). Yetiştirme yurdunda kalan ergenlerin gelecek beklentileri ve sosyal destek algıları. *Kriz Dergisi*, 18(1), 27-39. [https://doi.org/10.1501/Kriz\\_0000000316](https://doi.org/10.1501/Kriz_0000000316)
- Bono, G., Reil, K., & Hescocox, J. (2020). Stress and wellbeing in college students during the COVID-19 pandemic: Can grit and gratitude help? *International Journal of Wellbeing*, 10(3), 39-57. <https://doi.org/10.5502/ijw.v10i3.1331>
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513–531. <https://doi.org/10.1037/0003-066X.32.7.513>
- Bronfenbrenner, U., & Evans, G. W. (2000). Developmental science in the 21st century: Emerging questions, theoretical models, research designs and empirical findings. *Social Development*, 9(1), 115–125. <https://doi.org/10.1111/1467-9507.00114>
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Series Eds.) & R. M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed., pp. 793–828). New York, NY: Wiley.
- Brown, S. L., Teufel, J. A., Birch, D. A., & Kancherla, V. (2006). Gender, age, and behavior differences in early adolescent worry. *The Journal of School Health*, 76(8), 430–437. <https://doi.org/10.1111/j.1746-1561.2006.00137.x>

- Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2020). *Eğitimde bilimsel araştırma yöntemleri* (28. Baskı). Ankara.
- Casali, N., Feraco, T., & Meneghetti, C. (2023). Keep going, keep growing: A longitudinal analysis of grit, posttraumatic growth, and life satisfaction in school students under COVID-19. *Learning and Individual Differences, 105*, 102320. <https://doi.org/10.1016/j.lindif.2023.102320>
- Chen, P., & Vazsonyi, A. T. (2012). Future orientation, school contexts, and problem behaviors: a multilevel study. *Journal of Youth and Adolescence, 42*(1), 67–81. <https://doi.org/10.1007/s10964-012-9785-4>
- Clark, K. N., Dorio, N. B., Eldridge, M. A., Malecki, C. K., & Demaray, M. K. (2019). Adolescent academic achievement: A model of social support and grit. *Psychology in the Schools, 57*, 204–221. <https://doi.org/10.1002/pits.22318>
- Cobo-Rendón, R., López-Angulo, Y., Pérez-Villalobos, M. V., & Díaz-Mujica, A. (2020). Perceived social support and its effects on changes in the affective and eudaimonic well-being of Chilean university students. *Frontiers in Psychology, 11*, 590513. <https://doi.org/10.3389/fpsyg.2020.590513>
- Commodari, E., & La Rosa, V. L. (2020). Adolescents in quarantine during COVID-19 pandemic in Italy: Perceived health risk, beliefs, psychological experiences and expectations for the future. *Frontiers in Psychology, 11*, 559951. <https://doi.org/10.3389/fpsyg.2020.559951>
- Crespo, C., Jose, P. E., Kielpikowski, M., & Pryor, J. (2013). "On solid ground": family and school connectedness promotes adolescents' future orientation. *Journal of Adolescence, 36*(5), 993–1002. <https://doi.org/10.1016/j.adolescence.2013.08.004>
- Datu, J. A. D. (2017). Sense of relatedness is linked to higher grit in a collectivist setting. *Personality and Individual Differences, 105*, 135–138. <https://doi.org/10.1016/j.paid.2016.09.039>
- Datu, J. A. D., King, R. B., Valdez, J. P. M., & Eala, M. S. M. (2019). Grit is associated with lower depression via meaning in life among Filipino high school students. *Youth & Society, 51*(6), 865–876. <https://doi.org/10.1177/0044118X18760402>
- Dubow, E. F., Arnett, M., Smith, K., & Ippolito, M. F. (2001). Predictors of future expectations of Inner-City children: A-9 month prospective study. *The Journal of Early Adolescence, 21*(1), 5–28. <https://doi.org/10.1177/0272431601021001001>
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: grit and passion for long-term goals. *Journal of Personality and Social Psychology, 92*(6), 1087–1101. <https://doi.org/10.1037/0022-3514.92.6.1087>
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the short grit scale (grit-s). *Journal of Personality Assessment, 91*(2), 166–174. <https://doi.org/10.1080/00223890802634290>
- Dursun, A., Özkan, M.S., & Başkaya-Körler, Y. (2018). Ergenlerin gelecek beklentilerinin yordayıcısı olarak: Psikolojik semptomlar ve akademik başarı. *Bursa Uludağ Üniversitesi Eğitim Fakültesi Dergisi, 32* (1), 121-144. <https://doi.org/10.19171/uefad.447592>
- Erarslan, A. (2023). Cognitive flexibility and grit during times of crisis for Turkish EFL teachers. *Psychology in the Schools, 60*, 2296–2319. <https://doi.org/10.1002/pits.22852>
- Erden, Z. Ş., & Aliyev, R. (2022). Anxiety and psychological needs of high school students: COVID-19 period. *Psychology in the Schools*. Advance online publication. <https://doi.org/10.1002/pits.22767>
- Eryılmaz A. (2011). Ergen öznel iyi oluşu ile olumlu gelecek beklentisi arasındaki ilişkinin incelenmesi. *Düşünen Adam Psikiyatri ve Nörolojik Bilimler Dergisi, 24*, 209-215. <https://doi.org/10.5350/DAJPN2011240306>
- Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education* (6th ed.). New York, NY: McGraw-Hill.
- Garagiola, E. R., Lam, Q., Wachsmuth, L. S., Tan, T. Y., Ghali, S., Asafo, S., & Swarna, M. (2022). Adolescent resilience during the COVID-19 pandemic: A review of the impact of the pandemic on developmental milestones. *Behavioral Sciences, 12*(7), 220. <https://doi.org/10.3390/bs12070220>
- Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research, 26*(3), 499–510. [https://doi.org/10.1207/s15327906mbr2603\\_7](https://doi.org/10.1207/s15327906mbr2603_7)

- İmamoğlu, E. O., & Guler-Edwards, A. (2007). Self-related differences in future time orientations. *Türk Psikoloji Dergisi*, 22(60), 115-138.
- Iovu, M. B. (2014). Adolescents' positive expectations and future worries on their transition to adulthood. *Procedia - Social and Behavioral Sciences*, 149, 433-437. <https://doi.org/10.1016/j.sbspro.2014.08.283>
- Iovu, M.B. (2013). Future expectations of senior high schoolers in Romania. *International Journal of Adolescence and Youth*, 20(4), 518-527. <https://doi.org/10.1080/02673843.2013.810162>
- Iovu, M.B., Hărăguș, P.T., & Roth, M. (2016). Constructing future expectations in adolescence: relation to individual characteristics and ecological assets in family and friends. *International Journal of Adolescence and Youth*, 23(1), 1-10. <https://doi.org/10.1080/02673843.2016.1247007>
- Israelashvili, M. (1997). School adjustment, school membership and adolescents' future expectations. *Journal of Adolescence*, 20(5), 525-535. <https://doi.org/10.1006/jado.1997.0107>
- Jachimowicz, J. M., Wihler, A., Bailey, E. R., & Galinsky, A. D. (2018). Why grit requires grit and passion to positively predict performance. *PNAS Proceedings of the National Academy of Sciences of the United States of America*, 115(40), 9980-9985. <https://doi.org/10.1073/pnas.1803561115>
- Jacobs, J. E., Lanza, S., Osgood, D. W., Eccles, J. S., & Wigfield, A. (2002). Changes in children's self-competence and values: gender and domain differences across grades one through twelve. *Child Development*, 73(2), 509-527. <https://doi.org/10.1111/1467-8624.00421>
- Jin, H., Wang, W., & Lan, X. (2019). Peer attachment and academic procrastination in Chinese college students: A moderated mediation model of future time perspective and grit. *Frontiers in Psychology*, 10, 2645. <https://doi.org/10.3389/fpsyg.2019.02645>
- Kaplan, V., Kürümlüoğlu, R., & Bütün, B. (2021). COVID-19 pandemisine bağlı karantina sürecinin ergenlerin gelecek beklentileri ve anksiyete düzeylerine etkisi. *Çocuk ve Gelişim Dergisi*, 4(7), 12-23. <https://dergipark.org.tr/en/pub/cg/issue/63053/898202>
- Karaca, S., Karakoç, A., Bingöl, F., Eren, N., & Andsoy, I.I. (2016). Comparison of subjective wellbeing and positive future expectations in between working and nonworking adolescents in Turkey. *Iranian Red Crescent Medical Journal*, 18(2): e21055. <https://doi.org/10.5812/ircmj.21055>.
- Karaman, M. A., Eşici, H., Tomar, İ. H., & Aliyev, R. (2021). COVID-19: Are school counseling services ready? Students' psychological symptoms, school counselors' views, and solutions. *Frontiers in Psychology*, 12, 647740. <https://doi.org/10.3389/fpsyg.2021.647740>
- Karataş, Z. (2020). COVID-19 pandemisi sürecinin LGS ve YKS sınavına hazırlık sürecinde olan çocuk ve ergenlerin psikolojilerine yansımalarının incelenmesi. B. Gençdoğan (Eds.), *Pandemi Döneminde Çocuk ve Ergen Psikolojisi*. (pp. 54-74). Türkiye Klinikleri.
- Kareem, J., Thomas, S., Kumar, P. A., & Neelakantan, M. (2023). The role of classroom engagement on academicgrit, intolerance to uncertainty and well-being among school students during the second waveof the COVID-19 pandemic in India. *Psychology in the Schools*, 60, 1594-1608. <https://doi.org/10.1002/pits.22758>
- Kiss, O., Alzueta, E., Yuksel, D., Pohl, K. M., de Zambotti, M., Müller-Oehring, E. M., Prouty, D., Durley, I., Pelham, W. E., 3rd, McCabe, C. J., Gonzalez, M. R., Brown, S. A., Wade, N. E., Marshall, A. T., Sowell, E. R., Breslin, F. J., Lisdahl, K. M., Dick, A. S., Sheth, C. S., McCandliss, B. D., Guillaume, M., Van Rinsveld, A. M., Dowling, G. J., Tapert, S. F., & Baker, F. C. (2022). The pandemic's toll on young adolescents: Prevention and intervention targets to preserve their mental health. *The Journal of Adolescent Health*, 70(3), 387-395. <https://doi.org/10.1016/j.jadohealth.2021.11.023>
- Koller, S.H., Raffaelli, M., & Morais, N.A. (2020). From theory to methodology: Using ecological engagement to study development in context. *Child Development Perspectives*, 14(3), 157-163. <https://doi.org/10.1111/cdep.12378>
- Kumar, A., & Nayar, K. R. (2021). COVID 19 and its mental health consequences. *Journal of Mental Health (Abingdon, England)*, 30(1), 1-2. <https://doi.org/10.1080/09638237.2020.1757052>
- Kurudirek, F., Arıkan, D., & Ekici, S. (2022). Relationship between adolescents' perceptions of social support and their psychological well-being during COVID-19 pandemic: A case study from Turkey. *Children and Youth Services Review*, 137, 106491. <https://doi.org/10.1016/j.childyouth.2022.106491>

- Kwon, H.W. (2018). *The sociology of grit: Cross-cultural approaches to social stratification*. [Unpublished Doctoral dissertation]. University of Iowa. <https://doi.org/10.17077/etd.4oeodiua>
- LeMoult, J., Humphreys, K. L., Tracy, A., Hoffmeister, J. A., Ip, E., & Gotlib, I. H. (2019). Meta-Analysis: Exposure to early life stress and risk for depression in childhood and adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(7), 842-855. <https://doi.org/10.1016/j.jaac.2019.10.011>
- Liu, Y., Hu, J., & Liu, J. (2022). Social support and depressive symptoms among adolescents during the COVID-19 pandemic: The mediating roles of loneliness and meaning in life. *Frontiers in Public Health*, 10, 916898. <https://doi.org/10.3389/fpubh.2022.916898>
- Lytle, A., & Shin, J. E. L. (2023). Resilience and grit predict fewer academic and career concerns among first-year undergraduate students during COVID-19. *Social Psychology of Education*, 26, 227-240. <https://doi.org/10.1007/s11218-022-09741-3>
- MacCann, C., & Roberts, R. D. (2010). Do time management, grit, and self-control relate to academic achievement independently of conscientiousness? In R. E. Hicks (Ed.), *Personality and individual differences: Current directions* (pp. 79–90). Australian Academic Press.
- Mello, Z. R., & Swanson, D. P. (2007). Gender differences in African American adolescents' personal, educational, and occupational expectations and perceptions of neighborhood quality. *Journal of Black Psychology*, 33(2), 150–168. <https://doi.org/10.1177/0095798407299514>
- Milli Eğitim Bakanlığı. (2020). *Uzaktan Eğitim Sürecinin Detayları*. Retrived from 10 February 2022: <https://www.meb.gov.tr/uzaktan-egitim-surecinin-detaylari/haber/21990/tr>
- Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, 11(1), 1–59. [https://doi.org/10.1016/0273-2297\(91\)90002-6](https://doi.org/10.1016/0273-2297(91)90002-6)
- Nurmi, J. E., & Pulliainen, H. (1991). The changing parent-child relationship, self-esteem, and intelligence as determinants of orientation to the future during early adolescence. *Journal of Adolescence*, 14(1), 35–51. [https://doi.org/10.1016/0140-1971\(91\)90044-r](https://doi.org/10.1016/0140-1971(91)90044-r)
- Oettingen, G., & Mayer, D. (2002). The motivating function of thinking about the future: Expectations versus fantasies. *Journal of Personality and Social Psychology*, 83(5), 1198–1212. <https://doi.org/10.1037/0022-3514.83.5.1198>
- Öncü, S. (2022). Covid-19 pandemisinin ergenler üzerindeki etkilerinin incelenmesi. *Edu 7: Yeditepe Üniversitesi Eğitim Fakültesi Dergisi*, 11 (13), 18-35. <https://dergipark.org.tr/en/pub/edu7/issue/67809/1008401>
- Park, D., Tsukayama, E., Yu, A., & Duckworth, A. (2020). The development of grit and growth mindset during adolescence. *Journal of Experimental Child Psychology*, 198, 104889. <https://doi.org/10.1016/j.jecp.2020.104889>
- Park, D., Yu, A., Baelen, R. N., Tsukayama, E., & Duckworth, A. L. (2018). Fostering grit: Perceived school goal-structure predicts growth in grit and grades. *Contemporary Educational Psychology*, 55, 120–128. <https://doi.org/10.1016/j.cedpsych.2018.09.007>
- Prince, D. M., Epstein, M., Nurius, P. S., Gorman-Smith, D., & Henry, D. B. (2019). Reciprocal effects of positive future expectations, threats to safety, and risk behavior across adolescence. *Journal of Clinical Child and Adolescent Psychology*, 48(1), 54–67. <https://doi.org/10.1080/15374416.2016.1197835>
- Raffaelli, M., & Koller, S. H. (2005). Future expectations of Brazilian street youth. *Journal of Adolescence*, 28(2), 249–262. <https://doi.org/10.1016/j.adolescence.2005.02.007>
- Rathakrishnan, B., Bikar Singh, S. S., & Yahaya, A. (2022). Perceived social support, coping strategies and psychological distress among university students during the COVID-19 pandemic: An exploration study for social sustainability in Sabah, Malaysia. *Sustainability*, 14(6), 3250. <https://doi.org/10.3390/su14063250>
- Rice, F. P., & Dolgin, K. G. (2005). *The adolescent: Development, relationships and culture* (11th ed.). Pearson Education New Zealand.

- Seginer, R. (2008). Future orientation in times of threat and challenge: How resilient adolescents construct their future. *International Journal of Behavioral Development*, 32(4), 272–282. <https://doi.org/10.1177/0165025408090970>
- Seginer, R. (2019). Adolescent future orientation: Does culture matter?. *Online Readings in Psychology and Culture*, 6(1). <https://doi.org/10.9707/2307-0919.1056>
- Seginer, R., & Lilach, E. (2004). How adolescents construct their future: the effect of loneliness on future orientation. *Journal of Adolescence*, 27(6), 625–643. <https://doi.org/10.1016/j.adolescence.2004.05.003>
- Shevlin, M., McBride, O., Murphy, J., Miller, J. G., Hartman, T. K., Levita, L., Mason, L., Martinez, A. P., McKay, R., Stocks, T., Bennett, K. M., Hyland, P., Karatzias, T., & Bentall, R. P. (2020). Anxiety, depression, traumatic stress and COVID-19-related anxiety in the UK general population during the COVID-19 pandemic. *BJPsych open*, 6(6), e125. <https://doi.org/10.1192/bjo.2020.109>
- Shoshani, A., & Kor, A. (2022). The mental health effects of the COVID-19 pandemic on children and adolescents: Risk and protective factors. *Psychological Trauma: Theory, Research, Practice, and Policy*, 14(8), 1365–1373. <https://doi.org/10.1037/tra0001188>
- Singh, K., & Jha, S. D. (2008). Positive and negative affect, and grit as predictors of happiness and life satisfaction. *Journal of the Indian Academy of Applied Psychology*, 34(Spec Issue), 40–45.
- Smokowski, P. R., Evans, C. B., Cotter, K. L., & Webber, K. C. (2014). Ethnic identity and mental health in American Indian youth: Examining mediation pathways through self-esteem, and future optimism. *Journal of Youth and Adolescence*, 43(3), 343–355. <https://doi.org/10.1007/s10964-013-9992-7>
- Stoddard, S. A., & Pierce, J. (2015). Promoting positive future expectations during adolescence: The role of assets. *American Journal of Community Psychology*, 56(3-4), 332–341. <https://doi.org/10.1007/s10464-015-9754-7>
- Su, S., Li, X., Lin, D., & Zhu, M. (2017). Future orientation, social support, and psychological adjustment among left-behind children in rural China: A longitudinal study. *Frontiers in Psychology*, 8, 1309. <https://doi.org/10.3389/fpsyg.2017.01309>
- Sulimani-Aidan, Y., & Benbenishty, R. (2011). Future expectations of adolescents in residential care in Israel. *Children and Youth Services Review*, 33(7), 1134–1141. <http://dx.doi.org/10.1016/j.childyouth.2011.02.006>
- Sundarasan, S., Chinna, K., Kamaludin, K., Nurunnabi, M., Baloch, G. M., Khoshaim, H. B., Hossain, S., & Sukayt, A. (2020). Psychological impact of COVID-19 and lockdown among university students in Malaysia: Implications and policy recommendations. *International Journal of Environmental Research and Public Health*, 17(17), 6206. <https://doi.org/10.3390/ijerph17176206>
- Sundblad, G. B., Jansson, A., Saartok, T., Renström, P., & Engström, L. M. (2008). Self-rated pain and perceived health in relation to stress and physical activity among school-students: a 3-year follow-up. *Pain*, 136(3), 239–249. <https://doi.org/10.1016/j.pain.2007.06.032>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/Pearson Education.
- Terzi, Ş. (2008). Üniversite öğrencilerinin psikolojik dayanıklılıkları ve algıladıkları sosyal destek arasındaki ilişki. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3(29), 1-11. <https://dergipark.org.tr/tr/pub/tpdrd/issue/21449/229847>
- 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. <https://doi.org/10.1080/15325024.2020.1765098>
- Tuncer, M. (2011a). Ergen gelecek beklentileri ölçeğinin Türkçeye uyarlanması. *Turkish Studies*, 6(3), 2265-1275. <http://doi.org/10.7827/TurkishStudies.2335>
- Tuncer, M. (2011b). Yükseköğretim gençliğinin gelecek beklentileri üzerine bir araştırma. *Turkish Studies*, 6(2), 935-948.
- Tuncer, M., & Bahadır, F. (2018). Lise öğrencilerinin gelecek beklentilerinin bazı değişkenler açısından incelenmesi. *Journal of Human Sciences*, 15(1), 541-553.

- Uluçay, T., Özpolat, A., İşgör, İ., & Taşkesen, O. (2014). Lise öğrencilerinin gelecek beklentileri üzerine bir araştırma. *Education Sciences*, 9 (2), 234-247. <https://dergipark.org.tr/en/pub/nwsaedu/issue/19808/211882>
- Vela, J. C., Lu, M.T. P., Lenz, A. S., & Hinojosa, K. (2015). Positive psychology and familial factors as predictors of Latina/o students' Psychological Grit. *Hispanic Journal of Behavioral Sciences*, 37(3), 287–303. <https://doi.org/10.1177/0739986315588917>
- Verdugo, L., & Sanchez-Sandoval, Y. (2018). Predictive capacity of psychopathological symptoms for Spanish adolescents' future expectations. *Open Access Library Journal*, 5, 1-15. <https://doi.org/10.4236/oalib.1104546>
- Von Culin, K. R., Tsukayama, E., & Duckworth, A. L. (2014). Unpacking grit: Motivational correlates of grit and passion for long-term goals, *The Journal of Positive Psychology*, 9(4), 306-312. <https://doi.org/10.1080/17439760.2014.898320>
- Watt H. M. (2004). Development of adolescents' self-perceptions, values, and task perceptions according to gender and domain in 7th- through 11th-grade Australian students. *Child Development*, 75(5), 1556–1574. <https://doi.org/10.1111/j.1467-8624.2004.00757.x>
- Wight, R. G., Botticello, A. L., & Aneshensel, C. S. (2006). Socioeconomic context, social support, and adolescent mental health: A multilevel investigation. *Journal of Youth and Adolescence*, 35(1), 109–120. <https://doi.org/10.1007/s10964-005-9009-2>
- Williams, S. N., Armitage, C. J., Tampe, T., & Dienes, K. (2020). Public perceptions and experiences of social distancing and social isolation during the COVID-19 pandemic: a UK-based focus group study. *BMJ open*, 10(7), e039334. <https://doi.org/10.1136/bmjopen-2020-039334>
- Wolters, C. A., & Hussain, M. (2014). Investigating grit and its relations with college students' self-regulated learning and academic achievement. *Metacognition and Learning*, 10(3), 293–311. <https://doi.org/10.1007/s11409-014-9128-9>
- Zhang, C., Ye, M., Fu, Y., Yang, M., Luo, F., Yuan, J., & Tao, Q. (2020). The psychological impact of the COVID-19 pandemic on teenagers in China. *The Journal of adolescent health*, 67(6), 747–755. <https://doi.org/10.1016/j.jadohealth.2020.08.026>
- Zhuo, L., Wu, Q., Le, H., Li, H., Zheng, L., Ma, G., & Tao, H. (2021). COVID-19 related intolerance of uncertainty and mental health among back-to-school students in Wuhan: The moderation effect of social support. *International Journal of Environmental Research and Public Health*, 18(3), 981. <https://doi.org/10.3390/ijerph18030981>