



Turkish Psychological Counseling and Guidance Association
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I am happy to share with you the last issue of 2022 of the Turkish Journal of Psychological Counseling and Guidance. The publication of the Journal's new issue is the result of the devoted efforts and teamwork of the newly appointed team. When we took office in September 2022, we had regular meetings almost every week to discuss how to move the Journal forward. The first thing that caught our attention was that the OJS system in which the articles were loaded was impractical. For this reason, the first thing we did was to switch from the Journals OEJ system to the Dergipark system, and indeed, by doing so, we speed up the submission processes.

Although the language of the Journal is English, we noticed that the explanations on both the OJS and Journals web page were mainly in Turkish. This situation discouraged foreign researchers who wanted to submit articles to our Journal. For this reason, we continue to work on updating both our own Journals page and its Dergipark page. We also created a new position on the editorial board, that of a Statistics editor, with the duty of controlling the quality of statistical techniques used in the submitted articles.

The paramount goal of our Journal is to become an SSCI-indexed journal. To reach this goal, it is necessary first to enter the ESCI. Our work in this direction continues, and we hope we will soon be able to apply to be included in ESCI.

In our Journal, the referee evaluation process is carried out per scientific principles. In this context, we make every article that passes the preliminary review process with two referees who are experts in that subject, with a double-blind refereeing process, being careful not to assign a referee from the department where the author works. In addition, we publish only one article by the same author in the same issue. In addition, we ensure consistency in the number of articles published in each issue. A total of 10 articles have been published in this issue. Nine of these articles are research, and one is review work. Eight of the research articles are quantitative, and one is qualitative. Two articles are scale development studies (the Interpersonal Affect Improvement Strategies Questionnaire; The Romantic Relationship Assessment Scale). Two articles studied the effectiveness of the programs they developed; one presents the topic "Emotion Regulation Skills and Mindfulness," and the other the effect of psychodrama, is assessed. Further, two articles are about Covid-19, two are about marriage, and one is about cyber victimization. One of these articles has a single author, six have two authors, two have three authors, and one has four authors. The submissions come from 13 universities and one from a primary school counselor.

I congratulate all the newly appointed team for their devoted efforts throughout this process. I want to thank our editors, Assoc. Prof. Dr. Özlem ULAŞ KILIÇ, Assoc. Prof. Dr. Selen DEMİRTAŞ ZORBAZ, Assist. Prof. Dr. Tansu MUTLU ÇAYKUŞ, our statistics editor Assoc. Prof. Dr. Murat BOYSAN, our English language editor, Assist. Prof. Dr. Tehseen NAZIR; technical team, Res. Asst. Zeynep GÖRGÜLÜ, Res. Asst. Ecem ÇİÇEK, Mehmet Fatih KILIÇ, and Özge ERDEM.

I would also like to thank our colleagues who served in the previous management of the Journal. I want to thank Editor-In-Chief Prof. Dr. Mehmet Engin DENİZ, editors Assoc. Dr. Seydi Ahmet SATICI, Assoc. Dr. Durmuş ÜMMET; Co-Editors Assoc. Dr. Önder BALTACI, Assoc. Dr. Ümüt ARSLAN; Language Editor Assoc. Dr. Ayşe Sibel DEMİRTAŞ; Technical Support Lect. Dr. Ömer Faruk AKBULUT.

Finally, my gratitude goes to the researchers who sent their articles and the referees who reviewed these articles. I believe the articles published in this issue will contribute to the counseling and guidance field.

Kind regards,

Prof. Dr. Metin PİŞKİN
Editor-In-Chief

RESEARCH

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ARAŞTIRMA

Açık Erişim

Psychometric Properties of Turkish Version of the Interpersonal Affect Improvement Strategies Questionnaire (IAISQ)

Kişilerarası Duygulanım İyileştirme Stratejileri Ölçeği'nin (KDİSÖ) Türkçe Adaptasyonu ve Psikometrik Özellikleri

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Article Information**Keywords**

Interpersonal affect improvement strategies, validity, reliability, confirmatory factor analysis

Anahtar Kelimeler

Kişilerarası duygulanım iyileştirme stratejileri, geçerlik, güvenilirlik, doğrulayıcı faktör analizi.

Article History

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ABSTRACT

The aim of this study was to adapt the Interpersonal Affect Improvement Strategies Questionnaire (IAISQ) into Turkish population, as well as to examine its validity and reliability estimates. The sample consisted of 610 university students. The original factor structure of the scale was confirmed in Turkish sample by confirmatory factor analysis (CFA). The internal reliability coefficient was found as .75 for overall scale (.74 for Positive Engagement subscale, .63 for Acceptance subscale). Significant correlation coefficients were found between the subscales of IAISQ and Interpersonal Emotion Regulation Questionnaire (IERQ), confirming a good criterion related validity. Overall results suggest that Turkish form of IAISQ is a valid and reliable measure to use for research purposes in order to investigate the Turkish students' interpersonal affect improvement strategies.

ÖZET

Bu çalışmanın amacı Kişilerarası Duygulanım İyileştirme Stratejileri Ölçeğini (KDİSÖ) Türk popülasyonuna uyarlamak ve geçerlik/güvenirlilik değerlerini incelemektir. Çalışmanın örneklemini 610 üniversite öğrencisinden oluşmaktadır. Ölçeğin orijinal faktör yapısı, Türkiye örnekleminde doğrulayıcı faktör analiziyle (DFA) doğrulanmıştır. İç güvenirlik katsayısı ölçeğin tamamı için .75 olarak bulunurken, Pozitif Katılım alt ölçeği için .74, Kabul alt ölçeği için .63 olarak hesaplanmıştır. Ölçeğin ölçüt geçerliği için Kişilerarası Duygu Düzenleme Ölçeği (KDDÖ) kullanılmış olup, KDİSÖ ve KDDÖ alt ölçekleri anlamlı korelasyon katsayıları bulunmuştur. Araştırmanın bulguları, KDİSÖ'nün, Türk öğrencilerinin kişilerarası duygulanım iyileştirme stratejilerini değerlendirmek amacıyla kullanılacak geçerli ve güvenilir bir ölçme aracı olduğunu göstermektedir.

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Ethical Statement: The study was approved by the Fatih Sultan Mehmet Vakıf University Ethics Committee on September 24, 2020 (No: 24/09/2020-28).

INTRODUCTION

Emotions are the biological reactions that emerge in a short span of time and regulate the responses of people to the important life events they experience (Gross & Levenson, 1993). It is possible to list a variety of emotions. Yet the six of them, namely happiness, sadness, disgust, fear, rage, and confusion were described as fundamental (Ekman, 2003). Emotions function as the primary power in organizing individuals' thoughts and behaviors (Dougherty, Abe, & Izard, 1996). They provide important information about the one's interaction with the world and include the reactions regarding the situations encountered during life span. People experience emotions actively in their private, social, and community lives and think that they should manage them (Gross, Richards, & John, 2006). Emotion regulation process includes reaction's magnitude, duration, the time to rise, way of reaching equilibrium, as well as the process of how individuals experience and express emotions (Gross, 1998). Emotion regulation process is important to provide flexibility for the motivation and orientation of the emotions people experience, to protect inner stimulation in behavioral processes and to respond to changing conditions quickly and efficiently (Cassidy, 1994; Thompson, 1991). Emotion regulation consists of intrinsic and extrinsic processes including a person's observation of self- responses, self-evaluation, changing them with appropriate responses and improving them to reach targets. This process comprises a decrease or an increase in the positive and negative feelings and provides balance for an appropriate response to specific situations (Gross, 1999; Langston, 1994; Thompson, 1994).

The basic model explaining the emotion regulation strategies is the process model which divides these strategies into two categories: antecedent-focused and response-focused (Gross, 2001, 2002). According to Gross (2001, 2002) antecedent-focused strategies include a selection of pleasing situations, intervention to situations in order to control feelings, and cognitive changes to control ideas about situations. On the other hand, response-focused strategies include the interpretation and regulation of behavioral and physiological responses resulting from experience with emotions. There are also different strategies for emotion regulation. For example, in cognitive emotion regulation, individuals' cognitive processes are effective, and emotions can be regulated through cognition. Accordingly, cognitive processes help individuals to control their emotions in face of the threatening or stressful events (Garnefski & Kraaij, 2007; Garnefski, Kraaij, & Spinhoven, 2001).

Despite the prevalence of studies on emotion regulation, most of these studies focus on intrapersonal emotion regulation processes, and this shows the need for studies on interpersonal emotion regulation processes (Hofmann, Carpenter, & Curtiss, 2016). Interpersonal emotion regulation is defined as motivation that occurs in a social context, performs as a communicative function among individuals, takes advantage of the presence and support of others in difficult times, and helps to improve others' emotional states (Hoffmann, 2014; Rime, 2007; Zaki & Williams, 2013). It consists of intrinsic and extrinsic forms. While intrinsic form refers to an individual's initiation of social interactions in order to regulate his/her emotional experiences, extrinsic form refers to the process in which an individual regulates another individual's emotions (Zaki & Williams, 2013). Before moving on to the interpersonal effect improvement strategies, the models of Interpersonal Emotion Management (IEM) (Williams, 2007) and the Interpersonal Affect Classification (IAC) (Niven, Totterdell, & Holman, 2009) will be elaborated more.

When emotions do not conform to norms, individuals try to change their emotions to avoid stress (Hochschild, 1983). While this effort was named as "emotion work" by Hochschild (1983), it was named

as “emotion management” by Thoits (1986). This management or work is important to be in healthy, social, and interactional communication. When emotion cannot be changed easily, the situation may be an easier target (Francis, 1997). Building on Gross’s (1998) work on emotional regulation of self, Williams (2007) come up with Interpersonal Emotion Management (IEM) and introduced a new classification to the field. According to IEM, people may change their own or others’ behaviors by using some strategies that affect different stages and categories of emotional processes. As people can manage their own emotions, they use the same tactics to manage others’ emotions (Williams, 2007). IEM is classified as antecedent-focused or response-focused strategies that are specific and distinct from one another. These strategies aim to address other people’s negative emotions by reducing them as well as increasing positive ones (Little, Kluemper, Nelson, & Gooty, 2012).

While the IEM aims at strategies to impact emotions, the Interpersonal Affect Classification (IAC) (Niven et al., 2009) considers regulating negative or positive emotions and moods (López-Pérez, Morillo, & Wilson, 2017). IAC focuses on Parkinson and Totterdell’s (1999) classification of strategies. First, their classification provides conceptually rooted distinctions between strategies and second, their classification concerns the regulation of effect in terms, emotions, and moods (Niven et al., 2009). Parkinson and Totterdell (1999) classified strategy types based on two main distinctions. The first distinction between strategies took into consideration the implementation type, either cognitively, or behaviorally (Niven et al., 2009). The second distinction was between strategies which led one to engage in a situation or affective state and those which led one to divert attention away from one’s current concern (Niven et al., 2009).

Although Parkinson and Totterdell (1999) proposed these distinctions only in relation to affect improvement, Niven et al. (2009) proposed that the same distinctions would apply to affect worsening. Based on this proposal, Niven and colleagues’ (2009) theoretical framework differentiated interpersonal affect regulation strategies along three factors: Affect improving vs. affect worsening, cognitive vs. behavioral, and engagement vs. diversion. Niven et al. (2009) suggested that each of these distinctions included different primary means. For example, affect improvement included positive engagement (i.e., any strategy that engages with the target’s feelings and cognitions in order to make them feel better) and acceptance (i.e., giving the target attention, diverting their attention away, making the target laugh, and making them feel valued). On the other hand, affect worsening included negative engagement (i.e., any strategy to engage with the target’s feelings and behaviors in order to make them feel worse) and rejection (i.e., a lack of care for the target).

There are various scales about the field of emotion regulation, many of which have already been adapted to the Turkish population. For example, Cognitive Emotion Regulation Questionnaire (Garnefski et al., 2001) adapted by Onat and Otrar (2010), Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) adapted by Rugancı and Gençöz (2010), Emotion Regulation Questionnaire (Gross & John, 2003) adapted by Eldeleklioğlu and Eroğlu (2015), Emotion Regulation Profile-Revised (Nelis, Quoidbach, Hansenne, & Mikolajczak, 2011), Difficulties in Emotion Regulation Scale-Positive (DERS-Positive; Weiss, Gratz, & Lavender, 2015) adapted by Asıcı, İkiz, and Karaca (2018). Yet, most of them are related to the internal process of emotion regulation. In recent years, the number of studies about the interpersonal emotion regulation process has increased. For instance, Hofmann et al. (2016) have recently developed the Interpersonal Emotion Regulation Questionnaire and Saruhan et al. (2019) conducted the adaptation studies into Turkish.

All in all, the studies on the interpersonal emotion regulation process include getting the help of other people in order to regulate the individual's own emotions. However, Turkish literature is limited about the measurement tools that include strategies to be used to improve the emotional states and moods of other people. In this regard, this study aimed to adapt the Interpersonal Affect Improvement Strategies Questionnaire (IAISQ) to Turkish and examine its psychometric properties. Strategies that individuals can use to improve other people's emotional states and moods will be examined in new research that will be carried out using the adapted scale with this study. In this way, the contribution of individuals to the emotion regulation of others as well as their own emotion regulation processes will be revealed.

METHOD

Participants

The sample was composed of four different groups. The first group of participants included 31 university students who are proficient in English. The data collected from this group was used for the language equivalence of IAISQ. The second group consisted of 634 university students studying at different universities located in İstanbul. The data collected from this group was used for the construct validity of IAISQ. After initial screening of the data, 24 participants were eliminated from the dataset since they provided incomplete or inaccurate data. Thus, final sample included 610 participants, 469 (76.9%) of whom were female and 141 (23.1%) of whom were male. The mean age was 21.30 (SD =3.959). In addition, the third group of participants were also included to the study for criterion-related validity estimates. This group was composed of 51 university students. Finally, the test-retest reliability estimates were conducted in a two-week interval with the fourth group of participants who were composed of 48 students.

Procedures

After the initial permissions were gathered from the authors of the original IAISQ and required ethical approvals were obtained to conduct the adaptation studies, data collection was initiated. During translation process of IAISQ to Turkish, a 5-step model was implemented as suggested by Brislin, Lonner, and Thorndike (1973): translation to the target language, evaluation of the translation, back-translation to the original language, evaluation of the back-translation and receiving expert opinion. At first IAISQ was translated from English to Turkish by 8 field experts. Then, Turkish translations were independently evaluated by other four experts. Following this, back translations of the scale were evaluated, and the Turkish version of the scale was decided.

The English and Turkish form of IAISQ was scored by 31 students registered in a language class, with a 3-week interval, the language equivalence of the scale was confirmed. Confirmatory Factor Analysis (CFA) was performed to confirm the factor structure of the Turkish IAISQ. To determine the criterion validity of the scale, IAISQ and Interpersonal Emotion Regulation Questionnaire (IERQ) were provided to 51 students. The correlation estimates of sub-dimensions of both scales were examined. To calculate the test re-test reliability, the Turkish IAISQ was scored by 48 students at 2-week intervals.

Ethical Statement

Ethical approvals and permissions required to carry out this study were obtained by Fatih Sultan Mehmet Vakıf University Research and Publication Ethics Committee (Approval date and number: 24/09/2020-28).

Data Collection Tools

Interpersonal Affect Improvement Strategies Questionnaire (IAISQ). IAISQ which was developed by Lopez-Perez et al. (2019), is a 5-point Likert scale, ranging from '1=not at all' to '5=extremely'. The scale consists of 10 items and has two dimensions positive engagement and acceptance. The positive engagement dimension consists of cognitive and affective engagement elements, acceptance dimension consists of humor and attention elements. The fit indices of the original scale were found to be acceptable (RMSEA =.072, CFI = .966, TLI =.951). Reliability coefficients were calculated as .82 for positive engagement and .70 for acceptance dimensions.

Interpersonal Emotion Regulation Questionnaire (IERQ). IERQ was developed by Hoffman et al. (2016) and adapted to Turkish by Saruhan et al. (2019). The scale consists of 20 items scored on a 5-point Likert scale. It consists of 4 subscales as enhancing positive affect, perspective taking, soothing, and social modeling. For the subscales reliability coefficients were found as .84, .80, .87, and .85, respectively. For the overall scale, the internal reliability coefficient was found as .91.

Data Analysis

Confirmatory Factor Analysis (CFA) was conducted to examine the construct validity of the IAISQ. CFA is an analysis that examines whether the measurement tool created based on a predetermined theoretical structure, based on testing theories about latent variables, is confirmed by the data obtained (Kline, 2016; Tabachnick & Fidell, 2013). Accordingly, CFA was preferred during the IAISQ adaptation process into Turkish. Mplus 7.3 program was used to perform DFA. Comparative Fit Index (CFI), Chi-Square Goodness Test, Tucker-Lewis Index (TLI), the Root Mean Square Errors of Approximate (RMSEA), and Standardized Root Mean Square Residual (SRMR) were used to determine the goodness of fit of the model tested in confirmatory factor analysis. Acceptable fit values were considered as <5 for χ^2/sd , .08 for RMSEA, .010 for SRMR, .90 for CFI and TLI indices (Kline, 2016; Sümer, 2000; Tabachnick & Fidell, 2001). For linguistic equivalence, paired-sample t-test and Pearson product-moment correlation analysis were performed; for criterion validity, Pearson correlation analysis was performed; and for reliability, Cronbach's alpha reliability coefficient, paired-sample t-test, and Pearson correlation analysis were performed. Those analyzes were carried out using the SPSS 23 Package Program.

RESULTS

Linguistic Equivalence

The English form and Turkish form of the IAISQ were respectively administered to 31 students who have mastered both Turkish and English in a 3-week interval. Paired sample t-test was carried out to examine whether there was a significant difference between the sub-dimensions of the scale. Pearson Product-Moment Correlation was carried out to determine the relationships between the scores of the sub-dimensions. The results of the statistical analysis performed on linguistic equivalence are presented in Table 1.

Table 1. Findings to Determine Linguistic Equivalence

Dimension	Practice	\bar{x}	SD	t	df	p	r
Positive Engagement	Turkish Form	33.193	4.206	2.002	30	.054	.806*
	English Form	32.193	4.629				
Acceptance	Turkish Form	15.129	2.837	.528	30	.601	.705*
	English Form	14.935	2.337				

* $p < .001$

Table 1 shows the results of Paired Sample t-test and Pearson Correlation performed between the sub-dimensions of the Turkish and English forms of the scale applied at 3-week intervals. Results indicated that the mean scores of the Turkish and English forms of the scale did not differ significantly in the positive engagement dimension ($t = 2.002, p > .05$) and acceptance dimension subscales ($t = 52, p > .05$). Significant positive correlations were found across the positive engagement dimensions ($r = .806, p < .001$) and acceptance dimensions ($r = .705, p < .001$) of Turkish and English forms. Findings confirmed that the scale gives similar results in both languages and has linguistic equivalence.

IAISQ's Structure Validity

CFA was performed in order to examine the validity of the original structure of the IAISQ in Turkish culture. In the original form, the positive engagement subscale consisted of 6 items (1, 2, 3, 4, 8, 10) and acceptance subscale consisted of 4 items (5, 6, 7, 9). In addition, items 6, 7, and 8 were loaded on both factors. The results of the CFA testing of the original model suggested that acceptable model fit was achieved (First model $\chi^2/df = 3.64$, RMSEA = .066, CFI = .934, TLI = .905, SRMR = .044). Yet, it was found that the path coefficient of the item 8 in the acceptance dimension was not significant ($r = .080, p > .05$). For this reason, the path of item 8 in the acceptance dimension was removed and item 8 was allowed to load only on positive engagement dimension. Following this, CFA has performed again (see Table 2).

Table 2. Fit Indices and Threshold Values Used in Confirmatory Factor Analysis

Fit Indices	Model Fit	Good Fit	Acceptable Fit
χ^2/df	3.59	$0 \leq \chi^2/df \leq 2$	$2 \leq \chi^2/df \leq 5$
CFI	.933	$0.95 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.95$
RMSEA	.065	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$
TLI	.906	$0.95 \leq TLI \leq 1.00$	$0.90 \leq TLI \leq 0.95$
SRMR	.045	$0 \leq SRMR \leq 0.05$	$0.05 < SRMR \leq 0.10$

The results suggested that the modified model provided acceptable level of fit to the data ($\chi^2 / df = 3.59$, RMSEA = .065, CFI = .933, TLI = .906, SRMR = .045) (Hu & Bentler, 1999; Marsh, Wen, Hau, & Nagengast, 2006; Schermelleh-Engel, Moosbrugger, & Müller, 2003; Sümer, 2000; Tabachnick & Fidell, 2001). The two-dimensional factor structure and factor loadings of the scale items in the Turkish sample are provided in Figure 1.

According to the findings, factor loadings varied from .209 to .770 in the positive engagement dimension, and from .213 to .739 in the acceptance dimension. All factor loadings were found to be significant at the .001 level. These findings show that each item is sufficiently loaded by the sub-dimension to which it belongs. According to these findings, the CFA obtained by subtracting item 8 from the acceptance dimension seems to fit the model. Unlike the original structure of the scale, item 8 is only included in the positive engagement dimension in the Turkish sample, the content of item 8 for the Turkish people does not seem to be related to the acceptance dimension. When evaluated in general, the model has been verified, and the original structure of the IAISQ is also valid for the Turkish version.

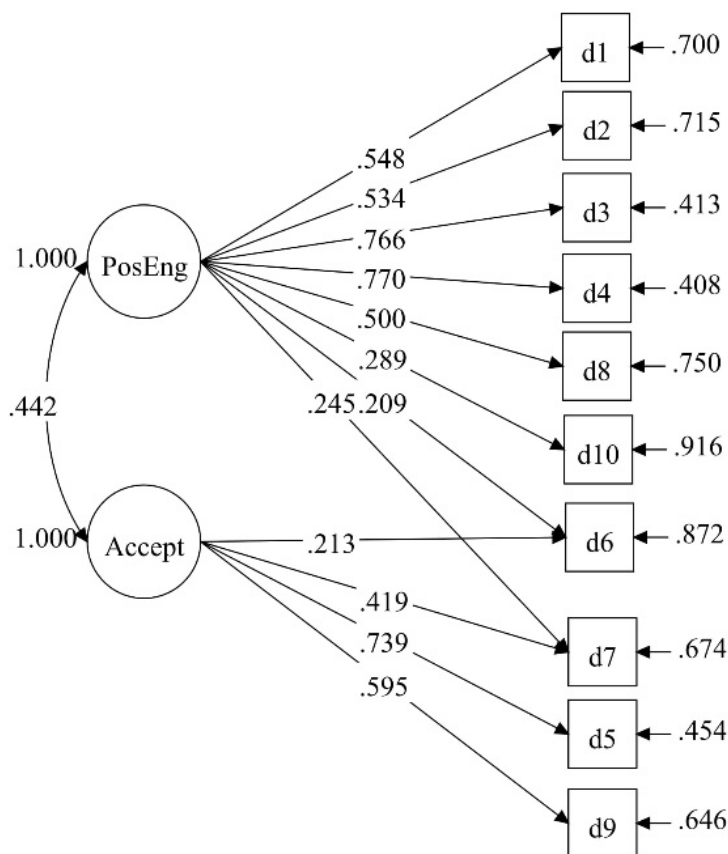


Figure 1. Path Diagram of IAISQ and Factor Loadings
Note: PosEng: Positive Engagement, Accept: Acceptance

Criterion-Related Validity

The criterion-related validity of IAISQ was tested using the Interpersonal Emotion Regulation Questionnaire (IERQ) with 51 students. Pearson Product-Moment Correlation was carried out to examine the relationships between the sub-dimensions of IAISQ and IERQ. The statistical findings are presented in Table 3.

Table 3. Relationships Between Sub-dimensions of IAISQ and IERQ

	Enhancing Positive Affect	Perspective Taking	Soothing	Social Modeling
Positive Engagement	.495*	.425**	.374**	.542*
Acceptance	.239	.448**	.461**	.341***

* $p < .001$ ** $p < .01$ *** $p < .05$

As it is shown in Table 3, there are moderately positive significant relationships between the positive engagement sub-dimension and the sub-dimensions of IERQ [enhancing positive affect ($r = .495$; $p < .001$), perspective taking ($r = .425$; $p < .01$), soothing ($r = .374$; $p < .01$), social modeling ($r = .542$; $p < .001$)]. There are moderately positive significant relationships between the acceptance sub-dimension and the three sub-dimensions of IERQ [perspective taking ($r = .448$; $p < .01$), soothing ($r = .461$; $p < .01$), social modeling ($r = .341$; $p < .05$)]. Significant relationships between the sub-dimensions of IAISQ and IERQ, indicating that the criterion validity of the scale was provided. There was no significant relationship only between acceptance and enhancing positive affect ($r = .239$; $p > .05$).

Reliability of IAISQ

In order to test the reliability of IAISQ, Cronbach’s alpha reliability coefficients (see Table 4) and test-retest reliability coefficients (see Table 5) were calculated for sub-dimensions.

Table 4. Findings Regarding Internal Consistency Reliability Analysis

Sub-dimensions	Item Number	Cronbach Alpha
Positive Engagement	8	.740
Acceptance	4	.630
Total	10	.754

For the acceptable reliability, the Cronbach’s alpha values are required to be .70 and above. When the sample is large enough, the values below .70 can be tolerated due to the low number of items in some sub-dimensions (Kline, 2016). Considering this, Cronbach’s alpha coefficients presented in Table 4 are acceptable, ranging from .630 to .754.

In order to examine the test-retest reliability of Turkish IAISQ, the scale was administered to 48 university students in 2-week intervals. Paired sample t-test was performed to compare the mean scores of sub-dimensions of the scale in the first and last administrations. Also, correlation coefficients were calculated. The findings are presented in Table 5.

Table 5. Findings Regarding Test-Retest Reliability of IAISQ

Dimension	Practice	\bar{x}	Sd	t	df	p	r
Positive Engagement	Pre-Test	32.5288	4.2941	-.629	47	.532	.532*
	Post Test	32.8750	3.4309				
Acceptance	Pre-Test	14.1667	2.8830	-1.112	47	.272	.740*
	Post Test	14.5000	2.8806				

* $p < .001$

The results suggested that the pretest and posttest scores did not differ significantly in the positive engagement dimension ($t = -.629, p > .05$) and acceptance dimension ($t = -1.112, p > .05$). Also, there were positive relationships between the pretest and posttest scores of positive engagement ($r = .53, p < .001$) and acceptance subscales ($r = .740, p < .001$). According to the findings, the scale gives similar results and has reliability in both implementations.

DISCUSSION, CONCLUSION AND SUGGESTIONS

This study aimed to conduct the adaptation of IAISQ to Turkish. First, the translation of IAISQ from English to Turkish was carried out. This process was followed by back translation and the final version of the Turkish form was decided. In order to evaluate the language validity, English and Turkish forms were administered at a 3-week interval and linguistic equivalence was confirmed. Following this, CFA was performed in order to test whether the original structure of the scale was confirmed with the current data. Results indicated that model fit indices were acceptable. Since the path coefficient of item 8 in the acceptance dimension was not significant, factor loading of this item was removed from the acceptance dimension and CFA has performed again. With this modification, the fit indices were found to be acceptable and all factor loadings were found to be significant at .001 level. In the final version of the scale, it was determined that the positive engagement dimension included items 1, 2, 3, 4, 6, 7, 8, 10, and the acceptance dimension included items 5, 6, 7, 9.

Moreover, significant positive correlation coefficients between the sub-dimensions of IERQ and IAISQ confirmed the criterion validity of Turkish IAISQ. Internal consistency estimates of IAISQ's subscales indicated that the scale is reliable. Also, test-retest reliability estimates confirmed the stability of IAISQ over time. Overall analyses regarding the validity and reliability of IAISQ showed that the scale is a valid and reliable measurement tool to assess interpersonal affect improvement strategies.

In Turkish literature, the study area of emotion regulation generally focuses on internal structures, yet there is a growing interest in the interpersonal emotion regulation processes. Recently, Saruhan and colleagues (2019) conducted Turkish adaptation studies of the Interpersonal Emotion Regulation Questionnaire (Hofmann et al., 2016) which includes getting help from other people in order to regulate the individual's own feelings in interpersonal processes. However, there is no Turkish measurement tool that focuses on strategies to be used to improve the emotional state and moods of other people. In this regard, this study is believed to make an important contribution to the field by providing a new measurement tool that can be used for scientific reasons in the future.

Due to the short response time of the scale and its easy application, it will enable it to be used in new researches. Based on the results of the research, several suggestions can be made. The use of the scale in different studies and samples may contribute to the understanding of the psychometric properties of the scale. In quantitative studies to be carried out using this scale, the relationship between interpersonal affect improvement strategies and different variables can be examined. Examination of their relations with different concepts may be beneficial both in terms of better understanding the psychometric properties of the scale and contributing to the literature. It is thought that it will contribute to the research on emotion regulation by revealing the connections with different variables. In addition, experimental studies can be carried out to apply interpersonal affect improvement strategies and to reveal the change in individuals. In these experimental studies, the scale we adapted can be used to measure the changes in individuals.

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Appendix

Turkish Form of the Interpersonal Affect Improvement Strategies Questionnaire (LAISQ)

Kişilerarası Duygulanım İyileştirme Stratejileri Ölçeği

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1 Arkadaşlarım bir durum hakkında kafa karışıklığı yaşadığında, onlarla beraber farklı seçenekleri değerlendiririm.	1	2	3	4	5
2 Bir yakınım sinirli görüldüğünde, kendisini daha iyi hissetmesi için bir şeyler yapmaya çalışırım.	1	2	3	4	5
3 Arkadaşım bir konu hakkında sıkıntı yaşadığında, nedenlerini düşünmesine yardımcı olurum.	1	2	3	4	5
4 Arkadaşım sorun yaşadığında, onunla her zaman onu neyin endişelendirdiği hakkında konuşurum.	1	2	3	4	5
5 Arkadaşımın morali bozuk olduğunda, ona şaka yaparım.	1	2	3	4	5
6 Ailemden biri üzgün olduğunda, onu farklı bir ortama götürmeye çalışırım.	1	2	3	4	5
7 Bir şeyin arkadaşımı üzdüğünü fark ettiğimde, ilgisini başka yere çekmeye çalışırım.	1	2	3	4	5
8 Bir yakınım yanıma üzgün bir şekilde geldiğinde, daha önce benzer bir durumun üstesinden çok iyi geldiğini hatırlatırım.	1	2	3	4	5
9 Genellikle arkadaş ortamında onları güldürmek için şaklabanlıklar yaparım.	1	2	3	4	5
10 Çalışma arkadaşım bir problem karşısında öfkeli olduğunda, her zaman sıkıntısını dışa vurmasına izin veririm.	1	2	3	4	5

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Author Contribution

This study was conducted by all the authors working together and cooperatively. All of the authors substantially contributed to this work in each step of the study.

Conflict of Interest

It has been reported by the authors that there is no conflict of interest.

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Ethical Statement

The study was approved by the ethical committee of Fatih Sultan Mehmet Vakıf University on September 24, 2020 (No: 24/09/2020-28). In addition, consent forms were obtained from all participants included in the study.

Ethics Committee Name: Ethical Committee of Fatih Sultan Mehmet Vakıf University

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RESEARCH

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ARAŞTIRMA

Açık Erişim

Positive and Negative Aspects of Digital Games from the Perspective of Adolescents

*Ergenlerin Bakış Açısından Dijital Oyunların Olumlu ve Olumsuz Yanları*Ayten Doğan Keskin  & Neriman Aral **Authors Information****Ayten Doğan Keskin**

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ABSTRACT

The game, which is the work of the child, is handled in two ways as real play and digital play. From these games, digital games can be played with technological tools owing to the development of technology. These games also have positive and negative aspects. For this reason, it was aimed to reveal the positive and negative aspects of digital games from the point of view of adolescents in the study. Therefore, the study was carried out with 106 voluntarily adolescents who play digital games and between ages 12-14. In the study, where the data were collected quantitatively, a questionnaire consisted of open-ended-multiple-choice questions were used. According to the adolescents, the positive aspects of digital games were; eliminating boredom, reflex development, learning language, strategic thinking, experiencing competitiveness, earning money, relaxation, possibility to being an e-sport player. The negative aspects of digital games were; physical problems, problems related to lessons, attention, family.

Article Information**Keywords**

Game, Adolescent, Digital Game, E-Sport, Game Addiction

Anahtar Kelimeler

Oyun, Ergenler, Dijital Oyunlar, E-Spor, Oyun Bağımlılığı

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ÖZET

Çocuğun işi olan oyun, gerçek oyun ve dijital oyun olmak üzere iki şekilde ele alınmaktadır. Teknolojinin gelişmesiyle birlikte teknolojik araçlarla dijital oyunlar oynanabilmektedir. Bu oyunların olumlu ve olumsuz yönleri de vardır. Bu nedenle çalışmada ergenlerin bakış açısından dijital oyunların olumlu ve olumsuz yönlerinin incelenmesi amaçlanmıştır. Bu nedenle araştırma, 12-14 yaşları arasında dijital oyun oynayan gönüllü 106 ergen ile gerçekleştirilmiştir. Verilerin nicel olarak toplandığı çalışmada, açık uçlu ve çoktan seçmeli sorulardan oluşan bir anket kullanılmıştır. Ergenlere göre dijital oyunların olumlu yönleri; can sıkıntısını giderme, refleks geliştirme, dil öğrenme, stratejik düşünme, rekabet edebilme, para kazanma, rahatlama, e-spor oyuncusu olma imkanındır. Dijital oyunların olumsuz yönleri ise; fiziksel sorunlar, dersler, dikkat ve aile ile ilgili sorunlardır.

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INTRODUCTION

The rapid development of contemporary technologies has created digital games to accompany the more traditional ones, although the main audience for such games continues to be children. Today, games can be broadly classified into two categories: physical and digital. Games have a history that is older than that of literature, while video games first emerged in the 1970s (Avcı & Avşar, 2016). Starting with Atari, Gameboy and Tetris, digital games later transformed into console games, and games in different virtual spaces, like Xbox. Digital games can be defined as games that are played on digital devices such as computers, game consoles, tablets or phones (Baranowski et al., 2008). Digital games are played by an ever increasing number of people. Depending on the number of participating players, digital games can be further divided into single-player and multi-player categories (Gürcan et al., 2008). When it comes to genre, digital games can be divided into fighting games, first person shooter games, real-time strategy games, sport and racing games, massive online battle arena games, and others (Information Technologies and Communications Authority, 2017). Apps like Blue Whale, Mariam, and Momo, which offer challenges that, upon completion, provide prestige are not considered as digital games. These apps assign various tasks to the user, expecting them to complete these tasks, and use various threats to induce compliance, such as by stating that bad things could happen should the “player” fail to fulfill the task.

Around 671 million online games are played on laptop and desktop computers. The number of daily gamers is around 145 million. Of these, 47.9 million are from the Asia-Pacific region, 45.6 million are from Europe, 30.3 million are from North America, 14.9 million are from Latin America, and 6.2 million are from the Middle East/Africa (Comscore, 2020). In Turkey, overall around 30 million people play digital games (Information Technologies and Communications Authority, 2017). Minors aged 0–17 make up approximately 29 percent of Turkey’s population, and many people in Turkey, particularly children and teens, come into contact with digital games at an early age. According to a 2013 study conducted by the Turkish Statistical Institute (TurkStat), children aged 6–10 in Turkey started using computers by the age of 6, on average, and children in the age group 11–15 started using computers by the age of 10. The age of first Internet use, on the other hand, is 9 (TurkStat, 2013). According to TurkStat (2013) data, 60.5% of children aged 6–15 use computers, 50.8% use the Internet and 24.3% use smartphones. Among the children in this age group, the most often-cited reason for using the Internet was to assist with homework, stated by 84.8% of the respondents, followed by playing games, with 79.5%. In addition, the most-often cited reason for using smartphones was for talking, stated by 92.8% of the respondents, followed by playing games, with 66.8%. Of the young people aged 16–24, 93% use the internet on a regular basis (TurkStat, 2019). As of January 2019, China led the world in terms of game revenues, with 850 million Internet users spending in the region of \$34,400,000,000 on gaming. Turkey, with 53 million Internet users, spending \$853,000,000, ranked 18th on the list (Newzoo, 2019). Gamers do not consist only of children and teens, however, as people of all almost all age groups play games.

According to a report by the Entertainment Software Association (ESA), the gaming industry reported total revenues of \$23.5 billion in 2015 (ESA, 2016), showing that the gaming industry plays a substantial role in the global economy. Aside from traditional games, digital games are the most preferred activity among children and adolescents. Digital games can be played on-line or off-line, on computers, cell phones and tablets, and on home or handheld game consoles.

There are many kinds of games that can be played on screens. For example, young people may play “advergames,” which are apps that combine digital games and brands. Advergames are games designed for specific brands, and as long as users are comfortable with the brand, they can keep playing advergames (Bozkurt & Oyman, 2016). When games resemble reality, users can perceive them as real, and so continue playing (Huizinga, 2010). New technologies bring multiple senses into play via elements such as software, hardware and place, thus immersing the player more deeply into the game, and consequently, to spend more time playing.

Digital games have both negative and positive effects (Tablo 1). Studies have showed some benefits of the digital games in improving some problems (behavioral, physical or psychological) related to disordered eating (Tang et al., 2022). According to the meta-analysis study, it suggests that digital gaming interventions may be useful for reducing mental disease related symptoms (Lau et al., 2017). Some studies showed that digital games can be used in psychological evaluation of adolescents and in therapy process and treatment (Ceranoglu, 2010; Eichenberg & Schott, 2017; Townsend et al., 2022; Zayeni et al., 2020). Digital games can be used in improvement of language (Smith, 2004). Digital games also have benefits in increasing academic skills. Studying with digital tools (games, exercises) have promoted vocabulary knowledge (Sadan & Katzir, 2022). Digital games have some benefits although, it is quite difficult in designing digital games to prevent some risks, such as gaming addiction (Tang et al., 2022) and addiction is one of the most important negative effects of digital games.

Table 1. Positive and negative effects of digital games (Prot et al., 2012)

Positive Effects	Negative Effects
“Action games improve a range of visual-spatial skills	“Violent games increase aggressive thoughts, feelings, and behaviors
Educational games successfully teach specific knowledge and skills	Violent games desensitize players to violence, decrease empathy and helping
Exergames can improve physical activity levels	Video game play is negatively related to school performance
Prosocial games increase empathy and helping	Video games may exacerbate attention problems
Prosocial games may decrease aggression”	It seems that some players can become addicted to video games”

In a comparative study involving a number of European countries, computer games were found to be the most preferred interactive media device among children aged 6–16 (Fromme, 2003). Young brains are affected most by the effects of digital technologies, and consequently, young people are the most vulnerable group in society in this respect (Small & Vorgan, 2008). Children and adolescents can play digital games in almost any setting. Such games can lead to positive or negative experiences in the lives of gamers (Shi et al., 2019). People who play digital games naturally form opinions about, benefit from and complain about the games they play. The present study examines the positive and negative aspects of digital games from the perspective of adolescents, and to this end, answers will be sought to the following research questions: 1) What are the positive aspects of digital games from the perspective of adolescents? 2) What are the negative aspects of digital games from the perspective of adolescents?

METHOD

Participants and Procedure

Data for this study was garnered through quantitative and qualitative methods. The participants in the study were adolescent seventh and eighth graders attending two public schools in central Ankara. The participants were selected using criterion sampling, which is a purposive sampling method that is used when an in-depth follow-up study is planned based on the results of a quantitative study (Büyüköztürk et al., 2015). The inclusion criteria were aged 12–14, and playing digital games. Upon obtaining consent from all participants, in the classes the students filled in the questionnaire in October 2018. The study was conducted with the voluntary participation of 106 adolescents aged 12–14, all of whom had played digital games and who gave their consent to participate.

Ethical Issues

Approval was obtained from the Ankara University Ethics Committee (13.4.2017/7/119) and the school administration where the study was conducted. Verbal consent was obtained from all adolescents who participated in the study by giving information about the study. Written consent was obtained from the families of the adolescents.

Data Collection Instrument

Data for the study was collected using a questionnaire containing both multiple choice and open-ended questions that was prepared following expert advice. The questionnaire included items on duration of playing digital games, the devices used, reasons for playing, the type of game played, and the positive and negative aspects of playing digital games.

Data Analysis

The data collected from the respondents for evaluation was in the form of frequencies and percentages, and the responses to the open-ended questions are presented as themes and direct quotes.

Participant Characteristics

Of the 106 respondents, 54.8% were 13 years old, 29.2% were 12 years old and 16% were 14 years old; 71.7% were male and 28.3% were female; and 61.3% were seventh graders and 38.7% were eighth graders.

RESULTS

The Positive and Negative Aspects of Digital Games

This study focuses on the positive and negative aspects of digital games from the perspective of adolescents, and the data obtained through the questionnaire is presented in the following tables.

Table 2. Frequency and percentage distributions describing the gaming behaviors of adolescents

	f	%
<i>Duration of playing digital games</i>		
I have been playing digital games for less than a year	14	13.2
I have been playing digital games for 1–2 years	18	17
I have been playing digital games for 3–4 years	35	33
I have been playing digital games for 5 years or more	39	36.8
<i>The most preferred device on which to play digital games</i>		
Computer	53	50
Phone	47	44.4
Tablets and/or game consoles	6	5.6
<i>Type of game played</i>		
Online games	43	40.6
Offline games	7	6.6
Both online and offline games	56	52.8
<i>Time spent playing digital games a day</i>		
I play digital games for less than an hour	19	17.9
I play digital games for 1–2 hours	32	30.2
I play digital games for 3–4 hours	33	31.1
I play digital games for 5–7 hours	20	18.9
I play digital games for 8 hours or more	2	1.9
Total	106	100

Table 2 shows that 36.8% of the respondents have been playing digital games for five years or more. Furthermore, 50% of the respondents use computers to play digital games, and 44.4% use cell phones; 52.8% of the respondents play both online and offline games. A total of 31.1% of the respondents play digital games for 3–4 hours a day.

Table 3. Frequency and percentage distributions describing the reasons adolescents play digital games

	f	%
I play digital games to deal with boredom	31	29.2
I play digital games in my free time	3	2.8
I play digital games to relax	2	1.9
I play digital games for fun	45	42.5
I play digital games to compete and win	11	10.4
I play digital games to be popular	1	0.9
I play digital games to forget about my issues and problems	3	2.8
I play digital games because I am planning to have a gaming-related job in the future	4	3.8
I don't know why	3	2.8
Other (learn a foreign language, improve foreign language)	3	2.8
Total	106	100

Table 3 shows that 42.5% of the adolescents who participated in the study play digital games for fun, and 29.2% out of boredom. The respondents expressed the reasons they play digital games as follows:

“I feel talented.”

“Games take away boredom, and I am happy when I am playing games.”

“There is competition, and it improves your reflexes. There are valuable items in the game I play, like dollars, cents, and various goods, and you can sell them to earn money.”

“I play games when I am bored. They alleviate boredom and let me have fun. Winning trophies in the games makes me somewhat happy.”

“I am happy when I win.”

“My reflexes are now faster. Sometimes it helps me forget about things when I have the blues.” “I can play e-sports if I can’t find a job in the future.”

“I relax by playing games. I cannot do without games. I am always playing, even during mealtimes.”

“I mostly play strategy games, which improve your intellect. They make me happy because they are fun.”

“Imagination, not being perceived as a ‘nerd’ among friends, a better sense of humor, having a more realistic perspective on life, being solution-oriented, noticing details.”

“We can make lots of money if we become e-sports players.”

“Quiz games (like Know and Conquer) improve my general knowledge, and I do better when there are general knowledge questions in my exams. Games improve my English vocabulary because most games are in English.”

Table 4. Positive aspects of digital games from the perspective of adolescents

	f	%
Fun	27	12.8
Improves reflexes (hand-eye coordination)	24	11.4
Contributes to learning foreign languages (English/Japanese)	21	9.9
Helps use/pass free time	21	9.9
Makes me happy/ relaxed	18	8.6
Alleviates boredom	15	7.1
Improves strategic thinking	12	5.7
Learning	12	5.7
Making friends	11	5.2
Improves attention span	10	4.7
Allows competition	7	3.3
Improves imagination and creativity	7	3.3
Distracts from problems	6	2.9
Has no positive aspects	6	2.9
Makes you more disciplined/better organized	4	1.9
Lets you earn money	4	1.9
Becoming better at playing the game	3	1.4
Chance to become an e-sports player	2	0.9
Learning how to code	1	0.5

Table 4 shows that when asked to identify the positive aspects of playing digital games, 12.8% of respondents said it offers fun, 11.4% said it improves reflexes, and 2.9% said digital games have no positive aspects.

Table 5. Negative aspects of digital games from the perspective of adolescents

	f	%
Experiencing physical problems	36	21.2
Experiencing family problems	22	12.9
Experiencing problems with classes	22	12.9
No negative aspects	20	11.8
Makes you angry	15	8.8
Eye-related problems	13	7.6
Waste of time	13	7.6
Attention and focus problems	9	5.3
Food and sleep problems	7	4.1
Emotional problems	4	2.4
Socialization-related problems	4	2.4
Addiction	3	1.8
Being affected by negative content	2	1.2

Table 5 shows that when asked about the negative aspects of playing video games, 21.2% of the respondents reported experiencing physical problems (hand, wrist, head, neck, back, lower back, and hearing-related problems). Moreover, 11.8% of the respondents said that digital games had no negative aspects.

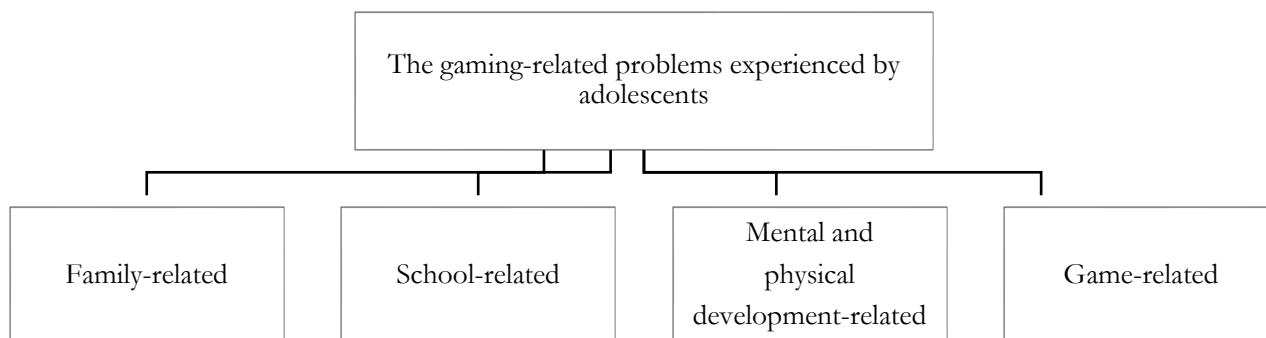


Figure 1. The Gaming-Related Problems

The gaming-related problems experienced by adolescents (Fig. 1) can be classified into those that are family-related, school-related, mental, and physical development-related, and game-related. The respondents elaborated on the family-related problems they had experienced related to their playing of digital games:

“Sometimes I get carried away and waste too much time. I have arguments with my family.”

“What is harmful about the game is that I have to play because I am an admin, which I am fine with, but my family gets angry.”

“It takes me away from social settings.”

“When I play games, my mom yells at me to stop playing and start studying. I get headaches when I play too much.”

“It makes me spend less time with my family.”

“Mom and dad get angry sometimes.”

“There is too much family pressure, this is why we have problems.”

The respondents elaborated on the school-related problems they experience related to their playing of digital games:

“Sometimes I get carried away and forget to study.”

“I find it hard to pay attention in class. I get easily distracted.”

The respondents expressed the mental and physical development-related problems they experience related to their playing of digital games:

“If there are levels in the game, I get very frustrated when I fail to make it to the next level. I also get very frustrated when the Internet connection is lost when playing online games.”

“It is harmful. It keeps me from eating and sleeping and I find it hard to stop playing.”

“Being unable to eat because gaming takes up all my time. Physical problems.”

“I can get very angry when I lose games. You end up wasting all your day.”

The respondents expressed the game-related problems they experience related to their playing of digital games:

“My time is wasted. For example, I could have spent my time doing something useful, but I end up playing a game that only provides fun and nothing else.”

“Sometimes I spend too much time playing.”

“Only that I spend too much time playing sometimes and turn up late for other things.”

DISCUSSION

Technological progress and technological devices change people’s lives and have led to the creation of a new culture (Yan, 2018). Culture, in turn, directly affects child development. This new culture, created by technology, has both negative and positive aspects, and changes people’s lifestyles and habits. In this process of change, children and adolescents are the most vulnerable to the negative effects of technology (Aral & Doğan-Keskin, 2018). Adolescence is a critical period for the development of personality. Peer relations and group identity are important in this period, while through simulation games, adolescents are able to create “worlds” that are entirely under their own control. Adolescents can be the protagonist of this world and create any identities they imagine or desire in the virtual world (Adanır et al., 2016). It has been argued, given the developmental characteristics of adolescents, that simulation games can have positive effects on their personality development through virtual socialization, although it would be difficult to argue for the presence of any positive effects unless such socializations are transferred to the real world.

Literature reports that use of the Internet and computers can lead to such physical problems as back, lower back, neck, knee and wrist problems, as well as burning or stinging eyes (Saito et al., 2000). In the present study, the respondents complained of such physical problems as headaches and neck, back and wrist pain when asked to identify the negative aspects of digital games. The respondents stated further that these negative aspects had been caused not by games per se, but by such things as computers, computer desks, seats, chairs, keyboards, mouses and lighting. Computers are not designed for children

or their physical characteristics in terms of height and weight, being designed usually for adults, despite the fact that both adults and children make use of computers. Items such as furniture, chairs and desk lamps are sometimes specially produced for children and adolescents, as are some technological devices, while there are no special-production computers for digital games that target early adolescents. As such, the immobility associated with playing digital games for many hours can lead to physical problems. In the case of children and adolescents, the physical problems resulting from staying immobile for long hours are accompanied by those associated with the furniture and devices used (desk, chair, computer, keyboard, etc.), and exacerbated in terms of duration and severity. The respondents also mentioned the physical and mental problems among the negative aspects of playing digital games, although this view was limited to the short-term effects. The respondents did not mention that declines in academic achievement, family problems and physical problems could be permanent or difficult to resolve after a certain stage.

In a study examining Internet use among children and adolescents of different ages, adolescents aged 13–17 were found to be more knowledgeable about the Internet than their parents (Yeygel & Eçimli, 2009). This shows that adolescents, if left to their own devices, can do practically anything on the Internet. Therefore, adolescents constitute the most critical group that requires utmost attention. In another study, adolescents aged 12–14 were found to spend an average of 137 minutes a day in front of computers (Ho & Lee, 2000, cited by Gürcan et al., 2008). In the present study, some of the respondents reported spending less than an hour playing digital games, whereas others played for more than 8 hours a day. Over 50% of the respondents reported using computers to play digital games, and this finding highlighting computers as the most preferred device for playing games indicates important role of computers in gaming addiction.

The use of games in the healthcare sector for the treatment of certain conditions shows that the gaming industry may compete with the pharmaceutical industry in the future. Having certain groups of patients play selected games for prescribed amounts of time can play a supporting or healing role in healthcare. Some games, however, are addictive, and the addiction process has certain similarities with the way substance addictions develop. The same substance can serve as treatment or support treatment when used as a medicine, or can cause addiction when used too much, in an uncontrolled manner, and/or for different purposes. Similarly, some games can be used for treatment purposes and can be beneficial, whereas others can cause harm through addiction. Gaming addiction, one of the negative aspects of digital games, was recognized as a disorder by the World Health Organization (WHO) in 2018. From June 2018 onwards, it has been included in the International Classification of Disease 11 (ICD-11) under the name Gaming Disorder (WHO, 2018).

In addition to their negative effects, games have also some positive effects. There have been studies reporting that digital games improve attention and concentration among children diagnosed with ADHD and can help calm them down. In one study, brain activity was recorded in children while they played games using a joystick, and it was found that children's brains generate high-frequency waves while gaming, indicating heightened attention. In addition to increasing the attention and concentration of children and calming them down, digital games have other benefits, such as teaching how to remain calm under stress (Tarhan & Nurmedov, 2013). In any discussion of the benefits of digital games, it is important to note that not all digital games offer these benefits. It is argued that digital games can bring benefits and positive experiences when used properly but can result in harm and negative experiences

when used improperly (Tarhan & Nurmedov, 2013). Some researchers argue that focusing exclusively on the negative aspects of digital games is a superficial approach (Tuğran, 2016). Digital games allow individuals to enjoy themselves and have fun. Some well-designed virtual games improve hand-eye coordination, increase visual/spatial attention and make it easier to acquire computer skills (Doğan, 2006), offer computer-based learning environments (Bütün-Ayhan & Aral, 2005), improve visual intelligence (DeBell & Chapman, 2006; Subrahmanyam et al., 2000), act as a model teacher (active participation, feedback, the ability to repeat, motivation) (Gentile & Gentile, 2008), make it easier to deal with physical aches and pains (Kirsch, 2010), help develop new schemes for orienteering and cognitive coordination (Çelen, 2013) and are used for treatment purposes (Avcı & Avşar, 2016). The other positive effects of digital games are “strategies for dividing visual attention, spatial integration skills, spatial abilities, improvement of iconic languages” (Smith, 2004). The present study had similar findings, with the respondents mentioning improved reflexes and strategic thinking ability among the positive aspects of gaming. When asked to identify the positive aspects of playing digital games, the respondents said such games were fun, were a way to spend free time, made people happy and relaxed, remove boredom, help in the development of strategic thinking abilities, provide opportunities to make friends, improve attention span, provide an opportunity to compete, improve imagination and creativity, distracts one from problems, makes people more disciplined and better organized, can be used to make money, develops gaming skills, provides an opportunity to become an e-sports player and teaches coding, whereas others said digital games have no positive aspects.

Alongside these positive aspects, digital games also have negative aspects.

Negative aspects of digital games are addiction, distraction from education, aggression (Smith, 2004). There is a relationship between violent digital game use and aggressive cognitions, affect, and behavior. In addition, there is a relationship between the use of violent digital games and physiological arousal and decreased empathy (Blumberg et al., 2019). Game addicted children and adolescents tend to exhibit high levels of internalizing symptoms (anxiety, depression) (Tavares et al., 2022). Game play is associated with adverse behaviour (abuse, neglect, bullying etc.) in some individuals (Bavelier et al., 2011). There are harmful effects of some digital games on cognitive control (Jordan and Romer, 2014). And violent game play reduces prosocial behaviors and attention (Groves and Anderson, 2015).

These include tendinitis, neurological conditions, spasms resembling epileptic fits, hemiparesis, increased heartbeat and metabolism (Dolu et al., 2010), attention deficit, aggression, lack of empathy, insensitivity, family problems, and school attendance, detriment to psychological function (Çelen, 2013), increased tendency to violent behavior (Anderson & Bushman, 2001), anxiety and worry (Schulte-Markwort, 2005), negative physical, psychological and social effects, declines in academic achievement, and most importantly, risk of addiction. The present study produced similar findings. When asked about the negative aspects of playing video games, the respondents reported experiencing physical problems (hand, wrist, head, neck, back, lower back and hearing-related problems), family problems, school-related problems, anger-related issues, eye- and sight-related problems, feelings of wasting time, attention and focus problems, food- and sleep-related problems, emotional problems, socialization problems, addiction problems and being affected by negative content. Some respondents, on the other hand, said digital games had no negative aspects.

Limitations

There are some limitations in this study. These limitations are as follows: Sample size was limited and the questionnaires were completed only in two schools. The questionnaire is the self-report and there are open-ended questions in the questionnaire. Also self-reported response is a typical limitation of survey designs and methods. Because adolescents may not want to write, they may have given short answers. Despite all these limitations, since multiple choice questions were not asked in this study, adolescents were not directed and they were expected to answer themselves with open-ended questions.

Conclusion

The foundations of personality development are laid during adolescence. In this period, adolescents may play digital games to socialize, pass time or have fun, but they should be reminded that there are activities to do in the real world as well as in the virtual one, and they should be encouraged to take up art, sport or similar pursuits. Moreover, they should be reminded that some of the negative effects of playing digital games can be permanent or difficult to reverse. Some of the respondents in this study reported having been playing games for five years or more. Given that the age of the respondents varied between 12 and 14, this means that some of the respondents have been playing since that ages of 7–9 years old, or even earlier. Playing games, of course, is what children are supposed to do, but in the real world, not just in the virtual world of video monitors. This is because games in the real world rarely have negative effects on child development, whereas some digital games in the virtual world do have such effects. Among the adolescents that participated in the study, computers were the most preferred device for the playing of digital games. Some of the respondents said that they played games with the goal of becoming e-sports players in the future, which shows that e-sports is considered a viable career option among young people. To be successful this profession, adolescents may be tempted to spend long hours in front of their computers playing games, leading them to neglect their studies. Such a dream could be detrimental not only to academic achievement, but also social ties and family life. The respondents in the present study were enrolled in schools providing full-time education, but reported playing three–four hours a day on average. Adolescence is a period of growth and development, and spending three to four hours a day immobile while playing games carries physical and mental development risks, as well as a risk of developing obesity. The respondents in the study reported that they sometimes played out of boredom or to have fun. Parents can recommend activities to their children that will help them relax and make better use of their free time. Street games, sports like football and basketball, board games that can be played as a family, or activities such as setting the table or doing the dishes can also serve as opportunities for family members to spend quality time together. Such activities allow parents to spend more time with their children, and allow children to play with friends in the real world.

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Ayten Doğan Keskin, Neriman Aral: Design, analysis and interpretation of data, drafting the article and revising of the version to be published.

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RESEARCH

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ARAŞTIRMA

Açık Erişim

Perceived Stress and Psychological Well-Being in Adult Individuals during COVID-19: The Mediating Role of Coping Strategies

Covid 19 Sürecinde Yetişkin Bireylerde Algılanan Stres ve Psikolojik İyi Oluş: Başa Çıkma Tutumlarının Aracılık Rolü

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ABSTRACT

The purpose of this study was to explore the role of coping strategies in the relationship between adult individuals' perceived stress levels and their psychological well-being during the COVID-19 pandemic. The study data was collected by administering the measurement tools to 259 adult individuals between May 1, 2020, and May 30, 2020, the dates when the quarantine measures were strictly implemented in Turkey during the COVID-19 pandemic. Perceived Stress Scale, the COPE Inventory, and Psychological Well-Being Scale were used for data collection. The model created to determine the direct and indirect relationships between the study variables was tested with path analysis. According to the analysis, the model has a good fit with the data ($\chi^2=43.554$, $p=.126>.05$, $df=34$, $\chi^2/sd=1.281$, $RMSEA=.033$, $SRMR=.0358$, $CFI=.993$, $TLI=.964$), and perceived stress was significantly predicted by some of the coping strategies and psychological well-being. In addition, coping strategies had a mediating effect between perceived stress and psychological well-being. The findings showed that while stress is a trigger factor that supports new personal development for some, it can have a compelling effect on others. The way stress is perceived and the coping strategies employed as a result affect the well-being of individuals.

Article Information**Keywords**

COVID-19, stress, psychological
well-being, coping strategies

Anahtar Kelimeler

COVID-19, stres, psikolojik iyi oluş,
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ÖZET

Bu araştırmada Covid 19 Pandemi sürecinde yetişkin bireylerin algıladıkları stres düzeyleri ile psikolojik iyi oluşları arasındaki ilişkide başa çıkma tutumları rolünün belirlenmesi amaçlanmıştır. Araştırma verileri Covid 19 pandemi sürecinde Türkiye'de karantina uygulamalarının yoğun olarak yaşandığı 1-30 Mayıs 2020 tarihleri arasında 259 yetişkin bireye uygulanarak elde edilmiştir. Araştırmada Algılanan Stres Ölçeği, Başa Çıkma Tutumları Ölçeği ve Psikolojik İyi Olma Ölçekleri uygulanmıştır. Araştırmada yer alan değişkenler arasındaki doğrudan ve dolaylı ilişkileri saptamak için oluşturulan model, yapısal eşitlik modeli yöntemlerinden biri olan yol analizi ile test edilmiştir. Analizler sonucunda modelin verilerle iyi uyum sağladığı ($\chi^2=43.554$, $p=.126>.05$, $df=34$, $\chi^2/sd=1.281$, $RMSEA=.033$, $SRMR=.0358$, $CFI=.993$, $TLI=.964$), algılanan stresin başa çıkma tutumları ve psikolojik iyi oluş üzerinde anlamlı etkisi olduğu sonucuna ulaşılmıştır. Ayrıca algılanan stres ile psikolojik iyi oluş arasında bazı başa çıkma stratejilerinin aracılık etkisi olduğu tespit edilmiştir. Stres kimi için yeni bireysel gelişimi destekleyen bir tetikleyici unsur iken kimisi için zorlayıcı etkiye sahip olabilmektedir. Stresin algılanış biçimi ve bunun sonucunda devreye sokulan baş etme stratejileri bireylerin iyi oluş biçimlerini etkilemektedir.

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INTRODUCTION

Noticed as an agent causing pneumonia in Wuhan, China in December 2019, Coronavirus is one of the viruses among the CoV virus group that developed serious outbreaks such as the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) since 2002 (Nokhodian et al., 2020). The World Health Organization (WHO) announced that this new disease can be characterized as a pandemic in March, 2020 (WHO; 2020b). A pandemic is an epidemic occurring across a large region, transcending international borders, and generally affecting a large number of people (Porta, 2014). Measures such as curfews, suspension of formal education activities, ending all meetings and activities bringing people together and travel restrictions were taken against the COVID-19 pandemic in Turkey (T.C. Ministry of Interior, 2020). The measures taken against COVID-19 changed the lifestyle people were used to. The crisis stemming from the COVID-19 pandemic has been generating stress in the world's population (WHO; 2020a). Stress is considered by the WHO as one of the important triggering factors affecting human health in the 21st century. Recently, COVID-19 pandemic affected the world as a powerful stress stimulus.

The concept of stress is defined as the body's non-specific response to any demand (Selye, 1975). The concept of stressor refers to the stimulus causing a stress response (Everly & Lating, 2019). Emphasizing the relationship between the individual and the environment in the definition of stress, Lazarus and Folkman (1984) defined psychological stress as the individual's assessment that the relationship between the individual and his/her environment exceeds or strains his/her strength and jeopardizes his/her being. The primary and secondary appraisals about the situation made by the individual who is exposed to the psychosocial stress stimulus (Lazarus & Folkman, 1984; Everly & Lating, 2019) show that the source of the response to the stressful situation is related to the perception of stress, namely its cognitive content (Fink, 2016). Primary appraisals are assessments of what environmental demands are and what their consequences will be. Three main consequences are identified: (1) irrelevant if the situation has no effect on the individual, (2) benign-positive if the situation is perceived as positive for the individual, and finally (3) stressful (Lazarus and Folkman, 1984). When the situation is perceived as stressful, the secondary appraisal comes to play. In the secondary appraisal, the individual intervenes in the situation by making an assessment of his or her available options for coping. Depending on the result of the secondary appraisal, harm/loss, threat, and challenge stress types may develop. Appraisal of the stress factor as harm/loss and/or threat causes distress, which is the typical form of stress. On the other hand, challenge appraisal leads to a different form of stress called eustress. In the challenge appraisal, the situation is still considered as challenging (potentially exceeding capacity and therefore being stressful), but it also involves seeing the effort and behavior pattern as an opportunity to gain benefit, positively motivating (Lazarus & Folkman, 1984; Fink, 2016). According to the basic prediction of Lazarus and Folkman's (1984) theory and other stress appraisal theories, individuals who regard stress as a challenge rather than a threat and who believe that stress may increase and facilitate the pursuit of goals will be able to cope more effectively with stress and exhibit better results (Hagger, Keech, & Hamilton, 2020). Depending on how stress is perceived, the strategies used to cope with the situation also vary.

When people encounter a stressful situation, they try to cope with stress by using one or more of the cognitive, affective, and behavioral ways in order to maintain their physical and psychological well-being and to reduce or control stress. Any stressful event, even an ordinary daily encounter, may have different meanings for each person. Depending on the meanings attributed to events, solutions differ from person

to person (Folkman & Lazarus, 1988). Coping strategies play an important role in the physical and psychological well-being of the individual. Coping is defined as the ever-changing cognitive and behavioral efforts of the individual to overcome certain demands leading to the perception that their internal and/or external resources are depleted (Lazarus & Folkman, 1984). Coping strategies may directly affect the health outcomes of the individual, as well as indirectly affect the well-being of the individual by facilitating adaptation to medical interventions. Coping strategies may mitigate or cushion the health effects of stress (Aldwin, 2007).

The studies conducted by Lazarus and Folkman (1984) stand out among the studies on stress management and coping strategies. According to their cognitive model regarding stress and coping, there are two types of coping strategies, namely problem-focused coping strategies and emotion-focused coping strategies. Most of the scales developed to measure coping include the dimensions of problem-focused coping strategies and emotion-focused coping strategies (Parker & Endler, 1992). Problem-focused coping aims to solve the problem or do something to change the source of stress, such as learning new skills, removing challenges, and finding alternative solutions. Emotion-focused coping aims to reduce or manage situation-related or situation-based emotional distress, such as social comparison, emotional support, and imaginary thoughts (Lazarus, 1993). Studies put forth that most people use both problem-focused and emotion-focused coping strategies when dealing with stressful events, and that a particular action may often reflect both strategies (Lazarus, 1996). Also, according to the literature, avoidance is defined as the third basic dimension of coping. Avoidance strategies may be related to avoidance from the task orientations in problem-focused coping strategies, as well as avoidance from the personal orientations in emotion-focused coping strategies (Parker & Endler, 1992).

The positive and negative emotions experienced when faced with a stressful event are the reflections of the person's instantaneous appraisal of their well-being (Lazarus & Folkman, 1984). It is possible that psychological well-being (Ryan & Deci, 2001), which is associated with the individual's functionality as a whole, may be affected when faced with any stress stimulus. There are studies showing that psychosocial stress stimuli (Everly & Lating, 2019) that are activated through cognitive assessments when faced with a stressful situation/event directly or indirectly affect the psychological well-being of the individual (Essex et al., 1999). Psychological well-being refers to revealing the potential of the individual during the process of self-realization (Ryff, 1989). According to the psychological well-being model of Ryff, in order for a person to experience the highest levels of well-being, they must exhibit the six positive dimensions of mental health at the highest levels. The six dimensions mentioned in the model are self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1989; Ryff & Singer, 1996).

Stress causes feelings of fear and anxiety and may have devastating effects on our emotional and physical health (Fink, 2016). Psychological responses in pandemics were found to be anxiety, fear, depression, anger, guilt, grief and loss, post-traumatic stress and stigma, as well as compassion for others, and a greater sense of empowerment (Chew et al., 2020). Negative psychological responses such as post-traumatic stress symptoms, confusion, and anger were reported as the psychological effects of quarantine measures imposed to prevent COVID-19. Stress sources resulted from long quarantine periods, fear of infection, frustration, boredom, insufficient material, insufficient information, financial losses, and stigmatization (Brooks et al., 2020). Worldwide research on the psychological effects of COVID-19 revealed that people are negatively affected by COVID-19, albeit at different levels, and revealed the

psychological stress they experience (Cao et al., 2020; Roy et al., 2020; Rehman et al., 2021; Sønderskov et al., 2020; Park et al., 2020).

Pandemic is a condition that is associated with psychosocial stress factors and involves health threats to people and their loved ones. Psychological responses to pandemics include maladaptive behavior, emotional stress, and defensive reactions (Taylor, 2019). The fact that people do not give the same response to similar stress stimuli and/or that they have different response levels seems to be associated with the stress they perceive. The interaction of the cognitive-affective domains that happens when encountering stressful stimuli represents how stress factors are perceived, and this critical integrated perception represents the determination of whether psychosocial stimuli become psychosocial stress factors. Cognitive interpretation of the situation/event plays a role in adaptation to the stress factor and serves to increase or decrease the resulting stress response (Everly & Lating, 2019). Although the relationships between perceived stress level, psychological well-being, and coping strategies were examined separately in different studies, it is believed that it was necessary to reveal the role of coping in the relationship between perceived stress and psychological well-being. This study is important in terms of being the first attempt to provide a quantitative model determining the relationship between the perceived stress level, psychological well-being, and coping strategies of adults in Turkey when faced with psychosocial stress stimuli. Determining what kind of coping strategies are used in stressful situations and whether these coping strategies are functional or not is very important in terms of identifying whether the individual endangers his/her physical and mental health (Hagger, Keech, & Hamilton, 2020). At this point, it is believed that determining the mediating effect of coping strategies in the relationship between perceived stress level and psychological well-being will contribute to the structuring of intervention programs and psychological counseling practices.

Within the scope of main purpose, first, the relationships between variables were examined, and then a model was created to examine the direct and indirect relationships between the variables. In line with this model, the following hypotheses were tested. During the COVID-19 pandemic,

- There are direct relationships between adult individuals' perceived stress levels and their psychological well-being.
- There are direct relationships between adult individuals' perceived stress levels and their coping strategies.
- There are direct relationships between adult individuals' coping strategies and their psychological well-being.
- Coping strategies have a mediating role between adult individuals' perceived stress levels and their psychological well-being levels.

METHOD

Within the framework of the study purpose, the study employed the descriptive relational design. Relational research designs are used in order to determine the existence of a relationship between two or more variables and the level of this relationship. For this reason, the study data were collected through scales. The data were collected between May 1, 2020 and May 30, 2020, the dates when the quarantine measures were strictly imposed in Turkey during the COVID-19 pandemic.

Study Group

The scales for collecting the data were developed in a format that could be viewed online on Google Form, and the generated link was sent to researchers' students, colleagues, and other people from their circle, and they were asked to send the form to their own circles. The study purpose and the fact that they did not need to give their names were explained on the first page to the people that this link was given, and the participants were asked to fill in the scales online. Repeated entries from the same computer were blocked. For the study, the necessary approval was obtained from the Zonguldak Bülent Ecevit University Human Research Ethics Committee (Protocol No: 830).

200 females and 59 males participated in the study. Being over the age of 18 was taken as a criterion while determining the adult individuals that would be included in the study group. Participants' ages ranged from 18 to 72. Of the participants, 133 were single, 107 were married, and 19 were widows or divorced. 136 of the participants lived in a metropolitan city, 60 in a city, 50 in a district, and 13 in a village. 106 of the participants were in the 18-25 age range, 39 in the 25-34 age range, 58 in the 35-44 age range, 44 in the 45-54 age range, nine in the 55-64 age range, and three in the 64-72 age range. Eight of the participants were tested for COVID-19. 14 of the participants were diagnosed with COVID-19 themselves or had a relative who tested positive. Before the application, research ethics committee approval was obtained from the institution where the researchers worked.

A cross-sectional survey was conducted with 259 people. While working with very large sample groups in structural equation models causes data loss, small sample groups lead to unreliable results. Therefore, it is necessary to determine the adequate sample size in structural equation model studies. Although there is no definite consensus about the sample size in these studies, many researchers emphasize that there should be at least 200 participants (Kline, 2015; Hoe, 2008). Based on these assessments, it was concluded that the number of participants in the study was adequate.

Data Collection Tools

Personal Information Form. Personal Information Form included information on participants' age, sex, and whether or not they were tested for COVID-19.

Perceived Stress Scale (PSS). Developed by Cohen, Kamarck, and Mermelstein (1983), PSS was adapted to Turkish by Eskin et al. (2013). As a result of the construct validity test done using exploratory factor analysis, a two-factor structure, "perceived insufficient self-efficacy" and "perceived stress/distress", was obtained. The scale is a five-point Likert-type scale in which the responses range from zero (never) to four (very often). The scale consists of 14 items which are similar to "In the last month, how often have you been upset because of something that happened unexpectedly?". The internal consistency coefficient of the scale was calculated as .84 and the test-retest reliability coefficient as .87. The 14-item two-factor structure in the scale explained 46.5% of the total variance. In this study, the 14-item two-factor structure of the scale was confirmed, and goodness of fit values were obtained within the desired ranges [$\chi^2=51.682$, $df=33$, $\chi^2/sf=1.566$, $p=.020$, $RMSEA=.047$, $SRMR=.050$, $CFI=.977$, $TLI=.968$]. Also, the Cronbach's alpha internal consistency coefficient for the whole scale was calculated as .87, .82 for "perceived insufficient self-efficacy", and .78 for "perceived stress/distress".

The COPE Inventory. Developed by Carver, Scheier, and Weintraub (1989), the COPE Inventory was adapted into Turkish by Ağargün et al., (2005). The inventory is a four-point Likert-type scale consisting of 60 items with 15 sub-dimensions. These sub-dimensions are positive reinterpretation and growth, mental disengagement, focus on and venting of emotions, use of instrumental social support, active

coping, denial, religious coping, humor, behavioral, restraint, use of emotional social support, substance use, acceptance, suppression of competing activities, and planning. Each of these sub-dimensions indicates a different coping strategy. In the present study, ten of these dimensions (religious coping, substance use, humor, denial, focus on and venting of emotions, acceptance, suppression of competing activities, planning, active coping, positive reinterpretation, and growth) were from the original form of the scale. It was found that some items were also related to different dimensions. In this study, the items of the restraint coping subscale were excluded because the item values of the restraint coping subscale were not adequately high (Cronbach's alpha internal consistency coefficient was .35) and the items were distributed among other dimensions. Similarly, Carver (1997) stated in his study that the Restraint Coping subscale did not have a significant effect as in their first study and that they excluded the items from the scale because the items could be explained with different dimensions. Also, items of the use of instrumental social support and use of emotional social support dimensions were gathered under one single dimension, and the items of the mental disengagement and behavioral disengagement were gathered under one single dimension, too. Since the items in use of instrumental social support and use of emotional social support dimensions were related to the use of social support, this dimension was named as "use of social support", and since the items in mental disengagement and behavioral disengagement dimensions were related to the disengagement, this dimension was named as "disengagement". As a matter of fact, in the original scale study, researchers (Carver, Scheier, and Weintraub, 1989) expressed that these variables are variations of each other. Therefore, it was decided to combine these two dimensions in this study. Although two items were found to be sufficient for each dimension in the shortened versions of the scale in different countries, this study did not include a subscale consisting of two items. However, due to the low item load values of some items, one item was removed from each of the subscales. For this study, the reliability of the scale was ensured by calculating Cronbach's alpha internal consistency coefficients for the scale's sub-dimensions and the whole scale. Cronbach's alpha internal consistency coefficients for the whole scale was .87 (with 48 items), for "religious coping" .96 (with 3 items), for "substance use" .90 (with 4 items), for "humor" .87 (with 4 items), for "denial" .83 (with 3 items), for "focus on and venting of emotions" .82 (with 4 items), for "acceptance" .75 (with 3 items), for "suppression of competing activities" .73 (with 3 items), for "planning" .83 (with 3 items), for "active coping" .84 (with 3 items), for "positive reinterpretation and growth" .76 (with 3 items), for "use of social support" .86 (with 8 items), and for "disengagement" .67 (with 7 items). In this study, the goodness of fit values of these thirteen sub-dimensional form of the scale was obtained within the desired ranges [$\chi^2=902.897$, $df=570$, $\chi^2/sd=1.584$, $p=.000$ RMSEA=.048, SRMR=.0659, CFI=.934, TLI=.923].

Psychological Well-Being Scales (PWBS). Developed by Ryff (1989), PWBS was adapted to Turkish by Akın (2008). The 84-item 6-point Likert type scale consists of six sub-dimensions, namely autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Confirmatory factor goodness of fit values of the scale were RMSEA=.072, NFI=.97, IFI=.98, RFI=.97, CFI=.98, GFI=.93, and SRMR=.062. As a result of CFA in this study, the dimensions of Autonomy, Positive Relations with Others, Personal Growth, and Environmental Mastery were under separate dimensions as in the original form. However, items from the Self-Acceptance and Purpose in Life dimensions were gathered together under the same factor. These two dimensions, the dimension of Self-Acceptance, which involves exhibiting a positive attitude towards oneself by accepting oneself and life as it is, and the dimension of Purpose in Life, which involves finding meaning in the difficulties

experienced by the person, were taken as a single dimension since they were interrelated. As a result, the PWBS was used as a five-dimensional scale in this study. In the present study, the Cronbach's alpha internal consistency coefficient for the dimension of Autonomy was .81, .76 for Positive Relations with Others, .80 for Personal Growth, .80 for Environmental Mastery, .88 for Self-Acceptance and Purpose in Life, and .91 for the whole scale. The goodness of fit values of the five-dimensional form of the scale were within the desired ranges [$\chi^2=346.384$, $df=196$, $\chi^2/sd=1.767$, $p=.000$, $RMSEA=.055$, $SRMR=.060$, $CFI=.918$, $TLI=.903$].

Data Analysis

Before performing structural equation modeling, whether the data collected for analysis provided the necessary assumptions for analysis was tested. Single and multiple outliers were examined, and all scores were converted into standard scores. Although two outliers were found in the collected data, these data were not excluded from the analysis. There was no missing data in the study. The normality of distribution was tested, and it was concluded that the kurtosis skewness coefficients were obtained within the range of between +1 and -1. Whether there was multicollinearity and singularity which refers to the relationship between independent variables was tested with the Pearson product-moment coefficient (Table 1). Tolerance values (higher than 0.10) and variance inflation factor (lower than 10) were obtained within the desired range (Pallant, 2005). After these assessments, the measurement model and the structural equation modeling were tested. Since the model fit values were obtained within the desired ranges, the mediation test was performed. Direct, indirect, and total effect values among the latent variables were calculated. The bootstrap method was used to test the mediation effect. The bootstrap method reveals statistically stronger results, especially in mediation analysis performed with small sample groups (Shrout & Bolger, 2002). The results were obtained by using the Monte Carlo parametric bootstrap method at a 95% confidence interval consisting of a sample of 1000 and the maximum likelihood method. SPSS 20 and AMOS 20 programs were used to analyze the data.

In the study, structural equation modeling was used in order to test the compatibility of the proposed model with the data. The information about the fit between the model and the data is tested with the chi-square (χ^2) test. As with many research techniques, the results obtained with chi-square distributions are affected by the sample size. In studies where the sample size is 150 and above, the χ^2 test tends to be significant (Bagozzi & Yi, 2012). The χ^2 test being significant indicates that the model does not fit well. In order to solve this problem, some goodness of fit values other than the χ^2 significance are examined. In this study, RMSEA (root mean square error of approximation), SRMR (standardized root mean square residual), CFI (comparative fit index), and TLI (Tucker-Lewis Index) values are presented in addition to the chi-square value (Bagozzi, 2010; Bagozzi & Yi, 2012). In order to conclude that the fit between the model and the data is at a good level, the values of $\chi^2 / df \leq 2$, $p \geq .05$, $RMSEA \leq .06$, $SRMR \leq .07$, $CFI \geq .95$, and $TLI \geq .95$ were taken as criteria.

Path Analysis. Employed using the observed variables, path analysis is an analysis under the framework of structural equation modeling. The direct and indirect relationships between the variables are determined with a model created by the researcher (Kline, 2015). In the study, first, whether perceived stress and coping strategies significantly predicted psychological well-being was explored using path analysis. Then, the mediating effect of coping strategies between perceived stress and psychological well-being was determined.

RESULTS

Descriptive Statistics

First, whether there was a significant relationship between the variables included in the study was determined by Pearson product-moments correlation coefficients. According to Table 1, there were both negative and positive relationships between the sub-scales of the Perceived Stress Scale and the sub-dimensions of the COPE Inventory, and the sub-dimensions of the Psychological Well-Being Scale.

Structural model

Before proceeding to the structural equation modeling and mediation test, all variables in the model were tested with the measurement model. The values obtained for the measurement model [$\chi^2=77.307$, $df=39$, $\chi^2/sd=1.982$, $RMSEA=.062$, $SRMR=.0485$, $CFI=.972$, $TLI=.876$] indicated that the model fit the data well. The direct and indirect relationships between the variables in the study were tested using path analysis, taking into account the theoretical framework and literature.

Table 1. Correlation Values Regarding the Variables

	1.1.	1.2.	2.1.	2.2.	2.3.	2.4.	2.5.	2.6.	2.7.	2.8.	2.9.	2.10.	2.11.	2.12.	3.1.	3.2.	3.3.	3.4.	3.5.
1.1.	-	.392**	.001	.196**	.121	-.025	.295**	.015	-.130*	.000	.110	.040	.295**	.260**	-.185**	-.381**	.116	.073	-.185**
1.2.		-	-.360**	.017	-.001	.085	.158*	.053	-.375**	-.358**	-.123*	-.150*	.158*	.241**	-.423**	-.345**	-.194**	-.080	-.423**
2.1.			-	.232**	.134*	-.119	-.015	-.032	.416**	.566**	.339**	.338**	-.015	-.111	.413**	.235**	.369**	.230**	.413**
2.2.				-	-.037	.111	.309**	.174**	.091	.073	.214**	.108	.025	.334**	.045	-.106	-.024	.012	.045
2.3.					-	-.197**	-.100	.201**	-.068	.094	.096	.094	.100	.125	-.181**	-.057	.001	-.032	.041
2.4.						-	.169**	.259**	-.021	-.063	-.004	-.055	.142*	.278**	-.192**	-.218**	-.196**	-.204**	-.064
2.5.							-	.242**	.092	.107	.149**	.179**	.027	.204**	.128*	-.006	.044	-.039	.128**
2.6.								-	-.265**	-.116	.033	.029	.107	.413**	-.289**	-.248**	-.277**	-.188**	-.107
2.7.									-	.580**	.325**	.199**	-.118	-.336**	.332**	.272**	.369**	.182**	.371**
2.8.										-	.299**	.303**	-.051	-.364**	.301**	.170**	.370**	.204**	.312**
2.9.											-	.192**	.111	.080	-.047	.093	.262**	.332**	.133*
2.10.												-	.275**	.060	-.206**	-.199**	.091	.045	-.060
2.11.													-	.0301**	.069	.026	.233**	.102	.254**
2.12.														-	-.415**	-.469**	-.308**	-.308**	-.319**
3.1.															-	.513**	.366**	.233**	.179**
3.2.																-	.188**	.277**	.356**
3.3.																	-	.529**	.472**
3.4.																		-	.302**
3.5.																			-
Mean	15.208	6.984	9.420	7.590	12.247	5.057	8.115	6.799	9.324	9.038	8.189	14.957	8.115	13.559	22.166	18.305	20.521	19.949	22.166
SD	4.744	2.934	1.918	2.234	3.669	2.246	2.401	1.569	2.037	2.114	2.019	3.288	2.401	3.708	4.706	5.352	3.246	3.164	4.706

Note. 1.1.: PSS-Perceived Insufficient Self-Efficacy, 1.2.: PSS-Perceived Stress/Distress, 2.1.: COPE- Positive Reinterpretation and Growth, 2.2.: COPE- Acceptance, 2.3.: COPE- Religious Coping, 2.4.: COPE- Substance Use, 2.5.: COPE- Humor, 2.6.: COPE- Denial, 2.7.: COPE- Planning, 2.8.: COPE- Active Coping, 2.9.: COPE- Suppression of Competing Activities, 2.10.: COPE- Use of Social Support, 2.11.: COPE- Focus on and Venting of Emotions, 2.12.: Disengagement 3.1.: PWBS- Autonomy, 3.2.: PWBS- Environmental Mastery, 3.3.: PWBS- Personal Growth, 3.4.: PWBS- Positive Relations with Others, 3.5.: PWBS- Self Acceptance and Purpose in Life

The final model indicates that the model fit to the data reasonably well ($\chi^2=43.554$, $p=.126>.05$, $df=34$, $\chi^2/sd=1.281$, $RMSEA=.033$, $SRMR=.0358$, $CFI=.993$, $TLI=.964$). Since the present study was a mediation model made using the data obtained by the cross-sectional survey method, another alternative model was investigated. In the alternative model, COPE was taken as an exogenous variable, and the mediating effect of Perceived Stress between Coping Strategies and Psychology Well-being was tested. Although the data fit the alternative model at an acceptably good level [$\chi^2=53.495$, $p=.018 <.05$, $df=34$,

$\chi^2/sd=1.573$, $RMSEA=.047$, $SRMR=.0446$, $CFI=.986$, $TLI=.927$], considering both models tested, the initial model seemed to fit to the data much better. For this reason, the initial model was preferred in the study. The paths between the variables in the first model are given in Figure 1. In order to follow the paths between variables more easily, only significant paths are shown in the figure.

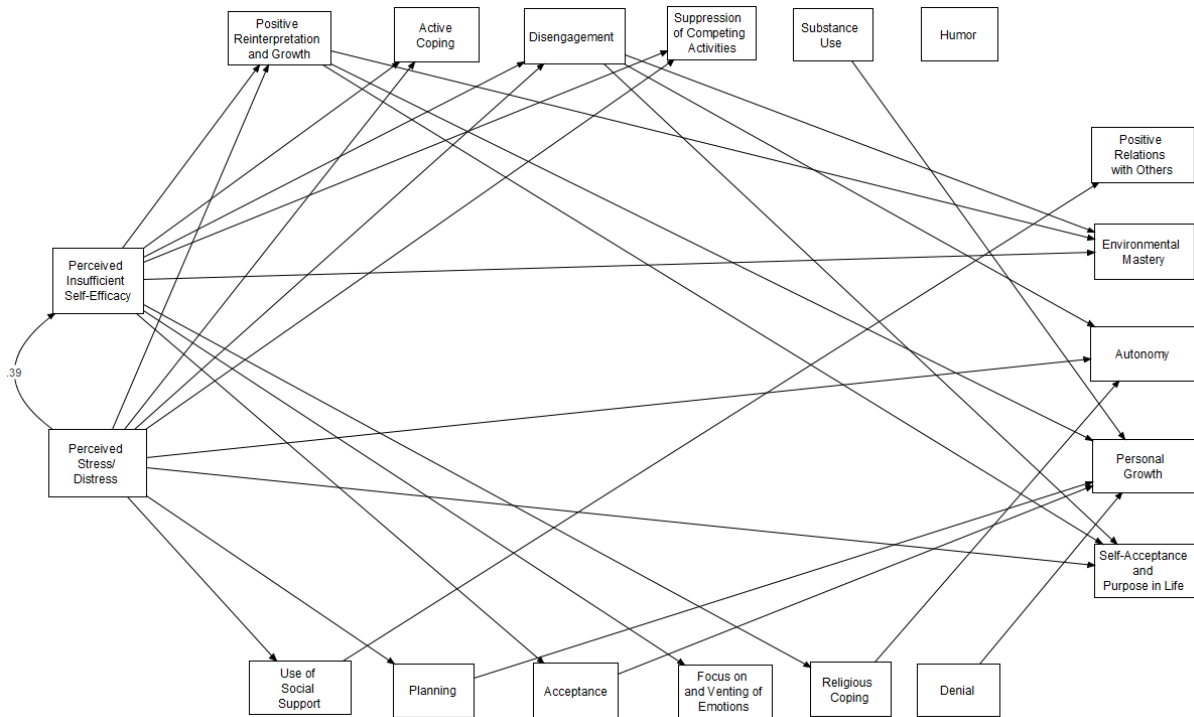


Figure 1. Structural Equation Modeling Path Graph

Findings Regarding the Direct Relationships between Perceived Stress Levels, Psychological Well-Being, and Coping Strategies

Before testing the mediating effect of coping strategies in the relationship between perceived stress and psychological well-being, findings on the direct relationships between all variables in the study are presented. First, the path coefficients between Perceived Stress and Coping Strategies were examined. The coping strategy of Humor was not associated with any variable. As seen in Table 2, the variable of Perceived Stress/Distress negatively and significantly predicted the variables of Positive Reinterpretation and Growth ($\beta = -.433$), Active Coping ($\beta = -.425$), Planning ($\beta = -.383$), Suppression of Competing Activities ($\beta = -.197$), Use of Social Support ($\beta = -.196$). However, the Perceived Stress/Distress variable predicted the Disengagement ($\beta = .218$) variable positively and significantly. In addition, the variable of Perceived Insufficient Self-Efficacy positively and significantly predicted the variables of Focus on and Venting of Emotions ($\beta = .275$), Acceptance ($\beta = .223$), Suppression of Competing Activities ($\beta = .187$), Positive Reinterpretation and Growth ($\beta = .171$), Active Coping ($\beta = .166$), Disengagement ($\beta = .148$), and Religious Coping ($\beta = .144$).

Then, the path coefficient between the perceived stress and psychological well-being variables was examined. Again, as seen in Table 2, the variable of Perceived Stress/Distress positively and significantly predicted the variable of Autonomy ($\beta = .177$), whereas it negatively and significantly predicted the

variable of Self-Acceptance and Purpose in Life ($\beta = -.234$). In addition, the Perceived Insufficient Self-Efficacy variable negatively and significantly predicted the Environmental Mastery variable ($\beta = -.267$).

The direct relationships between the dimensions of the COPE Inventory and the dimensions of the Psychological Well-Being Scale were as follows: Positive Reinterpretation and Growth strategy positively and significantly predicted the variables of Self-Acceptance and Purpose in Life ($\beta = .250$), Personal Growth ($\beta = .179$), and Environmental Mastery ($\beta = .178$). The strategy of Disengagement negatively and significantly predicted the Environmental Mastery ($\beta = -.411$), Autonomy ($\beta = -.314$), and Self-Acceptance and Purpose in Life ($\beta = -.173$) variables.

While Use of Social Support strategy positively and significantly predicted the variable of Positive Relations with Others ($\beta = .295$), Religious Coping strategy negatively and significantly predicted Autonomy variable ($\beta = -.176$). While Personal Growth was predicted by the strategies of Substance Use ($\beta = -.131$), Acceptance ($\beta = -.119$), and Denial ($\beta = -.173$) negatively and significantly, Planning strategy positively and significantly predicted it ($\beta = .157$).

Table 2. Direct Effect Values between the Variables

Path	β	SH	Lower	Upper
Direct Effect				
PSS-Perceived Stress/Distress → COPE- Positive Reinterpretation and Growth	-.433***	.052	-.533	-.334
PSS-Perceived Stress/Distress → COPE- Active Coping	-.425***	.064	-.547	-.300
PSS-Perceived Stress/Distress → COPE- Planning	-.383***	.066	-.515	-.256
PSS-Perceived Stress/Distress → COPE- Suppression of Competing Activities	-.197**	.069	-.326	-.062
PSS-Perceived Stress/Distress → COPE- Use of Social Support	-.196*	.074	-.327	-.039
PSS-Perceived Stress/Distress → COPE- Disengagement	.218***	.083	.057	.373
PSS-Perceived Stress/Distress → PWBS- Self-Acceptance and Purpose in Life	-.234**	.061	-.345	-.106
PSS-Perceived Stress/Distress → PWBS- Autonomy	.177*	.067	.044	.299
PSS-Perceived Insufficient Self-Efficacy → COPE-Focus on and Venting of Emotions	.275**	.068	.138	.400
PSS-Perceived Insufficient Self-Efficacy → COPE-Acceptance	.223**	.075	.065	.356
PSS-Perceived Insufficient Self-Efficacy → COPE-Suppression of Competing Activities	.187**	.069	.058	.317
PSS-Perceived Insufficient Self-Efficacy → COPE-Positive Reinterpretation and Growth	.171**	.058	.065	.296
PSS-Perceived Insufficient Self-Efficacy → COPE-Active Coping	.166**	.060	.047	.285
PSS-Perceived Insufficient Self-Efficacy → COPE- Disengagement	.148*	.066	.015	.273
PSS-Perceived Insufficient Self-Efficacy → COPE-Religious Coping	.144*	.063	.019	.264
PSS-Perceived Insufficient Self-Efficacy → PWBS-Environmental Mastery	-.267**	.055	-.374	-.161
COPE-Positive Reinterpretation and Growth → PWBS-Self-Acceptance and Purpose in Life	.250***	.067	.119	.390
COPE-Positive Reinterpretation and Growth → PWBS-Personal Growth	.179*	.076	.018	.321
COPE-Positive Reinterpretation and Growth → PWBS-Environmental Mastery	.178**	.066	.049	.309
COPE- Disengagement → PWBS-Environmental Mastery	-.411**	.073	-.553	-.261
COPE- Disengagement → PWBS-Autonomy	-.314**	.072	-.445	-.159
COPE- Disengagement → PWBS-Self-Acceptance and Purpose in Life	-.173*	.075	-.315	-.019
COPE-Use of Social Support → PWBS- Positive Relations with Others	.295***	.080	.048	.466
COPE-Religious Coping → PWBS-Autonomy	-.176**	.061	-.295	-.047
COPE-Substance Use → PWBS-Personal Growth	-.131*	.067	-.273	-.004
COPE-Acceptance → PWBS-Personal Growth	-.119*	.063	-.246	-.007
COPE-Denial → PWBS-Personal Growth	-.173*	.076	-.316	-.019
COPE-Planning → PWBS-Personal Growth	.157*	.069	.014	.294

Note. PSS: Perceived Stress Scale; PWBS: Psychological Well-Being Scale; COPE: The COPE Inventory BC interval: Error corrected %95 confidence interval

p<.05; p<.01**; p<.001***

As a result of the final model, the squared multiple correlation coefficients, which shows the extent to which the external variables are explained by the internal variables, were examined. The Perceived Stress sub-dimensions explained 15.8% of the Positive Reinterpretation and Growth, 15.3% of the Active Coping, 14.1% of the Planning, 9.5% of the Disengagement, 8.9% of the Focus on and Venting of

Emotions, 4.5% of the Suppression of Competing Activities, 4.2% of the Acceptance, and 3.4% of the Use of Social Support variances.

Findings Regarding the Mediating Role of Coping Strategies in the Relationship between Perceived Stress Level and Psychological Well-being

According to the direct, indirect, and total effect values in Table 3, Positive Reinterpretation and Growth, and Disengagement were full mediators between the Perceived Stress/Distress and Environmental Mastery. Also, Positive Reinterpretation and Growth, and Planning were full mediators between the Perceived Stress/Distress, and Personal Growth. Lastly, Use of Social Support was a full mediator between the Perceived Stress/Distress and Positive Relations with Others. While Positive Reinterpretation and Growth, and Disengagement coping strategies were partial mediators between the Perceived Stress/Distress and Self-Acceptance and Purpose in Life, Disengagement coping strategy was a partial mediator between the Perceived Stress/Distress and Autonomy. There was not any full or partial mediator between Perceived Insufficient Self-Efficacy and Psychological Well-Being sub-dimensions.

Table 3. Direct, indirect, and total effects in the model

Exogenous Variables	Endogenous Variables	Direct Effect	Indirect Effect	Total Effect
PSS- Perceived Stress/Distress	PWBS- Self-Acceptance and Purpose in Life	-.234**	-.182**	-.416**
	PWBS-Environmental Mastery	-.082	-.151**	-.233***
	PWBS-Personal Growth	-.064	-.219**	-.283***
	PWBS- Positive Relations with Others	.028	-.156**	-.128
	PWBS- Autonomy	.177*	-.231***	-.054
PSS- Perceived Insufficient Self-Efficacy	PWBS- Self-Acceptance and Purpose in Life	-.069	.046	-.023
	PWBS-Environmental Mastery	-.267**	-.026	-.292**
	PWBS-Personal Growth	.160	.067	.227**
	PWBS- Positive Relations with Others	.074	.049	.123
	PWBS- Autonomy	-.019	-.041	-.060

PSS: Perceived Stress Scale; PWBS: Psychological Well-Being Scale; COPE: The COPE Inventory BC interval: Error corrected %95 confidence interval
 p<.05; p<.01**; p<.001***

As a result of the final model, squared multiple correlation coefficients-R2 values, which shows at what level the exogenous variables are explained by endogenous variables and mediating variables, were calculated. The entire structural model explained 38.8% of the Environmental Mastery variance, 33.3% of the Personal Growth variance, 31.9% of the Autonomy variance, 31.3% of the Self-Acceptance and Purpose in Life variance, and 19.9% of the Positive Relations with Others variance. These values indicate that all five exogenous variables have a medium effect size in terms of the variance levels explained (Cohen, 1992).

DISCUSSION

In the study, the mediating effect of coping strategies on the relationship between adult individuals' perceived stress and their psychological well-being during the COVID-19 pandemic was tested on a model. It was concluded that there were significant relationships between some of the tested variables, and the model created by taking into account the literature fit well with the study data. Some coping strategies mediated between perceived stress and psychological well-being. The findings obtained as a result of the study showed similar results to the studies examining the fear, anxiety, and stress levels of individuals during the COVID-19 pandemic and how they were affected psychologically (APA, 2020; Brooks et al., 2020; Charles, 2020; Kirman, 2020; Qiu et al., 2020; Park et al., 2020; Rehman et al., 2021; Rodriguez et al., 2020; Sønderskov et al., 2020).

The study findings revealed that the variable of Perceived Stress/Distress negatively and significantly predicted the variables of Active Coping, Positive Reinterpretation and Growth, Planning, Suppression of Competing Activities, Use of Social Support, while it positively and significantly predicted the variable of Disengagement. In other words, individuals who felt intense discomfort due to the stress they experienced during the pandemic and who thought that the problems accumulated so much that they could not overcome, had much more difficulty in coping with the problems they experience. The individuals' perception of the stressful event as a weakening situation cognitively and emotionally affects them (Crum et al., 2017; Everly & Lating, 2019). During the pandemic, these individuals have difficulty in looking at events with a new perspective, adapting to existing conditions, maintaining their ties with other areas of their lives, and getting support by activating their social relationships (Brooks et al, 2020). At the same time, these individuals tend to ignore the problem instead of effectively solving the existing problem and fulfilling their life plans. As a matter of fact, individuals with high Perceived Stress/Distress tend to have a low level of Self-Acceptance and Purpose in Life, and a high level of Autonomy. Individuals who experience negative emotions due to the stress they experience during the pandemic and who are intensely distressed because of this situation have difficulty in exhibiting positive attitudes towards themselves and making an assessment of their past and present lives as meaningful and with purpose. According to another finding, individuals with a high perception of Perceived Stress/Distress tended to behave more autonomously. However, Disengagement coping strategy is a mediator variable between Perceived Stress/Distress and Autonomy. Disengagement coping strategy prevents the individual from facing the existing problem. Mental and behavioral disengagement makes it easier for the person to get away from the anxiety caused by the stressor by keeping them busy. Sometimes, Disengagement may be a behavior displayed as an indicator of desperation (Carver, Scheiver, & Weintraub, 1989). This may prevent the individual from acting particularly autonomously. Indeed, individuals using a high level of Disengagement coping strategy tend to be less autonomous. According to another finding of the study, the mediation of Disengagement, and Positive Reinterpretation and Growth coping strategies between Perceived Stress/Distress and Self-Acceptance and Purpose, and Environmental Mastery, indicated that individuals who are aware of the virus and shape their behavior accordingly may behave more autonomously, but individuals who feel desperate against the problem and unable to reorganize their perspectives limit their autonomy and have difficulties in adapting to the environment, accepting themselves and forming new life goals. Furthermore, Planning, and Positive Reinterpretation and Growth coping strategies, which mediated between Perceived Stress/Distress, and Personal Growth, also showed the important effect of functional coping strategies on the individual's self-development by making new inferences from stressful events.

The variable of Perceived Insufficient Self-Efficacy, another dimension of the Perceived Stress Scale positively and significantly predicted the variables of Focus on and Venting of Emotions, Acceptance, Suppression of Competing Activities, Positive Reinterpretation and Growth, Active Coping, Disengagement, and Religious Coping. This finding showed that, during the pandemic, some individuals were worried that they would not be able to cope with the psychological, physiological, sociological, and economic stress caused by the virus, they did not trust themselves to control this anxiety and they felt insufficient. The interesting result was that some of these individuals had a high tendency to use functional coping strategies such as acceptance, positive reinterpretation and growth, and active coping rather than avoiding the problem. These individuals tried to overcome the stress they experienced by either expressing their feelings or exhibiting behaviors aimed at solving the problem. The fact that the

regression coefficient was positive indicated that individuals who felt insufficient to cope with the situation at the time of stress exhibited more constructive behaviors to interpret the event differently and to reduce their anxiety. Individuals who had perceived insufficient self-efficacy perception during the pandemic tended to use their existing potential, improve themselves, and see the process they went through as a learning process. Although the generally destructive effects of stress are known, it also has a feature that motivates some people, helps them to cope with the existing problem, directs them to positive stimuli, and increases cognitive flexibility (Crum et al., 2017; Hagger, Keech and Hamilton, 2020). While moderate levels of fear or anxiety motivate people to cope with health threats, severe stress prevents coping (Taylor, 2019).

As Perceived Insufficient Self-Efficacy increased, Religious Coping, and Disengagement tendency increased and Environmental Mastery decreased. In line with the study findings, it was concluded that different coping strategies had significant effects on psychological well-being. The Autonomy tendencies of the individuals who used the Disengagement and Religious coping strategies to overcome the stress they experienced during the pandemic were lower. Individuals who attributed the problem to a supreme being independent of themselves in order to reduce the situation that gave anxiety to them tended to think and act dependent on traditions, while individuals who thought that their fate was not in their own hands and that what happened to them depended on external factors tended to behave less autonomously. In uncertain and uncontrollable situations, some individuals take refuge in their religious beliefs as a coping strategies (Karataş & Baloğlu, 2019). In her study on how people perceive the pandemic and to what they attribute what is happening, Kirman (2020) concluded that religiously oriented discourses, thoughts, and religiosity are partially revived. The quarantine measures taken to minimize the infection possibility during the pandemic suggest that psychological well-being would adversely affect a society like Turkey where the majority of individuals have a relational self-construal (Kağıtçıbaşı, 2000). As a matter of fact, one of the study findings was that the individuals who used the Use of Social Support coping strategies had a higher tendency to exhibit Positive Relations with Others.

Also, the present study concluded that individuals who displayed dysfunctional coping behaviors such as denial and substance use showed a low level of Personal Growth. However, individuals who made plans and continued their lives by reinterpreting the stressful situation tended to display more Personal Growth. Avoidance strategies negatively affect well-being differently in problem-focused or emotion-focused coping strategies (Parker & Endler, 1992). A study conducted by APA (2020) stated that approximately half of Americans were worried about being infected by the coronavirus, 62% of them worried about their loved ones getting a coronavirus diagnosis, and 59% of them believed that coronavirus has a serious impact on their daily lives. 19% of the participants expressed that they had trouble sleeping, and 8% of them consumed more alcohol or drugs. About a quarter (24%) of the respondents stated that they had trouble concentrating on other things because they thought about the coronavirus. In another study conducted with the participation of university students in the United States, the psychological symptoms, perceived stress levels, and alcohol use levels of students before and after the pandemic were compared. It was determined that students experienced more symptoms of mood disorders and used more alcohol after the pandemic compared to before the pandemic (Charles, 2020). Perceived threat and psychological stress during the pandemic process trigger the amount of alcohol use (Rodriguez et al., 2020). Although such avoidance behaviors make the person feel good for a while, they are not effective in solving the problem in the long term (Stone, 2020).

In addition, Positive Reinterpretation and Growth coping strategies positively and significantly predicted psychological well-being's dimensions of Self-Acceptance and Purpose in Life and Environmental Mastery. On the contrary, Disengagement coping strategies predicted these variables negatively and significantly. This finding showed that individuals who improved by reinterpreting and making sense of the event they experienced had a higher tendency to accept their past and present selves, to realize their life goals, and to reveal their existing potentials. This finding also showed that individuals who were able to make plans for the future despite their uncertainty about their present had a higher tendency to accept themselves as they were, to determine their goals in life, to improve them, to use their potential, and had the capacity to reorganize their environment. On the other hand, people who ignored the event and found themselves other occupations and avoided them had trouble improving themselves, setting new life goals, and adjusting their environment to the existing situation. However, there are many variables affecting the well-being of individuals during the pandemic. In a study comparing the subjective well-being of the elderly (over 65) and adults (35-46 years) during the SARS pandemic of 2003, it was observed that the subjective well-being levels of the elderly living in areas where the pandemic was intense was significantly lower and that the younger sample remained within the normative range. Having a chronic disease, being female, low educational status, and unemployment were listed as the other variables affecting subjective well-being (Lau et al., 2008). That is why, in the interventions to be addressed, it is necessary to assess the context and conditions of the individuals well.

Implication

The impact of the COVID-19 pandemic has been continuing, and many factors such as anxiety about losing health, avoiding social relationships, economic difficulties, difficulties in meeting basic needs, anxiety about not being able to access health services stress people (Cao et al., 2020; Qiu et al., 2020; Rehman et al., 2021). However, while some may activate their coping strategies more effectively in this process, for others these strategies are insufficient (Fink, 2016). For some, stress is perceived as a new learning process, while for others, intense anxiety, fear, and stress bring many psychosocial difficulties into their lives. Accordingly, the well-being levels of individuals differed from each other. These findings may be interpreted as an indication that the stress experienced in a way forces the individuals to adapt to the new situation and directs them to cope with anxiety by functionally reducing stress and to create new learning processes. Although stress includes unpleasant situations, stress also has some positive motivations for some people. What makes this difference is the meanings people attach to events (Vestre & Burni, 1987). Kobasa (1979) stated that individuals who deal with stress effectively tend to see events not as a threat, but as an opportunity to improve them, struggle to gain experience rather than escape or exhibit hostile attitudes, and seek more meaning. In this context, the participants with high Perceived Insufficient Self-Efficacy scores overcame the events by using more constructive coping strategies. Individuals who used more functional coping strategies to manage stress, as a result, could make decisions with their own free will without being dependent on other people.

The fact that individuals with high levels of Perceived Insufficient Self-Efficacy used more functional coping strategies compared to individuals with high Perceived Stress/Distress is believed to stem from these individuals differently assessing events. The findings obtained as a result of the mediation test confirmed this. Participants with high Perceived Stress/Distress had difficulty in gaining different perspectives by reinterpreting events, making plans accordingly, and using social support while doing so. Hence, their individual growth was interrupted. In addition, they had difficulty accepting them and

determining a purpose for their lives. These individuals needed to make plans and address the stressful situation with a new perspective in order to feel good by acting more autonomously, use social support resources by increasing internal and external adaptation. Their ability to receive social support depends on establishing positive relations with others. However, individuals with high Perceived Stress/Distress find it difficult to use these coping strategies and as a result, their psychological well-being is low. Individuals with more social support networks are expected to focus on social relations, higher interactions with other people, and improve depending on the quality of the support they receive. Getting social support makes it easier for people to stay strong in the face of many negative situations and to overcome the problems experienced (Beedie & Kennedy, 2002). Social isolation or social distance experienced during the pandemic becomes a risk factor for some individuals in terms of mental health. In a study conducted in Turkey, Bilge and Bilge (2020) stated that the majority of the participants were “negatively affected” and got bored “much” and “too much” from staying at home. Again, in the same study, 28% of the participants stated that they were “much” and “too much” concerned about being infected by the virus, 61% of from the result of the infection, and 73.4% of from infecting someone else. The study results revealed that individuals who have low psychological resilience, who use a dysfunctional coping strategies with stress, and who have negative perceptions and attitudes towards COVID-19 social isolation are more vulnerable to protect their psychological health against the pandemic and feel the need for psychological help more (Bilge & Bilge, 2020). People’s contact with each other decreased due to the fear of harming loved ones over the age of 65, infecting others, and getting infected. The quarantine practices, which were imposed to prevent the transmission and spread of the disease during the pandemic, especially affected relationship-oriented individuals and vulnerable individuals who did not want to be alone when they needed it most (Brooks et al., 2020).

Defensive responses such as the denial of the stressful event and substance use prevent individuals from confronting reality, exhibiting functional behaviors, and taking their own life responsibilities (Taylor, 2019). During a pandemic, the individual is not only responsible for his own health. Maintaining social distance is mandatory due to the high infection rate. However, in Turkey, although there are people who show due diligence to social distancing, wearing masks, and hygiene, there also people who exhibit the opposite. Especially celebrations, religious festivals, religious activities, and intercity trips for holidays without wearing a mask and without maintaining social distance increase people’s contact with each other. From this point of view, the fact that there are individuals who deny the existence of the virus indicates that they are not concerned about infecting themselves and others because the denial mechanism is about denying the reality of the event (Carver et al., 1989; Carver & Scheier, 1994; Ağargün et al., 2005). Examining especially the behavioral responses of individuals with a Denial coping strategy towards the virus and the emotions, beliefs, and behaviors underlying this denial mechanism may be a helpful factor in developing interventions against this strategy.

Stress affects each individual differently. The meaning attributed to events by each individual is not the same. Depending on this, their reactions also differ (Everly & Lating, 2019). Some individuals are much more affected in moments of stress. This is an important factor for the deterioration of individuals’ physical and mental health. Sometimes, moments of stress can be a trigger of a mental disorder or cause an existing mental problem to worsen. The coronavirus is a deadly, uncontrollable virus that cannot be seen. This affects individuals’ potential to use their coping strategies (Fink, 2016). Cognitive interpretation of challenging situations and assessment of ongoing coping mechanisms are important in understanding the behavioral and emotional effects of these situations (Kopp et al., 2010). The psychological damage

of the virus is also devastating just like its damage to people's physical integrity. During pandemics, even if there is a treatment for the disease, many people from all age groups are psychosocially negatively affected at the end of this process (Lau et al., 2008). For this reason, important responsibilities fall to many people working in the field of mental health. Each individual experiencing stress does not perceive the event in the same way, uses different coping strategies, and, accordingly, their well-being varies. Some may feel much stronger at the end of the process by gaining features such as developing new relationships, creating new interests, or feeling stronger spiritually (Roberts, 2005).

Limitation

Although the present study provided important data on the relationships between perceived stress, psychological well-being, and coping strategies during the Covid-19 pandemic, it has some limitations. The sample size being limited to 259 participants, most of the participants being female, the collection of data using self-report scales, and the collection of data only through online means (which may be limiting for those who do not have internet access and/or do not know how to use computers or phones) may be listed among the study's limitations

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Author Contribution

This study was conducted by both authors working together and cooperatively. Both authors substantially contributed to this work in each step of the study.

Conflict of Interest

Both authors reported that there is no conflict of interest

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RESEARCH

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ARAŞTIRMA

Açık Erişim

Investigation of University Students' Cyber Victimization Experience in Relation to Psychological Symptoms and Social Media Use

Üniversite Öğrencilerinin Siber Mağduriyet Deneyimlerinin Psikolojik Belirtiler ve Sosyal Medya Kullanımı Açısından İncelenmesi

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ABSTRACT

The purpose of this study is to examine university students' cyber-victimization experience in terms of psychological symptoms and social media use. A cross-sectional and self-reported survey was conducted among a total of 1746 undergraduate students. Data were collected through the Revised Cyber Bullying Inventory-II, Brief Symptom Inventory, and the Media and Technology Usage and Attitudes Scale. Chi-square analysis revealed non-significant gender differences for the cyber-victimization experience. Mann-Whitney U test results showed that psychological symptom scores and social media usage scores of cyber victims are significantly higher than non-victims. Binary logistic regression analysis showed that an increase in general social media usage, social media friendship, online friendship, hostility, and paranoid ideation increases the probability of reporting cyber-victimization. The results were discussed, and suggestions were provided in the light of the literature.

Article Information

Keywords

Cyber-victimization, psychological symptoms, social media usage, hostility, paranoid ideation

Anahtar Kelimeler

Siber mağduriyet, psikolojik semptomlar, sosyal medya kullanımı, düşmanlık, paranoid düşünce

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ÖZET

Bu çalışmanın amacı, üniversite öğrencilerinin siber mağduriyet deneyimlerini psikolojik belirtiler ve sosyal medya kullanımı açısından incelemektir. Toplam 1746 lisans öğrencisi ile kesitsel ve öz bildirime dayalı bir anket yapılmıştır. Veriler, Revize Edilmiş Siber Zorbalık Envanteri-II, Kısa Semptom Envanteri ve Medya ve Teknoloji Kullanımı ve Tutumları Ölçeği aracılığıyla toplanmıştır. Ki-kare analiz sonuçlarına göre, siber mağduriyet deneyimi ile ilgili cinsiyetler arasında anlamlı fark ortaya çıkmamıştır. Mann-Whitney U testi sonuçları, siber mağdurların psikolojik belirti puanları ve sosyal medya kullanım puanlarının, mağdur olmayanlara göre önemli ölçüde daha yüksek olduğunu göstermiştir. İkili lojistik regresyon analizi, genel sosyal medya kullanımı, sosyal medya arkadaşlığı, çevrimiçi arkadaşlık, düşmanlık ve paranoid düşüncedeki artışın siber mağduriyeti bildirme olasılığını artırdığını göstermiştir. Sonuçlar tartışılmış ve literatür ışığında önerilerde bulunulmuştur.

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INTRODUCTION

While the use of technology was initially limited to areas such as industry and health, today it is hard to imagine our lives without it. We are seeing the dawn of a new era where shopping, health, transportation, friendships, relationships, and even marriages are being realized through Internet technology. Adapting to this age of technology, which is creating a new world order by removing all borders worldwide, is now a necessity rather than a desire. Especially with the Covid 19 pandemic, a process has developed in which people are leaning toward technology in all areas, from their most basic needs such as food to their academic needs such as education. During this time, many people, especially youth and children, have turned to the readily available, cost-effective, and entertaining digital technologies to manage their stress and anxiety (Dinç, 2020). Besides making our lives easier, Internet technology has also brought some negative aspects. Considering that not every change is an absolute improvement, the negative aspects of Internet technology have given rise to new definitions. One of them is cyberbullying. Belsey (2007) defined cyberbullying as intentional and hostile harm to a group or person by others using information and communication technologies. As with traditional bullying, cyberbullying in the digital environment has a cyberbully who carries out the bullying and the cybervictim who is exposed to this situation. Cyber victimization, according to Arıcak (2011), is the exposure of a person or group, a natural individual, or a legal entity to harmful behaviors via communication technologies on a technical or relational basis. Cyber-victimization has been associated with various psychological outcomes in the literature. A meta-analysis study found a positive association between cyber victimization and stress, anxiety, depression, loneliness, behavioral problems, emotional problems, somatic symptoms, and drug and alcohol use (Kowalski et al. 2014). Schenk, Fremouw, and Keelan (2012) observed significant increases in anxiety, depression, phobic anxiety, and paranoia scores in cyber-victims compared to the control group in their study of college students aged 18-24 in the United States. Arıcak (2009) found that the non-cyberbully/non-victim group had fewer psychological symptoms than the cyberbully/victim group. He also found that interpersonal sensitivity and psychoticism predicted cyber-victimization.

In cyberbullying, bullies may think they are not harming victims. However, people who are subjected to bullying may be severely affected by this event and, as a result, may even end their lives. Although such situations do not always lead to suicide, they can have negative consequences for individuals (Ayas & Horzum, 2014). Jessica Logan, who was 18 years old in the state of Ohio in the United States in 2008, committed suicide after her ex-boyfriend circulated her nude photos at school and shared them on social media accounts. Following this case, the Jessica Logan Act was passed in the state of Ohio in January 2012, which encourages schools to prevent cyberbullying and educate teachers against bullying (Wells, 2012). These and similar cases in the media show that the experience of cyber victimization can have serious consequences for individuals.

Social media has become an essential part of our lives with the improvements in information technologies. Social media offers benefits such as quick access to information, acquiring new knowledge, communicating with friends, keeping in touch with family members and other adults (Lenhart, 2015). However, in addition to these benefits, it is also apparent that intensive and frequent use of social media accounts carries the risk of cyber-victimization (Kowalski & Whittaker, 2015; Mesch, 2009). In a study conducted with 914 university students in the U.S., participants' likelihood of becoming an online victim was found to be positively associated with the number of daily updates, number of social media profiles, and acceptance of strangers accessing their social media profiles (Henson, Reynolds, & Fisher, 2011). In

addition, time spent on social media was associated with negative symptoms such as major depression, anxiety, and low subjective well-being (Andreassen et al., 2016; Kross et al., 2013; Lin et al., 2016). Especially with the increased use of the social media (Kemp, 2020), it seems necessary to determine the prevalence of victimization among young people, understand the characteristics of the victim, and show the relationship between social media use and cyber-victimization.

Although it is known that studies on cyberbullying mostly focus on adolescents (Bauman & Baldasare, 2015), several studies show that cyberbullying occurs in all age groups and that university students both engage in and are exposed to cyberbullying (Akada & Kabasakal, 2018). Although the prevalence of cyberbullying among university-aged students appears to be less critical than among high school students, studies have shown that this rate is high, ranging from 10% to 28% (Kowalski et al., 2016). This high rate suggests that cyber victimization experience of university students is a major problem that needs to be addressed. On the other hand, the developmental stage that university students are in has some unique characteristics, unlike other stages. According to Yıldırım (2006), some characteristics of being a university student can cause difficulties for individuals. Young people entering higher education have to move from a protective system such as the family to a broader system in which the protective effect of the family is reduced, and adapt to this new system. In addition, young people are still facing the effects of the problems of adolescence related to identity formation, i.e., a tumultuous period is still underway. In addition, during this time, closer relationships must be formed, emotional bonds must be established, feelings of admiration, acceptance, academic success, and the ability to adapt to competition must be acquired, and the future profession must be questioned. All of these skills require self-confidence. Considering all of this, the characteristics of this period and the responsibilities associated with it may make some young people more vulnerable and targeted for negative experiences. As mentioned earlier, individuals exposed to cyberbullying can be greatly affected by this situation and even end their lives. The responsibility of countries is to remove the obstacles that stand in the way of the bio-psycho-social development of university youth at a dynamic age, who will produce knowledge and technology in the future and raise future generations. This is a requirement of modern education (Yıldırım, 2006). For this reason, it is crucial to study university students' experiences of cyber-victimization, which will support the preparation of prevention and remediation measures in higher education institutions. Reviewing the literature, it appears that the cyberbullying experience in the recent studies is examined in relation to different variables. Unlike other studies, the cyber-victimization experience of university students in the current study is examined in terms of gender, psychological symptoms (“somatization, interpersonal sensitivity, depression, anxiety, hostility, psychoticism, phobic anxiety, paranoid ideation, obsession”), and social media use (general social media use, social media friendship, and online friendship). Given the paucity of studies on cyber-victimization, the purpose of this study is twofold: first, to compare psychological symptoms and frequency of social media use in relation to the experience of cyber-victimization, and second, to determine the extent to which the variables together predict cyber-victimization.

METHOD

Research Model

The descriptive survey model and correlational survey model, which are among the quantitative research models, were utilized (Fraenkel, Wallen, & Hyun, 2012).

Sample

The study sample is comprised of undergraduate students studying at a public university in Türkiye during the spring semester of academic year 2017-2018. Random sampling was used, and a total of 1948 students participated in the study. By eliminating participants with incomplete data, 1746 participants were included in the study. A total of 688 (39.4%) of the university students experienced cyber-victimization, and 1058 (60.6%) of them did not experience cyber-victimization. 418 (23.9%) of the victims were female, and 270 (15.5%) were male. It was determined that 640 (36.7%) of those who did not experience cyber-victimization were female, and 418 (23.9) were male.

The cyber-victimization rates of university students are presented in Table 1.

Table 1. Cyber-victimization Experience Rates of University Students

	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Cyber Victim	418	23.9	270	15.5	688	39.4
Non-Cyber Victim	640	36.7	418	23.9	1058	60.6

Data Collection Tools

Revised Cyber Bullying Inventory-II, Short Symptom Inventory, Media and Technology Usage, and Attitudes Scale were used to collect data in the study.

Revised Cyber Bullying Inventory-II (RCBI-II). The first version of the Revised Cyber Bullying Inventory-II was developed by Erdur-Baker (2007). It was updated by Topçu (2014). The inventory consists of 10 items, and the same items are divided into two separate columns as "done to me" and "I did" to measure two dimensions: cyber-victimization and cyberbullying. The inventory has a 4-point Likert scale as "never", "once", "two or three times", and "more than three" (Items are scored between 1 and 4). The highest score that can be taken from the inventory is 40, and the lowest score is 10. It can be said that individuals who score 11 and below from the inventory do not experience cyberbullying / victimization, while individuals who score above 11 points experience cyberbullying / victimization (Topçu, 2014). The Cronbach alpha coefficient for RCBI-II was .69 for the cyber-victimization section and .84 for the cyberbullying section (Topçu, 2014).

Brief Symptom Inventory. The Brief Symptom Inventory (BSI) is a short form that emerged as a result of studies conducted with the 90-item SCL-90-R. The BSI, developed by Derogotis (1992), consists of 9 subscales, three global indices, and 53 items. The items scored between 0 and 4, and the scores correspond to the statements "not at all" and "extremely". The Sum of scores indicates the frequency of the symptoms. The inventory subscales are "somatization, interpersonal sensitivity, depression, anxiety, hostility, psychoticism, phobic anxiety, paranoid ideation, and obsession-compulsion". The scale was adapted to Turkish by Şahin and Durak (1994). The Cronbach alpha coefficients for BSI ranged between .71(somatization) and .85 (depression). A follow-up research study on the reliability and validity of the

scale was conducted by Şahin, Batıgün and Uğurtaş (2002). The results showed that the factor structure was very similar to the factor structure determined in the study of Şahin and Durak (1994) and that the internal consistency values are high (Cronbach's alpha coefficients ranged from .70 (depression) and .88 (somatization)), and the scale is valid. Based on these results, they decided that the scale adapted by Şahin and Durak (1994) was still valid and reliable. According to the researchers' studies, Cronbach's alpha coefficient for the total score is between .93 and .96.

Media and Technology Usage and Attitudes Scale. Media and Technology Usage and Attitudes Scale was used to measure social media use by university students. This scale was developed by Carrier, Cheever, Rokkum, Rosen, and Whaling (2013) and consisted of 68 items. 50 of these items aim to measure media and technology usage levels, while the remaining 18 items aim to determine media and technology use attitudes. The scale was adapted to Turkish by Özgür (2016). In this study, sub-factors of general social media usage, social media friendship, and online friendship were utilized. The general social media usage subscale is a 10-point Likert scale ranging from "never" to "always" and consists of 9 items. Social media friendship and online friendship are 9-point Likert scales ranging from "0" to "751 or more" and each consists of 2 items. In the validity and reliability study conducted by Özgür (2016). Cronbach's alpha coefficient for general social media usage is .82, social media friendship is .87, and online friendship is .85.

Data Collection Process

After approval by the ethics committee, data collection was conducted during lecture hours of students who volunteered to participate in the study, with the permission of the instructor in charge. Prior to enrollment, students who agreed to participate in the study were informed about the research and the process of data collection.

Data Analysis

Research data were analyzed in the SPSS 25 program. Before the analysis, the required values were checked to determine whether the data showed a normal distribution or not, and it was concluded that the data did not show a normal distribution. For this reason, it was decided to use non-parametric tests. Chi-square test, Mann-Whitney U test, and Binary Logistic Regression analysis were used in the study.

RESULTS

According to the results of the Chi-Square Test, there is no significant relationship between gender and cyber-victimization experience ($\chi^2(1) = .01, p > .05$). The Mann - Whitney U test was used to reveal whether the psychological symptom scores of the university students participating in the study differed according to the cyber-victimization experience variable. Results revealed that those who experienced cyber-victimization (X: .71) reported significantly more somatization than those who did not (X: .57) (U= 291960, p= .00). According to the calculated eta-squared (η^2) value (.03), it can be said that 3% of the variance of the somatization score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (X: 1) reported significantly more interpersonal sensitivity than those who did not (X: .75) (U= 295249, p= .00). According to the calculated eta-squared (η^2) value (.03), it can be said that 3% of the variance of interpersonal sensitivity score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (X: 1.17) reported significantly more depression than those who did not (X: .78) (U= 274296, p= .00). According to the calculated eta-squared

(η^2) value (.04), it can be said that 4% of the variance of the depression score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : .83) reported significantly more anxiety than those who did not (\bar{X} : .67) ($U = 290689.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.03), it can be said that 3% of the variance of the anxiety score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : 1.20) reported significantly more hostility than those who did not (\bar{X} : .80) ($U = 261743.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.06), it can be said that 6% of the variance of the hostility score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : 1) reported significantly more psychoticism than those who did not (\bar{X} : .60) ($U = 280004.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.04), it can be said that 4% of the variance of the psychoticism score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : .68) reported significantly more phobic anxiety than those who did not (\bar{X} : .40) ($U = 289889.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.03), it can be said that 3% of the variance of phobic anxiety score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : 1.40) reported significantly more paranoid ideation than those who did not (\bar{X} : 1) ($U = 250052.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.07), it can be said that 7% of the variance of the paranoid ideation score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : 1.50) reported significantly more obsession-compulsion than those who did not (\bar{X} : 1.17) ($U = 250052.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.04), it can be said that 4% of the variance of the obsession-compulsion score depends on the cyber-victimization experience variable (See Table 2).

The Mann - Whitney U test was conducted to reveal whether the scores of university students' social media use sub-dimensions of general social media usage, social media friendship, and online friendship differ according to the cyber-victimization experience variable. According to the results of the test, those who experienced cyber-victimization (\bar{X} : 5) reported significantly more general social media usage than those who did not (\bar{X} : 4.33) ($U = 295703$, $p = .00$). According to the calculated eta-squared (η^2) value (.02), it can be said that 2% of the variance of the general social media usage score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : 4.50) reported significantly more social media friends than those who did not (\bar{X} : 4) ($U = 304211.50$, $p = .00$). According to the calculated eta-squared (η^2) value (.02), it can be said that 2% of the variance of the social media friendship score depends on the cyber-victimization experience variable. Those who experienced cyber-victimization (\bar{X} : 1.50) reported significantly more online friends than those who did not (\bar{X} : 1) ($U = 280765$, $p = .00$). According to the calculated eta-squared (η^2) value (.04), it can be said that 4% of the variance of the online friendship score depends on the cyber-victimization experience variable (See Table 2).

Table 2. Analysis of University Students' Psychological Symptom Scores According to the Cyber Victim Experience Variable (Mann - Whitney U Test)

	Cyber Victim	Non-Cyber Victim	U	Z	η^2
	(n=688)	(n=1058)			
	\bar{X}_{rank}	\bar{X}_{rank}			
Psychological Symptoms					
Somatization	978.14	805.45	291960.00	-7.02*	.03
Interpersonal Sensitivity	973.36	808.56	295249.00	-6.71*	.03
Depression	1003.81	788.76	274296.00	-8.73*	.04
Anxiety	979.99	804.25	290689.50	-7.14*	.03
Hostility	1022.06	776.89	261743.50	-9.96*	.06
Psychoticism	995.52	794.15	280004.50	-8.19*	.04
Phobic Anxiety	981.15	803.50	289889.50	-7.25*	.03
Paranoid Ideation	1039.05	765.84	250052.50	-11.09*	.07
Obsession-Compulsion	992.65	796.02	281976.50	-7.98*	.04
Social Media Use					
General Social Media Usage	972.70	808.99	295703.00	-6.63*	.02
Social Media Friendship	960.33	817.03	304211.50	-5.84*	.02
Online Friendship	994.41	794.87	280765.00	-8.84*	.04

Note. *p<.05; Xrank: Average Rank

The effect of psychological symptoms and social media use on cyber-victimization experience were analyzed by Binary Logistic Regression Analysis. The assumptions regarding the Logistic Regression analysis were provided, and as a result of the Hosmer and Lemeshow Test, it was determined that the values estimated by the model did not differ statistically from the observed values and the data fit was sufficient ($\chi^2(8) = 8.25, p > .05$).

According to the findings, it was determined that the scores of university students in psychological symptoms and social media use sub-scales were significant predictors in explaining cyber-victimization experience ($\chi^2(12) = 201.87, NR^2 = .15, p < .01$). The data regarding the general correct classification rate in Logistic Regression Analysis are given in Table 3. The increase in the overall correct classification rate of the model (65.8%) compared to the initial model (60.6%) shows that this model is successful in terms of classification.

Table 3. Model Classification Table

Observed	Estimated		Correct Classification Rate
	Cyber Victims	Non-Cyber Victims	
Cyber Victims	260	428	37.8
Non-Cyber Victims	170	888	83.9
Overall Correct Classification Rate			65.8

Hostility ($p < .05$), paranoid ideation ($p < .05$), general social media usage ($p < .05$), social media friendship ($p < .05$), and online friendship ($p < .05$) has significant effects on university students' cyber-victimization experience (See Table 4). A one-unit increase in university students' level of hostility increases the probability of experiencing cyber-victimization by 1.31 times or 31% $[(1.31-1) * 100]$. Likewise, a one-unit increase in the level of paranoid ideation of university students increases the probability of experiencing cyber-victimization by 1.67 times or 67% $[(1.67-1) * 100]$.

When the variables related to social media use are examined, a one-unit increase in the level of general social media usage of university students increases the probability of experiencing cyber-victimization 1.09 times or 9% $[(1.09-1) * 100]$. A one-unit increase in the social media friendship level increases the probability of experiencing cyber-victimization by 1.08 times or 8% $[(1.08-1) * 100]$. One unit increase in

the level of online friendship increases the probability of experiencing cyber-victimization by 1.20 times or 20% $[(1.20-1) * 100]$.

Table 4. Logistic Regression Analysis of University Students' Psychological Symptoms and Social Media Use According to the Cyber-victimization Experience Variable

	LR	%95 CI		p
		Lower	Upper	
Psychological Symptoms				
Somatization	1.11	.91	1.36	.31
Interpersonal Sensitivity	.98	.82	1.17	.82
Depression	1.06	.87	1.30	.56
Anxiety	.76	.60	.97	.32
Hostility	1.31	1.11	1.54	.00
Psychoticism	.97	.77	1.21	.76
Phobic Anxiety	1.06	.84	1.33	.63
Paranoid Ideation	1.67	1.39	2.01	.00
Social Media Usage				
General Social Media Usage	1.09	1.03	1.15	.00
Social Media Friendship	1.08	1.02	1.14	.01
Online Friendship	1.20	1.06	1.35	.00

Note. p <.05 LR: Likelihood Ratio CI: Confidence Interval

DISCUSSION

In this study, university students' cyber-victimization experience was examined in terms of gender, psychological symptoms, and social media use. In the study, more than one-third of university students reported that they had experienced cyber-victimization. Considering the literature, the prevalence of cyber-victimization varies among university students. Dilmaç (2009) found the cyber-victimization rate as 55.3%, Fancsher and Randa (2019) found the cyber-victimization rate as 43%, Felipe-Castaño et al. (2019) found the cyber-victimization rate as 77.6%, and Topçu (2014) found the cyber-victimization rate as 25.8%. The reason for these proportional changes may be the different measurement tools used or the differences in samples. The differences between the definitions of cyber-victimization and the basing of cyber-victimization on self-reports can be counted among these reasons (Baldry, Sorrentino, Farrington, & Blaya, 2019).

No significant difference was found between females and males in terms of experiencing cyber-victimization. Consistent with our study, some studies have shown that there is no significant gender difference in cyber-victimization (Felipe-Castaño et al., 2019; Sorrentino, Baldry, Farrington, & Blaya, 2019). Similar to traditional bullying, the fact that the tendency to bullying is related to the balance of power in cyberbullying (Fırat & Ayran, 2016), the bully's ability to see a weaker person as a target of bullying regardless of male or female may be the reason why the cyber-victimization experience does not differ according to gender.

In this study, significantly more psychological symptoms were found in cyber victims than in non-victims. Somatization, interpersonal sensitivity, depression, anxiety, hostility, psychoticism, phobic anxiety, paranoid ideation, and obsession-compulsion scores of the cyber victim group were significantly higher. These findings are consistent with the previous studies (Ybarra and Mitchell, 2004) and recent studies (Laconi et al., 2018; Lin et al., 2020; Spears, Taddeo, Daly, Stretton, & Karklins, 2015). This reveals the relationship of cyber-victimization experience with the psychological symptoms of individuals. Besides,

the use of social media by the cyber victims was found to be significantly higher than the non-victims. This is consistent with other studies demonstrating that cyber-victimization is associated with social media use (Craig et al., 2020; Fansher and Randa, 2019). A success rate of 65.8% was achieved after the classification of the students according to their cyber-victimization status with Binary Logistic Regression Analysis. Considering this ratio, the classification of students according to their experience of cyber-victimization was estimated 5.2% more accurately than the initial model. This proportional difference arising from the inclusion of independent variables in the model is small but important as it can be considered as an indicator of model-data fit.

It was found that the increase in the hostility level of university students increases the probability of experiencing cyber-victimization. Individuals who have been subjected to cyberbullying may have hostile emotions as a result of these behaviors. On the other hand, as a result of the hostile feelings of the victims, provoking, threatening others, or using offensive words may cause bullying behavior (Yang, 2012). Consistent with the current study, there are studies in the literature showing that cyber-victimization is related to hostility (Calpbınici & Tas Arslan, 2019; İldırım, Çalıcı, & Erdoğan, 2017; Laconi et al., 2018).

Another finding of the study is that the increase in the level of paranoid ideation of university students increases the probability of experiencing cyber-victimization. Paranoia, which is defined as the thought that others are trying to harm us deliberately, can be in the form of mild suspicion and insecurity in individuals, or it can also appear in the form of delusions of persecution (Freeman, 2016). Studies examining the relationship between paranoid ideation and traditional bullying have found that past experience of bullying increases the risk of developing paranoid ideation later in life. Findings of the studies examining the relationship between cyberbullying victimization and paranoid ideation are consistent with the current study (Baldwin, Ayorech, Rijdsdijk, Schoeler, & Pingault, 2020; Laconi et al., 2018; Schenk, Fremouw, & Keelan, 2013). While the participants may have developed feelings of insecurity and suspicion and paranoid ideation after being victimized by cyberbullying, paranoid-minded youth can interpret online interactions as hostile and thus report cyber-victimization (Baldwin et al., 2020).

Another finding obtained from the study is that the increase in the use of general social media, social media friendship, and online friendship increases the probability of experiencing victimization. Young people generally use social media to socialize, maintain existing friendships and make new friends (Acquisti & Gross, 2006). As social media accounts are easily accessible, people can hide their identities by creating anonymous accounts and are open to access at any time without any temporal and spatial restrictions. It might create a risk for cyber-victimization experience (Fansher & Randa, 2019). The findings of recent studies that social media use increases the risk of cyber-victimization are consistent with the current study (Craig et al., 2020; Sorrentino, Baldry, Farrington, & Blaya, 2019). In addition to these studies, Fansher and Randa (2019) conducted a study with 1310 undergraduate students, and they found that social media use alone does not pose a risk to cyber-victimization, and that different uses such as sharing personal information or using social media to meet new people create this risk. However, it should be kept in mind that the use of social media in search of support or interaction by young people with low psychological well-being may pose a higher risk of cyber-victimization (Sampasa - Kanyinga & Hamilton, 2015).

In conclusion, in this study, in which the cyber-victimization experiences of university students were examined in terms of psychological symptoms and social media use; It was revealed that there was no gender difference in terms of cyber-victimization experience. Psychological symptom scores and social media usage scores of the group reporting cyber-victimization were higher, and the increase in the level of hostility, paranoid ideation, general social media use, social media friendship, and online friendship increased the likelihood of reporting cyber-victimization experience.

Limitations & Future Studies

The scope of this study is limited to university students in Türkiye during the 2017-2018 academic year. In terms of the generalizability of the findings, the study variables can be re-studied on samples in universities in different countries. Since the data obtained from the research are cross-sectional, it is not possible to interpret the causality between variables. Using longitudinal designs in future research may provide more robust findings for the relationships between variables. Moreover, since the meaning of the cyber-victimization experience can be different for each participant, qualitative studies can provide more detailed data.

Implications

Within the scope of these results, practitioners can provide informative training to students, parents, and educators, starting from primary school to university level, about cyberbullying and cyber-victimization, the possible negative consequences, and where they can apply when faced with such behaviors. Again, practitioners regarding the conscious use of social media can provide training to all segments of society, especially students. Psychological counselors and other mental health professionals working with university students can plan individual and psycho-education intervention programs that will allow young people to protect themselves against negative online experiences, increase their life skills, and develop better-coping strategies recognizing their anger emotions. Researchers can obtain more comprehensive data by examining the cyber-victimization experience with qualitative methods and examine the relationship between the cyber-victimization experience with hostility and paranoid ideation in more depth. Finally, considering the prevalence of cyber-victimization and its relationship with psychological symptoms, policymakers can prepare legal regulations that encourage schools and universities to prevent cyberbullying.

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Author Contribution

TY and SCY designed the study. DTK conducted the statistical analyses and wrote the first draft of the manuscript. TY and SCY supervised the writing and revised the article. SCY translated the article into English. All authors reviewed the manuscript for intellectual content, read and approved the final version of the manuscript.

Conflict of Interest

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Ethical Statement

This study was conducted with the approval of the İnönü University Social Sciences and Humanities Scientific Research Ethics Committee, Malatya, Türkiye.

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REVIEW

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DERLEME

Açık Erişim

Could Robots Empatize? A Review on The Employment of Social Robots in Mental Healthcare*Robotlar Empati Yapabilir mi? Sosyal Robotların Ruh Sağlığı Hizmetlerinde Kullanımı Üzerine Bir Derleme***Mücahit Gültekin** **Authors Information****Mücahit Gültekin**

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ABSTRACT

The advances in artificial intelligence and robotics began to transform business and human relations. The employment of robots in health, education, entertainment and rehabilitation as well as industries introduced the concept of "social robots". Although there is no consensus on the definition of the concept, robots with some degree of autonomy and could conduct meaningful social interactions with humans are considered social robots. Studies have been conducted on the employment of social robots in mental health services. Studies have been conducted on the employment of social robots in mental health services. The effectiveness of social robots in the treatment of anxiety, stress, depression, anger, and eating disorders, especially dementia and autism spectrum disorder, has also been investigated. The question of "can robots empathize" is a significant topic in research that focus on human-robot interactions. Robotic empathy studies were conducted with two dimensions of human empathy for robots and robot empathy for humans and led to various philosophical and ethical discussions. Some argued that robot-human interaction leads to new opportunities in mental health services, while others criticized the use of robots since it could increase human solitude, blur the line between reality and virtuality perceptions and the distinction between ontological categories. The present literature review aimed to discuss the concepts of artificial intelligence, robots, and social robots, provide information about the studies on the employment of social robots in mental healthcare, and address the studies and views based on the question "can social robots empathize?"

Article Information**Keywords**

Social Robot, Robot, Artificial Intelligence, Mental Health, Empathy

Anahtar Kelimeler

Sosyal Robot, Robot, Yapay Zekâ, Ruh Sağlığı, Empati

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ÖZET

Günümüzde yapay zekâ ve robotik alanındaki gelişmeler iş ve insan ilişkilerini dönüştürmeye başlamıştır. Robotların sadece endüstriyel alanda değil, sağlık, eğitim, eğlence, rehabilitasyon gibi alanlarda kullanılması "sosyal robot" kavramını gündeme getirmiştir. Kavramın üzerinde uzlaşılan ortak bir tanımı bulunmasa da, bir dereceye kadar özerkliğe sahip, insanlarla anlamlı sosyal etkileşimler kurabilen robotlar sosyal robotlar olarak kabul edilebilir. Bu bağlamda sosyal robotların ruh sağlığı hizmetlerinde kullanımına yönelik çalışmalar da yapılmaktadır. Sosyal robotların demans ve otizm spektrum bozukluğu başta olmak üzere anksiyete, stres, depresyon, öfke, yeme problemleri gibi sorunların terapisinde de etkililiği araştırılmaktadır. "Robotlar empati yapabilir mi?" sorusu ise insan-robot etkileşimine odaklanan araştırmaların önemli bir tartışma konusudur. Robot-insan etkileşiminin ruh sağlığı hizmetleri için yeni fırsatlar yarattığını savunanlar olduğu gibi, insanın yalnızlığını arttıracığı, gerçeklik ve sanallık arasındaki çizgiyi belirsizleştirebileceği, ontolojik kategoriler arasındaki ayrımı bulanıklaştırabileceği gibi eleştiriler de yapılmaktadır. Bu derleme yazıda yapay zekâ, robot, sosyal robot kavramlarını açıklamak; sosyal robotların ruh sağlığı hizmetlerinde kullanımına ilişkin yapılan çalışmalar hakkında bilgi vermek, "sosyal robotlar empati yapabilir mi?" sorusu çerçevesinde yapılan araştırmaları ve öne sürülen görüşleri tartışmak amaçlanmıştır.

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INTRODUCTION

It has been about seventy years since the beginning of contemporary artificial intelligence studies. The article "Computing Machinery and Intelligence" published by Alan Turing in *Mind* magazine in 1950 is accepted as the first artificial intelligence study (McCorduck, 2004). The concept of artificial intelligence was first introduced in a letter written by McCarty et al. (2006) to the Rockefeller Foundation in 1955. The workshop organized at Dartmouth College in 1956 is accepted as the official beginning of modern artificial intelligence studies (Say, 2018). However, the number of artificial intelligence studies waned and investments decreased in the period christened as the "artificial intelligence winter" during the 1970s (Bostrom, 2018). The studies on artificial intelligence were revived in the 1990s. The interest and investments in artificial intelligence increased after the artificial intelligence called Deep Blue, developed by IBM, defeated the world chess champion Kasparov in 1997 (Fan, 2020). The popularization of the Internet and mobile phones made it easier to access large data, which in turn introduced significant developments in machine learning, a sub-field of artificial intelligence. The developments in machine learning led to more human-like artificial intelligence cognitively and emotionally, and the developments in robotic architecture made it possible to design robots that are more human-like in appearance and movement.

The current developments in artificial intelligence and robotics increased the visibility of robots in business and social arena. According to the International Federation of Robotics (IFR) report, the number of industrial robots employed in factories globally increased by 12% in 2019 compared to 2018 and reached 2.7 million units. Since the same figure was 1.021 million in 2009, it could be suggested that the number of robots has increased about 3 times in the last decade (IFR, 2020a). The IFR report noted a significant increase in the production and sales of both industrial and service robots. The professional service robots market grew by 32% in 2019 when compared to 2018 from \$8.5 billion to \$11.2 billion. The employment of service robots in medicine increased by 28% in 2019, accounting for 47% of the total service robot turnover. The popularity of service robots in homes and public spaces has also increased. The number of service robots designed for domestic work was 18.6 million in 2019, and increased by 16% to 21.6 million in 2020. This figure is expected to increase to 48.6 million in 2023 (IFR, 2020b). It was reported that the interest in the benefits of artificial intelligence and robotics in health has increased, especially due to the Covid-19 pandemic. It was estimated that the market share of artificial intelligence in healthcare, which was 5 billion dollars in 2020, will increase to 45 billion dollars by 2026 (Lee et al., 2021). Rapid advances in artificial intelligence and robotics required the inclusion of the states in the process, and more than 60 nations have published national artificial intelligence strategy documents (Türkiye Cumhuriyeti Cumhurbaşkanlığı Dijital Dönüşüm Ofisi, 2021).

The employment of robots in areas with intense contact with individuals such as education, maintenance, transportation, rehabilitation and entertainment industries in addition to the manufacturing plants led to the introduction of the concept of "social robot" (Socially Assistive Robot), the robots that could establish meaningful social interactions with individuals (Breazal, 2003; Duffy, 2003; Severinson-Eklundh et al., 2003). The employment of social robots in industries that require social interaction with humans led to discussions in social sciences such as philosophy, law, ethics, and psychology. Issues such as the consciousness of artificial intelligence (Doğan, 2020), criminal responsibility of artificial intelligence (Kangal, 2021), differentiation between good and bad behavior by artificial intelligence (Çelebi & İnal, 2019), and emotional capacity of artificial intelligence (Yonck, 2019) have been discussed. The goal of socialization of the robots led social robotics to design more human-

like robots, not only cognitively, but also emotionally and physically. For example, as robots adopted a more human-like features (such as hands, face, eyes), people tended to anthropomorphize robots (DiSalvo et al., 2002). Anthropomorphism, defined as the tendency to attribute human traits to inanimate objects, animals and other beings (Duffy, 2003; Zlotowski et al., 2015), plays a key role in the interaction between humans and social robots. The ability of humans to establish social interaction with the robots on a psychological level depends to some extent on anthropomorphizing the robot. Studies on human-robot interaction reported that humans could anthropomorphize the robots and interact with social robots on a psychological level. Thus, recent studies demonstrated that social robots could be employed in psychological healthcare (Abdi et al., 2018). The use of social robots in care, therapy, education and counseling introduced the question of how much social robots could meet therapeutic requirements such as empathy (Bagheri et al., 2021; James et al., 2018).

The present literature review aimed to discuss the concepts of artificial intelligence, robots, and social robots, previous studies on the employment of social robots in mental healthcare, the empathic potential of the robots, views on these issues, and the possible impact of the developments in social robotics on mental healthcare. In the first section, the concepts of artificial intelligence, robots and social robots are discussed to clarify the differences between these concepts. In the second section, recent studies are presented in three parts to provide certain examples for the employment of social robots in mental healthcare. In the third section, the studies on empathic potential of the social robots and related ethical and philosophical debates were addressed. In the discussion section, the potential impact of social robots on mental healthcare are discussed, and recommendations are presented for future research.

Artificial Intelligence, Robots and Social Robots

Although artificial intelligence, robots and social robots are associated concepts, it is important to distinguish certain differences. Nilsson (2019) described artificial intelligence briefly as the activity of the introduction of intelligence to machines, while Whitby (2005) defined it as a scientific field that studies intelligent behavior in humans, animals and machines and attempts to determine how artificial devices could exhibit the same behavior. Russell and Norvig investigated various definitions in the textbooks. They reported that the definitions, which they analyzed based on two dimensions, could be categorized into 4 groups. Thus, AI was categorized as systems that think like humans, systems that act like humans, systems that think rationally, and systems that act rationally. European Commission (2019, p. 1) defined artificial intelligence as the “systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals.” The European Commission High Level Experts Group (2019, p. 6) later expanded this definition: “Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal.”

The Concept of Robot

The term robot was first used by Czech writer Karel Capek in the play "Rossum's Universal Robots" in 1920. This term means a slave, forced labor, hard work in Czech language (Nilsson, 2019). The American Robotics Institute defined the concept of robot as “a multifunctional and programmable

manipulator designed to move materials, parts and tools, or a special tool that can perform various programmed movements to perform different tasks” (Kyriakopoulos & Loizou, 2015). Robots are basically categorized in two basic groups of fixed and mobile robots; however, they are also classified based on the intended use, functional features, control methods, operational principles, etc. (Ben-Ari & Mondada, 2017; Dobra, 2014; Gürgöze & Türkoğlu, 2019) Based on the intended use, robots are generally classified as industrial and service robots (Shibata, 2004). There are also different types of service robots such as defense, educational, domestic and health robots (Ben-Ari & Mondada, 2017).

The European Commission (2019) clarified the differences between AI and robots. It was emphasized that robots are “physical machines,” while artificial intelligence could be included in a robot. It was indicated that the robots with artificial intelligence could be called "embodied artificial intelligence", and certain robotics applications are outside the field of artificial intelligence. Duffy (2003) also reported that the term robot refers to a material manifestation in the physical and social space, and virtual characters and avatar-based interfaces should be excluded. Artificially intelligent robots are not required to interact with humans. Thus, the fact that a robot has artificial intelligence is not sufficient for it to be defined as a social robot.

The Concept of Social Robot

There is no consensus about the definition of the concept of social robot. Sheridan (2020) argued that any robot that interacts with a human could be called a "social robot." However, this would also include surgical robots such as Da Vinci, which are controlled externally and designed to perform certain mechanical tasks, or certain manufacturing robots that collaborate with humans. In fact, these robots are called "co-bots" (Collaborative Robots) to describe their collaboration with humans. Sheridan (2020) stated that the concept of social robot is used in a narrow sense. The purpose of social robots does not entail external mechanical tasks but the humans. Social robots are robots that aim to engage in interactions with humans for emotional or other assistance. Sarrica et al. (2020) conducted a comprehensive study on the definition of social robots in scientific and popular literature. The authors reviewed 143 papers published in the International Journal of Social Robotics and listed the most cited definitions. Thus, a common definition described a social robot as an autonomous agent that could act in a socially adequate manner based on its role in an interaction. Another common definition described social robots as those that conduct meaningful interactions with humans (Breazal, 2003). Yan et al. (2014), on the other hand, included the ability to interact with individuals based on certain social cues and rules as a requirement for the acceptance of a robot as a social robot. Sarrica et al. (2020) determined the three common features across the definitions mentioned in academic and popular literature. These were the features of social robots associated with autonomy, capacity to interact with humans (via the comprehension and utilization of language and emotions), and their ability to work for humans. However, there are differences between the meanings associated with to the concepts of "autonomy", "interaction" and "working for humans" in popular culture and scientific literature. For example, definitions in popular culture tend to assign "absolute autonomy" to social robots, while scientific literature considers social robots as only "functionally autonomous" entities that perform specific tasks. Also, for example, "working for the people" was associated with the physical body in popular culture. However, robots that do not have a physical body could also work for and assist people (Sarrica et al., 2020). Fong et al. (2003) argued that a social robot may not necessarily need a physical body. For instance, a chatbot called Woebot, designed with the cognitive-behavioral model, could help those who suffer from depression (Fitzpatrick et al., 2017). Certain authors described

chatbots as a "specific type" of social robots (Westerman et al., 2019) while others categorized social robots as "bodied" and "unbodied"(Dennis, 2022). However, "physical body" has been commonly accepted as a common feature of social robots in the literature (Sarrica et al., 2020). For example, a recent study described "physical body" as a common feature of social robots (Asprino et al., 2022). While we discussed the employment of chatbots in mental healthcare in the present study, we focused on social robots with a physical body.

Sarrica et al. (2020) concluded that there was no consensus on the definition in scientific literature, and it was in the stage of development. However, it could be suggested that the concept of social robot is based on the assumption of "being like a human" not only in cognitive but also in physical and emotional sense. Behind the differences between the definitions lie the potential conflicts due to the attempts to produce human-like social robots (Sarrica et al, 2020). Nyholm (2020) indicated that humans tend to anthropomorphize robots. In social robotics, the robots are designed to be more human-like, reinforcing this trend. Thus, it was reported that social robots should have six basic design features: (1) Ability to communicate using natural language or non-verbal methods (such as light, motion, sound), (2) Ability to express emotional behavior and/or perceive human emotions, (3) A distinctive personality or character, (4) Ability to model the social human traits, (5) Ability to learn and/or develop social skills, (6) Ability to establish and maintain social relationships (Baraka et al., 2019; Fong et al., 2003).

Social robots are classified in three categories based on appearance: inspired by biology (e.g., human or animal form), inspired by artificial and imaginary objects (e.g., cars, table lamps or cartoon characters), and functional social robots, and employed in the fields of healthcare and therapy, education, entertainment, art, search and rescue, at home and workplace, and public services (Baraka et al. 2019). In social robotics, anthropomorphic and zoomorphic robots are quite common, especially among robots inspired by biological forms.

The robotic hardware and software that could interact with individuals not only physically and cognitively but also emotionally led to the idea that robots could be employed in mental healthcare. In recent years, special social robots were developed for educational, healthcare and therapeutical purposes, and the effectiveness of these robots was tested in various scientific studies. Although these studies reported promising results, various limitations of social robots were also emphasized. In the next section, examples for the employment of social robots in mental healthcare are presented based on the literature.

The Employment of Social Robots in Mental Healthcare

In recent years, the interest in the employment of social robots in mental healthcare has increased. Weir (2018) emphasized this in an article titled "The Dawn of Social Robots" published in *APA Monitor* and argued that social robots could serve as therapists and companions and called for a collaboration between social robotics experts and psychologists. The first issue of the journal "Technology, Mind and Behavior", published by the American Psychological Association (APA) on April 2020 emphasized the central impact of technological advances such as artificial intelligence and robotics on human health, mind and behavior.

The review of the studies on social robot-human interaction demonstrated that the use of social robots was prominent in childcare and care of elderly adults in the treatment of developmental disorders such as autism spectrum disorder (ASD) (Moyle et al., 2013; Vanderborcht et al., 2012). However, the

investigation of social robots in mental healthcare is still at an early stage. Studies demonstrated that the employment of social robots in mental healthcare would increase gradually. For example, Rabbitt et al. (2015) reported that social robots could be used in several psychological health problems, including adults with mood and anxiety disorders, children with disruptive behavior, and individuals who do not meet clinical criteria. In this section, the studies conducted on the employment of social robots in mental healthcare are summarized in three parts.

Social Robots in the Healthcare and Therapy of the Elderly

There are several social robots such as KASPAR, Pepper, Keapon, NAO, PARO, the effectiveness of which was investigated in mental health disorders, and these robots have been employed for the reduction of the emotion of loneliness, depression and anxiety among the elderly (Cifuentes et al., 2020). In a systematic review that covered a decade of studies (2008-2018), Lambert et al. (2020) reported that 35 social robots were employed. A social robot could be utilized in several areas. For example, NAO could be programmed for assistance in disorders such as autism and dementia, or as a playmate (Robaczewski, 2021).

PARO, the design of which was initiated in 1993 to help dementia patients, is the most frequently used robot among other animal-like robots in research conducted with elderly individuals with dementia (Moyle, 2017; Abdi, 2018). After five years of development, the first generation PARO was introduced in 1998. PARO is a zoomorphic robot in the form of a seal and includes olfactory, visual, auditory and posture sensors under the soft white fur, and 8 actuators (for eyelids, eyes, neck, anterior and posterior fins). PARO can produce reactive (reacting to sudden stimuli such as looking towards a loud noise) and proactive (reacting based on internal states, stimuli, desires and rhythm) behaviors during interaction with a human (Wada et al., 2002; Shibata, 2004). Sabanovic and Chang (2016) studied PARO in various cases for 10 years and concluded that the sociability of PARO was relational. PARO was introduced commercially in Japan in 2005 and was approved by the Food and Drug Administration (FDA) in 2009. As a commercial product, PARO has been sold in large quantities in Europe, Asia and the United States for use in dementia care (Broadbent, 2017).

Several studies have been conducted on PARO and elderly individuals. One of the first studies on PARO was conducted by Wada et al. (2004). In the study, 23 73-93 years old women in an elderly daycare interacted with PARO one to three days a week. The participants' facial expressional, mood, urine test, and nurse comment data were collected with various scales before and after the interaction with PARO. The study findings demonstrated that the mood of the elderly who interacted with PARO improved. Furthermore, it was determined that the stress level of the nurses decreased because the elderly required less supervision during interaction with PARO. The authors concluded that PARO was beneficial for institutions that provide services for the elderly. In another study conducted by Wada et al. (2008), the effects of PARO were investigated in 29 patients, 11 of whom were male and between the ages of 62 and 90, with mild to moderate dementia. EEGs were taken during the interaction between the patients and PARO, and their neural activities were analyzed based on these records. The authors reported that PARO had a high potential to improve brain activity in dementia patients (Wada et al., 2008). Moyle et al. (2013) conducted a study with 18 older adults, and divided the participants into two groups: the reading group and the PARO group. Participants in the PARO and reading group were then swapped, where each participant experienced the activities in both groups. The study findings demonstrated that older dementia patients who regularly spent time with PARO enjoyed it

more and had a higher quality of life. The authors argued that social robotic animals could be an alternative psychosocial intervention tool for older adults with dementia; however further research with larger samples is required (Moyle et al., 2013). In another study conducted by Petersen et al. (2016), 61 patients, 77% of whom were female, were assigned to experimental and control groups and the effects of PARO were investigated. The study findings demonstrated that stress and anxiety levels, psychoactive drug and painkiller use decreased in the PARO treatment group. In a content analysis conducted by Hung et al. (2019), 29 papers were reviewed, and 3 main benefits of PARO were determined. These included the reduction of negative emotional and behavioral symptoms, improvement in social participation, and promotion of positive moods and quality of care experiences. In the study, also 3 prominent obstacles to PARO were identified. These included the cost and the increase in staff workload, the infection concerns due to the difficulty of cleaning the fur of PARO. Another obstacle was user embarrassment and stigma anxiety about interaction with a robotic animal in front of others. It was also reported that the employment of robots in elderly care could be unethical on the grounds that robotic care is childish and inhumane.

In addition to PARO, humanoid social robots such as NAO, Pepper, and Buddy are also employed in mental health and physical care of older adults (Cifuentes, 2020). For example, in a study conducted with 41 elderly participants, NAO was compared to a human trainer. The study findings showed that NAO was more effective than the human trainer in exercise instructions and increasing the motivation of the participants (Shen & Wu, 2016).

Systematic reviews that analyzed studies conducted with older adults and social robots revealed the limitations of these studies. Methodological limitations such as the small sample size, lack of a control group and follow-up were emphasized. For example, in a recent systematic review, it was reported that PARO increased the quality of life, improved biopsychological condition, and was beneficial in reducing painful medical interventions. However, the authors emphasized inadequate sample sizes and methodological limitations in these studies, and claimed that further research is required to determine the effectiveness of PARO (Wang et al., 2021).

Social Robots in Autism Spectrum Disorder

Several studies have been conducted on the employment of social robots in Autism Spectrum Disorder. Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that also includes Asperger's syndrome. In DSM-V, ASD was defined based on two dimensions: A) Problems in social communication and interaction, and B) Limited, repetitive behavior, areas of interest or activities. Social robots are used to instruct certain skills to children with autism, play with them and teach them certain behaviors. The interest of children with autism for technological devices suggested that social robots would be beneficial in the treatment of autism (Scasselati, 2007). It was reported that social robots have been mostly used as an supplementary tool in the therapy of children with ASD. Cao et al. (2019) argued that studies conducted with children with ASD suggested social robots as a good social partner and mediator for children; however, they did not suggest that the robots could replace the therapist.

Social robots create interesting, engaging and meaningful interaction environments that motivate children to interact with them. Several social robots such as CHARLIE, Jumbo, KASPAR, Keepon, Maestro, Tito, PARO and NAO are employed in the therapy of children with autism (Cabibihan et al., 2013). Among these, KASPAR, which was developed at the University of Hertfordshire in 2005, is one of the most popular humanoid robots employed in the therapy of children with ASD (Breazal, 2016;

Wood et al., 2021). KASPAR (Huijnen et al., 2016) is used for 12 objectives such as "attention", "playing together", "taking initiative", "reacting adequately to the behavior of others" in studies, is a child-like robot that could imitate certain simple facial expressions such as happiness, sadness and surprise. KASPAR is a social robot. It can perceive and react to children's touch and move its arms, eyes and hands (Raptapoulou et al., 2021; Iacono et al., 2011).

Social robots were designed to enable and maintain active participation during therapy, since a key feature of ASD is impairment in behaviors that regulate social participation such as avoidance of eye contact and communication. Several studies reported that the presence of robots positively affected attention and participation among children with ASD (Scasselati et al., 2012). For example, in a study conducted with KASPAR, Wainer et al. (2014) investigated the role of KASPAR in the promotion of collaborative play among children with autism in a 10-week study. In the study, six children with autism participated in 23 controlled sessions with and without robots. KASPAR played games with two children in each session. The findings demonstrated that children were more willing to play with each other after they played with KASPAR.

Kim et al. (2013) conducted a study with 24 children with ASD (4.6-12.8 years old), and investigated the children's interactions with humans, a touchscreen computer, and an anthropomorphic social robot, Pleo. The study findings demonstrated that children interacted more with the social robot when compared to the human or the computer. The authors reported that social robots could be an effective tool in the development of social skills and for therapeutic assistance. Yaman and Şişman (2018) conducted a study with 3 male and 1 female children with ASD, who were between 6 and 9 years old, and the social robot NAO. In the three-week study, 20-minute sessions were conducted with each child per week. Children's interactions with NAO were analyzed based on videos, and it was observed that there was a high level of interaction between the robot and the children. Furthermore, interviews were conducted with the parents, and all parents stated that their children developed positive attitudes towards NAO, and they liked the robot very much.

It was reported that most ASD studies focused on the basic joint attention skill. Joint attention is described as the employment of gestures and looks by infants and adults to communicate their interest in events or objects (Bülbül & Özdemirli, 2017). Although certain findings reflected that social robots improved joint attention in ASD (Elinç, 2016), the study findings were inconsistent. Scasselati et al. (2012) reported that several studies evidenced improvements in joint attention in children with autism. However, contradictory findings were also reported. Anzalone et al. (2014), in a study conducted with NAO, determined that the joint attention of the school-age children with ASD who interacted with the social robot decreases. Pennisi et al. (2015) reviewed five studies and reported that 2 studies evidenced improvements in the joint attention of children with ASD when they worked with social robots, while two studies reported opposite findings (one study did not investigate joint attention skills). David et al. (2018) interpreted these results and argued that social robots have a potential to improve joint attention; however, further methodologically rigorous studies are required for more reliable findings. Cifuentes et al. (2020) reviewed 12 studies conducted with 4-12 years old children with ASD. The findings reported by the reviewed studies supported the idea that robots could be employed as active reinforcement tools in semi-structured behaviors of children with ASD. Furthermore, the authors also mentioned the disadvantages of social robots in ASD in certain studies. For example, the focus on the robot could limit the interaction of the children with others in a social environment. The authors also

stated that studies with a larger sample and follow-up are required to improve the reliability of the findings (Cifuentes et al., 2020).

Although it is one of the most studied topics, the efficacy of social robots in ASD treatment and clinical use is not clear. Begum et al. (2016) reviewed the studies conducted for a decade and reported that although the study findings were promising, overall studies exhibited little clinical progress. A recent study where the papers published in the last two decades (2000-2020) were reviewed reported similar findings on the employment of social robots in education and classroom setting (Woo et al., 2021).

Social Robots in Therapy, Psychological Support, and Well-Being

The employment of social robots is not limited to ASD and dementia. Various studies have been conducted with social robots to reduce anxiety, depression, stress, and solitude, and to improve psychological well-being. In a meta-analysis that reviewed the studies on the efficacy of social robot-assisted therapy, it was reported that social robot use led to positive results in therapy; however, further research is required for reliable results (Costescu et al., 2014). In addition to the current areas of use, it was argued that these robots have a wide potential in mental healthcare (Rabbitt et al., 2015).

NAO is among the robots employed in psychological support, therapeutic interventions, and to improve well-being of individuals. NAO was produced by Aldebaran Robotics in 2008, is 58 cm tall and has a head, two legs, two arms, two hands and two color LED eyes, and the robot weighs approximately 5 kg. It is a humanoid social robot. NAO can walk, talk, listen and maintain a dialogue, and has two cameras, seven tactile sensors, four directional microphones and speakers that it utilizes to interact with the environment (Gelin, 2018; Robaczewski et al., 2021). Robinson and Kavanagh (2021) argued that robots could provide psychotherapeutic treatment and recently published the qualitative data collected in an empirical study they conducted with NAO. In the study, a four-week behavioral intervention program was applied to 26 participants (20 of whom completed the sessions) who wanted to change their eating habits. All sessions were conducted by NAO without human intervention. Sessions were conducted based on the Motivational Interview principles and the cognitive imagery method, and the sessions aimed behavioral change in the participants. In the study, the mean weight loss was 4.4 kilograms among the participants, and the expected behavioral changes were achieved. At the end of the empirical study, semi-structured interviews were conducted with 18 participants to collect qualitative data. The content analysis findings revealed that participants described NAO (introduced as Andy in the study) with positive attributes such as "optimistic", "reliable", "sweet", and some found the robot empathetic and bonded with it. One participant stated that (s)he did not want to disappoint Andy despite (s)he knew that it was a robot, another stated that it felt like a friend, and another claimed that (s)he would miss it. The authors concluded that NAO was effective psychotherapeutically (Robinson & Kavanagh, 2021).

In another study conducted with NAO, Alemi et al. (2016) investigated the impact of social robots on the therapy of 11 7-12 years old children diagnosed with cancer. Children were randomly assigned to two groups: the social robot-assisted therapy group (experimental group) and the psychotherapy group (control group). In the study, the social robot NAO (introduced as Nima) was programmed to play different roles such as the psychotherapist, assistant psychotherapist, ill child, cook, etc. in each session. Anxiety, anger and depression levels of both groups were determined before and after the psychotherapy sessions. The study findings revealed that the anxiety, depression and anger levels of the

social robot-assisted therapy group decreased significantly, and there was a significant difference between the two groups favoring the experimental group. In a study conducted by da Silva et al. (2018), NAO conducted motivational interviews with 20 participants. The majority of the participants stated that they enjoyed the interviews and NAO's instructions were clear and comprehensible. They stated that the non-judgmental communication style of NAO motivated them to change their behavior and positively affected their physical activities. Furthermore, the study findings emphasized the limitations of NAO in the development of individual dialogues (da Silva et al., 2018). Certain recent studies demonstrated that interaction with social robots was promising in geriatric depression and feelings of solitude (Zhang et al., 2021). The authors suggested that social robots may have a positive effect on individuals with depression when compared to the general population. It was argued that depressed individuals perceive low social competence when compared to ordinary people; and thus, they do not take the positive feedback from ordinary people such as social approval seriously. On the other hand, individuals with depressive mood would consider social robots as objective and perceive their feedback more realistic (Zhang et al., 2021). In a study conducted by Banks et al. (2008), the effect of the dog-like social robot called AIBO on the feeling of solitude was investigated. The findings of the study conducted in a nursing home revealed that the loneliness levels of the participants in the AIBO group were lower when compared to the control group, and the participants bonded with AIBO.

Robaczewski et al. (2021) reviewed all studies conducted with NAO. They reviewed 51 publications and categorized these studies in 6 groups: social interactions, affection, intervention, assisted instruction, mild cognitive impairment/dementia, and autism/mental disability. The authors reported that the majority of the findings were positive on NAO.

In another recent study, Kobacinska et al. (2021) conducted a content analysis on the employment of social robots in psychological healthcare of children. The authors analyzed 16 studies conducted between 2009 and 2019 and reported that NAO and PARO were the most frequently used social robots in that order. Other studies were conducted on social robots such as Huggable, Tega, and Pleo. The authors specifically focused on studies that aimed to contribute to the psychological well-being of children and argued that social robots were promising in the improvement and support of children's mental health (Kobacinska et al., 2021).

Cifuentes et al. (2020) conducted a comprehensive review of studies that employed social robots in therapy and care services. The study findings demonstrated that social robots could play various roles in health and well-being, such as a companion, partner, trainer and assistive instrument. Studies conducted with children demonstrated that social robots could have a potential to raise children's interest and attention, improve eye contact, joint attention and recognition of facial emotions. Furthermore, social robots could improve children's visual perspective skills, reduce anger, fear, anxiety and depression levels. Cifuentes et al. (2020) noted that these effects were also noted in adults and elderly and argued that social robots could improve communication skills and mood and reduce the solitude, depression and anxiety symptoms.

Scoglio et al. (2019) conducted a systematic review of studies where social robots were used to support mental health and psychological well-being of adults. Twelve studies were included in the review. Seven studies were conducted in nursing homes, two with university students, two with hospital staff, and one with 19-45 years old females who were not institutionalized. Five social robots were employed in these studies, namely Paro, NAO, CRECA, Betty and Haptic Creature. Eleven studies focused on positive

changes in participants' mood and quality of life after social robot interventions. Scoglio et al. (2019) reported that the impact of social robots on mental health and psychological well-being was not definitive, and the generalizability, scope and measurement techniques were limited in current studies. Robinson et al. (2019) also conducted a systematic review of 27 studies on psychosocial interventions with social robots and emphasized the methodological limitations of these studies.

Social robots are widely used in other fields such as education, entertainment, domestic services, public services, search and rescue, tourism and accommodation that do not entail therapeutic intervention but require social interaction (Baraka et al., 2019). Social robots have been employed as teacher assistants in the classroom (Woo et al., 2021), in reading, to improve grammar skills and in learning a second language (van den Berghe et al., 2019), in music, drama, dance and theatrical performances (Lytridis et al., 2019), as reception attendants, busboys, room managers, etc. in hotels (Nakanishi et al., 2020), as a waiter in restaurants and airports (Mende et al., 2019), in museums (Faber et al., 2009), as a domestic helper in the kitchen and other chores in businesses (Gates & Bill, 2007; de Graaf et al., 2019), and in stores and shopping malls (Niemela et al., 2019).

As seen in the above-mentioned studies, robots are used for different purposes in different fields that require social interaction with humans. However, the employment of social robots in mental health and their acceptance by the clients and experts are closely associated with the ability of this new technology to meet therapeutic requirements. Thus, the empathic skills of the social robots have been a significant topic of discussion. Significant efforts have been spent in social robotics for the acquisition of empathic skills by the robots (James et al., 2018; Lim & Okuno, 2015; Stephan, 2015). The next section is focused on this discussion.

Social Robots and Empathy: Can Robots Empathize?

Empathy is at the core of professional mental healthcare and among the important requirements of the therapeutic relationship. Carl Rogers, one of the founders of humanist psychology, had a significant influence on the descriptive development and current use of this concept (Dökmen, 1990). According to Rogers, “empathy is the process by which a person puts himself in the shoes of another individual and looks at things from his/her perspective, understands and feels the emotions and thoughts of that person accurately, and conveys this to him or her” (Dökmen, 2005 p. 135). In this definition, empathy is a concept with two dimensions; cognitive and affective. Most definitions of empathy include the affective and cognitive dimensions (Cuff et al., 2014). In the affective dimension, it is possible to feel the feelings of the other individual, and in the cognitive dimension, it is possible to understand the perspective and thoughts of the other individual correctly (VandenBos, 2020). Rogers (1983) defined empathy also as “a way of coexisting with someone”. According to Rogers, coexistence is “distancing oneself from one’s own values and perspective for a while to enter the world of the client without bias.” Based on these definitions, the skill of empathy includes emotional experiences and requires awareness about the subjective existence of oneself and the other. It could be suggested that these requirements are the most significant challenges for social robots in the acquisition of empathy skills.

Despite these challenges, since Kismet (Breazal, 2016), the first robot designed to interact with humans with psycho-social emotions, studies have been conducted for the acquisition of empathy skills by social robots. Furthermore, certain studies reported that individuals’ acceptance of robots depend on the acquisition of these skills during design (Damiano et al., 2015; Lim & Okuno, 2015). Dautenhahn (1995) emphasized this point in one of the early studies on robotics and stated that they should know

the effect of robotic behavior on others, how others judge robotic behavior, and how they want the robot to behave. Studies on human-robot interaction analyzed the empathy in two dimensions: "human to robot" and "robot to human" (Kerruish, 2021; Paiva et al., 2004; Nomura, 2018). Studies conducted with children and adults and investigated the human-to-robot dimension revealed that humans were empathic towards the robots (Carlson et al., 2019; Darling et al., 2015; Mattiasi et al., 2019; Riek et al., 2009; Suzuki et al., 2015, Seo et al., 2018; Küster et al., 2020). Rosenthal-von der Pütten et al. (2013) allowed the subjects to watch two different video images of a zoomorphic robot Pleo in an empirical study conducted with 41 participants. The first video footage included "friendly interactions" with Pleo, while the second video included "torturous interactions" such as hitting, punching, strangling. The physiological arousal of the participants was recorded, and their thoughts and emotions were analyzed with various scales. The findings demonstrated that participants were more physiologically aroused when watching the torture video and they expressed negative emotions when the robot was mistreated, empathizing with the robot.

Since robots that seem empathetic are more accepted by humans (Ruiten et al., 2007; Niculescu, 2013), "robot-to-human empathy" studies that investigated empathetic robot behavior are also perceived important. Various studies were conducted on human-robot interaction (Leite et al., 2014; Niculescu et al., 2013; Riek & Robinson 2008; Rutien et al., 2007; Riek et al., 2010). In an early study, Kozima et al. (2004) reported that children ascribed cognitive skills to robots that exhibited eye contact and joint attention skills in the study conducted with Keapon and Infanoid robots. Sixteen children (7 males and 9 females) participated in a study conducted by Leite et al. (2014) with the iCat robot. Each child played chess with iCat once a week for 5 weeks. iCat expressed positive comments about the children's moves ("It was a good move" "You are doing well") and provided emotional support when they lost or made a bad move. Children developed positive feelings towards iCat, and these positive feelings were sustained for 5 weeks. The study findings revealed that the children felt that iCat supported them and perceived the robot as empathetic.

The Functional, Phenomenological, and Relational Dimensions of Empathy in Human-Robot Interaction

The concept of empathy in human-social robot interaction could be discussed in three dimensions: "functional", "phenomenological" and "relational". The studies on the acquisition of empathy skills by social robots have mostly emphasized the functional dimension. The focus of these studies was the perceptions of the humans about "empathetic" robot behavior. The functional dimension focuses on robot behavior to allow the user to interpret the robot's behavior as empathic. It aims the acquisition of the ability to provide personal and context-sensitive physical (e.g., eye contact, gestures and mimics) and verbal responses by the robot that would be interpreted as "empathetic" by the user. Thus, the functional dimension of the empathy in robots reflects the case where robots are designed to be empathetic to humans (Malinowska, 2021). In other words, in the functional dimension, the human does not perceive the robot as an internal and subjective being.

The phenomenological dimension, on the other hand, refers to the "empathetic experience" of the robot, in other words, the "subjective empathetic experience", independent of the user's perception and the relationship. The key question in the phenomenological dimension is whether empathy requires a phenomenological experience. The definition of empathy posits that empathy includes the stages of cognitive and affective "perception", "experience" and "expression." It could be argued that robots

could perform the "perception" (via sensors, cameras, microphones) and "expression" (via actuators, speakers) stages. The concepts of "perception" and "expression" were used in social robotics research, albeit implicitly, with a reference to a perceiver and an expresser. For example, the statements "NAO detected the happy facial expression of the user", "NAO said 'I'm glad to see you like this'" seem to refer to the psychological presence of NAO. Coeckelbergh (2011) argued that as the social robotics advanced, the articles associated with the robots have changed and the third person pronoun "it" has evolved into "he/she/you." Thus, Leite et al. (2014) wanted to tell the children at the end of their study that the robot was not really worried about them. This attempt could remind us that the robot's "empathy" is a simulation, and there was a human who perceived empathy, not a robot who empathized. For example, when the robot says, "I understand how important the watch was to you, I am just as sorry as you are" to someone who lost his grandfather's wristwatch, it could be interpreted as an empathetic response. But does it mean that the robot actually "empathized"? Was the robot really "sad"? Does it really "understood" the importance of the watch for that person? Tapus and Mataric (2007) argued that it is not possible for robots to truly feel empathy, and robots imitate empathy by processing human verbal and nonverbal behavior. Malinowska (2021) stated that since empathy is considered to occur between two conscious, purposive, rational beings and since robots do not meet these requirements, they could not be a partner of an empathic interaction. However, in robotics, certain studies attempted to give robots a real sense of empathy with models such as biological modeling, developmental (epigenetic) robotics (Lim & Okuno, 2015) and robot genetics (Kozima et al., 2004).

The relational dimension, on the other hand, argues that empathy arises from the dynamics of the interaction between humans and robots (Malinowska, 2021). According to this approach, human-robot interaction is an intersubjective interaction and entails real "socialization" (Damiano et al., 2015; Damiano & Dumouchel, 2018; Damiano & Dumouchel 2020). The actors influence each other in this socialization, mutual emotions develop in the interacting actors. In this approach, the human is not the active and the robot is not the passive agent. Both are active and mutually create each other's emotions. Damiano and Dumouchel (2020) argued that emotions are not "internal" and "private" and proposed a synthetic model. According to the authors, the employment of a synthetic model that focuses on the interactional dynamics in the relationship between human and robot instead of "externalist" models that robot emotions are only human perception, or "internalist" models that aim to produce real emotions in robots would help overcome the subject-object dichotomy. Instead of whether robots have feelings, it is necessary to consider whether robots could coordinate emotionally with humans. Since emotions develop within an interactive context, the authors gave the example of "taller" stature. Taller stature is a subjective attribute, but it is not something that the subject could develop without a relationship with others (e.g., taller than John). This approach, in a way, suspends the ontological status and phenomenological experiences of the actors in human-robot interaction, and focuses on the interactions during the relationship between humans and social robots and the role played by the robots in this interaction. The main idea is the capacity to produce new emotions and behavior regardless of how an artificial system (robot) produces these emotions or behavior in a natural system (human) (Damiano & Dumouchel, 2020). Coeckelbergh (2011) also claimed that the advances in social robotics led to a different language about robots and experiences, and human-robot interaction mutually changed the both parties. Coeckelbergh argued that social robots were not merely an engineering design but also "social-linguistic" constructs. However, even when the relational approach is assumed to be accurate, the criterion for understanding the robot's endogeneity and subjectivity

would still be behavior (Malinowska, 2021). On the other hand, the proposal of this approach to remodel the human-robot interaction to prevent the dichotomy was based on the fact that neither party was interested in phenomenological experiences and ontological status. While the example of “taller” emphasizes the social context with focusing on “more,” it neglects that the “height” is independent of the context. Thus, the interaction between human and robot is established and sustained by the human tendency to anthropomorphize. Then, the criticism that social robotics could establish human-robot interaction by triggering the "illusion of empathy" is still valid.

Is Robotic Empathy a Technological Illusion: Philosophical and Ethical Criticisms

The production of robots that create an "illusion of empathy" due to the anthropomorphic predisposition of humans has led to philosophical and ethical discussions (Lin et al., 2017; Schmetkamp, 2020; Severson & Carlson, 2010). Sherry Turkle was among the strongest critics of this approach. Turkle (2018) considered the production of therapeutic robots as an "attack on empathy." According to Turkle (2010), social robotics is a type of "technological illusion"; simulated thought could be a thought, but simulated love is never love, simulated feeling is never a feeling. Thus, social robots do not promise companionship, relationship and partnership, but illusion. Turkle (2010) argued that computational technologies, including robots, should not be allowed in human relations. According to Turkle, the desire for a "risk-free relationship" by those who cannot tolerate solitude but also does not desire to face the problems associated with interhuman relationships has led to the interest in social robots. “Productivity” and “cost” becomes the new criteria and the idea of “better than nothing” is used to integrate social robots with our emotional lives (Turkle, 2018). Turkle (2010), citing Heinz Kohut, stated that social robots are the new "self-objects." In a way, robots are partners in a relationship due to the individual's fragile narcissism, fulfilling the self-object needs.

Damiano and Dumouchel (2020) emphasized the benefits reported in various studies conducted on social robots and considered Turkle excessive. Coeckelbergh (2011) also considered the "illusion objection" justified due to certain assumptions underlying this objection. According to Coeckelbergh, these assumptions were: 1) Talking with objects (things) is always and necessarily ethically problematic. 2) Only interpersonal relationships are real, true, and authentic. 3) An objective-exogenous perspective is possible, allowing a judgement of human-robot relationships. 4) Considering a robot as an object is perfectly fine. Coeckelbergh (2011) answered the first assumption by stating that humans talk not only to robots but also to other non-human beings (e.g., plants, computers, cars). There is basically no difference between the illusion of talking to robots and talking to plants. In answering the second assumption, Coeckelbergh emphasized the challenge of determining a true, real, and authentic relationship. Coeckelbergh asked whether we have an unmediated access to pure reality, an authentic self? Coeckelbergh also questioned the possibility of an objective-exogenous perspective. According to Coeckelbergh, our views on human-human and human-robot relations were not independent and neutral from these relations. Finally, according to Coeckelbergh, considering robots as just "machines" was influenced by the Western ontological approach. This approach was based on a strict subject-object distinction between humans and non-humans. This perspective excludes "hybrid" cases such as considering robots as "half-other". According to Coeckelbergh (2011), although our current experiences and conceptual framework prevent us from considering robots with a different approach, this will change as new types of robots will become available.

Airenti (2015) attributed human empathy towards robots to anthropomorphic predisposition. According to Airenti, we start to attribute mental states and emotions to nonhumans from a very early age. For example, we interact with animals, we anthropomorphize them, leading to empathy. We care for animals, and we expect them to care for us as well. However, according to Airenti, the interaction with robots is different. Humans expect animals to have feelings, but not robots. If robots show emotion, it is only a simulation. Airenti argued that a robot's display of emotion is disturbing, leading to the uncanny valley problem. The uncanny valley phenomenon, introduced by Masahiro Mori in 1970, has been investigated in various social robotics studies (Mathur & Reichling, 2016; Yin et al., 2021; Walters et al., 2008). According to Mori, the resemblance of robots to humans is accepted to a degree by the humans, but the increase in resemblance leads to emotions such as surprise, fright, and disgust (Breazal, 2016; Broadbent, 2017). According to Airenti (2015), humans know that robots do not have emotions. Thus, they do not expect empathy from the robots. During their interactions with robots, they could attribute emotions and cognition to them, which could positively affect human-robot interaction. However, they retain the power to ascribe emotion and empathy to robots. Thus, empathy is limited in human-robot interactions (Airenti, 2015).

In summary, although the question “can robots empathize” was posed due to the success in social robotics, the study findings usually answered the question "can robots be perceived as empathetic?" Thus, Malinowska (2021), who justified the employment of the empathy phenomenon in human-social robot relationships, claimed that although it is not possible to propose that robots could really empathize currently, there is still some hope for this goal in the future. As mentioned by Coeckelbergh (2011), the advances in robotic technology are gradual, and new types of robots are currently produced to reflect empathic skills better. It could be suggested that the issue of empathy in human-robot interactions will continue to be an important discussion topic.

DISCUSSION

The present article aimed to introduce the concept of social robots, which has been the focus of academic interest in recent years, to provide information about social robotics applications and the employment of social robots in mental healthcare. Furthermore, the study aimed to review the discussions around the question "Can robots empathize," which have been a prominent topic in studies on human-robot relations.

Rapid and significant advances have been witnessed in the world in the last two decades. It was reported that 58.7% of the global population has Internet access and 3.5 billion people own smartphones (Montag et al., 2020). The number of wearable devices is expected to exceed 1 billion by the end of 2022 (Moshe et al., 2021). It was reported that artificial intelligence and digital technologies do not only transform human relations but also humans themselves. In “The Future of Robots,” Domenico Parisi (2014) asked whether new digital technologies could create a new “cognitive ecology” and a new social life, and what would be the consequences of these developments in the chapter titled “Difficult Problems.” This question is closely associated with the future of mental healthcare. The integration of artificial intelligence, robotics and mental healthcare indicates a future where scientific disciplines such as psychological counseling and guidance, psychology, and psychiatry would be redefined by the partnership between the humans and machines (Fiske et al., 2019; Luxton, 2014). Thomas Insel (2018), former president of the American National Institute of Mental Health (NIMH), emphasized the role of smartphones in the collection of client data and argued that the revolution in information technologies would lead to significant changes in measurement and evaluation in mental

healthcare. The popularity of smartphones introduced a new concept called "digital phenotyping" (Jain et al., 2015). Digital phenotyping, described as the instant measurement of human phenotype based on data collected by personal digital devices, especially smartphones, made it possible to collect continuous data from the clients (24/7). Also, it was reported that the chat robot Woebot, designed with the cognitive-behavioral model at Stanford University, was effective in the treatment of anxiety and depression disorders (Fitzpatrick et al., 2017). Apart from Woebot, other chatbots are also employed in mental healthcare. SARA was used in adolescents with substance abuse (Rabbi et al., 2017), Wysa was used in the treatment of depression (Inkster et al., 2018), Deprexis, designed with the cognitive-behavioral model, was used in the treatment of depression (Twomey et al., 2017), and positive findings were reported. Lovejoy (2017) reported that 47000 mental health applications were sold in the USA in 2015. In a study conducted by Robinson and Kavanagh (2021), NAO autonomously counseled participants who wanted to change their eating habits.

Based on the above-mentioned developments, three questions arose about the impact of artificial intelligence and social robotics on mental healthcare. First entails the extent of this impact. Will artificial intelligence and social robots adopt the role of helping people in mental healthcare, or will they improve enough to adopt the roles of a "counselor" and a "therapist," pushing the humans to an assistive role? Furthermore, will the speed and dimensions of the advances in information technologies would lead to fully robotic mental healthcare? Second, what will be the role of mental health professionals in the integration of artificial intelligence and social robotics into mental healthcare? Finally, what will be the philosophical and ethical implications of the employment of artificial intelligence and social robots in mental healthcare? It seems inevitable to discuss various philosophical and ethical problems. For example, it was reported that artificial intelligence and robotic technologies design more and more physically, cognitively and emotionally human-like robots, which could blur ontological categories (Kahn & Shen, 2017; Severson & Carlson, 2010) and the distinction between the real and virtual worlds for the clients (Fiske et al., 2019).

The literature review revealed that the number of studies that investigated the views of mental health specialists on the above-mentioned developments was limited. In an international study conducted by Doraiswamy et al. (2020) with 791 psychiatrists, artificial intelligence technology was mainly considered to adopt an auxiliary role. In the study, 83% of the participants stated that artificial intelligence technology could not replace the empathy of an average mental health professional. Qualitative analysis findings were also reported in the same study. Specialists mentioned certain disadvantages of artificial intelligence technologies and stated that the psychiatric skills of the specialists would decrease, it would lead to excessive dependence on technology, and the specialist would not know what to do in case of a possible system error (Blease et al., 2020).

Conclusion

The employment of social robots in mental healthcare is still at early stages. Although previous studies reported positive views on the use of social robots in mental health, the methodological limitations were also attributed to these studies. Furthermore, it is not yet clear whether social robots will be accepted for clinical use and whether they would be beneficial. However, due to the advances in artificial intelligence, it could be expected that academic interest in the employment of social robots in mental healthcare would increase further in the near future. It could be suggested that this interest would lead to significant changes in the mental healthcare paradigm in the future. Thus, the current

philosophical and ethical discussions are important. The participation of mental health professionals in this discussion is necessary to reflect the perspective of psychology in the collaboration between social robotics and mental healthcare.

The fact that the present article aimed to raise the awareness of the reader about the opportunities in the relationship between social robots and mental healthcare and associated philosophical and ethical problems, and the findings could inform future studies could be considered as a contribution to the literature. Further in-depth and large-scale studies should be conducted on each opportunity and problem associated with social robots in mental healthcare.

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Conflict of Interest

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RESEARCH

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ARAŞTIRMA

Açık Erişim

The Effect of Psychodrama on The Burnout Level of School Counselors

Rehber Öğretmelerde Psikodramanın Tükenmişlik Düzeyine Etkisi

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ABSTRACT

Purpose: This study aims to determine the effect of psychodrama on the level of burnout in school counselors. **Method:** The study was conducted as experimental nonrandomized controlled trial. The population of the study consisted of 67 school counselors working within the Gaziosmanpaşa District Directorate of National Education and the sample consisted of 20 school counselors, who agreed to participate in the study, as experiment (n=9) and control (n=11) groups. The study was conducted ten sessions in total, 3 hours once a week, between September and October 2019. Socio-Demographic Questionnaire Form and "Maslach Burnout Scale" were used as data collection tools. **Results:** While there was a decrease in the burnout levels of the school counselors, in the experimental group after psychodrama, no significant change was found in the measurements made in the control group. In particular, a statistically significant difference ($p < 0.002$) was found after psychodrama in the Emotional Exhaustion Sub-dimension of the Experiment group. **Conclusion:** Psychodrama is an effective method in reducing burnout.

Article Information

Keywords

School counselor, burnout,
psychodrama

Anahtar Kelimeler

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ÖZET

Amaç: Bu çalışma, psikodramanın rehber öğretmenlerde tükenmişlik düzeyine etkisini belirlemeyi amaçlamaktadır. **Yöntem:** Çalışma deneysel, randomize olmayan kontrollü çalışma olarak yürütüldü. Araştırmanın evrenini Gaziosmanpaşa İlçe Milli Eğitim Müdürlüğü bünyesinde görev yapan 67 rehber öğretmen, örneklemini deney (n=9) ve kontrol (n=11) olmak üzere araştırmaya katılmayı kabul eden 20 rehber öğretmen oluşturdu. Çalışma, Eylül-Ekim 2019 tarihleri arasında haftada 3 saat olmak üzere toplam on oturumda gerçekleştirildi. Sosyo-Demografik Anket Formu ve "Maslach Tükenmişlik Ölçeği" veri toplama aracı olarak kullanıldı. **Bulgular:** Deney grubundaki rehber öğretmenlerin psikodrama sonrası tükenmişlik düzeylerinde azalma olurken, kontrol grubunda yapılan ölçümlerde anlamlı bir değişiklik bulunmadı. Özellikle Deney grubunun Duygusal Tükenmişlik Alt boyutunda psikodrama sonrası istatistiksel olarak anlamlı bir fark ($p < 0,002$) bulundu. **Sonuç:** Psikodrama rehber öğretmenlerde tükenmişliği azaltmada etkili bir yöntemdir.

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Ethical Statement: The study was approved by the Health Sciences University Gaziosmanpaşa Taksim Training and Research Hospital Ethics Committee on 24.07.2019. (No: 2019-105).

INTRODUCTION

The prerequisite for a person to be in full social well-being is to have a healthy social and business life. It is not possible for a person to be in full well-being in societies where job and life security cannot be ensured, there is no opportunity to find a job, and the unrest caused by income inequality cannot be eliminated. Individuals' work environments, their relationships in the workplace, status and role ambiguities, problems with the people served, and administrative negativities can impair the health of the employees. Prolonged persistence of these adverse conditions can lead to burnout syndrome. Burnout is a multifactorial psycho-cognitive syndrome that causes physical and psychological problems and reduces efficiency and productivity (Janighorban et al., 2020). Although the definitions of burnout vary, Kaya et al. (2010) stated in their article that Maslach defines burnout as "a professional person being detached from the original meaning and purpose of his/her profession, he/she can no longer really care about the people he/she serves".

Psychodrama is a way for participants to relive psychological and social issues rather than just talking about events in their lives. Psychodrama sessions conducted using this method are designed to provide purification (catharsis) and gain insight, examine truth and develop logical thinking, and develop learning and behavior change in psychodrama (Karataş & Gökçakan 2009).

Psychodrama is an experimental method of psychotherapy designed to heal individuals, groups, and societies based on the dramatization of events, thoughts, and emotions. (Orkibi, 2019). Psychodrama can be used in groups under the guidance of a specially trained therapist (Chung, 2013). Group members express their feelings and thoughts spontaneously, dramatizing them, rather than talking about related events in their lives; thus, it aims to find some solutions to existing their problems in the lives of group members and to increase insight and awareness (Jacobs et al., 2012).

Data on the positive impact of psychodrama practice on different patient groups are available in the literature. Studies have shown many effects of psychodrama practice such as increased hope and self-confidence of individuals, increased ability to cope with events, improvement in psychological health, improvement in anger, improvement in self-esteem, decrease in depression and hopelessness scores, increase in quality of life, decrease in anxiety and depression scores (Vural, 2014; Terzioğlu, 2018; Sproesser, 2010).

METHOD

Type of Research

This study was conducted as a nonrandomized controlled trial to evaluate the effect of psychodrama on the burnout level of school counselors.

Population and Sample

The population of the study consisted of 67 school counselors working within the Gaziosmanpaşa District Directorate of National Education and the sample consisted of 20 school counselors, who agreed to participate in the study, as experiment (n=9) and control (n=11) groups. The study was conducted

between September - October in 2019. A total of 10 sessions of psychodrama were conducted, once a week, 3 hours per session. Psychodrama sessions lasted a total of 10 sessions, once a week for three hours. Measurements were carried out before and after psychodrama practice as pre and post-tests. The psychodrama study was conducted by a psychodramatist who completed psychodrama training at the Abdülkadir Özbek Psychodrama Institute.

Inclusion Criteria

- Expressing the burnout
- Being a volunteer

Exclusion Criteria

- Having a psychiatric diagnosis

Extraction Criteria

- Not following the group rules
- Not attending two consecutive sessions

Psychodrama Sessions

There are three main phases in a psychodrama session: the warm-up, the action and the sharing.

Warm-up phase. The psychodrama session starts with a warm-up phase to prepare the panelists and director for the characters, themes and the situation at hand. Warming up lets members to rise up spontaneity and break group resistance. At that stage, decide what kind of work the group will do and who will be the protagonists.

Action phase. This phase is the action phase where the decisions made during the warm-up phase are put into practice. In this stage, the psychodramatist applies the basic techniques of psychodrama and some auxiliary techniques.

Sharing Phase. The group session is the stage at the end of the psychodrama performance where the group members give feedback about their character. The feedback and comments of the psychodramatist regarding the process are also very important at this stage (Şimşek et al., 2019).

Data Collection Tools

Sociodemographic Questionnaire. It consists of four questions including age, gender, profit-loss statement and working time.

Maslach Burnout Scale (MBS). The Scale developed by Maslach and Jackson (1981) and referred to in the literature as the Maslach is a seven-point Likert scale. The scale consists of 22 items and three subscales. Among these subscales, the depersonalization subscale consisted of 5 items, the emotional exhaustion subscale consisted of 9 items, and the personal achievement subscale consisted of a total of 8 items. The scale items were rated "1: never" and "7: always". Ergin translated the Maslach Burnout Scale into Turkish in 1992, after pre-application to a group of 235 people, according to the answer options given to the seven levels from this group and the original table were "0: Never", decided to divide the scale into five levels and arrange it as "4: Always", and use this five-level version in the study. High levels

of burnout reflect high scores on the depersonalization subscales and emotional exhaustion and low scores on the personal achievement subscale. Moderate burnout reflects moderate scores in all three subscales, low scores are reflected in emotional exhaustion and depersonalization subscales, and high scores are reflected in personal achievement subscales. While scoring, three different burnout scores are calculated for each individual (Çapri, 2006).

Ethical Aspect of the Research

Approval numbered 2019-105 was obtained from the Ethics Committee of Gaziosmanpaşa Taksim Training and Research Hospital for this study. Written consent was obtained from school counselors who agreed to participate in the study.

Limitations of the Study

The fact that the study was in a small sample group constituted its limitation.

Statistical Analysis

The data were analyzed using the SPSS 25.0 package program. Continuous variables were presented as mean±standard deviation, median, and categorical variables were presented as numbers and percentages. Data were checked for agreement with the normal distribution using the Shapiro-Wilk test. When the parametric test hypothesis was met, the test of significance of the difference between the two means was used to compare independent group differences; When the parametric test hypothesis was not met, the Mann-Whitney U test was used to compare differences between independent groups. when controlling the variation between measurements; T-tests were used for dependent groups when parametric test hypotheses were met, and 2-sample Wilcoxon tests were used when parametric test hypotheses were not met. Differences between categorical variables were analyzed using the chi-square test.

RESULTS

This section includes the socio-demographic characteristics of the school counselors.

Table 1. Socio-demographic Characteristics of Counselors (N = 20)

		Experimental Group		Control Group		Between-Groups <i>p</i>
		<i>n</i>	%	<i>n</i>	%	
Gender	Female	8	88.8	7	63.6	0.319
	Male	1	11.1	4	36.3	
Age	18-25	0	0	0	0	0.081
	26-30	6	66.6	2	18.1	
	31-35	2	22.2	6	54.5	
	36-40	1	11.1	3	27.2	
Profit-loss statement	41 and older	0	0	0	0	0.379
	Income is less than expenses	6	66.6	7	63.6	
	Break Even	1	11.1	0	0	
Working time	Income is more than expenses	2	22.2	4	36.3	0.14
	0 - 5 year	5	55.5	1	9.0	
	6 - 10 year	2	22.2	4	36.3	
	11 - 15 year	1	11.1	3	27.2	
	16 and above	1	11.1	3	27.2	

75% (n = 15) of the counselors in the study are women. It was found that the counselors in the experimental and control groups participating in the study were similar and the groups were homogeneous.

Table 2. Comparison of the Experimental and Control Group Counselors' Scores on the Burnout Scale Between Groups

Burnout Scale	Experimental Group (n=9)		Control Group (n=11)		Between- Groups p
	X ± S.S	Med (min - max)	X ± S.S	Med (min - max)	
Emotional Exhaustion Sub-Dimension					
Before Psychodrama	29 ± 4.64	29 (23 - 34)	18.27 ± 4.38	19 (10 - 24)	0.0001** α
After Psychodrama	21.67 ± 4.27	21 (16 - 30)	19.91 ± 4.83	20 (11 - 26)	0.405 α
Difference Between Two Groups	7.33 ± 4.92	7 (1 - 18)	-1.64 ± 1.69	-2 (-5 - 1)	0.0001** α
In-Group p	0.002* φ		0.009* φ		
Desensitization Sub-Dimension					
Before Psychodrama	10.56 ± 3.97	9 (5 - 18)	8.09 ± 3.21	8 (5 - 16)	0.152 β
After Psychodrama	9.22 ± 1.92	9 (6 - 12)	9.36 ± 2.91	9 (5 - 17)	0.941 β
Difference Between Two Groups	1.33 ± 2.69	2 (-3 - 6)	-1.27 ± 1.1	-1 (-3 - 0)	0.021* α
In-Group p	0.176 φ		0.003* φ		
Personal Success Sub-Dimension					
Before Psychodrama	27 ± 3.28	27 (21 - 31)	30.82 ± 3.89	30 (24 - 40)	0.031* α
After Psychodrama	30.33 ± 4.06	30 (23 - 37)	27.18 ± 5.67	28 (16 - 37)	0.179 α
Difference Between Two Groups	-3.33 ± 3.97	-3 (-10 - 1)	3.64 ± 4.08	3 (0 - 15)	0.0001** β
In-Group p	0.036* φ		0.005* γ		
Total					
Total Before Psychodrama	66.56 ± 6.69	65 (56 - 79)	57.18 ± 4.79	59 (47 - 64)	0.002* α
Total After Psychodrama	61.22 ± 4.92	60 (53 - 69)	56.45 ± 5.61	58 (44 - 64)	0.061 α
Total Difference	5.33 ± 6.78	5 (-6 - 14)	0.73 ± 5.5	-1 (-3 - 16)	0.095 β
In-Group p	0.046* φ		0.641 γ		

** p < 0.001, * p < 0.05, α: t test in independent groups ; β: Mann Whitney U test; φ: t test in dependent groups; γ: Wilcoxon Paired two sample test

When we look at the findings of the Emotional Exhaustion Sub-dimension

As can be seen in Table 2, the psychodrama was applied to the counselors of the experimental group; there was a statistically significant (p<0.002) difference between the results before and after the test. Significant differences emerged when scores gradually declined after psychodrama. The decline in the scale scores indicated that the emotional exhaustion of the counselors in the experimental group was reduced. The MBI was applied to school counselors in the control group; a statistically significant difference (p<0.009) was also found between the results before and after the test. Significant differences occurred in the increase in scores after psychodrama. Counselors in the control group experienced increased emotional burnout. In addition, when we look at the difference between the two groups in terms of scores before and after psychodrama, there is a statistically high difference between the two groups (p < 0.001).

When we look at the Desensitization Sub-Dimension findings

When examining the internal changes of the two groups, there was no significant difference between the pretest and posttest results of the experimental group ($p < 0.176$); the scale value of the control group increased significantly after the posttest. Furthermore, when examining the differences between the two groups in terms of pre- and post-play scores ($p < 0.003$), a statistically significant difference was found between the two groups ($p < 0.021$).

When we look at the findings of the Personal Success Sub-dimension

When will we examine the changes that have occurred within the two groups; There was a significant difference between the experimental ($p < 0.036$) and control ($p < 0.005$) groups. After psychodrama, the scores of the experimental group increased; scale scores of the control group decreased. In addition, when the differences between the two groups in terms of pre- and post-training scores were examined, there was a statistically significant difference between the two groups ($p < 0.0001$).

Although occupational burnout is one of the most prominent questioning issues in the field of occupational health; the burnout experienced by counselors is a chronic phenomenon that mostly causes wear and tear. Specific, holistic and personalized interventions are effective in reducing burnout (Wiederhold et al., 2018). This study found that Psychodrama is an effective method to reduce the burnout of counselors. In literature, the burnout of counselors in Turkey could be found in a single study examining the efficacy of psychodrama. In addition, it was seen in the studies that the scale was not evaluated on its sub-dimensions and it was discussed over the general scale scoring. For this reason, the sub-dimensions have been discussed in line with the supplementary literature. Gökkaya and Özdel found a statistically significant difference between the total scores of counselors before and after the study in their Psychodrama study and stated that Psychodrama is a usable method in reducing occupational burnout (2016). According to the quotation from the same study; Etiz (2006) and Pişmişoğlu (2006) stated in their thesis that Psychodrama is effective in reducing occupational burnout. Thacker found that Psychodrama provide reducing burnout (1984). Psychodrama helps the individual to improve communication skills, manage stress, and reduce burnout by helping to increase psychological resilience. Kutlukturkan et al., similarly, in planning individual and organizational interventions to reduce burnout; they emphasized the necessity of organizing programs that provide psychological support, the importance of developing communication skills and providing training on coping strategies (2016). There are three sub-dimensions associated with burnout. Emotional exhaustion means feeling tired and emotionally worn out. In this study, while there was a decrease in emotional exhaustion subscale scores after Psychodrama in the experimental group; there was an increase in the control group. In addition, an advanced level of significant difference was found between the two groups. Emotionally exhausted individuals may experience anxiety and / or depression after a while, as a result of which a decrease in professional satisfaction develops and this may result in quitting the job. Orkibi stated in his study that burnout supports quitting and there is a negative relationship between burnout and career commitment (2015). Grigorescu et al., found a reduction in nurses' depression and anxiety levels in their Psychodrama study; they also stated that there was a decrease in their personal and professional burnout (2020). Al-Hammuri found that psychodrama-based training reduced depressive symptoms (2018). Similarly, Şimşek

et al. found that Psychodrama decreased social anxiety and increased empathy skills (2020). On the other hand, Özbaşı and Tel stated that psychodrama may lead to the development of adaptive mechanisms and lower levels of fatigue and exhaustion in the workplace (2015). Kokkinos pointed out that burnout creates chronic work stress in individuals. Anxiety and depression also negatively affect the personal success of the individual (2007). Personal success sub-dimension refers to a person's negative self-evaluation, personal achievement poverty, personal achievement competence, and overcoming problems with success. At this point, the person begins to feel ineffective and lacks the qualification for personal thinking. Self-esteem decreases and depression begins to occur. It is accepted that as the scores in this sub-dimension decrease, the level of personal achievement decreases. In this study, while the scores of the experimental group increased, the scores of the control group decreased. This result means that Psychodrama helps counselors to reduce burnout by increasing personal success. In a study by Esfahani et al., examining burnout in midwives, they stated that low levels of emotional exhaustion and depersonalization lead to high personal success (2012). In addition, Janighorban et al. stated that psychological resilience has an important role in predicting the variances of burnout in the field of personal success (2020). Desensitization means that individuals “distance themselves from those receiving service, receiving a strict, even inhumane response”. In this study, while the depersonalization scores of the experimental group after Psychodrama decreased; there was an increase in the control group. Sometimes, communication problems and sometimes being psychologically weak can cause these problems. Psychodrama helps individuals to discover themselves, understand the perspective of others and associate their own feelings or thoughts with others, thus, while handling the emerging communication problems more effectively, on the other hand, it helps to increase the psychological resilience of the person by strengthening the self. In a study conducted by Oflaz et al. with nurses, it was determined that Psychodrama is useful in solving communication problems (2011). Chen and Fang (2016), El Dahshan and Dorgham (2013), Rashidazar et al. (2018) and O'Brien (2011) found a significant relationship between total psychological empowerment score and three burnout domains.

Conclusion and Recommendations

In this study, psychodrama was found to be an effective way to reduce levels of burnout. It is recommended that psychodrama studies aiming to reduce the burnout of counselors should be carried out in different institutions and regions by including qualitative analysis methods.

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Author Contribution

This study was conducted by all the authors working together and cooperatively. All the authors substantially contributed to this work in each step of the study.

Conflict of Interest

It has been reported by the authors that there is no conflict of interest.

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Ethical Statement

For this study, the approval of Gaziosmanpaşa Taksim Training and Research Hospital Ethics Committee numbered 2019-105 were obtained.

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RESEARCH

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ARAŞTIRMA

Açık Erişim

Revision Study of the Romantic Relationship Assessment Scale (RRAS-RF)*Romantik İlişkiyi Değerlendirme Ölçeğinin Revizyon Çalışması (RİDÖ-RF)***Elvan Yıldız Akyol  & Kemal Öztemel ****Authors Information**

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ABSTRACT

The present study includes a revision of the Romantic Relationship Assessment Scale (RRAS; Kılınçer and Tuzgöl Dost, 2013). Personal Information Form, RRAS, and Relationship Satisfaction Scale (RSS) were used as data collection tools. Explanatory and confirmatory factor analyzes were performed on the RRAS. As a result of exploratory factor analysis (EFA), a structure consisting of 28 items and five sub-dimensions was obtained. When the first and second-level CFA results are evaluated together, it was seen that five sub-dimensions consisting of 28 items were supported. In order to provide evidence for the validity of the scale, its relationship with the RSS was examined. The results revealed a negative and statistically significant correlation between the revised form of RRAS and RSS. In addition, the reliability of the scale was examined in terms of internal consistency, and the Cronbach Alpha coefficient values of the dimensions were found to vary between .78 and .92.

Article Information**Keywords**

Romantic relationship, Romantic Relationship Assessment Scale, abuse, revision, validity, reliability

Anahtar Kelimeler

Romantik ilişki, Romantik İlişkiyi Değerlendirme Ölçeği, istismar, revizyon, geçerlik, güvenilirlik.

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ÖZET

Bu çalışma Romantik İlişki Değerlendirme Ölçeği'nin (RİDÖ; Kılınçer & Tuzgöl Dost, 2013) revizyonunu içermektedir. Araştırmada veri toplama aracı olarak Kişisel Bilgi Formu, RİDÖ ve İlişki Doyumu Ölçeği (İDÖ) kullanılmıştır. RİDÖ'nün üzerinde açıklayıcı ve doğrulayıcı faktör analizleri gerçekleştirilmiştir. Açıklayıcı faktör analizi (AFA) sonucunda 28 madde ve beş alt boyuttan oluşan bir yapı elde edilmiştir. Gerçekleştirilen birinci ve ikinci düzey DFA sonuçları birlikte değerlendirildiğinde; 28 maddeden oluşan beş alt boyutlu yapının araştırmanın çalışma grubu olan yetişkin bireylerde desteklendiği görülmüştür. Ölçeğin geçerliğine kanıt sağlamak amacıyla İDÖ ile ilişkisi incelenmiştir. Sonuçlar RİDÖ revize formu ve İDÖ'nün negatif yönde ve istatistiksel olarak anlamlı şekilde ilişkili olduğunu ortaya koymuştur. Ayrıca ölçeğin güvenilirliği Cronbach Alpha katsayısı ile iç tutarlılık bağlamında incelenmiştir ve boyutlara ait Cronbach Alpha katsayısı değerlerinin .78 ile .92 arasında değiştiği bulunmuştur.

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INTRODUCTION

An intimate relationship is important for individuals' life satisfaction, overall well-being, and sense of safety. Intimate relationships form the foundation necessary for individuals' psychosocial development (Noam & Fischer, 1996). Fromm (1964) emphasizes that individuals' desire for intimacy and belonging is an existential need. Similarly, Maslow (1954) indicates that the desire to be loved and to belong results from their need to actualize themselves. A number of researchers have been trying to explain romantic relationships which are considered to be intimate relationship and their nature for years. Sternberg (1986) defines a romantic relationship as an emotional relationship that is created by the combination of passion, attachment, and intimacy among individuals. According to Collins (2003), a romantic relationship is a kind of voluntary relationship that both parties mutually accept. Especially romantic relationships that are experienced during young adulthood are of vital importance for individuals to develop their adult roles. Because of that reason, the romantic relationships people establish during their university years which include the young adulthood period influence the quality of the relationships they establish during adulthood and their choice of spouse in marriage (Fernet, Hebert & Paradis, 2016). In this context, while romantic relationship experiences mostly teach individuals to establish healthy relationships with the people around them, these experiences can also contain various negative behaviors called abuse from time to time (Saltzman, Fanslow, McMahon & Shelley, 2002).

Definition of Abuse in Romantic Relationships

Heise and Garcia-Moreno (2002) define abuse in romantic relationships as behaviours and attitudes exhibited by couples who are having an emotional intimacy between them to exert power or control over each other via mutual physical, psychological and sexual violence. Niolon et al. (2017) describe abuse in romantic relationships as being exposed to one or more the behaviours such as physical violence (e.g. hitting, pushing, punching...), psychological violence (e.g. shouting, embarrassing, giving a nickname...), sexual violence (e.g. abuse, rape...) and hunting (the following somebody in a way to cause fear and anxiety about safety) in a current or possible relationship. Furthermore, abuse in romantic relationships is described by the World Health Organization (WHO, 2013) as any physical violence, sexual assault, controlling, and emotional misbehaving in any flirting relationship.

Some other examples of abuse include punishing through deprivation, not giving importance, directing, threatening, exercising violence, exhibiting exploitative behaviours, and trying to control (Seçim, 2019). Physical abuse is defined as the intentional use of force among partners that can lead to getting hurt, injury, disability, or even death (Saltzman et al., 2002). Emotional/verbal abuse includes all kinds of words and actions that cause one of the partners to get scared, have lower self-confidence, and feel guilty (e.g. humiliating, isolating, depriving, threatening...). While physical abuse can be detected relatively more easily, it is difficult to detect and define emotional abuse (Murphy & Hoover, 1999). Sexual abuse refers to forcing the partner to have sexual intercourse, preventing birth control, forcing the partner to have oral or anal intercourse, and using physical violence on genitalia (Mouradian, 2000).

While abusive behaviours can cause damage in more than one area, a single abusive behaviour can include different types of abuse at the same time. For example, an individual who is exposed to sexual abuse by their partner can experience physical, emotional, and psychological abuse at the same time. Although there are different approaches to the types of abuse in the literature, most researchers agree that all kinds of abusive behaviours end with emotional abuse (Şahin & Tezel, 2014; Taner & Gökler, 2004).

Impact of Abuse in Romantic Relationships on People's Physical and Psychological Health

In recent years, abuse in romantic relationships leading to short- and long-term physical and psychological problems has increasingly turned out to be a social health problem, and it has become widespread all over the world regardless of social, economic, religious, and cultural background (Angelone, Mitchell & Lucente, 2012; Silverman, Raj, Mucci & Hathaway, 2001; WHO, 2013). An abused individual starts to have problems in various domains of life. Therefore, this phenomenon is a process that brings about a number of individual and social problems and conflicts and has serious effects on people's future lives (Niolon et al., 2017). Related studies in the literature show that men and women can sometimes be unilateral agents or victims of abuse (Baker & Stith, 2008; Lewis & Fremouw, 2001), while they can sometimes mutually be the agent and victims of it (Caetano, Ramisetty-Mikler, & Field, 2005; Renner & Whitney, 2012). In the USA, one in every four women and one in every nine men are a victim of sexual abuse, physical abuse, and hunting by their partner (Breiding, Chen & Black, 2014).

The studies focusing on abuse in romantic relationships show that the rate of abuse carried out by men to women is higher than the rate of abuse carried out by women to men (Archer, 2000; Johnson, 2011; Krug, Mercy, Dahlberg & Zwi, 2002). According to research conducted by the World Health Organization in more than 80 countries, abuse in romantic relationships is mostly exercised by the male partner to the female partner, and 35% of women, which means one in three women, all over the world are subject to physical and/or sexual abuse in romantic relationships by their partners (WHO, 2013). According to a study conducted by the Ministry of Family and Social Policies in 2014, one in three women is subject to physical abuse by her partner or husband throughout her life. In other words, it is possible to say that 4 in 10 women are abused by their partner or husband. The results of this study also reveal that 36% of women are exposed to physical violence, while 12% of them are exposed to sexual abuse in Turkey. When it comes to the level of emotional violence and abuse, 44% of the married women in Turkey have been exposed to at least one behaviour of emotional violence and abuse in their life (T.C. MFSP Directorate General on the Status of Women, 2015). Moreover, another study reveals that 12 women have been exposed to sexual violence in their life (Yüksel-Kaptanoğlu, Çavlin, Akadlı Ergöçmen, 2015).

Previous studies in the literature show that young adults are frequently exposed to abuse in their romantic relationships both by men to women and by women to men (Bott, Guedes, Goodwin & Mendoza, 2012; Heise & Garcia-Moreno, 2002; Hickman, Jaycox, & Aronoff, 2004), and individuals who have been abused in their romantic relationships can also come across various acute and chronic health problems that prevent them from following their daily routine (Breiding et al., 2014). Those who are exposed to flirting violence can have some psychological and physical problems such as drinking alcohol, smoking, eating disorders, decrease in self-confidence, a burst of anger, depression, shame, guilt, suicidal intention or attempt, decrease in self-respect, unintended pregnancy and sexually transmitted infections (Banyard & Cross, 2008; Heise & Garcia-Moreno, 2002; Silverman et al., 2001). The findings of this study reveal that abuse in romantic relationships is a risk factor for individuals' physical and psychological health. Because of that reason, it seems important to reveal the abuse in romantic relationships in order to protect individuals' physical and psychological health.

The Need for Revision of the Romantic Relationship Assessment Scale (RRAS)

The need to understand and measure the dynamics of abuse has brought about studies to develop scales for that purpose. In 2013, Kılınçer and Tuzgöl Dost developed Romantic Relationship Assessment Scale (RRAS) in order to identify the abuse experienced by university students in their romantic relationships. This scale is important for being the first scale developed in Turkish culture in order to identify the level of abuse experienced by individuals in their romantic relationships. Despite this, we observed that there are situations that need to be revised on this scale. When the theoretical background of romantic abuse (e.g., Flowers, 2009; Heise & Garcia-Moreno, 2002; Niolon et al., 2017; Öztürk, Karabulut & Sertoğlu, 2018; Saltzman et al., 2002; Seçim, 2019; WHO, 2013) and the scales developed on romantic abuse in other cultures (e.g. Borjesson, Aarons & Dunn, 2003; Hegarty, Sheehan, & Schonfeld, 2017) were examined, it is possible to state that abuse by nature may appear in many different forms such as controlling the behavior of the partner and restricting the partners, as well as physical, emotional and sexual abuse. Because of that reason, the Romantic Relationship Assessment Scale is expected to have a multi-factor structure.

The original form of the Romantic Relationship Assessment Scale is composed of 70 items and has only one factor. Despite the detailed and meticulous work of the researchers while preparing the data pool, we believe that some mistakes were made in the original scale analysis stage while performing the exploratory factor analysis. For this reason, it was decided to revise it again, assuming that the scale should be controlled statistically. Moreover, as RRAS has 70 items, it is quite a long scale, which makes it difficult for participants to respond to all items with the same motivation until the end, and it takes quite a long time to respond to all the items. As a result, there comes out a need to revise the scale both because of its one-factor structure, problematic statistical analysis, and the high number of items on the scale.

Consequently, this study aims at revising the Romantic Relationship Assessment Scale (RRAS). Due to the expectation of a multi-factor structure, statistical defects, and a high number of items, revising the scale is thought to contribute to the literature and future research on this issue in terms of identifying what kind of abuse individuals are exposed to and easy to conduct.

METHOD

Study Group

The current study has two different study groups for explanatory and confirmatory factor analyses in order to develop a revised form of the Romantic Relationship Assessment Scale (RRAS).

Study Group 1. In the first phase of the study to conduct explanatory factor analysis, the study group included 460 adults (370 females and 90 males) who were reached by the researchers in line with the method of convenience sampling and who participated in the study on a voluntary basis. The participants were aged 18-59, and the average of their age was 27 ($Ss = 6.51$).

Table 1. Demographic Characteristics of the First Study Group in the Romantic Relationship Assessment Scale Revision Process

Variables		N	%
Gender	Female	370	80.4
	Male	90	19.6
Employment Status	Student	152	33.0
	Working	263	57.2
	Not Working	45	9.8
State of Romantic Relationship	Dating	248	53.9
	Engaged	37	8.0
	Married	175	38.0
Duration of Romantic Relationships	Less than 1 month	17	3.7
	1- 6 months	55	12.0
	6 months - 1 year	46	10.0
	1- 2 years	76	16.5
	2- 4 years	90	19.6
	4- 6 years	66	14.3
	More than 6 years	110	23.9

Study Group 2. In the second phase of the study which aimed to conduct confirmatory factor analysis and examine criterion validity, the same method of convenience sampling was used to reach 303 adults (232 females, 71 males) who were aged 18-63, while the average of their ages was 28.98 ($S_s = 7.41$).

Table 2. Demographic Characteristics of the Second Study Group in the Romantic Relationship Assessment Scale Revision Process

Variables		N	%
Gender	Female	232	76.6
	Male	71	23.4
Employment Status	Student	82	27.1
	Working	189	6.4
	Not Working	32	10.6
State of Romantic Relationship	Dating	156	51.5
	Engaged	23	7.6
	Married	124	40.9
Duration of Romantic Relationships	Less than 1 month	15	5.0
	1- 6 months	54	17.8
	6 months - 1 year	28	9.2
	1- 2 years	45	14.9
	2- 4 years	39	12.9
	4- 6 years	35	11.6
	More than 6 years	87	28.7

Thus, while developing the revised form of the scale, the researchers collected data from 763 adults in total who were over the age of 18 and who had a romantic relationship at the time.

Procedure

Within the framework of the current study, the researchers, first of all, got the necessary permission from the researchers who had developed the scale to create the revised version of it. They then received permission from the ethical commission of Gazi University before starting the data collection process. After completing the process of receiving legal permissions, they prepared the questionnaires to collect data on Google Forms. With the announcements made on various social media platforms, the purpose

of the study and the conditions of participation was announced to the individuals. Participants received a consent form online. With their consent, participants were recruited to the study and filled out the questionnaires online at Google Forms.

First, explanatory factor analysis was conducted in order to test the factor structure of the original RRAS scale and to remove the items from the scale due to having a factor load below .40 and giving load to more than one factor as well as those having a difference of factor load lower than .20 (Hair, Anderson, Tatham & Black, 1998; Tabachnick & Fidell, 2013). Explanatory factor analysis is a kind of analysis that is conducted to clean out the items that are not functional in order to determine the construct validity of a scale which refers to the structure of factors (DeVellis, 2003; Kline, 2005).

After conducting explanatory factor analysis, the form obtained at the end of the explanatory factor analysis was implemented with a new sample in order to test the accuracy of the construct, and so confirmatory factor analysis was done with the collected data (DeVellis, 2003; Kline, 2011). At this phase, the correlations between the Romantic Relationship Assessment Scale (RRAS) and Relationship Satisfaction Scale (Curun, 2001) were calculated in order to test criterion validity. Moreover, at both stages, the researchers calculated the internal consistency coefficient of both sub-dimensions and the whole scale in order to get evidence for the reliability of the scale. They then evaluated the results of these analyses in accordance with the acceptable intervals necessary to appear in a scale, and they finalized the revised form of the scale.

Data Collection Tools

The data collection tools in the current study are the Personal Information Form, Romantic Relationship Assessment Scale (Kılınçer & Tuzgöl Dost, 2013), and Relationship Satisfaction Scale (Curun, 2001). The data collection tools are described in detail below.

Personal Information Form. The researchers developed the Personal Information Form to gather information about the participants' gender, age, employment status, state of a romantic relationship, and how long they have been in a romantic relationship.

Romantic Relationship Assessment Scale Original Form. In the current study, the researcher used the Romantic Relationship Assessment Scale (RRAS) developed by Kılınçer and Tuzgöl Dost (2013) in order to identify the abuse perceived by university students in their romantic relationships. An item pool was created after conducting a detailed literature review, examining similar scales, and receiving the opinions of experts. Then, a scale form consisting of 112 items was developed and presented for expert opinion. After receiving expert opinion, 39 items were removed from the scale and there were 73 items left in the form for pilot implementation.

Explanatory factor analysis for the scale was conducted with a sample of 426 university students who had a romantic relationship at the time or had had a romantic relationship in the last year. First of all, Kaiser-Meyer-Olkin (KMO) was calculated in order to see if the data were enough to carry out factor analysis or not, and it was found to be .94. This figure showed that the data were rich enough to conduct factor analysis. Furthermore, the Barlett sphericity test was done to see if the inter-item correlations were appropriate for factor analysis or not, and the result was found to be statistically significant at a level of $p < .001$. Other results regarding factor analysis were examined based on these results. Factor loads were examined depending on the results of the first explanatory factor analysis. As a result of this examination

and expert opinion, three items were removed from the scale and a further factor analysis was carried out for the scale consisting of 70 items (Kılınçer & Tuzgöl Dost, 2013).

The second explanatory factor analysis showed that the scale had 13 dimensions having an eigenvalue larger than 1, and these values accounted for 64.89% of the total variance. The eigenvalue of the first factor was found to account for 33.50% of the total variance. The results also showed that there was a sharp decrease from the first eigenvalue to the second one, and the difference between the two values was more than four times, whereas there was no other sharp decrease among other eigenvalues. Considering this result, it was clear that the scale was one-dimensional, and it was possible to use the total score of the scale. In order to strengthen the evidence of the validity of the scale, confirmatory factor analysis (CFA) was conducted with responses from 411 university students. When the results of confirmatory factor analysis for RRAS were examined, the scale was found to provide the necessary criteria for the construct validity without any need for further modification (GFI/AGFI=.80/,79; NFI=.96, NNFI=1.00; CFI=1.00; RMSEA=.038; RMR=.05; SRMR=.046) (Kılınçer & Tuzgöl Dost, 2013).

The scale consisting of 70 items is a 5-point Likert-type scale and it is one-dimensional. There is no reverse item in the scale. On the scale, 1 refers to "never", 2 refers to "rarely", 3 refers to "sometimes", 4 refers to "often" and 5 refers to "very often". The lowest score can be 70, whereas the highest score can be 350. Cronbach Alpha reliability coefficient was found to be .97 for Romantic Relationship Assessment Scale. The test-retest reliability coefficient for RRAS was found to be .89. In order to determine similar criterion validity, the researchers examined the relation between RRAS and Relationship Satisfaction Scale (Curun, 2001) which was thought to have an opposite construct, and it was found to be $-.76$ ($p < .001$). A high score on the scale points to a higher level of abuse in a romantic relationship (Kılınçer & Tuzgöl-Dost, 2013).

The Relationship Satisfaction Scale. Relationship Satisfaction Scale (RSS) was developed by Hendrick (1988) in order to measure satisfaction in a romantic relationship. The scale is composed of seven items and it is a 7-point Likert-type scale. Hendrick (1988) conducted a factor analysis and found out that RSS had a one-factor construct, which accounted for 46% of the total variance, and it was clear that item-total correlation varied between .57 and .76. In that study which was conducted with a sample of flirting couples, the correlation between RSS and Dyadic Adjustment Scale was found to be .80. The scale was adapted into Turkish culture by Curun (2001) with a sample of 140 university students who had a romantic relationship at the time. The factor analysis showed that the scale had one factor as the original scale, and this factor accounted for 52% of the total variance. Cronbach Alpha internal consistency coefficient was found to be .86. Items 4 and 7 are reversed items, and a high score points to a high level of satisfaction in the relationship. In the current study, Cronbach Alfa's internal consistency coefficient for RSS was found to be .92.

FINDINGS

Validity of Romantic Relationship Assessment Scale – Revised Form

Explanatory Factor Analysis (EFA). Although different researchers offer different views and criteria about the appropriate sample size to conduct factor analysis, it is widely accepted that the sample size should be 5-10 times more than the number of items in the scale (Kline, 2011; Clark & Watson, 1995). Considering this, 473 participants were included in the current study. First of all, the researchers examined

outlier values. 13 responses were removed from the data set as they were found to have multi-variate outlier values according to the z values and univariate Mahalanobis distance identified with boxplots. Then, the researchers conducted EFA with the remaining 460 responses (Table 1). EFA is used when there is no clear factor construct (DeVellis, 2003). The original form of RRAS is composed of 70 items and it has a one-factor construct. Literature review shows that abuse in a romantic relationship can appear in many various forms such as physical violence towards the partner, emotional neglect, sexual abuse, control, and restriction (Heise & Garcia-Moreno, 2002; Niolon et al., 2017; WHO, 2013). In this context, abuse is expected to have a multi-factor structure by nature. In line with this expectation, explanatory factor analysis was conducted to remove the items from the scale due to having a factor load below .40 and giving load to more than one factor as well as those having a difference of factor load lower than .20 (Hair et al., 1998; Tabachnick & Fidell, 2013).

The researchers looked at Kaiser-Meyer Olkin (KMO) coefficient and Barlett Sphericity test the data if appropriate for EFA. The analysis showed that the KMO value was .91, while the Barlett Sphericity test resulted in a statistically significant value ($\chi^2 = 19640.624$; $p < .000$). As a result, the analysis showed that the data set was appropriate for EFA.

Explanatory factor analysis aims to identify under which factor the items fall in the original form by including all the items in the analysis freely. In the factor analysis of the current study, the researchers made use of Principal Axis Factoring, which is one of the methods to extract factors as well as the Promax spinning method, which is an inclined spinning method as it had already been identified that the items in the scale were related to each other theoretically (Tabachnick and Fidell, 2013).

The results of the first-factor analysis showed that 70 items in the original RRAS were distributed among the 16 factors randomly. Besides, some items gave load to more than one factor, whereas the factor load of some other items was lower than .30. At the end of the factor analysis, the researchers removed the items that were not working, the items that gave load to more than one factors, the items with a factor load of lower than .40 and the items giving load to two factors with a difference of .20 (DeVellis, 2003), and they repeated the factor analysis after removing each item. Moreover, the items that were highly correlated with each other were removed from the scale in order to avoid the problem of multicollinearity (Tabachnick & Fidell, 2013).

After removing the items in line with the aforementioned criteria, the researchers came up with a construct with five factors and 28 items. The form with 28 items was re-evaluated in terms of accuracy for EFA (Netemeyer, Bearden & Sharma, 2003). The results showed that the KMO value was .91, and the Barlett test result was statistically significant ($\chi^2 = 6468.662$; $p < .000$). These results showed that the scale items were appropriate to conduct explanatory factor analysis. A high level of explained variance refers to the strength of the factor construct of a scale. A value between 40% and 60% is considered acceptable in social sciences (Kline, 2011). The variance explained by this five-factor construct is found to be 61.02%. When the five-factor construct obtained at the end of the analysis was examined, it was clear that the items falling under each sub-factor were consistent with each other as an indicator of the type of abuse in theoretical terms (Heise & Garcia-Moreno, 2002; Mouradian, 2000; Murphy & Hoover, 1999; Niolan et al., 2017; WHO, 2013; Öztürk et al., 2018; Saltzman et al., 2002). While naming these factors, the researchers examined how abuse can appear in a romantic relationship theoretically, identified behavioural indicators for each factor, and named the factors in accordance with these indicators. The behaviours that aim to cause physical injury such as “S/he throws me dangerous materials, s/he attempts

to hurt with wounding objects, s/he punches me, s/he hurts me with any object, s/he slaps me in the face, s/he twists my fingers or arms.” are called *physical abuse*; the behaviours that aim to isolate the partner from his/her social circle such as “s/he minds if I join a social event without him/her, s/he feels troubled when I join social events with my friends, s/he feels troubled when I make a friend of opposite sex, s/he prevents me meeting my friends, s/he interferes with my personal plans, s/he constrains me to the activities I like.” are called *social restriction*; the behaviours that aim to take the partner under control cognitively such as “s/he expects me to accept his/her wishes unconditionally, s/he gets angry when I make a decision that s/he does not approve, s/he gets very angry when I do not accept his/her views, s/he exercises power over me to get me accept his/her views, s/he insists that s/he knows the best for me, s/he commands me.” are called *cognitive suppression*; the behaviours that aim to ignore the partner emotionally such as “s/he does not show his/her love to me, s/he avoids using terms of affection to me, s/he does not show interest in my problems, s/he does not appreciate me enough, s/he does not try to keep his/her words to me, s/he lies to me.” are called *emotional neglect*; and lastly, the behaviours that are conducted without the permission of the partner such as “s/he forces me to display sexual behaviour that I do not want, s/he does not respect my sexual lines, s/he sees me as a sexual object, s/he touches my sexual organs although I do not want that.” are called *sexual abuse*.

Figure 1 shows the scatter diagram of the Romantic Relationships Assessment Scale-Revised Form, and Table 3 presents the factor loads of the remaining 28 items in the scale.

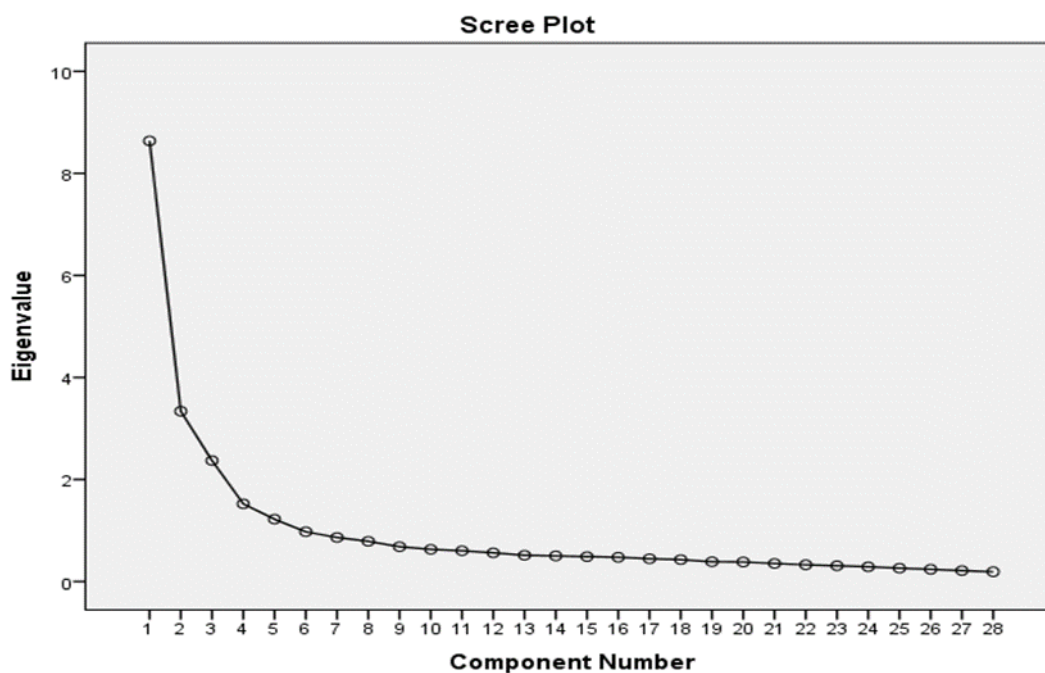


Figure 1. The Scatter Diagram of Romantic Relationships Assessment Scale-Revised Form

Table 3. Factor Load Values of Romantic Relationship Assessment Scale – Revised Form

No	Items	Physical Harm	Social Restriction	Cognitive Suppression	Emotional Neglect	Sexual Abuse
55	S/he throws me dangerous materials.	.862				
49	S/he attempts to hurt with wounding objects.	.839				
27	S/he punches me.	.772				
11	S/he hurts me with any object.	.759				
5	S/he slaps me in the face.	.753				
61	S/he twists my fingers or arms.	.745				
43	S/he minds if I join a social event without him/her.		.930			
9	S/he feels troubled when I join social events with my friends.		.813			
42	S/he feels troubled when I make a friend of the opposite sex.		.784			
47	S/he prevents me from meeting my friends.		.783			
38	S/he interferes with my personal plans.		.618			
57	S/he constrains me from the activities I like.		.618			
19	S/he expects me to accept his/her wishes unconditionally.			.802		
26	S/he gets angry when I make a decision that s/he does not approve of.			.782		
10	S/he gets very angry when I do not accept his/her views.			.778		
35	S/he exercises power over me to accept his/her views.			.773		
21	S/he insists that s/he knows the best for me.			.766		
32	S/he commands me.			.677		
68	S/he does not show his/her love to me.				.837	
14	S/he avoids using terms of affection to me.				.792	
36	S/he does not show interest in my problems.				.744	
60	S/he does not appreciate me enough.				.673	
63	S/he does not try to keep his/her words to me.				.639	
69	S/he lies to me.				.629	
6	S/he forces me to display sexual behaviour that I do not want.					.815
22	S/he does not respect my sexual lines.					.810
39	S/he sees me as a sexual object.					.786
56	S/he touches my sexual organs although I do not want that.					.559
Eigenvalue		8.636	3.337	2.370	1.522	1.221
Variance Explained		30.842	11.919	8.465	5.435	4.360
Total Variance Explained					61.022	

As is seen in Table 3, the sub-factor of physical harm is composed of six items whose factor loads vary between .75 and .86; the sub-factor of social restriction is composed of six items whose factor loads vary between .62 and .93, the sub-factor of cognitive suppression is composed of six items whose factor loads vary between .68 and .80, the sub-factor of emotional neglect is composed of six items whose factor loads vary between .63 and .84, the sub-factor of sexual abuse is composed of four items whose factor loads vary between .56 and .82. All the items in the scale account for 61.02% of the total variance. The sub-factor of physical harm accounts for 30.84% of the total variance, the sub-factor of social restriction accounts for 11.92% of the total variance, the sub-factor of cognitive suppression accounts for 8.47% of the total variance, the sub-factor of emotional neglect accounts for 5.44% of the total variance and the sub-factor of sexual abuse accounts for 4.36% of the total variance.

The researchers calculated the correlation coefficients among the factors in order to reveal the relations among the five sub-factors obtained at the end of the explanatory factor analysis, and the results are given in Table 4.

Table 4. Correlations Between Sub-Dimensions of the Romantic Relationship Assessment Scale-Revised Form

Sub-dimensions	Physical Harm	Social Restriction	Cognitive Suppression	Emotional Neglect	Sexual Abuse	Total
Physical Harm	1.00	.23**	.27**	.18**	.25**	.41**
Social Restriction		1.00	.66**	.41**	.29**	.82**
Cognitive Suppression			1.00	.52**	.39**	.88**
Emotional Neglect				1.00	.44**	.73**
Sexual Abuse					1.00	.56**
Total						1.00

** $p < 0.01$

As is clear in Table 4, the correlations among the sub-factors of the scale vary between .18 and .66, and they are statistically significant at a level of $p < .01$. According to the results, the sub-factors are correlated with each other at a statistically significant level.

Item Validity

Findings About the Item-Total Test Correlations. Item-total correlations were calculated in order to see if each item in the revised form could measure the intended feature sufficiently or not. Table 5 gives the item-total correlations for each item.

Table 5. Item-Total Correlations for Items

Dimensions	Items	\bar{X}_{ort}	Sd	Item-total correlations
Physical Harm	55	1.03	.25	.751
	49	1.02	.17	.731
	5	1.07	.35	.673
	11	1.20	.42	.688
	27	1.03	.34	.610
	61	1.07	.45	.620
Social Restriction	43	1.69	1.00	.795
	9	1.83	1.03	.668
	42	2.29	1.28	.658
	47	1.36	.78	.724
	38	1.71	.89	.674
	57	1.33	.71	.585
Cognitive Suppression	35	1.49	.87	.685
	19	1.76	1.05	.724
	10	1.99	1.04	.709
	26	2.16	1.10	.745
	21	1.73	1.04	.617
	32	1.40	.78	.604
Emotional Neglect	68	1.37	.78	.696
	36	1.42	.76	.669
	14	1.44	.88	.531
	60	1.36	.74	.634
	63	1.41	.77	.536
	69	1.38	.76	.516
Sexual Abuse	6	1.15	.50	.594
	22	1.19	.66	.476
	39	1.14	.54	.563
	56	1.13	.51	.532

According to the results of item analysis given in Table 5, item-total test correlations of the items under the factor of physical harm vary between .61 and .75, item-total test correlations of the items under the factor of social restriction vary between .59 and .80, item-total test correlations of the items under the factor of cognitive suppression vary between .62 and .67, item-total test correlations of the items under the factor of emotional neglect vary between .52 and .70, and item-total test correlations of the items under the factor of sexual abuse vary between .48 and .59. Item-total test correlations that are equal to and higher than .30 are accepted to be evidence of the validity of the scale items (Field, 2005). The item-total test correlations of the current study show that this value is higher than .30 for each item. In this context, the results show that the items in this scale can really measure the intended feature.

Confirmatory Factor Analysis

The researchers conducted a first-level and second-level confirmatory factor analysis with a different sample group (Table 2) in order to gather evidence for the construct validity of the five-factor Romantic Relationships Assessment Scale – Revised Form (RRAS-R) obtained at the end of the explanatory factor analysis. These analyses were conducted with LISREL 8.80 (Jöreskog & Sörbom, 1993). Before starting the confirmatory factor analysis, all the variables were checked for missing data, deviating data, outliers, and normality assumptions. At the end of this check, 7 out of 310 responses were removed from the data set, and CFA was conducted with responses from 303 participants.

First-Level Confirmatory Factor Analysis. Figure 2 gives the path diagram obtained at the end of the first-level CFA regarding the five-factor construct, and Table 6 presents the goodness of fit indices.

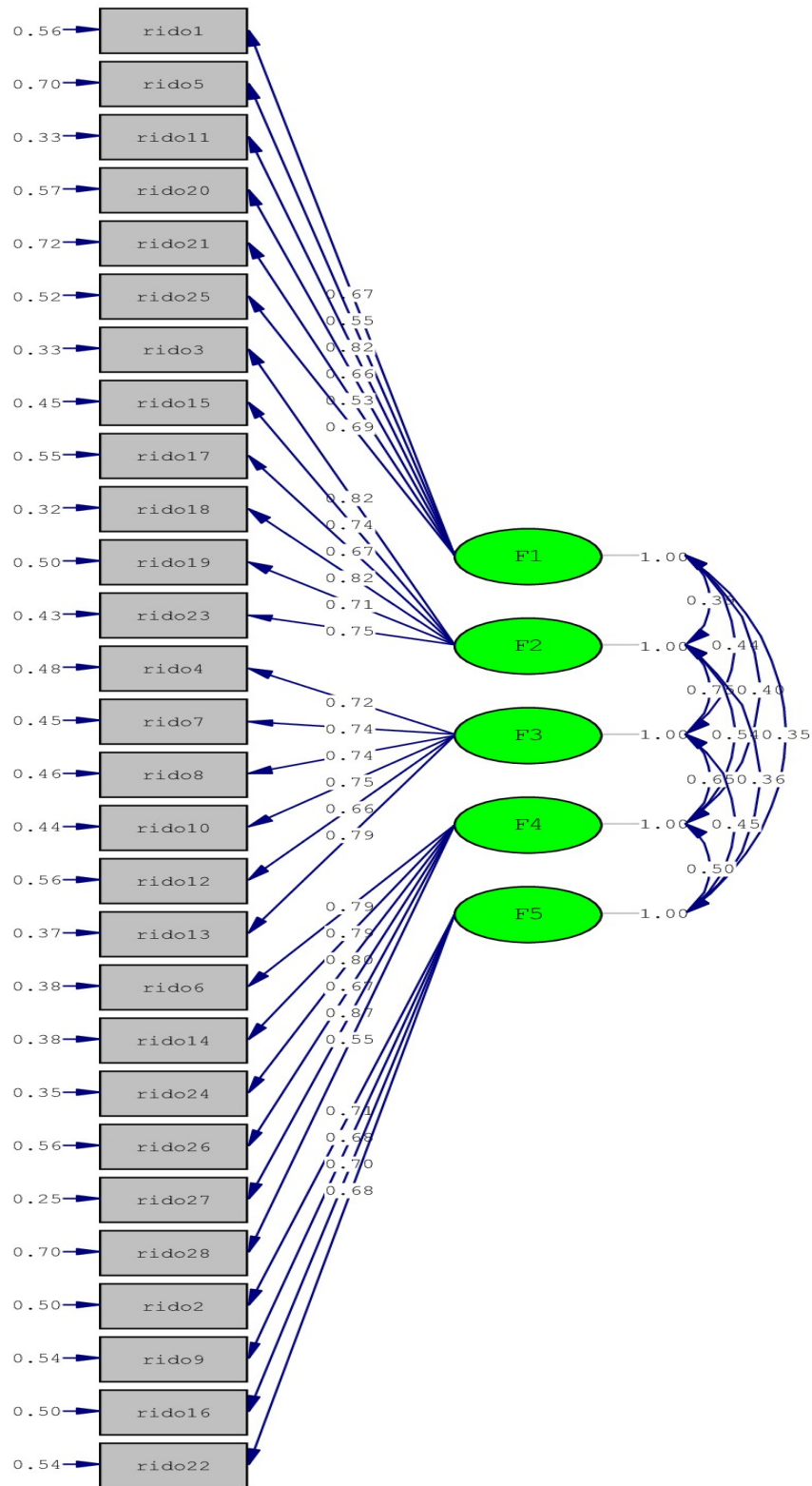


Figure 2. Path Diagram for First Level Confirmatory Factor Analysis Results

Table 6. Fit Indices for First Level Confirmatory Factor Analysis of the Romantic Relationship Assessment Scale - Revised Form

The goodness of fit indices.	χ^2 /df	RMSEA	SRMR	NFI	NNFI/TLI	CFI	GFI	AGFI
Value	2.484	.070, CI[.064-.076]	.063	.93	.95	.96	.87	.85

When the goodness of fit indices regarding the model with 28 items obtained at the end of the first-level confirmatory factor analysis given in table 6 are examined, it is clear that RMSEA, SRMR, CFI, NFI, GFI, AGFI values are within the acceptable intervals, while χ^2/df and TLI/NNFI have values of perfect fit (Kline, 2011, Marcoulides & Schumacher, 2001; Schermelleh-Engel, Moosbrugger & Müller, 2003).

Second-Level Confirmatory Factor Analysis. Figure 3 gives the path diagram obtained at the end of the second-level CFA conducted in order to test if it is possible to get a total score from the scale or not, and Table 7 presents the goodness of fit indices.

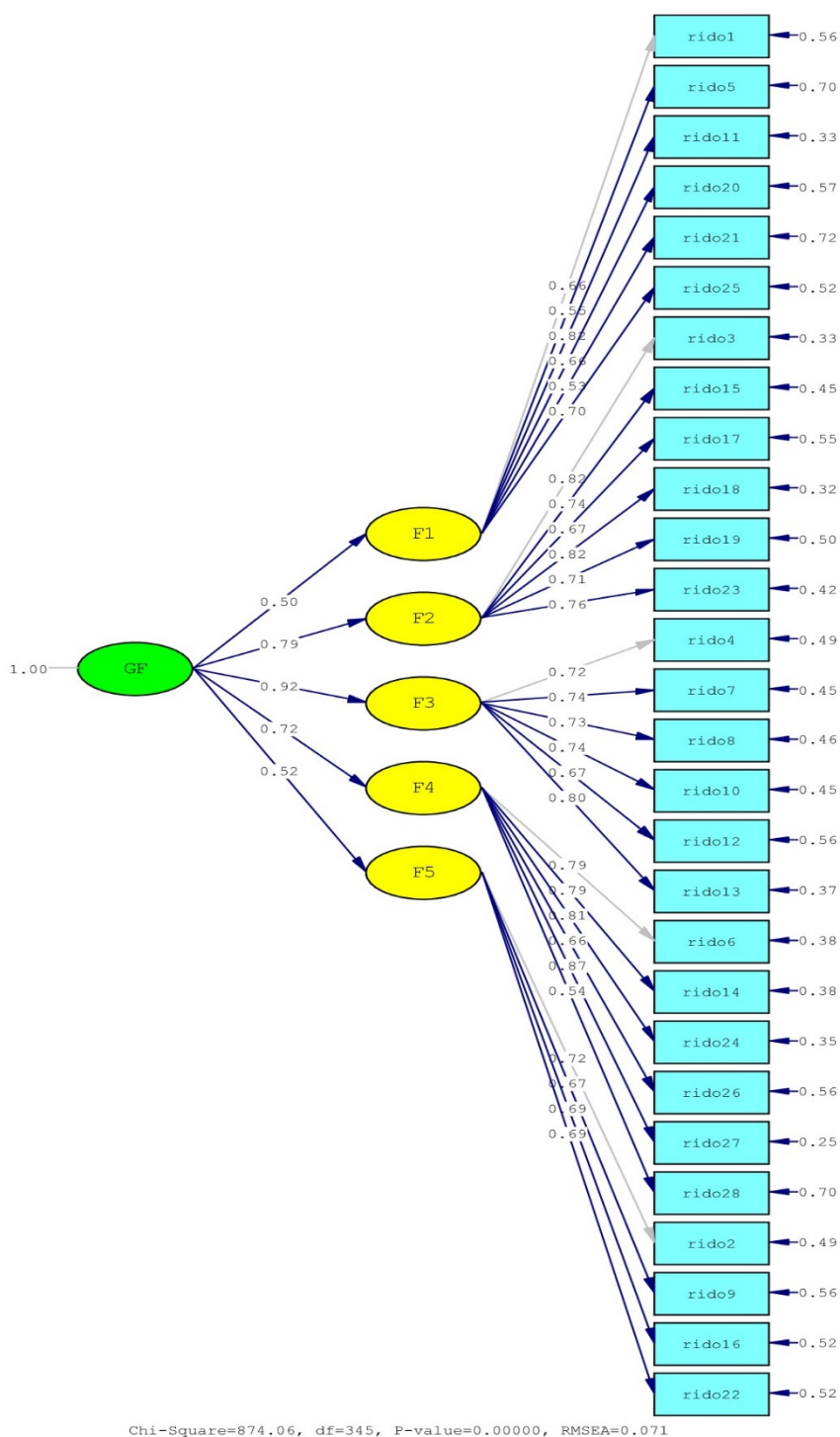


Figure 3. Path Diagram for Second-Level Confirmatory Factor Analysis Results

Table 7. Fit Indices for Second Level Confirmatory Factor Analysis of the Romantic Relationship Assessment Scale - Revised Form

The goodness of fit indices.	χ^2 / df	RMSEA	SRMR	NFI	NNFI/TLI	CFI	GFI	AGFI
Value	2.534	.071, CI[.065-.077]	.067	.93	.95	.96	.87	.85

When the goodness of fit indices regarding the model with 28 items obtained at the end of the second-level confirmatory factor analysis given in table 7 are examined, it is clear that RMSEA, SRMR, CFI, NFI, GFI, AGFI values are within the acceptable intervals, while χ^2/df and TLI/NNFI have values of perfect fit (Kline, 2011, Marcoulides & Schumacher, 2001; Schermelleh-Engel, et al., 2003).

When these results are considered, it is possible to say that Romantic Relationship Assessment Scale-Revised Form, which has 28 items in total, is a valid measurement tool according to the first and second-level confirmatory factor analyses.

Criterion Validity

The researchers asked the participants to respond to the items in the Romantic Relationship Assessment Scale-Revised Form (RRAS-RF) as well as the Relationship Satisfaction Scale (Curun, 2001) as it is thought to measure an opposite construct during the second application done for CFA in order to test the criterion validity. In this phase of criterion validity conducted with the Romantic Relationship Assessment Scale-Revised Form and Relationship Satisfaction Scale, the relations between the two scales were examined. Table 8 presents the correlation coefficients among scores obtained from RRAS-RF, sub-factors of RRAS-RF, and RSS.

Table 8. Criterion Validity Analysis of the Romantic Relationship Assessment Scale-Revised Form

	RSS	RRAS-RF	Physical Harm	Social Restriction	Cognitive Suppression	Emotional Neglect	Sexual Abuse
RSS	-	-.61**	-.22**	-.46**	-.46**	-.63**	-.38**
RRAS-RF		-	.51**	.81**	.88**	.83**	.56**
Physical Harm			-	.33**	.38**	.35**	.30**
Social Restriction				-	.67**	.50**	.30**
Cognitive Suppression					-	.61**	.38**
Emotional Neglect						-	.44**
Sexual Abuse							-

** $p < 0.01$

As is clear in Table 8, RSS is negatively related to RRAS-RF at a statistically significant level ($r = -.61$, $p < .01$), while RSS is negatively related to RRAS-RF's sub-factor of physical harm ($r = -.22$, $p < .01$), social restriction ($r = -.46$, $p < .01$), cognitive suppression ($r = -.46$, $p < .01$), emotional neglect ($r = -.63$, $p < .01$) and sexual abuse ($r = -.38$, $p < .01$) at a statistically significant level. Starting from this point, it is possible to state that RRAS-RF is valid in the context of similar criteria.

After completing the analyses conducted to gather evidence for the validity of the Romantic Relationship Assessment Scale-Revised Form, the researchers conducted some analyses for reliability, which is another feature that a scale needs to have.

Reliability of Romantic Relationship Assessment Scale – Revised Form

The reliability of the Romantic Relationship Assessment Scale-Revised Form was analyzed with two different study groups. In this context, in the first phase, Cronbach Alpha Coefficient for the whole revised form consisting of 28 items and five factors obtained at the end of the explanatory factor analysis was found to be .91, while this value was found to be .85 for the sub-factor of physical harm, it was .87 for the sub-factor of social restriction, it was .87 for the sub-factor of cognitive suppression .87, it was .83 for emotional neglect and it was .74 for sexual abuse.

In the second phase, Cronbach Alpha Coefficient for the whole revised form consisting of 28 items and five factors confirmed at the end of the confirmatory factor analysis was found to be .92, while this value was found to be .80 for the sub-factor of physical harm, it was .87 for the sub-factor of social restriction, it was .87 for the sub-factor of cognitive suppression, it was .88 for emotional neglect and it was .78 for sexual abuse.

Nunnally and Bernstein (1994) state that a reliability coefficient equal to or higher than .70 is enough to consider the scale reliable. The results show that this scale is a reliable tool.

RESULTS, DISCUSSION, AND SUGGESTIONS

The current study aims at revising the Romantic Relationship Assessment Scale (RRAS) and creating a revised form of it. First of all, the researchers conducted an explanatory factor analysis with the Romantic Relationship Assessment Scale consisting of one factor and 70 items in order to identify the construct validity. They came up with a construct with 28 items and 5 factors at the end of the explanatory factor analysis. The analysis showed that this construct with five factors accounted for 61.02% of the total variance. Afterward, the researchers conducted first and second-level confirmatory factor analyses with a different sample group in order to obtain evidence for the validity of five-factor construct obtained at the end of EFA. When the results of first and second-level confirmatory factor analysis were examined together, it was clear that RRAS-RF had the necessary goodness of fit indices (Jöreskog and Sörbom, 1993; Kline, 2011).

For the purpose of testing the criterion validity of the scale, the researchers asked the participants to respond to items in RRAS-RF as well as Relationship Satisfaction Scale (Curun, 2001) as it was thought to have an opposite construct, and calculated the correlations between the scores obtained from these two scales. The results showed that there was a negative relationship between participants' score of RRAS-RF and relationship satisfaction at a statistically significant level. The higher the score of sexual abuse was, the lower the score of relationship satisfaction was. This finding can be said to support the validity of the scale.

The researchers calculated the Cronbach Alpha internal consistency coefficient to test the reliability of the scale. Cronbach Alpha Coefficient was calculated to be .92 for the whole scale, .74 for the sub-factor of physical harm, .86 for the sub-factor of social restriction, .86 for the sub-factor of cognitive suppression, .87 for the sub-factor of emotional neglect and .73 for the sub-factor of sexual abuse. These values obtained at the end of the analysis for reliability are considered sufficient for the reliability of a scale (Kline, 2011).

Depending on the aforementioned findings of the current study, it is possible to state that Romantic Relationship Assessment Scale – Revised Form (RRAS-RF) consists of 28 items and five factors (physical harm, social restriction, cognitive suppression, emotional neglect, sexual abuse) obtained after revising Romantic Relationship Assessment Scale is a valid and reliable tool to measure the level and type of the abuse which adults suffer from in their romantic relationships. There are no reverse items in RRAS-RF. The participants can respond to the items in the scale as “never (1)”, “rarely (2)”, “sometimes (3)”, “often (4)” and “very often (5)”. The lowest score that can be obtained from the scale is 28, whereas the highest score can be 140. A higher score refers to a high level of abuse in a romantic relationship.

Literature review shows that abuse in romantic relationships affects individuals’ physical and psychological health badly (Banyard & Cross, 2008; Breiding et al., 2014; Silverman et al., 2001). Various studies, some of which are applied, emphasize that it is of vital importance to address this concept in Turkey, where abuse in romantic relationships has turned out to be a matter of public health (Aba, 2008; Kayı, Yavuz & Arıcan, 2000; Kılınçer & Tuzgöl Dost, 2014; Tagay, Ünüvar & Çalışandemir, 2018). Therefore, RRAS-RF, which was revised in the current study and has good psychometric features, can be used in further studies that will address abuse in romantic relationships. Moreover, as RRAS-RF is composed of 28 items, it can be easier to use with other measurement tools in further theoretical and applied studies.

RRAS-RF is a scale that can measure how much adults suffer from which type of abuse in their romantic relationships, and it would be helpful to test its validity and reliability with different sample groups that can face abuse in their romantic relationships such as adolescents or LGBT individuals. In this way, it can be possible to conduct various studies with different variables (e.g. depression, substance abuse, eating disorders, sleep disorders, some personality disorders, chronic pain syndromes, psychosomatic disorders, life satisfaction, happiness, hope, psychological well-being, etc.) and with different sample groups (e.g. adolescents, emerging adults, adults, immigrant women, LGBTQ communities, pregnant women, low-income people, etc.) in order to identify the variables that predict abuse in romantic relationships. In addition, RRAS-RF can contribute to identifying the level and type of abuse people suffer in their romantic relationships, which can be helpful to prepare psycho-educational programs to prevent abuse in romantic relationships and to identify the individuals to participate in such programs.

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Author Contribution

This study was conducted by all the authors working together and cooperatively. All of the authors substantially contributed to this work in each step of the study.

Conflict of Interest

It has been reported by the authors that there is no conflict of interest.

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RESEARCH



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ARAŞTIRMA

Açık Erişim

Enhancing Well-being of the Married: Investigating Marital Satisfaction, Self-Compassion and Happiness Increasing Strategies

Evlü Bireylerin İyi Oluşunu Artırmak: Evlilik Doyumu, Öz-anlayış ve Mutluluğu Artırma Stratejilerinin İncelenmesi

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ABSTRACT

In this research, married individuals' well-being was investigated in regard to marital satisfaction, self-compassion, and happiness increasing strategies. The study group consists of 330 married individuals (213 females and 117 males). Personal Information Form, Flourishing Scale, Satisfaction with Married Life Scale, Self-Compassion Scale, and Happiness Increasing Strategies Scale were used. We conducted Independent T test and linear multiple regression analysis. Results show that there are significant correlations between married individuals' psychological well-being, marital satisfaction, self-compassion, and happiness increasing strategies. By covering 34% of the total variance; marital satisfaction and self-compassion are significant predictors of married individuals' psychological well-being. Likewise, by covering 12% of the total variance; happiness increasing strategies (dimensions of desire satisfaction, mental control, and participation in religious activity) are significant predictors of married individuals' psychological well-being. We elaborated on results based on literature and provided some suggestions for mental health professionals and researchers, also for married individuals.

Article Information

Keywords

Psychological well-being, marital satisfaction, self-compassion, happiness increasing strategies, married individuals.

Anahtar Kelimeler

Psikolojik iyi oluş, evlilik doyumu, öz-anlayış, mutluluğu artırma stratejileri, evli bireyler.

Article History

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ÖZET

Bu araştırmada, evli bireylerin iyi oluşu evlilik doyumu, öz-anlayış ve mutluluğu artırma stratejileri açısından incelenmiştir. Araştırmanın çalışma grubu 330 (213 kadın, 117 erkek) evli bireyden oluşmaktadır. Çalışmada demografik bilgi formu, Psikolojik İyi Oluş Ölçeği, Evlilik Yaşam Doyumu Ölçeği ve Mutluluğu Artırma Stratejileri Ölçeği kullanılmıştır. Toplanan veriler ile bağımsız gruplar t testi ve lineer çoklu regresyon analizi uygulanmıştır. Bulgulara göre, evlilik doyumu ve öz-anlayış evli bireylerin psikolojik iyi oluşunu pozitif yönde yordamaktadır, toplam varyansın %34'ünü kapsamaktadır. Yine toplam varyansın %12'sini kapsayarak, mutluluğu artırma stratejileri (istekleri doyumak, mental kontrol yapmak, dini inancı gereğini yapmak alt boyutları) evli bireylerin psikolojik iyi oluşlarını pozitif yönde yordamaktadır. Çalışmanın bu bulguları tartışma bölümünde alanyazına dayandırılarak tartışılmıştır. Ayrıca ruh sağlığı çalışanları, araştırmacılar ve evli bireyler için öneriler sunulmuştur.

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INTRODUCTION

Family is a core element to society, from individuals to the general population. Psychologically well and happy people are essential to build and maintain welfare societies. Married individuals who experience happiness and wellness also effects their spouses and children. Married adults build their own family structures and start to shape future with their children. This means shaping the next generation. Research show, children of parents with low well-being are more likely to experience psychological and physical disorders, also they are more likely to get involved in crimes (Maybery et al., 2005; Ereş, 2009; Kalyencioğlu & Kutlu, 2010). In that regard, married couples are not only considered as individuals by themselves, but they are also elemental for the communities. Well-being studies and interventions are not only vital for individual's well-being, but they are also fundamental for building a well society.

Studies focus on different points while approaching well-being of married individuals (Carr et al., 2014; Diener et al., 2000). And psychological well-being is one of them (Coombs, 1991). Psychological well-being (PWB) was created for a term to express one's general well-being on psychological aspects (Bradburn, 1969). During the early stages of PWB studies, "psychologically well person" meant "not being psychologically disturbed" and overall experiencing positive emotions over negative (Bradburn, 1969). With new studies and approaches on PWB, the term itself changed from being generally okay to something much more profound. PWB is, not experiencing psychological disturbance, overall feeling of happiness and a state of well-being above and beyond (Maloney, 1990). Ryff (1989) explains PWB with eudaimonia, a feeling of happiness experienced when an individual works on achieving their full potential, thereby their life goals. Ryff (1989) studies PWB on multidimensional basis; self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. When individual makes improvements on these multidimensions, their experienced eudaimonic happiness (PWB) is expected to increase. Deci and Ryan (2008) also modelled their own theories of PWB named Self-Determination theory. Their theory of PWB focuses on some universal needs related with personal and social context: autonomy, competence, and relatedness (Deci & Ryan, 2002). To experience high PWB, individual would focus on their behaviours and social conditions. Improving their competence on subjects for being highly functional in society, reflecting their self for experiencing autonomy and working on their relations with others for feeling relatedness, would make them feel eudaimonic happiness; meaning feeling psychologically well (Deci & Ryan, 2000; 2002; Ryan, 2009).

Experiencing satisfaction and happiness in marriage is a valid factor for married individuals' well-being (Kim & McKenry, 2002). Marital satisfaction's been a weighty subject for healthy and happy households. Studies made between 30's and 70's investigated happy families without (or less) negative emotions and relations. They used terms such as marital satisfaction, marital adjustment, marital happiness (Locke & Wallace, 1959, Spanier & Cole, 1976; Terman & Bittenweiser, 1935). Many scientists agree on the significancy of having a fulfilling, happy relationship between couples and they discourse on marital satisfaction based on numerous psychological approaches. Here are some explanations for how to experience marital satisfaction: Burgess and Cottrell (1936) take harmony between couple's personality and early household structures on hand. Locke and Williamson (1958) focus on similar interest and hobbies, also fulfilment of spousal duties. Orden and Bradburn (1968) explains through positive and negative effects in marriage; similarly, Gottman and Krokoff (1989) discourse on positive and negative codes in marital relationship. Snyder (1979) has a 11 sub-dimension model for marital satisfaction. Bodenmann (1997; 2005) centre upon stress and dyadic stress in marriage, affecting well-being and marital satisfaction of couples. The investment model evaluates marital satisfaction, via personal

expectations and outcome of relationship. Based on the model, marital satisfaction experienced when the outcome and expectations are close (Rusbult, 1980). In addition, some new studies discourse on marital satisfaction based on personal evaluation criteria (Johnson et al., 2006; Ward et al., 2009). They believe, a personal decision about how satisfy one is with their marriage, is a more accurate way to talk about marital satisfaction. The reason for that approach is that a formulation of socioeconomics, health, achievements, or any other criteria can vary significantly among individuals. An assessment of based on a criterion may not represent the real situation. This is similar with assessment of life satisfaction (Diener et al., 1985). Nevertheless, marital satisfaction continues to be hot topic for married individuals' well-being, as studies suggest that increasing quality and satisfaction of marriage also increases well-being (Carr et al., 2014; Kim & McKenry, 2002).

Along with marital satisfaction, self-compassion can also be an indicator of individual's well-being. With recent studies and discussions on self-image, self-compassion has become highlighted in psychology literature. Self-compassion means that person can accept who they are and their mistakes, also they have a compassionate approach to these mistakes (Neff, 2003a; 2003b). When people don't accept their failures and show no compassion towards themselves, they can use defence mechanisms extremely, like denial or projection (Neff, 2003a). This can put individuals' well-being at risk, by pressuring ego. On the other hand, increasing self-compassion can improve one's well-being by lifting the pressure (Gilbert, 2009; Neff, 2003a).

When one shows self-compassion to themselves, they can accept the truth about their actions and responsibilities, but this wouldn't put them down. Because they know that every human can make mistakes, and these mistakes are emendable. This mentality would help people to stop judging themselves brutally and act towards a possible solution for their problem (Neff, 2003a). Self-compassion is a hot topic for the recent psychology, including well-being studies. But amount of self-compassion research conducted with married individuals and their well-beings are limited. Thus, researchers make suggestions for new studies (Rostami et al., 2014; Fahimdanesh et al., 2020).

Another recent subject in psychology literature is happiness increasing strategies. Studies show that when these strategies are used, we see significant increasing in people's subjective well-being. Moreover, subjective well-being and PWB (hedonic and eudaimonic happiness) studied as strongly linked to each other (Seligman et al., 2004). With using happiness increasing strategies, individuals' PWB can also increase. Together, they can compose over-all well-being.

Fordyce is the first to study happiness increasing strategies back in 1977. He created fourteen practices to increase subjective well-being (SWB). These strategies included activities such as strengthening one's close relationships, being a better friend, working on a healthy personality, developing positive/optimistic thinking, reducing negative feelings and some other more. Study results show, these happiness increasing strategies did work for better SWB (Fordyce, 1977; 1983; Paul Smith et al., 1995). Second researchers to work on creating happiness increasing strategies are Tkach and Lyumbomirsky. They asked study group to write down "List of things that make you happier or preserve your state of happiness". When results examined, authors created 8 happiness increasing strategies. Their 8 strategies of increasing SWB includes activities such as mental control, religion, goal pursuit, partying and some more. Research on these strategies show that they can increase happiness (SWB) and decrease unhappiness (Tkach & Lyumbomirsky, 2006). These strategies predicted individuals' SWB, either increasing happiness or decreasing unhappiness. For instant, social affiliation was one of the strongest predictor of SWB. When

people are together with others and they participate in social activities, they feel happy (increased SWB) (Tkack & Lyumbomirsky, 2006). Additionally, their stress levels decrease, and they feel less undisturbed (Fordyce, 1977, Taylor, 2011). On the other hand, mental control is associated with unhappiness. When people perform mental control, they feel less unhappy. Therefore, their SWB increase (Tkach & Lyumbomirsky, 2006).

Final and newest study on developing happiness increasing strategies made by Eryılmaz. Eryılmaz worked on the topic both with adults and adolescents. He created 6 strategies for adults and 5 for adolescents (Eryılmaz 2010a; 2017). 4 strategies are valid for both groups: Reacting positively to the environment, desire satisfaction, mental control, and participating in religious activities (Eryılmaz, 2010a; 2017). Only additional strategy for adolescents is taking positive feedback from others (Eryılmaz, 2010a). But when we look at adults, we also see “taking a rest” and “exhibiting happiness-oriented behaviours” strategies (Eryılmaz, 2017). Eryılmaz’s happiness increased strategies are investigated with many subjects. strategies found efficient for academic motivation (Eryılmaz, 2010b), positive expectations for future (Eryılmaz, 2011), motivation to class engagement (Eryılmaz & Aypay, 2011), resilience (Çetinkaya & Bulut, 2019) and more. However, happiness increasing strategies is not much of a highlighted subject on literature, especially for married adults. On international literature, Al Nima and Garcia (2015) found that Tkack and Lyumbormirsky’s happiness increasing strategies can predict 41% of positive emotions on positive direction and predicts 27% of negative emotions negatively. In addition, Altınsoy and Aypay (2021) created a post traumatic growth model with adults. In their study, happiness increasing strategies were positively correlated with post traumatic growth and psychological hardiness. Happiness increasing strategies mediated the relationship between psychological hardiness and post traumatic growth. Yet studies on happiness increasing strategies are limited (Chen et al., 2013; Eryılmaz, 2017).

Current Study

Studies conducted on happiness increasing strategies with married individuals are scarcely. Von Humboldt et al., (2015) found happiness increasing strategies affective for elders’ SWB, however only half of their study group was married. Considering strong relations between SWB and PWB (hedonic and eudaimonic happiness), (SWB/hedonic) happiness increasing strategies can be used in practice and self-help for married adults to enhance their PWB (eudaimonic happiness). Subjective well-being increases may help married adults for a better well-being. Happily married people (higher SWB) are less likely to report health problems than unhappy married people (Lawrence et al., 2019). Additionally, married adults with high SWB’s also experience high marriage satisfaction (Scorsolini-Comin & Dos Santos, 2012). And Turkish married people were found happier only if they are satisfied with their marriage (Eren & Aşıcı, 2017).

Married individuals are a big portion of population and structure of societies. Moreover, they also affect their children’s (Maybery et al., 2005; Eres, 2009; Kalyencioğlu & Kutlu, 2010; Turney, 2012), and their spouses’ well-being (Petrican, et al., 2014). Hence, a study of happiness increasing strategies of married adults can help for enhancing individual, family, and public health. Along with happiness increasing strategies, self-compassion is also a possible pathway to enhance well-being of individuals. Additionally, marital satisfaction is a big aspect of married individuals’ happiness, therefore it should not be overlooked. Therefore, in this study, we aim to focus on these subjects, investigate the relationships and find a new way to help married individuals with suggestions to clinicians and for people who wants to act on self-help for a happier life.

METHOD

Research Design

The aim of this study is to investigate relationships between married individual's psychological well-being and marital satisfaction, self-compassion and happiness increasing strategies. This study's research questions are:

- (1) Does married individuals' psychological well-being differ based on gender?
- (2) Is there a significant relationship between married individuals' psychological well-being, marital satisfaction, and self-compassion?
- (3) Is there a significant relationship between married individuals' psychological well-being and happiness increasing strategies?

This study's inclusion criteria are (1) being married, (2) being ages between 22-50, (3) being married for at least 1 year. Exclusion criteria are (1) not being married, (2) being younger than 22, (3) being older than 50, (4) being married for less than 1 year. We limited the age of the participant group between 22-50 years old. The reason behind this limitation is because of possible mental, emotional, and behavioural changes between adolescents, adults, and elders. This can affect usage of happiness increasing strategies. We decided to limit our study group from participants between 18-21, because end of puberty and age of becoming an adult is a debated subject on literature. Generally, in eastern cultures ending of puberty and becoming an adult, marked with a social event like marriage. Individual who has completed their education, started earning income and lives apart from their parents considered as an adult (Arnett and Taber, 1994). In the face of this circumstances, we limited the minimum age limit of study group to 22, which is normally an age to graduate from university. Additionally, we limited maximum age limit of this study to 50. Recent study suggested that elders' subjective well-being can differ highly depending on the changing effects of life (like losing a spouse, living in a faster care institution etc.) (Eryilmaz & Atak, 2011). As their SWB decreasing, their usage of happiness increasing strategies might be low or close to none existing. Numerous health problems and losing people they love can also make elders to think more about death and afterlife rather than trying to have momentary (hedonic) happiness. We studied these situations according to Turkish culture and decided the age limits stated above. We also decided on a criterion that participants must be married at least for 1 year. A newly wed person's marital satisfaction can be deceiving since the honeymoon period can be a bed of roses (Tao, 2019). Thereby, we excluded participants who were married for less than 1 year.

Participants

213 females and 117 males, in total 330 married individuals participated in this study. The mean of participants' age is 34.4 (SD= 6.3). The frequencies of marriage years of participants are as it follows: 34 per cent for 1 to 5 years, 29.3 per cent for 6 to 10 years, 20 per cent for 11-15 years, 9.9 per cent for 16-20 years, 5.1 per cent for 21-25 years and 1.5 per cent for 26-30 years. 1.8 per cent of the participants were elementary/middle school graduates, 15.2 per cent were high-school graduates, 62.1 per cent were higher institution/bachelor's degree graduates and finally 20.9 per cent were higher education (Masters or PhD) graduates. When we look at the number of children of participants, here are the frequencies: 31.5 per cent has one child, 37 per cent has two children, 15.2 has 3 or more children and 16.4 per cent does not have any child.

Data Collection

Considering the Covid-19 pandemic restrictions, the data was collected online via Google Forms. Informed consent was taken by participants at the start of the questionnaire. For any questions authors provided contact information.

Measures

In this study, we used a personal information form, Flourishing Scale, Satisfaction with Married Life Scale, Self-compassion Scale and Happiness Increasing Strategies Scale for Adults. In Personal Information form participant's age, gender, years of marriage, last school they graduated from, and their own judgment of socio-economic of household. No further information requested.

Flourishing Scale was created by Diener et al. (2009a; 2010) for measuring socio-psychological well-being, and to complement other well-being scales. 7-likert type scale, answered between (1) completely disagree to (7) completely agree. All questions in the scale are positive statements. Minimum score of the scale is 8, and maximum score is 56 points. Turkish adaptation study was made by Telef (2013) with 529 participants. The total explained variance of the Turkish version was 0.42 and items were grouped under one factor. Scale was also found correlated with psychological well-being scales and need satisfaction scale (0.56 and 0.73, $p < 0.1$). For reliability, Cronbach alpha value found 0.80. The scale was found as reliable and valid for measuring psychological well-being of Turkish adults.

The Satisfaction with Married Life Scale was created by Ward et al. (2009) to measure individuals' marital satisfaction. 7-likert type scale answered between (1) completely disagree to (7) completely agree. Minimum score of the scale is 5, and maximum score is 35 points. The Turkish adaptation study was made by Çelik (2014) with 327 married participants. 5 itemed scale was single loaded, like its' original form. Chi-square found significant, and total correlation fell between 0.30 to 0.82. The scale's internal consistency found as 0.85, and it is reliable and valid for measuring marital satisfaction of Turkish married adults.

Self-Compassion Scale was created by Neff (2003b). Turkish adaptation study of the scale was made by Deniz et al., (2008). 24-item scale is single loaded and 5-likert typed. Minimum score of the scale is 24, and maximum score is 120 points. Deniz et al conducted 4 sub-studies to create the adaption of the scale. Ultimately, the scale's Cronbach alpha value was 0.89. Turkish version of the Self-compassion Scale found as reliable and valid for measuring self-compassion of Turkish adults.

Happiness Increasing Strategies Scale was created by Eryılmaz (2017). The scale has 6 sub-dimensions and 28 items at total. Minimum score of the scale is 28, and maximum score that is possible is 140. The scale's explained variance was 61.9 per cent. 6 sub-dimensions of the scale are reacting positively to the environment (internal consistency value of 0.84), desire satisfaction (internal consistency value of 0.69), mental control (internal consistency value of 0.83), participating in religious activities (internal consistency value of 0.83), taking a rest (internal consistency value of 0.83), and exhibiting happiness-oriented behaviours (internal consistency value of 0.81). Total internal consistency value of the scale was 0.89. The scale was found correlated with Oxford Happiness Scale at the value of 0.44. These findings show that Happiness Increasing Strategies Scale is valid and reliable for measuring the usage of happiness increasing strategies of Turkish adults.

Data Analysis

We conducted several statistical analyses. Firstly, data was checked normality and homogeneity values of variances. Afterwards, we conducted independent t test, Pearson correlation analysis, and multiple linear regression analyses to investigate relationships between variances.

RESULTS

We analysed descriptive values of married individuals' PWB, marital satisfaction, self-compassion, and happiness increasing strategies (table 1). Results show that over-all PWB (M= 44.11, SD= 7.05), and marital satisfaction (M= 23.74, SD= 5.05) scores were high. Self-compassion scores (M= 78.79, SD= 15.30) and the usage of happiness increasing strategies were moderate. Minimum and maximum value of kurtosis and skewness fell between -0.84 to 0.64, meaning data met normality criteria (George & Mallery, 2009). For homogeneity, Levene statistic was calculated. Among all data homogeneity criteria met, except reacting positively to the environment ($p < 0.05$) and taking a rest ($p < 0.05$) strategy (George & Mallery, 2009). Therefore, these two sub-dimensions of happiness increasing strategies were excluded from following statistical analysis.

A Pearson correlation analysis was conducted to investigate if variables were correlated. Marital satisfaction, self-compassion and happiness increasing strategies were all positively correlated ($p < 0.01$) with married individuals' PWB (table 1). Marital satisfaction was the strongest variable correlated with PWB. We conducted an independent variables t test to see if married individuals' psychological well-being differs depending on gender. Results show that PWB did not differ between married women and men ($t(328) = 0.04, p > 0.01$) (table 2).

Table 1. Descriptive Statistics and Correlations for All Study Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Psychological Well-being	330	44.11	7.05	—						
2. Marital satisfaction	330	23.74	5.05	.522**	—					
3. Self-compassion	330	78.79	15.30	.386**	.265**	—				
4. Desire satisfaction	330	10.16	3.33	.282**	.241**	.221**	—			
5. Mental control	330	16.49	3.46	.248**	.191**	.301**	.374**	—		
6. Exhibiting happiness-oriented behaviours	330	14.23	4.14	.170**	.076	.184**	.489**	.390**	—	
7. Participating in religious activity	330	10.81	3.78	.230**	.111*	.208**	.247**	.331**	.116**	—

* $p < .05$, ** $p < .01$

Table 2. Results of PWB Examining Gender

	Married Women		Married Men		<i>t</i> (328)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Psychological Well-being	44.09	6.80	44.13	7.52	.04	.97	.006

Two multiple linear regression analyses were conducted to investigate if there are further relations between variables. First regression test show that marital satisfaction and self-compassion can predict married individuals' PWB (table 3). Two variables covered 34 per cent of PWB's total variance ($R= 0.582$, $R^2= 0.338$, $F= 83.654$, $p< 0.001$). According to analysis, marital satisfaction is a stronger predictor of PWB. Secondly, happiness increasing strategies (desire satisfaction, mental control, participating in religious activities, exhibiting happiness-oriented behaviours) and PWB were entered for multiple linear regression analysis (table 4). Results show, happiness increasing strategies are significant predictors of PWB ($R= 0.346$, $R^2= 0.120$, $F= 11.062$, $p< 0.001$). Happiness increasing strategies covered 12 per cent of PWB's total variance. Among happiness increasing strategies, desire satisfaction ($p< 0.001$), mental control ($p< 0.05$) and participating in religious activity ($p< 0.05$) were significant. These results are discussed in discussion.

Table 3. Regression Analysis of Marital Satisfaction and Self-compassion as predictors of PWB

	<i>B</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>
Constant	19.48				
Marital Satisfaction	.631	.07	.45	9.69	.000***
Self-Compassion	.123	.02	.27	5.70	.000***

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4. Regression Analysis of Happiness Increasing Strategies as predictors of PWB

	<i>B</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>
Constant	37.74				
Desire satisfaction	.427	.13	.20	3.25	.001**
Exhibiting happiness-oriented behaviours	-.002	.11	-.02	-.02	.984
Mental control	.259	.12	.13	2.12	.035*
Participating in religious activity	.258	.10	.14	2.48	.014*

* $p < .05$, ** $p < .01$, *** $p < .001$

DISCUSSION

This study aims to investigate married individuals' PWB and its relations with marital satisfaction, self-compassion and happiness increasing strategies. Results show that marital satisfaction, self-compassion, and happiness increasing strategies are related with PWB, and they can also predict PWB for groups of married individuals. We also investigated to see if married people's PWB differ depending on gender, but our data show that there is no significant differentiation of PWB between married men and women. Results of this study are discussed below.

Gender

We began to discuss results with gender. Our data showed no significant difference between married men and women, considering groups' PWB levels. However, when psychology literature studied, we see that reported PWB variation of married men and women alter. Several studies reports that PWB differ based on gender, women have lower PWB levels than men (Coombs, 1991; Marks & Lambert, 1996; Williams & Dunne-Bryant; Perini & Sironi, 2016). Some study results show that sub-dimensions of Ryff's PWB theory differ based on gender (Chraif & Dumitru, 2015; Matud et al., 2019; Perez, 2012). Lindfors

et al. (2006) found gender-based differences in sub-dimensions of PWB but found no differentiation when PWB examined as single loaded. Li et al. (2015) found no differences between PWB of men and women, similar to the results of this study.

As it is seen on the scientific reports we mentioned above, results of PWB of men and women has not found a middle ground in psychology literature. This can be explained by taking PWB on hand as a variance which differs depending on individual experience. Married men and women may experience effects of marital status in their life on various dimensions, but PWB might be a more authentic experience and journey for every individual. Therefore, PWB might not be a variance which differs based on a grouping of gender, but it can be a unique journey for everyone; shaped via unlimited criteria, value, and personal evaluation process. PWB differentiation based on gender requires more studies for a better understanding of the subject.

Marital Satisfaction

Our data showed that marital satisfaction, self-compassion, and PWB are correlated. Also, marital satisfaction along with self-compassion can predict PWB. Similarly, studies made before also found marital satisfaction as significant variance for PWB. Study analyses show positive correlation between marital satisfaction and PWB (Carr et al., 2014; Kim & McKenry, 2002). Authors suggest married individuals to increase their quality of marriage for a better well-being state (Gove et al., 1983). Moreover, marital satisfaction predicted PWB of married people in Turkish sample before (Rıza, 2016; Uçar, 2018).

PWB theories paint a picture of psychologically well person with some qualifications. They have an optimistic attitude towards their future (Diener et al., 2009a; 2010). They feel that they are respected by others (Ryff, 1989). They have goals/purposes in life (Deci & Ryan 2000; Diener et al, 2009a; Ryff, 1989). They have positive relationships with others, and they can balance their needs and wants along with what others' expectations of them (Deci & Ryan, 2000; Ryff, 1989). These qualifications are very well relevant with marital satisfaction for married people. When one marries, they start to share their life with their partner. Spouses spend a considerable amount of time together, hence they become the closest (or one of) person for each other. They would have to make their future decisions considerable of their marriage. Therefore, marriage affects married individuals' daily life rather largely. This being the case, it is quite reasonable for individuals' PWB to be influenced by their experienced marital satisfaction. Moreover, it is sensible for sub dimensions of PWB models (such as positive relations with others, autonomy, environmental mastery, relatedness) and marital satisfaction to be related since these sub-dimensions are in consideration of one's relations with others and marriage being one of the most intimate relations for many people around the world. Thus, helping individuals for them to experience marital satisfaction can also help with their well-being.

Self-Compassion

Studies introduce self-compassion as an enhancing factor for PWB. Self-compassion can protect individuals' PWB (Smith, 2015). One data found that people with low self-compassion experience depression and stress more than others. Notwithstanding, people with high self-compassion have higher levels of PWB, even when they are under a great deal of stress (Vigna et al., 2018).

Self-compassion became a hot topic on recent years. Yet, it was suggested as an enhancing and healing intervention for mental disorders such as depression and anxiety half a century ago (Pauley & McPherson, 2010). When this suggestion was tested, it was found accurate and affective (Raes, 2011). A self-

compassion intervention was studied with people whom vulnerable against depression. Authors witnessed PWB increases on participants, therefore the intervention was efficient (Shapira & Mongrain, 2010). Self-compassion levels were also examined with Turkish middle schoolers. Students with low or moderate self-compassion levels had high values of depression, anxiety, and stress than those with high self-compassion (Sümer, 2008). This study's results also support the same thesis, but for married individuals.

Direct link between self-compassion and PWB can be seen through PWB theories. Ryff (1989), Deci and Ryan (2000), and Diener et al. (2009a) included self-acceptance in their models. PWB, in another word eudaimonic happiness, is considered as the feeling experienced when someone has a meaning in their life, and they pursue their purposes (Ryff, 1989). Maslow (1968) comments that people must make mistakes if it is necessary for their personal growth. Thereby, they can achieve self-actualization. Human beings are not perfect by nature. We all make mistakes at some points. For humans to become a fully functional person as it is discoursed upon psychology, they would have to make mistakes, notice these mistakes, accept their missing parts, and work on development and enhancing (Diener et al., 2009a; Maslow, 1968; Ryff, 1989). Ryff takes this mater on hand as a sub-dimension of PWB. Diener et al. (2009a) also agree that self-acceptance is necessary for PWB. Additionally, Ellis (1973), REBT therapist, considers self-acceptance as precondition for mental health.

Mindfulness is prime for self-acceptance. With performing mindfulness, person does not ignore their wrong doings or missing parts or ruminate constantly on the topic. They are in a balanced place, here and now (Brown & Ryan, 2003; Neff, 2003a; 2003b; 2011). For self-acceptance to occur mindfulness is the first step. Mindfulness, self-kindness, and common humanity are the three faces of self-compassion (Neff, 2003a; 2003b). Common humanity is accepting a place in society rather than isolating yourself from community (Neff, 2003b). And as we discussed above, a great deal of PWB structures includes emphasis on relationships person has with others (Diener et al., 2009a; Ryff, 1989). Ryan and Deci's (2000) self-determination theory is highly focused on social existence and relations with others for experiencing PWB. Thus, self-compassion, and its three sub dimensions self-kindness, mindfulness, and common humanity seemed to be strongly attached with PWB. By performing self-compassion practices married individuals' PWB can benefit exceptionally.

Happiness Increasing Strategies

Our results show that happiness increasing strategies can predict PWB. This result is parallel to the remarks on subjective well-being (SWB) and PWB studies on literature. When happiness studies started, clear definitional distinctions we have today about SWB, PWB, and life satisfaction was not present. As studies continued, limits between SWB, PWB and life satisfaction became clearer. However, these subjects are not completely separated. (Duckworth et al., 2005; Seligman et al., 2004). Studies state that hedonic happiness (SWB) and eudaimonic happiness (PWB) are strongly linked to each other (Diener et al., 2009b; Kim-Prietro et al., 2005; Peterson et al., 2005; Chen et al., 2013). This study examined happiness (SWB/hedonic happiness) increasing strategies and PWB and found similar results. Happiness increasing strategies are correlated with PWB, and they can also predict it.

There are many psychotherapies for helping individuals with their problems. Psychologists, counselors, and psychiatrist try to help people, and enhancing well-being is a general pursuit for all therapies. When we study PWB and PWB enhancing interventions, we see Fava et al.'s (1998) well-being therapy is featured. This therapy is based on Ryff's PWB theory. Well-being therapy practices structured psychoeducational 8 to 12 session intervention program and their main goal is to enhance PWB of clients

(Eryilmaz, 2017; Fava & Ruini, 2003; Fava & Tomba, 2009). When examined, these sessions of well-being therapy have some PWB enhancing focuses (Fava & Tomba, 2009). Therapist work on these subjects based on Ryff's multidimensional PWB theory.

When we investigate the relationships we found on our study, a connection between happiness (SWB) increasing strategies and PWB enhancing comes to light. In total, happiness increasing strategies found affective for PWB enhancing. But also 3 strategies were significant for increasing PWB. These 3 strategies are desire satisfaction, mental control and participating in religious activity. Figure 1 (Fig. 1 Well-being Enhancing Strategies) shows the strategies for enhancing PWB and SWB model (Eryilmaz, 2017; Fava & Tomba, 2009).

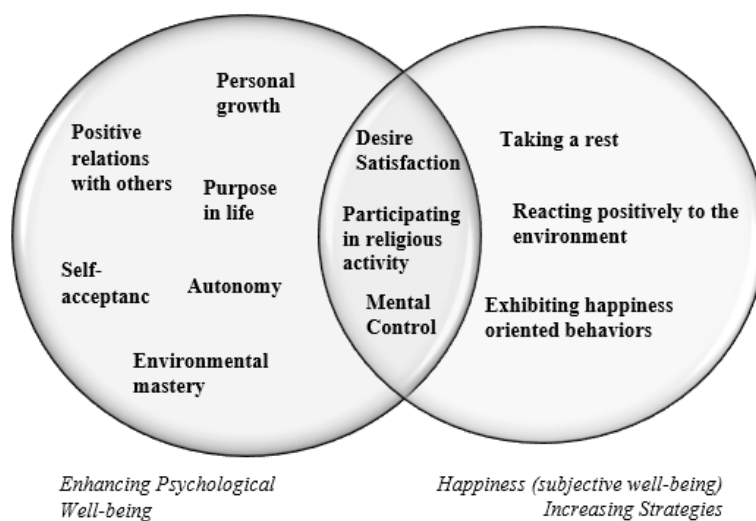


Figure 1. Well-being Enhancing Strategies

As it is explained in desire satisfaction theory, satisfying one's desires can make them experience positive feelings and happiness (Heathwood, 2006). When individuals' material desires are met, a relation of desire-satisfaction accrue. This pathway can also be explained through optimal functioning (Vitterso, 2013). For human beings to fully function, some physical and psychological desires are to be met. Studies show, when basic physical and psychological needs and desires are met people can achieve optimal functioning and their well-being state increase (Chen et al., 2015; Sheldon et al., 2011; Verner-Fillion & Vallerand, 2018). Although, there is a warning on literature that desire satisfaction may not bring happiness in every condition. Authors emphasis considering having realist desires and timing (Bruckner, 2013; Dorsey, 2013). Nevertheless, this subject needs more research.

Second strategy predicting PWB is mental control. Mental control is about trying not to think negatively, not to lose temper, thinking positive and thinking about what that person can do about their problems (Eryilmaz, 2017). Hence, mental control also includes anger management and solution-oriented thinking (Eryilmaz, 2017). Research on positive thinking found affective in groups of adults, elders, cancer patients and more (Scheier et al., 2001). Results show positive thinking can help with anxiety, depression, stress, anger, loneliness, and emotional instability; along with increasing life satisfaction and well-being (Scheier et al., 2001). Similar results are present through studies (Dargahi et al., 2015; Wong, 2012). Psychology literature also support this study's findings on mental control with anger management (Dhasmana et al.,

2018; Yekta et al., 2014), and problem-solving studies (Chang et al., 2009; Nakano, 1991; Uçar, 2018). A good number of psychotherapies work on cognitive with their clients for developing/increasing healthy thoughts. Cognitive therapy, REBT, positive psychology and positive psychotherapy are some examples. In this case of positive psychotherapy, mental control can make positive effects on married individuals' PWB. When they think less negative and more positive, control their temper and work on problem solving, this will reflect on their daily relations, therefore enhance their PWB (Deci & Ryan, 2000; Ryff, 1989; Diener et al., 2009a).

Moving on to the participating in religious activities, this strategy consist of behaviours such as praying according to person's faith, reading books on religion, and having/attending conversations about religion. This study found that these acts can improve married individuals' PWB. When literature is examined for well-being, acts such as praying and fasting, attending to prayers found significant (Rammohan et al, 2002; Karşlı, 2017; Kimter, 2017; Seyhan, 2013). Participating in religious activities are linked with individuals' meaning of life and having purpose in life (Deci & Ryan, 2000; Ryff, 1989; Diener et al., 2009a). Millions of people have faith in many different religions or ideologies, these beliefs help them give meaning to their lives and their experiences. Thus, when someone practices their religion they feel a sense of purpose, also they feel another step closer to their meaning of life. These positive feelings increases both hedonic and eudaemonic happiness.

When we have a look at results of exhibiting happiness-oriented behaviors, we see that this strategy is positively correlated with PWB, however it does not predict it. The reason why this strategy had a different result than other strategies entered to analysis, is because exhibiting happiness-oriented behaviours are momentary. Acts such as listening to cheerful music, singing, or making jokes happens momentarily. They perform their duty to make that person happier in the moment (meaning increasing SWB), yet their effects are temporal and gone when the moment past. PWB, is explained as eudaimonic happiness, which is an overall positive feeling when individual has a sense of purpose for their life, and they work on getting closer to their life goals (self-actualization) (Ryff, 1989). Momentary positive feelings may increase well-being (explained by correlation) but might not be strong enough to predict it.

In one respect, the most important point of this study is its result of happiness increasing strategies and PWB. Not every individual has access to professional mental health care whether because of locational conditions, economic limitations, or personal obstacles. However, happiness increasing strategies can be practiced by anyone, anywhere. These strategies may do good for individuals' PWB and SWB, therefore general well-being. Married individuals' who wish to enhance their happiness but don't know what they can do about the subject, can use these strategies in daily life for a better mental health state.

In conclusion, this study's findings show that to enhancing married individuals' psychological well-being their marital satisfaction, self-compassion and usage of happiness increasing strategies can be studied. Working on individuals' satisfaction with their marriage can help them improve their marriage and also their mental health. Along with that, self-compassion can help people with their mental distress and improve their well-being. Finally, a group of happiness increasing strategies can be helpful when used, for people to feel happy during the day and enhance their general well-being state in the long run. With that being said, we suggest mental health care professionals and family therapist to take consideration of their clients' satisfaction with marriage, and presence of self-compassion. These topics can be improved for clients' benefit. Also, happiness increasing strategies can be introduced to married individuals, so that they can increase their happiness state. These strategies can be used as an intervention in therapy sessions or can be studied by everyone for personal growth. For future studies, we suggest investigating gender

factors for psychological well-being, and more study about happiness increasing strategies are required in different study groups to fully understand the nature of the topic. Additionally, a well-being enhancing intervention program can be created for married individuals, consist of practices of marital satisfaction, self-compassion and happiness increasing strategies.

LIMITATIONS

This study was conducted with married adults between ages of 22 to 50. When interpreting this studies results, age limitation should be taken for consideration. Also, we excluded participant who were married for less than a year. New studies on the topic with newlyweds can be made for future research.

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Authors deposit the data of this research on ICF database. To access the data, follow this link: <https://mfr.de-1.osf.io/render?url=https://osf.io/vt8qz/?direct%26mode=render%26action=download%26mode=render>

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RESEARCH

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ARAŞTIRMA

Açık Erişim

Investigation of the Effect of a Psychoeducation Program on High School Students' Emotion Regulation Skills and Mindfulness Levels

Hazırlanan Psikoeğitim Programının Lise Öğrencilerinin Duygu Düzenleme Becerilerine ve Bilinçli Farkındalık Düzeylerine Etkisinin İncelenmesi

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ABSTRACT

This study aims to investigate the effect of a psychoeducation program on the high school students' emotion regulation skills and their mindfulness levels. This experimental research study adopted a pre-test post-test research design with experimental and control groups. The study group of the research was composed of 30 students (15 in experimental group, 15 in the control group) studying in a high school in Erzincan in the second semester of the 2018-2019 academic year. While a 12-session psychoeducation program designed for the experimental group was applied in the study, any intervention was not conducted for the control group. The data were collected with the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004), Mindful Attention Awareness Scale (Brown & Ryan, 2003), and the Psychoeducation Program Evaluation Form (Deniz, 2017). The data were analyzed with two-way analysis of variance. The findings showed that when examined the effects of the prepared psychoeducation program on the experimental groups, it was found that emotion regulation skills and mindfulness levels increased significantly, and these differences were also observed in the follow-up measurements.

Article Information

Keywords

Emotion regulation, mindfulness, psychoeducation program

Anahtar Kelimeler

Duygu düzenleme, bilinçli farkındalık, psiko-eğitim programı

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ÖZET

Bu araştırmanın amacı, hazırlanan psiko-eğitim programının lise öğrencilerinin duygu düzenleme becerilerine ve bilinçli farkındalık düzeylerine etkisini incelemektir. Araştırma, deney ve kontrol gruplu ön - test, son - test ve izleme testi modeline dayalı deneysel bir araştırmadır. Araştırmanın çalışma grubunu, 2018-2019 eğitim-öğretim yılı ikinci yarıyılında Erzincan'da bir lisede öğrenim gören 15'i deney 15'i kontrol grubunda olmak üzere toplam 30 öğrenci oluşturmaktadır. Araştırma kapsamında deney grubuna hazırlanan 12 oturumluk psiko-eğitim programı uygulanmış, kontrol grubuna ise herhangi bir müdahalede bulunulmamıştır. Araştırmanın verileri, Duygu Düzenleme Güçlüğü Ölçeği (Gratz ve Roemer, 2004), Bilinçli Farkındalık Ölçeği (Brown ve Ryan, 2003) ve Psiko-eğitim Programı Değerlendirme Formu (Deniz, 2017) kullanılarak elde edilmiştir. Elde edilen verilerin analizinde tekrarlı ölçümler için iki yönlü varyans analizi kullanılmıştır. Araştırma sonucunda, hazırlanan psiko-eğitim programının deney grubundaki katılımcıların duygu düzenleme becerilerini ve bilinçli farkındalık düzeylerini önemli ölçüde arttırdığı ve bu farkların izleme ölçümünde de korunduğu görülmüştür.

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INTRODUCTION

People are faced with many events that affect them directly or indirectly in daily life. Subsequently, these events evoke various emotions in them. These feelings usually create mental content with the effect of many different events. These are individual structures that cause changes in both the brain and the body (Lazarus, 1982). They aim to make individuals enjoy their lives as much as possible in their most primitive form (Izard, 1991). According to Gross & Thompson (2007), emotions lay the groundwork for behavioral, physiological, and psychological reactions. When emotions are experienced flexibly and consciously, in other words, when they are regulated, individuals can reach the goals they set for themselves in life. It provides functionality in many different ways, such as being able to act, establish, and develop interpersonal communication and support the concept of self-esteem (Roqueve & Verissimo, 2011). On the contrary, emotions that have lost their functionality, that is, cannot be used under appropriate conditions, cannot be adjusted in terms of time and intensity, and cannot be normalized, can become factors that make human life difficult (Gross & Thompson, 2007). An emotion is a sincere friend that enables us to embrace every moment that makes us feel that we are a part of life. At the same time, it is our worst and cruelest enemy that prevents us from thinking consciously and exhibiting appropriate behavior (Parrott, 2001). Therefore, emotion regulation is needed in excessive physiological and psychological reactions (Gazzaniga, 1985).

Emotion regulation is a concept that deals with all aspects of the emotional state experienced by individuals (Thompson, 1990). It includes all kinds of conscious and unconscious behaviors, skills, and strategies used to decrease, increase, or suppress the reactions that occur due to these processes (Calkins, 2010). The primary purpose of emotion regulation is not to remove negative or unwanted emotions; To create emotional awareness in the individual against all positive and negative emotions, to gain some skills such as acceptance of feelings and understanding emotions (Safer et al., 2013; Gratz & Tull, 2010).

Emotion regulation has become a trendy research topic in psychology literature in two decades. To better understand the concept of emotion regulation, it is important to associate it with many variables such as psychological well-being, education, and working life as well as physical health. While an effective way to increase a person's skills and improve mental health with the right strategies in emotion regulation comes true. On the contrary, inadequacies in these skills may adversely affect the mental health of individuals and their current conditions (Berking & Whitley, 2014). Having effective emotion regulation skills can be an effective way of preventing or overcoming both psychological and physiological problems (Garnefski et al., 2001).

When the literature is examined, it is seen that there are various emotion regulation skills. These skills can be diversified, such as recognizing emotions, increasing positive emotions, reducing negative emotions, calming, and self-compassion (Greenberg, 2010). Perhaps the most intriguing of these skills is "Mindfulness." In brief, mindfulness is the state of giving themselves time for the general post-acceptance reaction phase that individuals create for the moment by momentarily pausing or breathing in internal and external situations they encounter without sudden reactions. This step helps the individual control their behavior while reducing the involuntary rush of emotion (Thompson, 2000). With mindfulness, a person gains the ability to pay attention to the present moment, without judgment and openly, and to accept whatever is happening at the present moment (Bishop, 2004). In addition, focusing on the mysterious power of destructive and healing emotions and improving emotional balance with this ability is an effective way to reduce the habitual pressures that hinder the perception of the outer world or

disrupt the judgment (Kabat-Zinn, 1990). Therefore, mindfulness is considered as an important technique used in the development of emotion regulation, which is seen as the basic component of mental health. Thanks to this technique, the person focuses on the whole picture rather than his emotions and acts more intelligently in the decisions he makes while regulating the emotions he experiences in daily life (Wall, 2005). The use of mindfulness as an emotion regulation strategy is generally effective (Arch & Craske, 2006).

When the related literature is examined, it can be noticed that conscious awareness-based programs are included to increase individuals' emotion regulation skills. Interventions for emotion regulation can be effective both in clinical and non-clinical samples. Thanks to these training, it is possible to contribute to the treatment in clinical samples and improve the emotion regulation skills of individuals in non-clinical samples (Balci, 2018; Can, 2017; Kocaoğlu, 2017; Öz, 2017; Tekin, 2016; David & Dobrea, 2014; Demir, 2014; Schwarz et al., 2013; Horn et al., 2011; Izard et al., 2008; Stark et al., 2008; Clyne & Blampied, 2004). Similarly, it is also suggested that conscious awareness is a psychological process that can be developed with practice. Its effect can be increased by meditation-based techniques (Bishop et al., 2004).

From a developmental point of view, it is observed that individuals' emotion regulation skills begin to take shape from birth and increase from middle childhood to adolescence (Zeman & Garber, 1996). Especially, adolescence is a process in which many emotional, cognitive, and behavioral systems surrounding attachment relationships change, and emotions become quite complex and variable due to hormones. Therefore, the tension caused by rapid change and development in this period in adolescents; this situation, combined with the lack of knowledge and experience, makes it very difficult for them to adapt to the social order and regulate their emotions (Arslantaş & Adana, 2011). The deficiencies in emotion regulation skills in adolescence; anxiety disorders (McLaughlin et al., 2011), problematic internet use (Karaer, 2018), internet addiction (Akin, 2014), depression, and anxiety symptoms (Garnefski et al., 2001), procrastination (Aktan, 2016), aggression in schools (Kaya, 2015) and other behavioral problems (Schwarz et al., 2013) are cited in the relevant literature.

On the other hand, it is also observed during adolescence as a period in which suitable opportunities arise for the effective regulation of emotions. Because emotional revival can be achieved by achieving correct progress with new experiences, physical, psychological, and social developments in adolescence (Silk et al., 2003). Therefore, avoiding emotions or excessive experiencing emotions during adolescence, in other words, inability to regulate emotions, lead to psychological problems and health problems (Segerstrom et al., 2003; Gross, 2002; Salovey et al., 2002). On the contrary, it enables healthy, harmonious psychological, and emotional functionality (Bridges et al., 2004).

Similarly, this situation exists in mindful awareness. It can increase adolescents' mental health, well-being, and attention when properly taught and practiced. It can improve self-regulation and social competence (Gilbert & Thompson, 2008). This concept is also related to variables such as self-esteem, emotional intelligence, psychological resilience (Balci, 2018), self-controlled behavior, self-acceptance, self-love, being caring, and helpful towards others (Çollak 2018).

It is thought that a psychoeducational program to improve the emotion regulation skills and mindful awareness levels of adolescents may be beneficial for them, due to their situations related to many variables mentioned above. Since adolescents must maintain a balancing attitude by strengthening the executive function of mindful awareness and reducing emotions on the other (Zelazo & Lyons, 2012).

Although emotion regulation and mindfulness have been frequently used in the relevant literature, experimental studies on adolescents about these concepts are very limited in the Turkish context. In line with the investigations, there is not any program for adolescents that aimed both at providing emotion regulation skills and increasing their mindful awareness. This situation is evaluated as a serious deficiency in terms of psychological counseling and guidance services. With the idea of eliminating this deficiency and supporting the personal development of adolescents, a psychoeducation program was, and then the effect of this program on school students' emotion regulation skills and mindfulness levels were examined in this research.

Therefore, the following hypotheses are tested in this research.

1. There is a statistically significant difference between the experimental and control groups' scores of the Emotional Regulation Difficulty Scale (DERS) in the pre-test and post-test measurements.
2. There is a statistically significant difference between the experimental and control groups the Mindful Attention Awareness Scale (MAAS) scores in the pre-test and post-test measurements.

In addition to these hypotheses, the following question "What are the evaluations of the participants in the experimental group about the developed psychoeducation program?" was aimed to be answered in the study.

METHOD

Research Design

In this study, an experimental method with a random pattern with a pre-test - post-test control group is used to test the hypotheses. Experimental studies consist of studies conducted to test the effect of the differences revealed by the researcher on the dependent variable (Büyüköztürk, 2007). These are generally a practice form in which at least two groups (experimental group, control group) are formed. In addition, the application or intervention whose effect is investigated is performed in the experimental group. The control group in the study, on the other hand, is the group that does not make any other intervention and is used only for data collection (Metin, 2014).

Participants

To determine the study group, the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) and the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) were applied to 145 volunteer students studying in the 9th and 10th grades of a high school in Erzincan in the 2018-2019 academic year. The participants consisted of students who got higher than the DERS and lower than the MAAS, based on purposeful sampling method. 30 students in the study group are assigned randomly, 15 to the experimental group, and 15 to the control group by lot method. All of the members in the experimental and control groups are girls. The pre-test averages of the experimental and control groups regarding the total scores of the DERS and MAAS are compared using the independent groups t-test. As a result of the analysis, it is found that the pre-test averages of the experimental and control groups for the total scores of DERS ($t(28) = 0.528$ $p = 0.603$) and MAAS ($t(28) = 0.513$ $p = 0.612$) do not show a statistically significant difference. Hence, the groups are equivalent to each other.

Data Collection Instruments

The Difficulties in Emotion Regulation Scale, the Mindful Attention Awareness Scale, and Psychoeducation Evaluation Form were used as the data collection instruments.

The Difficulties in Emotion Regulation Scale (DERS). It is developed by Gratz and Roemer (2004) to determine emotion regulation difficulties. This scale consists of 36 items in a 5-point Likert type. The scale has six sub-dimensions (awareness, openness, non-acceptance, strategies, impulse, goals). In addition to determining the difficulties experienced in six sub-dimensions with the scale, the general difficulty experienced in emotion regulation can be determined according to the total score obtained from the scale. In the original of the scale, some items should be scored in reverse (1, 2, 4, 6, 7, 8, 10, 17, 20, 22, 24, and 34). The Cronbach alpha internal consistency coefficient of the scale was found to be .94, and the internal consistency coefficients of the sub-dimensions were found to vary between .75 and .90. Test-retest reliability is .83 for general and values vary between .60 and .85 for sub-dimensions. The scale was first adapted to Turkish by Rugancı and Gençöz (2010). This scale, originally developed for adults, was found to be valid and reliable for use in adolescents as a result of studies conducted in Turkey. When the use of the scale in adolescents was examined, the internal consistency coefficient of the Turkish form was .93, the test-retest reliability was .83, and the split half-test reliability was .95 (Sarıtış & Gençöz, 2011).

Mindful Attention Awareness Scale (MAAS). It is a 15-item scale developed by Brown and Ryan (2003), and measures general tendencies to be aware of immediate experiences in daily life and to be mindful of these experiences. The MAAS is a 6-degree Likert-type scale. With this scale, a single total score (between 15-90) is obtained. Higher scores on the scale indicate high conscious awareness. For the construct validity of MAAS, both exploratory and confirmatory factor analyzes were performed. In the exploratory factor analysis, MAAS showed a single-factor structure. The internal consistency coefficient of the scale was .82. Test-retest reliability was found .86 between the two applications. Item loadings obtain from the scale ranged between .48 and .81. Adaptation studies of MAAS into Turkish are carried out by Özyeşil, Arslan, Bıçak, and Deniz (2011) on a group of university students.

Psychoeducation Program Evaluation Form. This form is used by the experimental group members participating in the psychoeducation program whose effect is examined, created by Deniz (2017), to determine their evaluations about the program applied to them. The form includes three sections: Program structure and leadership, information and usefulness of information, opinions, and thoughts about the program information and usefulness of information part of the form was used by adapting it according to the concepts examined in this study, with the permission of the author who developed the form.

Ethical Statement

This study was approved by the "Survey-Research-Thesis Studies Evaluation Commission" affiliated to the Ministry of National Education, which includes the institution where the research will be conducted (No: 45468433-604.01.01-E.1069909/2019-1-16). In addition, all participants and their parents filled in informed consent forms and voluntarily participated in the research.

Planning and Implementation Process of the Psychoeducation Program

Planning the Program. The first stage of the psychoeducation program was to create the infrastructure of the program for its planning. In this context, the aim of the program was determined first. The main goal in the preparation of the program was to improve high school students' emotion regulation skills and mindfulness levels. For this purpose, the literature on emotion regulation and mindfulness is scanned, and resources related to these concepts were examined. The theoretical foundations of the program are based on the approaches of third-generation cognitive-behavioral therapies (Emotion Focused Therapy,

Dialectical Behavior Therapy, Acceptance and Commitment Therapy) to the concepts of emotion regulation and mindful awareness, which constitute the research subject. Furthermore, psychoeducation programs on this subject are also examined. Then, a literature review is done on the characteristics of the developmental period of adolescents in the study group. As a result of these stages, the general framework of the program prepared is determined.

Henceforth showing that an intervention is programmatic; The four main elements are outcome, content, process, and evaluation. To Nazlı (2016), the first thing that needs to be done within these items is to determine the goals. It is determined what knowledge, skill, and attitude will be gained to the participants, which will be implemented by determining the goals. In the program, each session is created to include the outcomes covering its own title. Finally, emotion regulation skills and mindfulness activities are grouped in 12 sessions.

Some of the elements that are aimed to be gained in the sessions in the program prepared within the scope of the research are as follows:

Table 1. Summary of the Psychoeducation Program

1. Session Introduction to the Program	<i>Objective:</i> To give information about the group process. <i>Outcomes:</i> 1. Have psychoeducation process (general objectives, number and duration of sessions, place of residence). 2. Recognize the group members. 3. Understand the importance of eye contact in communication.
3. Session Understanding Emotions	<i>Target:</i> To gain the ability to understand emotions. <i>Learning Outcomes:</i> 1. Realize the reasons for emotions. 2. Be aware of the things that are effective in sustaining emotions. 3. Explain the effects of certain emotions on the body. 4. Explain the feelings.
5. Session As a Social Skill: Empathy	<i>Goal:</i> To gain empathic skills. <i>Learning Outcomes:</i> 1. Define the concept of empathy. 2. Understand what should be considered in the process of empathy. 3. Understand someone else's feelings. 4. Share someone else's feelings.
8. Session Emotion Regulation Strategies	<i>Goal:</i> Using emotion regulation strategies appropriately. <i>Learning Outcomes:</i> 1. Realizes what s/he feels when s/he is present. 2. Understands what emotion regulation is. 3. Explain emotion regulation skills. 4. Explain Gross's emotion regulation strategies.
11th. Session Stress	<i>Goal:</i> To raise awareness about coping with stress. <i>Learning Outcomes:</i> 1. Realize the symptoms of stress. 2. Understand what the symptoms of stress mean. 3. Realize the situations that cause stress. 4. Understand the difference between healthy stress control methods and unhealthy stress control methods.
12. Session Evaluation & Termination	<i>Goal:</i> To evaluate the psychoeducation process. <i>Outcomes:</i> 1. Evaluate the psychoeducation process s/he participated in. 2. Express whether s/he has achieved his/her goals in the group process. 3. Express the feelings about the psychoeducation program he participated in.

After determining the goals and outcomes in the psychoeducation program, the second stage of the program was planned. While determining the activities in the content of the program, many sources in the relevant literature were used (Berking & Whitley, 2018; Altınay, 2015; Canel, 2014; Southam-Gerow, 2014; Işık-Terzi & Ergüner-Tekinalp, 2013; Geldard & Geldard, 2013; Voltan- Acar, 2013; Erkan & Kaya, 2009; Vernon, 2008; Boeckel, 1996). Then, the instruments, the techniques to be used during the sessions, exercises, exercises, and homework to be given to the participants at the end of the session were determined, and the final stage of the program, which was the evaluation. The evaluation part of the psychoeducation program provides information about the evaluation process of both the program and the participants. In this context, reflective evaluation, descriptive evaluation, formative evaluation, and total evaluation were used. Before applying the psychoeducation program of reflective assessment, expert opinion was obtained for the draft program. As a result of the feedback received, arrangements were made regarding the draft program. The program was made ready for implementation. In the diagnostic evaluation, while the DERS and the MAAS are applied to the students as a pre-test, the formative evaluation process continues with the interviews with the students and the school counselor. Finally, the total evaluation process was completed by applying the DERS, the MAAS and the Psycho-education Program Evaluation Form as a final test.

Program Implementation Process. The preventive and skill-enhancing psychoeducation program in this study is implemented with 15 students studying in a high school in Erzincan in the 2018-2019 academic year. Before the implementation, the parents of the students who will participate in the program were given the necessary permissions with the “Parent Approval Form” for the participation of the students in the application process. The sessions of the program were held in the project development hall of the school, where the students were educated. The implementation process of the program was completed in twelve sessions, one session per week. These sessions lasted approximately 60-90 minutes.

Data Analysis

SPSS 22 package program was used for the analysis. The level of significance in statistical operations is accepted as .05. The analysis is started by testing the Shapiro-Wilk normal distribution test (less than 30 studies) and the total scores of the DERS and the MAAS. After determining that the scale scores show normal distribution, a two-way analysis of variance with 2x3 factorial patterns and repeated measures was used.

RESULTS

To test the first hypothesis of the study, two-way analysis of variance for repeated measures was used to test whether there was a statistically significant difference between the scores of the DERS of the experimental and control groups in the pre-test, post-test and follow-up test measurements. The analysis results, the arithmetic mean, and standard deviations of the emotional regulation difficulty scores of the experimental and control groups are presented in Table 2.

Table 2. Two-Way Analysis of Variance Results of the DERS and MAAS scores of the Experimental and Control Groups

Group	N	Time			Group x Time Interaction	P	η^2
		Pre Test (n = 30)	Post Test (n = 30)	Follow-up (n = 30)			
Experiment	15	125.87 ± 11.85	68.33 ± 14.52	74.80 ± 20.85	37.386	<.001	.572
Control	15	123.80 ± 9.55	117.60 ± 17.79	112.33 ± 16.53			

Note. Comparisons between groups were made using the Bonferroni multiple comparison test.

The results of the Mauchly's sphericity test, which was conducted to test whether the multivariate variances between the groups in emotion regulation difficulties scores were homogeneously distributed, showed that the multivariate variances of the emotion regulation difficulty scores showed a homogeneous distribution (Mauchly $W = 0.85$; $\chi^2(2) = 4.11$; $p = 0.12$) Evaluation was made using the statistical significance of x time interaction and the uncorrected F value.

In the data regarding the pre-test, post-test, and follow-up test mean scores of difficulty in emotion regulation and standard deviation scores of the experimental and control groups in Table 2; It is seen that the pre-test averages are 125.87 for the experimental group and 123.80 for the control group. Posttest averages were 68.33 for the experimental group and 117.60 for the control group. Follow-up test averages were 112.33 for the experimental group and 74.80 for the control group.

According to the results of the analysis of variance regarding the emotion regulation difficulty scores of the experimental and control groups in Table 2, it is seen that the interaction between the group and repeated measures is statistically significant ($F(2,56) = 37.38$; $p < 0.01$; $\eta^2 = .57$). Post-hoc comparisons between groups were made using the Bonferroni multiple comparison test. In the post-hoc analysis, it was observed that the total pre-test scores of difficulty in emotion regulation did not show a statistically significant difference between the experimental and control groups. In addition, in the control group, no statistically significant difference was found in the pre-test-post-test and follow-up measures mean scores of difficulty in emotion regulation ($p > 0.05$). On the other hand, when the pre-test and post-test emotion regulation difficulty average scores of the experimental group were compared, it was observed that there was a statistically significant decrease in the experimental group scores after the intervention and the decrease in emotion regulation difficulties was preserved in the follow-up measurement.

The changes in the scores of the DERS scores of the students in the experimental and control groups regarding the pre-test and post-test and follow-up test results are shown in Figure 1.

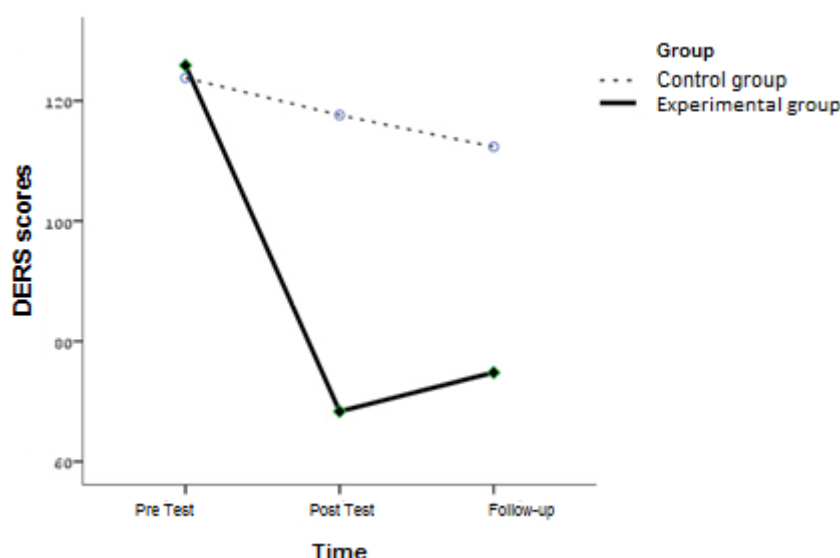


Figure 1. The Change over Time of the DERS according to Experimental and Control Groups

In Figure 1, there is a significant decrease in the post-test average scores of the experimental group for the DERS compared to the pre-test. In the follow-up test, it is seen that there is a significant decrease

compared to the pre-test, although it increases slightly compared to the post-test. There is some decrease in the emotion regulation difficulty scores of the control group, although there is no significant difference in the post-test and follow-up test average scores according to the pre-test results.

In order to test the second hypothesis of the study, it is examined by two-way analysis of variance for repeated measures (mixed designs) whether there is a statistically significant difference between the MAAS scores of the experimental and control groups in the pre-test-post-test and follow-up test measurements. The obtained analysis results, mindful attention awareness scores of the experimental and control groups are given in Table 3 together with their arithmetic averages and standard deviations.

Table 3. Two-Way Analysis of Variance Results of the MAAS scores of Experimental and Control Groups

Group	N	Time			Group x Time Interaction	F (1.66, 46.45)	P	η^2
		Pre Test (n = 30) Mean \pm SD	Post Test (n = 30) Mean \pm SD	Follow-up (n = 30) Mean \pm SD				
Experiment	15	44.80 \pm 13.20	68.60 \pm 13.68	66.00 \pm 13.75	10.696	<.001	.276	
Control	15	46.80 \pm 7.34	49.67 \pm 13.11	49.53 \pm 14.28				

Note. Comparisons between groups were made using the Bonferroni multiple comparison test.

First of all, Mauchly's sphericity test was conducted to test whether the multivariate variances between groups were distributed homogeneously in awareness scores, and the distribution was not homogeneous (Mauchly $W = 0.79$; $\chi^2(2) = 6.2$; $p = 0.04$). Therefore, the statistical significance of the group x time interaction was evaluated using the Greenhouse- Geisser corrected F value.

Considering the pre-test, post-test and follow-up test mean scores of difficulty in emotion regulation and standard deviation scores of the experimental and control groups in Table 3, when the pre-test average of the experimental group was 44.80, it was seen that the control group was 46.80. Posttest averages were 68.60 for the experimental group and 49.67 for the control group. Follow-up test averages are 66.00 for the experimental group and 49.53 for the control group.

As in Table 3 which shows the results of the analysis of variance regarding the conscious awareness scores of the experimental and control groups, the interaction between the groups and repeated measures is statistically significant ($F(1.66, 46.45) = 10.69$; $p < .01$; $\eta^2 = .27$). Post-hoc comparisons of experimental and control groups between groups are made with Bonferroni multiple comparison test. In the results obtained, there is no statistically significant difference between the experimental and control groups in the total pre-test scores of mindful awareness. Besides, it is observed that there is no statistically significant difference in the mean scores of conscious awareness in the pre-test, post-test, and follow-up measurements in the control group ($p > .05$). On the contrary, when the pre-test and post-test mean scores of mindful awareness of the experimental group are compared, it is observed that there is a statistically significant increase in the mindful awareness levels of the experimental group after the intervention ($p < .05$). This increase in the experimental group is also present in the monitoring measurement ($p < .05$).

The changes in the scores of the students in the experimental and control groups from the MAAS from the pre-test-post-test and follow-up test are shown in Figure 2.

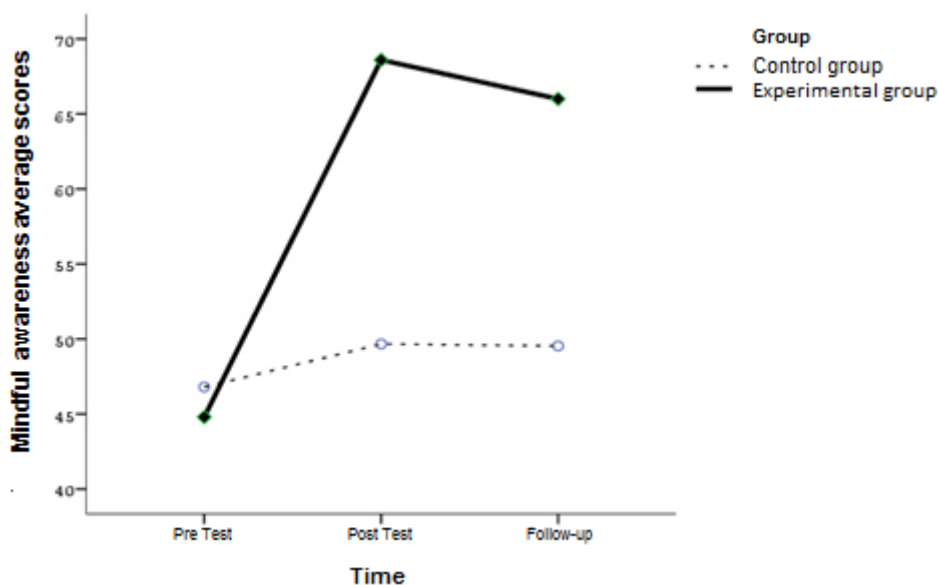


Figure 2. The Change Over Time of the MAAS according to Experimental and Control Groups

In Figure 2, it is seen that the post-test average scores of the experimental group regarding the mindful awareness levels have significantly increased when compared to the pre-test, but there is a significant increase in the follow-up test compared to the post-test. The mindful awareness scores of the control group increased slightly, although there is no significant difference in the post-test and follow-up test average scores according to the pre-test results.

Finally, in the study, “How do the experimental group participants evaluate the psychoeducational program?”. The answer is sought by examining the data obtained from the Psycho-education Evaluation Form. In line with the findings obtained from the responses of the members participating in the program process, the participants generally made positive evaluations in the Program Structure and Leadership and Use of Information and Informationsub-dimensions of the psychoeducation program form.

For “Program Structure and Leadership”, the most positive evaluations in the criterion for giving full points (5) are the leader’s mastery ($f= 14$), the leader’s listening skills ($f= 14$), the leader’s mastery ($f= 14$), the leader’s listening skills ($f= 14$), the leader’s mastery ($f= 14$), the leader’s listening skills ($f= 14$), the leader’s session management skills ($f= 13$) ($f= 12$). The most negative evaluation part is feeling comfortable while sharing about himself ($f= 8$).

For “Information and the Usefulness of Information” in the form, the first three answers to the question of which subjects you have obtained new information from the participants; they have given emotional awareness, empathy, and mindful awareness. They also state that negative emotions, awareness of emotions, empathy, and self-compassion are very useful for them in terms of understanding and awareness of their feelings.

When the participants are asked what information they learn during the program can be used to understand others and build better relationships with them; The most common answers are expressing emotions, positive emotions, empathy and conscious awareness. In addition, they say to the question to what extent the knowledge they learned would be useful in their education life, mostly positive and negative emotions, noticing emotions and expressing emotions. To the question about with whom the

participants can use the information they have learned through the program while communicating, they answer most with their friends ($f = 105$).

Finally, in the evaluation of the extent to which the participants can use the information obtained from the program in their daily life (in the criteria of scoring 1-5), six members give four points, and nine members give very high scores on the usefulness of the information they have acquired.

In addition, in the evaluation form of the psychoeducation program, "Please write your opinions about the program you attended. When the comments about the statement are examined; It is understood that the experimental group generally makes positive evaluations about the program process. Some of the opinions of the participants regarding this item are as follows:

"The program was very useful and effective. Now I can express and control my emotions better than before. So I thank my dear teacher and friends." "The program enabled me to know and express my feelings better. It was the first time I heard about conscious awareness and learned by having fun. I learned how to behave when I feel bad. In short, the program enabled me to control my emotions better." "This program was handy for me. For example, when I got excited during the exam, I calmed down when I thought of what the teacher said. It changed me in many aspects." "It was a nice and fun program. Seeing the contribution of what I learned in the program makes me very happy. For example, I realized that some emotions are not really bad. When I'm sad, I know that I'm not as bad as before and can be happy. I will miss the program, my program teacher, and my friends." "This program was very useful to me. It helped me a lot in controlling my emotions. It also helped me a lot in expressing my feelings. In short, this program supported and led me in terms of emotion in my life." "I really understood what I lived and how I felt myself through the program. I recognized myself. It was very useful, thank you." "I think this program has contributed to me, and it is a fun program. I think I am now more experienced in being a little more comfortable and compassionate in my own emotions."

CONCLUSION, DISCUSSION AND SUGGESTIONS

In terms of the first hypothesis of the study, it is found that the emotion regulation difficulties of the participants in the experimental group significantly decreased in the post-test measurements; It is observed that there is no significant difference in emotion regulation difficulties of the control group. In addition, in the follow-up test conduct one and a half months after the termination of the program, it is seen that this positive effect in the experimental group continues. Therefore, the first hypothesis of the research is confirmed. It can be concluded that the psychoeducation program prepared in this context is effective in increasing the emotion regulation skills of high school students. In other words, the program contributes to the decrease in the emotion regulation difficulties of the participants.

This result indicates that such psychoeducation programs increase emotion regulation skills, and it can be said that it is consistent with the results of previous research. For example, in the study prepared by Southam-Gerow (2014) on emotional functionality such as understanding and regulation of emotions in adolescence, it is understood that the emotion regulation skills of adolescents can be increased with various interventions using behavioral, cognitive, and emotional methods. Similarly, it is stated that with the program named "Emotion course" developed by Izard (2008) by using appropriate techniques and strategies, the emotion regulation skills of children can be increased similarly to the research findings.

It is concluded that the Structured Group Art Therapy Program developed by Karataş (2020) is effective in increasing adolescents' happiness levels and their tendency to express their emotions and decrease their emotion regulation difficulties and psychiatric symptoms. In the research conducted by Gülgez & Gündüz (2015), it is seen that the Dialectical Behavior Therapy Based Emotion Regulation Program is effective in reducing the emotion regulation difficulties of university students. Similarly, the game-based program developed by Aktürk (2016) provided a significant increase in preschool students' emotion regulation skills; The results of the family-participatory education program prepared by Ulusoy (2018) contributing to the emotion regulation skills of children and the Awareness-Based Skill Program developed by Can (2017) to reduce the emotion regulation difficulties of the participants are also included in the literature. The findings obtained from the research are consistent with all of these results.

In the foreign literature about emotion regulation, it is aimed to increase emotion regulation skills with the psychoeducation program prepared as in this study. Moreover, it is aimed to have a positive effect on various variables related to mental health by improving these skills. For example, in the studies conducted, such programs; depressive mood, constant unhappiness, and extreme irritability (Stark et al., 2008), diagnosing and minimizing behavioral problems in children (David & Dobrean, 2014), eating disorders (Clyne & Blampied, 2004), traumatic disorders (Thompson & Calkins, 1996) and anxiety disorders (Gross & John, 1998). As a matter of fact, on the basis of these studies, there are findings that emotion regulation skills can be increased with psychoeducation programs. It is seen that all these findings and the results obtained from the research are consistent.

As a result, it can be said that the findings obtained from the first hypothesis of the study are similar to the results of previous studies examining the possible effects of programs developed for emotion regulation on individuals (Karataş, 2020; Gem, 2018; Urcan, 2018; Aktürk, 2016; Ulusoy, 2016; Gülgez & Gündüz, 2015; David & Dobrean, 2014; Schwarz et al., 2013; Horn et al., 2011; Izard et al., 2008; Stark et al., 2008; Clyne & Blampied, 2004).

In terms of the second hypothesis in the study, its effect on the mindfulness levels of adolescents is examined. It is observed that the mindfulness scores of the participants in the experimental group increased statistically after the application, and this increase continued in the follow-up measurements. It can be said that the program prepared in line with this finding was effective in increasing the mindfulness of the participants. Thanks to this result, it is understood that mindfulness is a process that can be developed with exercise and practice, and that the mindfulness levels of individuals can be increased with various interventions. It is also consistent with similar research results in the literature (Bishop et al., 2004).

It is understood from the researches conducted both in the country and abroad that studies to increase conscious awareness are quite limited. In the reviews, it has been used as a method to increase mindful awareness in general and to have an effect on different variables. For example, Kabat-Zinn (1979) creates mindfulness-based stress reduction programs and claims that such programs are effective in reducing stress. An awareness-based program is developed by Schutte & Malouff (2011). It is understood that the program has positive effects on emotional intelligence; In addition, Wall (2005) applies mindfulness-based therapy and says that such a program is effective in reducing anxiety and supporting academic performance.

Verhulst (2007) believes that the mindfulness-based program he implemented is effective in increasing students' positive thoughts, providing support for exam performances, and reducing cognitive errors. In the mindful awareness-based programs developed in our country, these programs' children's focus, calmness, self-control, self-acceptance, and love, being caring and helpful towards others (Çollak, 2018), students' depression and stress levels (Demir, 2014), individuals' emotional intelligence and psychological resilience levels (Balci, 2018), there are studies showing that it is effective on the subjective well-being of individuals (Kocaoğlu, 2017). As a result, these programs prove that an increase can be achieved in the mindful awareness of individuals through psychoeducation. Research results are consistent with these results.

One of the two hypotheses of the study, the positive results obtained in the psychoeducation program for the development of emotion regulation skills of the participants and increasing their mindful awareness may have been effective. There are studies in the literature that examine this relationship. For instance, Hill and Updegraff (2012) state that mindful awareness enables individuals to create different perspectives towards their emotions and experiences and thus can prevent a rapid reaction. Therefore, individuals who strive to increase their mindful awareness; It is seen that they can reduce the involuntary, excessive frequency, and violent emotions (Balci, 2018). In addition, Can (2017) concludes that the mindfulness-based skills program developed by the researcher enables students to experience less difficulty in emotion regulation, experience less negative emotions, and have more positive emotions.

In terms of the participants' evaluation for the program, it is understood that the participants evaluate the program very positively, based on both the numerical assessments and the opinions at the end of the form. In these evaluations, it may be practical to prepare the structure of the program following the characteristics of high school students in their adolescence period (Geldard & Geldard, 2013). While planning the program, attention is paid to the fact that the process can attract the attention of high school students. For example, each session starts with a warm-up game. Afterward, all the goals target in the program are supported by activities-based, fun, and learning-by-doing-based content.

As a result, it is thought that the use of this program by psychological counselors working in educational institutions may be beneficial in counseling services for adolescents. In addition, this psychoeducation program can be used to support 'students' academic life. Generally, it is known that it can contribute to the academic success of students in schools by increasing their emotion regulation skills and mindful awareness levels, which are an effective way to increase their emotional functionality in their daily relationships (Wall, 2005; Verhulst, 2007). In addition, improving the emotion regulation skills of adolescents can be preventive against their depression or anxiety symptoms as a result of negative experiences that may happen to them (Garnefski et al., 2001). It is thought that the psychoeducation program prepared in this study may be useful for similar purposes for adolescents.

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Author Contribution

Both authors substantially contributed to this work in each step of the study.

Conflict of Interest

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RESEARCH

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ARAŞTIRMA

Açık Erişim

COVID-19 Stress in Married Individuals in Terms of Dyadic Coping and Problem-Solving in Marriage

Evlü Bireylerde Covid 19 Stresinin Evlilikte Problem Çözme ve Stresle Çift Olarak Baş Etme Açısından İncelenmesi

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ABSTRACT

This study aims to examine the relationship between the levels of married individuals being affected by the new life form that has emerged due to COVID-19 and the variables of dyadic coping with stress and problem-solving in marriage. The study group consists of 487 married individuals (77% women, 23% men) living in Turkey. Hierarchical multiple regression analysis was used in data analysis. It is found that regression model was significant and 46% of the COVID-19 pandemic effect was explained by problem-solving in marriage and dyadic coping with stress. The effect of both predictor variables on the COVID-19 Impact Index was moderate. This finding reveals that the couple can show greater resilience in the face of challenging life events if the ability to jointly cope with stress and problem solving is acquired. Explaining the impact of stressful life events such as Covid 19 on dyadic or triadic relationships with internal variables such as personality provides less information about the nature of relationships. In a couple relationship, the way one of the partners copes with stress and solves problems can be a source of stress for the other. For this reason, there is a need for studies that reflect the social context in studies examining the couple relationship.

Article Information

Keywords

Covid 19 pandemic, dyadic coping, problem solving, married individuals

Anahtar Kelimeler

Covid 19 pandemisi, stresle çift olarak baş etme, problem çözme, evli bireyler

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ÖZET

Bu çalışma, evli bireylerin COVID-19 nedeniyle ortaya çıkan yeni yaşam biçiminden etkilenme düzeyleri ile evlilikte stresle çift olarak baş etme ve problem çözme değişkenleri arasındaki ilişkiyi incelemeyi amaçlamaktadır. Çalışma grubunu Türkiye'de yaşayan 487 evli birey (%77 kadın, %23 erkek) oluşturmaktadır. Verilerin analizinde hiyerarşik çoklu regresyon analizi kullanılmıştır. Araştırma sonuçlarına bakıldığında regresyon modelinin anlamlı olduğu ve COVID-19 pandemi etkisinin %46'sının evlilikte problem çözme ve stresle çift olarak baş etme ile açıklandığı bulunmuştur. Her iki yordayıcı değişkenin COVID-19 Etki Endeksi üzerindeki etkisi orta düzeydedir. Bu bulgu, çifte stresle ortak başa çıkma ve problem çözme becerisinin kazandırılması halinde çiftin zorlayıcı yaşam olayları karşısında daha fazla dayanıklılık gösterebileceğini ortaya koymaktadır. Covid 19 gibi stresli yaşam olaylarının ikili veya üçlü ilişkiler üzerindeki etkisini kişilik gibi içsel değişkenlerle açıklamak, ilişkilerin doğası hakkında daha az bilgi sağlar. Çift ilişkisinde partnerlerden birinin stresle başa çıkma ve problem çözme tarzı, karşısındaki açısından bir stres kaynağı olabilir. Bu nedenle çift ilişkisini inceleyen çalışmalarda sosyal bağlamı yansıtan çalışmalara ihtiyaç vardır.

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INTRODUCTION

The global COVID-19 pandemic has affected and continues to affect lives in many aspects. The global COVID-19 pandemic, for which the whole world and the WHO were caught largely unprepared, has primarily forced the health systems owing to the nature of the phenomenon. Moreover, it has influenced social life at both macro and micro levels. The pandemic and the vital changes resulting from the pandemic have affected the individual and interpersonal dynamics as well as the married individuals' in different ways. Thus, Bradbury (2020) described the pandemic in an interview as "a stressful experience that can damage even the best relationships, no matter how well the couple gets along or their communication at home is" (personal communication). However, in a study shedding light on the relationship between stress and a couple's satisfaction with the relationship, it is revealed how significant the partners' support for each other under stressful conditions is (Karney & Bradbury, 1995). Based on this information, it can be said that the extent to which married individuals are affected by the new living conditions caused by the pandemic depends on their ability to solve social problems together and cope with stress.

The fact that coping with stress and problem-solving are rather addressed as an intrapsychic variable in the relevant literature may cause ignoring the social context. However, we consider that addressing these variables in the context of dyadic relationship (interpsychic) will reflect the social reality of the individual more. Consequently, a person's characteristics can be affected by the characteristics of other people who are considered important or with whom he/she is together (Bodenmann, 2005). Thus, the WHO (2003) shows in a study that there is a relationship between weak close social relationships and poor physical and psychological health status. A similar logic emerges in systemic couple therapy. According to this therapy school, one's reality and/or structuring is affected by how other people structure events (Kowalczyk, 2000). Accordingly, we think that investigating the COVID-19 exposure levels of married individuals in terms of intrapersonal variables may provide incomplete information about the extent to which married individuals are affected by this phenomenon. Therefore, it was assumed that married individuals' dyadic coping with stress and problem-solving in marriage would better reflect the nature of the dyadic couple relationship. In line with this, the current study aims to examine the relationship between the levels of married individuals' being affected by the new life form that has emerged due to COVID-19 and the variables of dyadic coping with stress and problem-solving in marriage. The explanations about the theoretical background of this study are presented below.

Theoretical Framework of the Study

Among stress-related theories, the transactional theory of Lazarus and Folkman (1985) is one of the most important and has significantly influenced the subsequent studies. Although the approach is individual-centered, it has addressed the individual and his/her social environment as a whole; it has also divided the coping attitudes into two, as problem-solving-oriented and emotion-oriented. Since the 1990s, researchers have started to emphasize the importance of social context and the impact of important people in an individual's life in coping with stressful situations (Ledermann, Bodenmann, Gagliardi, Charvoz, Verardi, Rossier, Bertoni and Lafrate, 2010). This change has enabled the concepts of problem-solving, stress, and coping to be addressed as a dual phenomenon in studies on marriage. Folkman (2009) brought dyadic coping to the fore as an extension of the original transactional theory, saying that "dyadic coping is more than the sum of two people's coping responses." This explanation is the cornerstone of modern dyadic coping approaches.

There are multiple approaches addressing problem-solving in marriage as dyadic (Berg & Upchurch, 2007, Bodenmann, 1991; 2005, Coyne & Smith, 1991, DeLongis & O'Brien 1990, Kayser, Watson, & Andrade, 2007, Lyons, Mickelson, Sullivan and Coyne, 1998, Revenson, 1994). Although all of the above-mentioned approaches emphasize the importance of addressing the dual phenomenon in coping processes, the Systemic Transactional Model (STM) is the only framework that clearly defines the importance of that stress and coping are mutual. The strengths of this model are that it combines established coping concepts in a dual perspective and addresses positive and negative coping separately (Regan, Lambert, Kelly, Falconier, Kissane & Levesque, 2015). Therefore, we considered the STM as a theoretical basis in our study.

The STM refers to a perspective in which one of the spouses reflects the stress experienced (verbally or non-verbally) and the other spouse responds with different coping responses, taking into account the stress symptoms. According to this approach, stress can be perceived by both spouses directly, or it can be perceived by one of the spouses and reflected on the other spouse. To maintain homeostasis in the couple relationship, the resources of both spouses to cope with stress are mobilized because it is assumed that the well-being and satisfaction of one spouse significantly depend on the well-being and satisfaction of the other spouse (Bodenmann, 1997; 2005; Bodenmann, Pihet & Kayser, 2006). Therefore, the STM considers each spouse's coping efforts in relation to the other's. A spouse's coping with stress is not independent of the other spouse or the outcome. In line with these views, addressing stress with intrapersonal processes or limiting the analysis unit to the "individual" will lead to ignoring the reciprocity of the relationship emphasized in the STM. Prime, Vade and Browne (2020) emphasize that instead of studies focusing on individual resources (Vagni, 2020), encouraging couples' dyadic coping competencies can be a way to improve their ability to cope with stress and anxieties related to the COVID-19 outbreak. Therefore, it was thought that it would be more accurate for the unit of analysis in this study to be a "dyadic relationship." Of course, it can be examined in an individual context how individuals are affected by COVID-19. However, this study aimed to examine how married individuals were affected by the COVID-19 pandemic in terms of dyadic coping with stress and joint problem-solving. The literature information about the explanatory variables in this study is given below.

With the pandemic and this emerging new life form, parents are trying to fulfill their work responsibilities, on the one hand, and they are trying to fulfill their increasing responsibilities for their children, on the other hand (Fraenkel & Cho, 2020, Goldberg, McCormick & Virginia, 2021). Therefore, this can cause them to experience more stress than usual. According to and Cho (2020), a large number of individuals try to maintain their daily life in the cycle of meeting basic needs and fulfilling domestic responsibilities. Moreover, some families have to grapple with additional stressors such as pandemic-induced unemployment and economic instability (Fraenkel & Cho, 2020). Spouses may also find themselves under stress from different aspects of the pandemic. For example, one spouse may have to take the risk of contagion in his job, while the other may have to take on the sole responsibility of managing household chores and children's online learning. These different stress experiences can tear couples apart, making it harder for them to empathize with each other's struggles. In addition to all these, the difficulty of protecting personal space, one of the most basic points in the continuation of a healthy couple relationship, may also affect the relationship adversely (Pappas, 2020).

Independently of the process, couples on the verge of divorce may enter into more intense conflicts during the quarantine since their commitment to each other, motivation to cooperate, and communication skills will be limited. There is a high possibility that couples with a high risk of contracting

coronavirus will have problems in their spousal relationship due to this increased stress factor (Fraenkel & Cho, 2020). During this period spent at home, while some married individuals have considered spending more time as an opportunity and become more attached to their relationships (Monmouth University Polling Institute, 2020), the others may have become emotionally divorced due to negative emotions such as anger, disappointment, hurt, anger, dislike, or hatred (Hashemi & Homayuni, 2017). An emotionally divorced person may feel that he and/or his/her partner become distant (Hashemi & Homayuni, 2017). However, the expectations of partners from the couple relationship are that their partners are helpful and supportive (Gagliardi, Bodenmann, Heinrichs, Bertoni, Lafrate & Donato, 2013).

As is known, the COVID-19 pandemic has deeply affected all living areas - especially couples and families. In this process, we have minimized our social relationships and increased the distance. We put ourselves under quarantine, we had to carry our working life to home (home office) and if there was a pupil in the house, we had to move the school to home (homeschooling) - even if our preference was not in this direction. COVID-19 transformed the quantity and quality of the relationship with the household. Previous potential conflict issues started to come to the forefront, and new problems started to emerge due to this stress factor. Of course, it is not possible to say that all married individuals have been affected by this new lifestyle imposed by COVID-19 in the same way and to the same extent. According to Gottman (1994), while the parties try to solve and reconcile problems in an objective way in a constructive marriage, the married individuals who avoid conflict are drawn into themselves. There are intense conflicts and arguments in impulsive marriages. In this new life form that started with COVID-19, it was assumed that if married individuals solved their problems jointly or reached a consensus on this issue, they would be more adversely affected by this process. Thus, many researchers indicate that spouses' conflict resolution skills and relationship patterns are important predictors of marital adjustment and divorce (Firestone and Catlett, 1999; Gottman, 1994; Karney and Bradbury, 1995; Levenson, Carstensen and Gottman, 1993; Prado and Markman, 1999).

Some of these explanations indicate that the married individuals' internal conditions constitute the basis for relationship crises. However, this study is based on the view that external conditions significantly destabilize the bilateral relationship, as stated by Bodenmann (2002). According to Bodenmann (2002), emphasizing that stress can have a devastating effect on the couple's relationship, stress can cause couples to establish negative communication or to withdraw themselves and spend less time. In that case, emotional sharing decreases and results in not being involved in the development of the other. Ultimately, alienation can be observed in the parties, which reduces the quality of the couple's relationship and increases the risk of divorce (Bodenmann, 2002). In our study, it was assumed that staying at home due to COVID-19 was a source of stress. It is thought that married individuals can be committed to dyadic coping with stress caused by the lockdown or pandemic process and problem-solving. The findings to be obtained from here will be useful for both future researches and psychological counselors working in the field of family counseling. Accordingly, the hypotheses of this study were determined as follows:

1. The score that married individuals obtain from the Dyadic Coping Inventory negatively predicts the score they obtain from the COVID-19 Impact Index.
2. The score that married individuals obtain from the Marital Problem Solving Scale negatively predicts the score they obtain from the COVID-19 Impact Index.

METHOD

In line with the hypotheses of the study, the relational survey model, one of the general survey models, was used in this study. Relational survey model aims to determine the existence or degree of co-variance between two or more variables (Karasar, 2011). The study group consists of 487 (%77 women, %23 men) participants living in Turkey. The age range for the participants varied between 23 and 65 years. The mean age was calculated as 37.3 years. The information about the employment status of the participants during the COVID-19 pandemic (See Table 1) and the employment status of their spouses (See Table 2) is presented below.

Table 1. Frequency and Percentage Values of Working Status of Participants in the Pandemic Process

		Not working	Went to work	Worked from home	Always work from home	Total
Women	<i>f</i>	99	226	34	15	374
	%	26.5	60.4	9.1	4.0	100
Men	<i>f</i>	5	73	26	8	112
	%	4.5	65.2	23.2	7.1	100
Total	<i>f</i>	104	299	60	23	486
	%	21.4	61.5	12.3	4.7	100

As seen in Table 1, 60% of women and 65% of men went to work during the COVID-19 pandemic. While the rate of women who stated that they did not work was 27%, this rate was calculated as approximately 5% in men. While 9% of women stated that they worked from home during the COVID-19 pandemic, this rate was calculated as 23% for men. Of women, 4% and 7% of men indicate that they always work from home.

Table 2. Frequency and Percentage Values of Working Status of Participants' Spouse's in the Pandemic Process

		Not working	Went to work	Worked from home	Always work from home	Total
Women	<i>f</i>	29	188	146	12	375
	%	7.7	50.1	38.9	3.2	100
Men	<i>f</i>	38	57	9	8	112
	%	33.9	50.9	8.0	7.1	100
Total	<i>f</i>	67	245	155	20	487
	%	13.8	50.3	31.8	4.1	100

As seen in Table 2, 8% of women and 34% of men state that their spouses are not employed. Of women, 50% and 51% of men stated that their spouses went to work during the COVID-19 pandemic. At the same time, it was observed that the rate of women saying that their spouses worked from home was 39%, and this rate for men was 8%. Of women, 3% and 7% of men state that their spouses always work from home.

Table 3. Frequency and Percentage Values Regarding the Financial Status of the Participants During the Pandemic Process

		Decreased	Increased	Remained the same	Total
Women	<i>f</i>	122	8	245	375
	%	32,5	2,1	65,3	100
Men	<i>f</i>	57	3	52	112
	%	50,9	2,7	46,4	100
Total	<i>f</i>	179	11	297	487
	%	36,8	2,3	61,0	100

Of the participants in the study group, 37% stated that their financial situation "decreased" during the pandemic, 2% stated that it "increased," and 61% stated that it "remained the same."

Table 4. Frequency and Percentage Values of Participants' Educational Status

		Elementary School	Middle School	High School	Bachelor	Postgraduate	Total
Women	<i>f</i>	2	1	19	229	124	375
	%	0,5	0,3	5,1	61,1	33,1	100
Men	<i>f</i>	0	1	6	71	34	112
	%	0,0	0,9	5,4	63,4	30,4	100
Total	<i>f</i>	2	2	25	300	158	487
	%	0,4	0,4	5,1	61,6	32,4	100

When the study group is examined in terms of education level, it is observed that the majority (62%) are university graduates, followed by postgraduates with 32% and high school graduates with 5%. Only about 1% of them reported their education level as elementary and middle school. In terms of the number of children, 189 of the 487 participants stated the number of children as 1 (39%). While the number of participants who stated that they had no children was 118 (24%), the number of those who stated that they had two children was 157 (32%). Twenty-one (4%) participants reported the number of children as 3, and one participant stated that they had 4 and 5 children.

Data Collection Tools

COVID-19 Index for Married Individuals: The index prepared by the researchers to understand changes in the marital relationship during the pandemic consists of 24 items. The existing literature was reviewed in the creation of the index and writing of indicators that might affect daily interaction (e.g., Bodenmann, Meuwly, Germann, Nussbeck, Heinrichs & Bradbury, 2015; Driver, Tabares, Shapiro & Gottman, 2012; Falconier, Nussbeck, Bodenmann, Schneider & Bradbury, 2015). The items in the COVID-19 Index for Married Individuals are expressed in the following contents: "Our respect for each other decreased during the pandemic," "Our sexual intimacy decreased during the pandemic," "We became emotionally distant from each other during the pandemic," "We started to empathize with each other more during the pandemic," and "Our sharing increased during the pandemic." As is known, indices are classified into three groups: unweighted additive, weighted additive, and multiplicative indices (See Bortz & Döring, 2006, ss.143-149). The COVID-19 Index for Married Individuals is an unweighted index since no weighting is performed for the indicators in the index. This indicates that all items are considered to have an equal value. The index is rated between 2 and 0 (yes, nothing has changed, no), and a high score indicates the negative impact of COVID-19 on the married individuals' relationship. While the percentage of variance explained by the index was approximately .50, the calculated Cronbach's alpha coefficient was calculated as .95. This internal consistency coefficient obtained reveals that the index has the characteristic of being a reliable index.

Dyadic Coping Inventory (DCI). The inventory developed by Bodenmann (2008) to measure coping with stress as a couple and stress communication in romantic relationships is a 5-point Likert type and consists of 37 items. The scale can be applied to married individuals and couples. DCI includes five subscales for the Self and corresponding subscales for the Partner (Stress Communication, Emotion-Focused Supportive Dyadic Coping (DC), Problem-Focused Supportive DC, Delegated DC, Negative DC). The DCI also assesses two Common DC behaviors (Emotion-Focused and Problem-Focused Common DC). The total score can be obtained from the scale as well as the subscale scores. The internal consistency coefficients (Croanbach's alpha) of the inventory were .92 for women and .93 for men in

total score. The results of the confirmatory factor analysis conducted in the Turkish adaptation study of the inventory (Kurt & Akbaş, 2019) showed that individuals had an acceptable level of adjustment for self-coping ($\chi^2/sd=3.76$, RMSEA=.06, CFI=.94, GFI=.95, SRMR=.04), spouse's perception of coping ($\chi^2/sd=4.50$, RMSEA=.06, CFI=.95, GFI=.94, SRMR=.04) and perception of common coping ($\chi^2/sd=1.10$, RMSEA=.01, CFI=1, GFI=.99, SRMR=.01). In the internal consistency analysis performed to determine the reliability of the inventory, Cronbach's alpha values ranged between .63 and .87 on the basis of sub-dimensions, and quasi-test values ranged between .63 and .85.

Marital Problem Solving Scale. The scale, which was developed by Baugh, Avery and Sheets-Hawth (1982) to determine the perceptions of married individuals about their ability to solve the problems they encounter in marriage, was adapted into Turkish by Hünler and Gençöz (2002). The original of the scale had 9 items with 7 grades, and the internal consistency coefficient was .95, the test-retest correlation coefficient was .86 ($p<.001$), and the correlation with the Dyadic Adjustment Scale was .61 ($p<.001$). While adapting the scale, which was evaluated out of 9 in the original form, it was converted into a 5-level rating scale for ease of response. In the factor analysis, the single factor structure was preserved, alpha coefficient was found to be .91, internal consistency coefficient was .88 ($p<.001$), and item-total correlation was found to vary between .63 and .73.

Personal Information Form. The form prepared by the researchers aims to describe the demographic information of the people in the study group. With the form, participants' gender, age, education level, employment status, etc. demographic information is obtained.

Procedure

Within the scope of this study, which examined problem-solving in marriage and dyadic coping with stress in predicting the adverse effects of the COVID-19 pandemic on married individuals, data were collected from the study group between March 2020 and May 2020 on the internet using an online form.

Data Analysis

Hierarchical (ordinal) multiple regression analysis was used to determine whether the score obtained from the COVID-19 Impact Index for Married Individuals, developed within the scope of this study, was predicted by the variables of married individuals' problem-solving in marriage and dyadic coping. Before this analysis, Pearson's product-moment correlation analysis was performed to determine the relationships between the COVID-19 Stress Index for Married Individuals, Marital Problem Solving Scale and Dyadic Coping Inventory. The financial situation and the employment status of the person and his/her spouse were used as control variables in the analysis.

RESULTS

Inter-Variable Relationships

Pearson's product-moment correlation coefficient results regarding the relationships between the scores obtained from the COVID-19 Impact Index for Married Individuals, Marital Problem Solving Scale, and Dyadic Coping Inventory are presented in Table 5.

Table 5. Correlation Coefficients Between Variables

Variables	1	2	3
1. COVID-19 Index for Couples	-		
2. Marital Problem Solving Scale	-.67**	-	
3. Dyadic Coping Inventory	-.56**	.69**	-

** $p < .01$

When the relationships between the variables in Table 5 are examined, there is a significant negative relationship between the COVID-19 Impact Index for Married Individuals and Marital Problem Solving Scale ($r = -.67, p < .01$) and Dyadic Coping Inventory ($r = -.56, p < .01$). On the other hand, it is observed that there is a significant positive relationship ($r = .69, p < .01$) between Marital Problem Solving Scale and Dyadic Coping Inventory.

Prediction of the COVID-19 Impact Index by Marital Problem Solving Scale and Dyadic Coping Inventory

It was determined by multiple regression analysis whether the levels of married individuals' marital problem solving and dyadic coping predicted the score obtained from the COVID-19 Impact Index. In the analysis, financial situation and the employment status of the person and his/her spouse were entered into the model in the first step as a control variable. Table 6 contains the findings regarding predicting the COVID-19 impact index by the levels of marital problem solving and dyadic coping.

Table 6. Regression Analysis Results on Predicting the Effect of Covid 19 on Marital Problem Solving and Dyadic Coping

Model	Predictive	B	ShB	β	t	R ²
1	Constant	16.18	1.77			
	Working in the epidemic	- 1.08	0.75	- 0.07	- 1.43	
	Spouse's work in the epidemic	0.66	0.75	0.41	0.89	.00
	Financial status	- 0.69	0.58	- 0.06	- 1.19	
2	Constant	53.33	2.49			
	Working in the epidemic	- 0.42	0.56	- 0.03	- 0.76	
	Spouse's work in the epidemic	0.64	0.55	0.04	1.16	.46
	Financial status	- 0.25	0.43	- 0.02	- 0.59	
	Marital Problem Solving	- 0.81	0.07	- 0.54	- 11.56*	
Dyadic Coping	- 0.12	0.03	- 0.18	- 3.83*		

According to the analysis results in Table 6, it is understood that the regression model is significant [$F(2, 477) = 80.85, p < .01$] and 46% of the COVID-19 pandemic effect ($R^2 = .46, \text{adjusted } R^2 = .45$) is explained by marital problem solving and dyadic coping entered into the model. As seen in Table 6, both marital problem solving ($\beta = -.54, p < .01$) and dyadic coping ($\beta = -.18, p < .01$) significantly predict the levels of married individuals being affected by the COVID-19 pandemic in the negative direction. The effect sizes of both predictor variables in the regression model were calculated with Cohen f^2 . Accordingly, while the effect size for marital problem solving was calculated as .28, the Cohen f^2 value for dyadic coping was calculated as .04. The effect of both predictor variables on the COVID-19 Impact Index was moderate ($f^2 = .32$; for reference values, see Cohen, 1988).

DISCUSSION AND CONCLUSION

This study aims to examine how married individuals are affected by the COVID-19 pandemic in terms of dyadic coping with stress and problem-solving in marriage. Within the scope of the present study, it is observed that both alternative hypothesis was confirmed. Accordingly, both problem-solving in marriage and dyadic coping with stress predict the score obtained from the COVID-19 Impact Index significantly in the negative direction. It is supported by studies (Donato, Parise, Pagani, Lanz, Regalia, Rosnati, & Iafrate, 2021; Fraenkel & Cho, 2020; Leonard, Giraud, & Abraham, 2022; Pappas, 2020; Randall vd., 2021) that married individuals may be affected by these two variables in the COVID-19 pandemic. Thus, as Olekers-Ax and Zwack (2020) revealed in their study, social inequality, domestic violence, and stress factors increased dramatically during this period.

Hierarchical regression analysis was conducted in this study. The reason for needing this was the desire to control whether one or both spouses worked during the pandemic. In the same way, financial income was also controlled. Thus, according to Bodenmann (2016), the fact that one or both of the spouses brings stress to home from outside (e.g., the workplace) poses a risk in terms of the relationship. The partner under stress may be reactive and aggressive or may withdraw from the relationship to be at peace. As a result, both behavior patterns reflect negatively on the partner and may even lead to a conflict. The presence of persistent stress frequently causes a relationship to become negative. Therefore, it is of great importance to know how each partner copes with stress individually and their dyadic coping strategies to establish a positive relationship between spouses (Bodenmann, 2016). However, within the scope of this study, although dyadic coping with stress indicates that married individuals are adversely affected by COVID-19, it actually does not have decisive significance considering the effect size. In other words, although our directional alternative hypothesis was confirmed, we obviously expected that dyadic coping with stress would affect married individuals more clearly in the COVID-19 pandemic. Explanations on the possible reasons for obtaining such findings are presented below.

According to the Systemic Transactional Model of Bodenmann (1995;1997; 2005), when individuals in a relationship encounter a stressor that affects them both directly and simultaneously, they define it as a source of stress and dyadic stress is observed. Studies demonstrate that stress arising from outside the spousal relationship (economic crisis, work problems, parenting stress, relationships with relatives-friends, etc.) has a strong and more harmful effect on the relationship and brings new problems to the marital relationship (Neff and Karney, 2017; Randall and Bodenmann, 2009; Randall and Bodenmann, 2017). For example, a study obtained results showing the potentially devastating effects of the COVID-19 pandemic on the sexual routines of single or partnered adults (Hille, Oezdemir, Beier & Hatzler, 2021). Another study reports that the frequency of solo sex and partnered sexual behavior decreased in those who had conflicts with their partners due to the coronavirus than those who did not have conflicts (Luetka, Hensel, Herbenick & Molly-Rosenberg, 2020).

Although there are studies indicating the adverse effects of the pandemic, people usually want to protect their comfort zones by seeking safety and comfort from their closest relatives in disasters that threaten people's existence (hurricane, storm, terrorist attack, etc.) (Mikulincer & Shaver, 2007). Thus, there are studies in the literature showing that the COVID-19 pandemic has a positive effect on the married individuals' relationship. For example, in an online study, while 22% of couples stated that their relationships became even closer, 82% agreed that their partner was the best individual for isolation (Rothmueller, 2020). Additionally, significant life events accompanied by stress related to job loss, injury or illness, and parenting concerns can exacerbate pre-existing marital problems or create new challenges

(Cohan, 2010). In the COVID-19 outbreak, as in similar examples in history, couples faced a possibly long restructuring event for an unknown period. In this process, spouses were exposed to numerous and various kinds of stressors (loss of income, loss of job, increased responsibility for the care of children, etc.). According to Pietromonaco and Overall (2020), the COVID-19 pandemic created various external stressors, which reduced the quality of the relationship and damaged the stability of the relationship. In this bidirectional process, weaker bilateral processes also strengthen the effect of external stressors.

According to the study carried out by Donato, Parise, Pagani, Lanz, Regalia, Rosnati and Lafrate (2021), concerns caused by COVID-19 significantly threaten the psychological well-being of individuals. Furthermore, these concerns positively predict open stress communication, which primarily predicts the perceived partner's dyadic coping responses positively and, as a result, positively predicts psychological well-being. According to Bodenmann (2005), coping with stress as a couple includes commitment in which both spouses provide satisfaction and well-being of the other. At the same time, this is ensuring the person's own satisfaction and well-being and ensuring that the spousal relationship continues to function as a whole. All this information supports the finding of the current study, indicating that dyadic coping with stress reduces the impact of COVID-19-induced stress on the spousal relationship. The effect of dyadic coping with stress on the relationship functions, satisfaction, and quality has already been proven by empirical findings (Bodenmann, Charvoz, Cina & Widmer, 2001; Bodenmann, Perrez, Cina, & Widmer, 2002; Bodenmann, Pihet, Shantinath, Cina, & Widmer, 2006; Ledermann, Bodenmann, & Cina, 2007; Pihet, Bodenmann, Cina, Widmer & Shantinath, 2007). However, in this study, considering the effect size of the finding obtained, the existence of other variables that affect the effect of COVID-19-induced stress on the spousal relationship comes to mind. Furthermore, it is important for both spouses to perceive the source of stress as a threat for the dyadic coping mechanism to go into action. We can say that the way spouses perceive the source of stress is an important factor in explaining the obtained finding. Moreover, the level at which stress is perceived as threatening is an important determinant in activating the resources to cope with stress. Studies demonstrate that individuals' levels of COVID-19-induced stress perception can be attributed to various factors such as gender, social support, special experiences with COVID-19 infection, the duration of isolation, the amount of exposure to media, and being under quarantine (Brooks, Webster, Smith, Woodland, Wessely, Greenberg, & Rubin, 2020; Zhang, Lu, Zeng, Zhang, Du, Jiang, & Du, 2020). Additionally, the dyadic perception of stress by spouses (we-stress) also increases the need for receiving support and collaborative coping (Rusu, Nussbeck, Leuctmann & Bodenmann, 2020). During the COVID-19 pandemic, the extent to which individuals perceive this process as a threat and the individual differences that affect these perceptions can be the subject of important research.

Another variable that explained the adverse effects of COVID-19 and was also investigated in this study is problem-solving in marriage. Problem-solving takes an important place in the STM. The theory of Bodenmann mentions the problem-solving processes of couples in the types of dyadic coping with stress and supportive coping. Joint problem-solving includes strategies such as seeking a common source of help, sharing feelings, mutual devotion, or relaxing together. Problem-focused support, on the other hand, is directed toward the source of stress (offering suggestions for a solution, helping the spouse to change his/her perspective on the situation, etc.) (Bodenmann, 1997; 2005). The satisfaction of couples with each other, especially during the crisis, depends on their joint problem-solving. Otherwise, the crisis will deepen, including the couple's relationship. Therefore, communication and problem-solving skills are kept at the center of many structured education programs for couples (Bodenmann, Charvoz, Cina

& Widmer, 2001; Sullivan, Pasch, Johnson, & Bradbury, 2010). Actually, conflict issues do not change no matter whether couples are happy or unhappy. What is determinant is how these conflict situations are dealt with. A conflict does not necessarily mean an incompatibility. However, the incompatibility of couples can sometimes turn into a quarrelsome and destructive form in conflict situations (Schindler, Hahlweg & Revenstorf, 2017). The research findings reveal that problem-solving skills (Deniz, Erus, & Batum, 2020; Hünler & Gençöz, 2005) and problem-solving interaction are associated with marital satisfaction (Author, 2021). According to Merz, Meuwly, Randall, and Bodenmann (2014), effective communication, problem-solving, and dyadic coping capacity in the face of stressful events are very important to protect the marriage and family system. In the case of social disasters, external social support is often interrupted, and spouses have to trust each other more (Cohan, 2010). The spouse is the most important source of support that cannot be easily substituted in times of stress (Dakof & Taylor, 1990; DeLongis et al., 2010). If the problems experienced by married couples are not solved effectively through communication, it may damage their marital relationship and adjustment, and conflicts between spouses may increase (Deniz, Erus, & Batum, 2020). According to the findings obtained by Donato, Parise, Pagani, Lanz, Regalia, Rosnati and Lafrate (2021), stress experienced during the COVID-19 process is positively associated with stress communication. Stress communication is the first step in the dyadic coping process. Studies have demonstrated that couples with open communication between both partners report higher levels of satisfaction than those who communicate without examining events or moods (Christensen and Shenk, 1991; Guerrero, Anderson & Afifi, 2011). We know that open communication takes a significant place in problem-solving. Some couples use temporary separation from each other after a conflict to resolve it. Quarantine practices do not allow temporary separations, which are the usual coping strategies, and can make conflicts even worse (Maiti, Singh, Innamuri, & Hasija, 2020).

COVID-19-induced stressors are considerably accompanied by uncertainty. It is difficult to predict which source of stress is short-term and which is long-term. Furthermore, the stress triggered by the pandemic also emerges in the context of ongoing, pre-existing vulnerable points (low income, etc.) (Johnson, Martin, Partika, Phillips, Castle & Tulsa SEED Study Team, 2021), and couples currently struggling to meet basic needs may have limited cognitive, emotional, and social resources to manage additional stress. The key point is the extent to which relationships have been damaged or improved following the COVID-19 pandemic. This largely depends on the broader context of couples' relationships and the extent to which the couple can be involved in adaptive dyadic relationship processes (Pietromonaco & Overall, 2020). Looking at the couple's relationship in a broader context requires a review of the situation before the couple has encountered the source of stress. In the current situation, what couple relationships individuals have had with their spouses before COVID-19 may significantly affect how their relationships have been affected by this process. This view is supported by the finding obtained by Donato, Parise, Pagani, Lanz, Regalia, Rosnati, and Lafrate (2021) indicating that individuals dissatisfied with their dyadic relationship are at a higher risk than those satisfied because they have lower levels of relational resources and well-being. Spouses dissatisfied with the relationship have less open stress communication, fewer positive dyadic coping responses, and lower psychological well-being than satisfied spouses.

LIMITATIONS AND RECOMMENDATIONS

Data were collected online over the internet on a voluntary basis in this study. To increase the external validity of the study, more systematic sampling (stratified, incremental sampling, etc.) can be performed. Furthermore, it would be beneficial to re-test the regression model created for this study by transforming

the quality or quality of the relationship, an important confounding variable, into a control variable. Although the predictiveness of variables such as working during the pandemic or having a spouse working during the pandemic was examined within the scope of the study, it would be beneficial to repeat this study in the health business sector, where there is a higher risk of COVID-19 transmission. Likewise, whether the participants had children or not/the number of children was determined by asking a question, but this was not checked. It is known that the responsibilities of married individuals who have children and even married individuals who have school-aged children in the pandemic process are much different. In new studies to be carried out in this context, it would be beneficial to consider the responsibilities that the distance education process has brought to parents and their effect on the spousal relationship. The financial situation, another predictor variable, was tried to be determined by a single question for learning the income status in the personal information form. However, it is thought that it would be beneficial to use a standard measurement tool to determine the socio-economic status. The level of satisfaction with the pre-pandemic marital relationship and the existing problems in the relationship were not taken under control within the scope of this study. Another study can be carried out by controlling these two variables. Research findings may be useful for psychological counselors working in the field of Family Counseling to understand how married individuals or couples are affected by the pandemic in terms of coping with stress and solving problems in marriage.

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Author Contribution

Both authors substantially contributed to this work in each step of the study.

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It has been reported by the authors that there is no conflict of interest.

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