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The Effectiveness of Reality Therapy Based Psycho-Education Program Regarding Decreasing the Level of Problematic Internet Usage of Adolescents

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ABSTRACT

The aim of this study is to examine the effectiveness of 10 session psycho educational program which was developed within the scope of the research to decrease the problematic internet usage level of adolescents. Embedded design, which is one of the mixed method types of research, was used in the research. In the quantitative experimental stage of the research, experiment, control, and placebo x pretest-posttest-follow-up test design was used. In addition, qualitative data were obtained with the focus group interview after the experiment. The study was started with 12 adolescents in each group, but it was completed with 11 adolescents in the experimental and control group, 12 in the placebo group, due to the loss of test subjects during the experiment. The data of the research was collected via Problematic Internet Usage Scale-Adolescent Form, Basic Needs Scale and Personal Information Questionnaire. The quantitative findings obtained from the research indicated that as a result of the experimental process the program has a significant effect on decreasing problematic internet usage levels of adolescents and meeting the need for love and belonging; however, it does not have a significant effect on the level of meeting other psychological needs. There was no significant difference between the control and placebo groups. Moreover, the findings of the focus group interview conducted with the experimental group revealed that adolescents gained awareness of internet use, their frequency of internet use decreased, and their aims changed, and they tried to meet their psychological needs in a social environment.

Today, adolescents tend to meet their developmental needs through internet experiences instead of real-life experiences, due to the wide environment and opportunities provided by internet technology. This may cause an increase in the level of internet use, as well as unhealthy internet use (Morahan-Martin and Schumacher, 2003). Also, excessive internet use, which affects adolescents in different dimensions, brings along the risk of problematic internet use or internet addiction (Ceyhan, 2014), and that the internet gives opportunities for behaviors towards the need for fun and these behaviors have addictive features (Greenfield, 2011). Thus, adolescents today have become a considerable risk group in terms of internet addiction, and the internet environment and applications have become important in meeting the basic psychological needs such as love-belonging, fun, power, and freedom which are mentioned by reality therapy. As a matter of fact, Yalçın (2006) states that at the root of internet addiction there are cognitive structures as “the internet is the only place where I get respected” and “the internet is my only friend”. In this context, adolescents try to meet their need for power and love-belonging through their internet usage behavior. Also, the internet gives individuals freedom in different areas such as communication, socialization, and access to information (Satan, 2013). Thus,

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adolescents can do identity experiments via internet use, as well as meeting the need for freedom, friendship, and communication. In this context, meeting the psychological needs of adolescents healthily is quite important during adolescence when identity achievement takes place. However, one can observe that as the internet use of adolescents increases, they try to meet their psychological needs, which they can meet in social life, through the internet. (Shen, Liu, and Wang, 2013).

To understand and explain adolescents' internet usage behaviors, it is crucial to consider the basic concepts of reality therapy, as well as basic psychological needs. In this context, a successful identity achievement of individuals is emphasized in Reality Therapy and adolescence is a critical development period in terms of successful identity achievement. In this respect, the internet provides a wide environment for adolescents to develop their identity and they can do identity experiments on the internet. As a result of a qualitative study conducted with adolescents, problematic internet use caused loneliness, depression, addiction to virtual environment, inefficient use of time, postponement or failure to fulfill responsibilities, learning wrong values, displaying angry or aggressive behaviors, emergence of health problems; It is stated that it has negative effects such as decreased social interaction, failure to develop social skills, decreased academic success, and academic problems (Doğan and Ersoy, 2020). Similarly, in the research conducted with university students, it is seen that there is difficulty in controlling internet use, and that their family and social relations and academic life are negatively affected (Baltacı, Akbulut and Zafer, 2020). It can be said that many of these negative effects are related to reality therapy concepts. While conducting such experiments on the internet, individuals can create the identity they want, and act without fear of being criticized, unlike social communication and relationships. Therefore, the internet becomes available to test various forms of relationships and identities (Griffiths, 1998). In this context, it is noteworthy that adolescents' identity experiments in the internet environment and their focus on the internet environment to meet their developmental needs or basic psychological needs can contribute to their development as well as prevent and disrupt this development, since the internet can cause to negative social, academic, emotional and psychological consequences, especially for adolescents, when it is not used properly (Kurtaran, 2008). Also, those seeking identity are observed to be facing the risk of problematic internet use, and those with successful identity are healthy internet users (Ceyhan, 2010). Similarly, the study conducted with adolescents has shown that diffuse avoidant identity style increases problematic internet use (Pednekar and Tung, 2017).

In terms of reality therapy, it is also vital for individuals to take responsibility and control their behaviors. It is stated that self-control is associated with problematic internet use (Park, Kang, and Kim, 2014) and it acts as a buffer (Li, Zhang, Li, Zhen, and Wang, 2010). Also, it is indicated that adolescents have difficulties in controlling their internet usage behaviors and the desire to control what is happening in the virtual environment can cause them to constantly turn to the internet (Öztabak, 2018, p.1032). However, it is stated that responsibility has a protective effect against problematic internet use (Diana and Xavier, 2014), as problematic internet use increases, responsibility decreases (Yavuzaslan-Gök, 2017) and problems in school, family, and social environment are neglected (Lin, Chen, Chang, and Lin, 2013). The decrease in control and responsibility, accompanying procrastination, due to problematic internet use during adolescence cause adolescents to face many developmental problems.

To understand adolescents' internet usage behaviors, it is also important to consider reality therapy's concepts of total behavior, which addresses the relationship of emotion, thought, behavior and physiology, and quality world, which includes everything that one cares about. In this context, the findings in the literature regarding problematic internet use's association with cognitive distortions and anxiety (Şahan and Eraslan-Çapan, 2017), loneliness and social anxiety (Caplan, 2006), irrational beliefs and feeling of inadequacy (Aydın, 2017), emotion regulation and depressive symptoms (Gámez-Guadix, 2014; Kızıldağ, Arıkan, and Koç, 2019), cyberbullying (Brighi, Menin, Skrzypiec and Guarini, 2019), depression and substance use (Gámez-Guadix, Smith and Calvete, 2013) reveal the importance of evaluating adolescents' internet usage behaviors in the context of total behavior. Besides, another study on adolescents' feelings about the internet reveals that when using the internet, adolescents experience positive emotions such as excitement, relaxation, and pleasure, negative emotions such as sadness and boredom, and neutral emotions such as feeling nothing and empty (Öztabak, 2018). Based on this finding, it is of great importance to reveal the relationship between the things

people care about and problematic internet use in terms of quality world, and to understand the meaning attributed to internet use and its place in quality world.

In the light of all these explanations, one can consider that a psycho-education program to be prepared in the context of reality therapy concepts for reducing adolescents' problematic internet use will make a significant contribution to adolescents' being healthy internet users, gaining awareness of the consequences of unhealthy internet use, and developing skills to prevent this. Also, the need in the literature for developing and diversifying various intervention programs for adolescents' problematic internet use is increasing day by day. The literature shows that different intervention programs are prepared with different theoretical perspectives to reduce adolescents' problematic internet use. The studies on adolescents' problematic internet use include intervention programs based on cognitive-behavioral approach (Erol, 2019; Lindenberg, Halasy, Schoenmaeker, 2017; Young, 2007), solution-focused approach (Busari, 2016; Şermet-Kaya, 2017), video-based education (Turel et al., 2015), focusing on human values (Peker and İskender, 2015), motivational interviewing based (van Rooij, Zinn, Schoenmakers, and Van de Mheen, 2012), peer education (Ruggieri et al., 2016), and parent education (Schatz, 2017). But there is no intervention program based on reality therapy for adolescents' problematic internet use. However, there are studies showing that reality therapy-based programs for problematic internet use are effective during different developmental periods, as "primary school and secondary school" (Shafie, Kahar, Anuar, Rahimi, and Ahmad, 2019), and "university" (Odacı and Berber-Çelik, 2017). As a result, an intervention program based on reality therapy for problematic internet use of adolescents is thought to be effective. In this context, this study aims to reveal the effectiveness of a 10-session reality therapy-based psycho-education program developed to reduce adolescents' level of problematic internet use. Therefore, the study predicts that the developed program will significantly reduce the adolescents' level of problematic internet use and significantly increase their level of meeting their basic psychological needs (love-belonging, power, freedom, and fun). As a result, programs based on different approaches to reduce the effects of problematic internet use on adolescents (Erol, 2019; Lindenberg, Halasy, Schoenmaeker, 2017; Ruggieri et al., 2016; Turel et al., 2015; van Rooij, Zinn, Schoenmakers, and Van de Mheen, 2012; Young, 2007). The first study on problematic internet use among adolescents was carried out in Indonesia and Malaysia by Mulawarman et al. In this study, it is emphasized that reality therapy is effective in reducing problematic internet use of 14 middle school and 14 high school adolescents (Mulawarman et al., 2021). As a matter of fact, it is also known that the effects of problematic internet use on adolescents (Doğan and Ersoy, 2020) are related to reality therapy concepts. Despite this, there is no intervention program in the context of reality therapy for problematic internet use in Turkey. For this reason, it is thought that the intervention applied in this study will contribute to reducing the problematic internet use of adolescents. In addition, the effectiveness of reality therapy in intervening problematic internet use in samples other than adolescents (Odacı and Berber-Çelik, 2017; Shafie, Kahar, Anuar, Rahimi, and Ahmad, 2019) supports this hypothesis.

Method

Research Design

The study was carried out with embedded design which is one of the mixed methods research designs. In this design, data are qualitatively and quantitatively collected and analyzed. In the process of this study, individual interviews were conducted in order to create the program at the qualitative stage before the experiment. Afterward, the program developed in the quantitative stage was applied in a 3x3 design (experimental-placebo/interaction-control group x pretest-posttest-follow-up test) from true experimental designs. While determining the members in the experimental phase of the research, the scores obtained from the scales applied first were ordered from high to low according to the arithmetic mean and standard deviation criteria. Preliminary interviews were held with eligible participants and participants who met the research criteria were included in the participant pool to be determined randomly. In this context, a 10-session reality therapy-based psycho-education program for reducing the problematic internet level was applied to the experimental group while the placebo/interaction group received a 10-session interactive psychological group counseling. No procedure was applied to the control group. After the experiment, focus group interviews were held at the qualitative stage.

Subjects

A total of 36 subjects participated in the experiment: 12 high school-age adolescents in each of the experimental, placebo/interaction, and control groups. All three groups included adolescents studying the ninth, tenth, and eleventh grades of a Science High School, Anatolian High School, or Vocational and

Technical Anatolian High School in a district of Eskişehir during the fall semester of the 2019-2020 academic year. While there were 8 girls and 4 boys each in the experimental and placebo/interaction groups (average age 15.08 and 15.25, respectively), there were 7 girls and 5 boys in the control group (average age 14.92).

Measures

Details of the measurement tools utilized to use the quantitative and qualitative data of the study are as follows.

Problematic Internet Usage Scale-Adolescent Form (PIUS-A). The scale was developed by Ceyhan et al. (2007) to determine primarily university students' problematic internet usage levels. Then, validity and reliability studies for adolescents were carried out by Ceyhan and Ceyhan (2014). The scale's adolescent form requires a 5-point Likert type descriptive rating and consists of 27 items in total. The scale has three sub-dimensions: the internet's negative consequences, excessive use, and social benefit/social comfort. Sub-dimension scores and a total score can be obtained from the scale, and the total score can range from 27 points as the lowest to 135 as the highest. High scores regarding the total score mean that adolescents have high levels of problematic internet use and may tend to internet addiction. Within the scope of the validity assessments for the scale, the findings of exploratory factor analysis revealed that the scale consisted of three sub-dimensions explaining 49.35% of the total variance: the internet's negative consequences (14 items), excessive use (6 items), and social benefit/social comfort (7 items) (explaining 37.73%, 6.48%, and 5.14% of the total variance, respectively). Within the scope of the reliability assessment for the scale, the overall internal consistency coefficient (α) was found to be 0.93 (Ceyhan and Ceyhan, 2014), while in this study, the internal consistency coefficient (α) was calculated as 0.83.

Basic Needs Scale. Based on Glasser's Choice Theory, the scale was developed by İkinci (2003) to measure the level of meeting the basic needs of adolescents. The scale consists of four sub-dimensions that include four basic psychological needs except for survival, namely love-belonging, power, freedom, and fun. It is a five-point Likert-type scale with 26 items. From the scale, a sub-score can be obtained for each psychological need, and a high score means that the level of meeting the needs is high. Within the scope of the validity assessments for the scale, the factor analysis results showed that the four-factor structure of the scale explained approximately 45% of the total variance. Within the scope of the reliability assessments for the scale, the calculations were made using the Cronbach's Alpha (α) internal consistency method. The overall scale internal consistency reliability coefficient (α) was found to be .83 (İkinci, 2003). In this study, the internal consistency reliability coefficient (α) of the scale was calculated as .78.

Individual Interview Form. To be used in the individual interviews, the interview form was prepared by the researcher in the process of creating the program content before the experiment, with the aim of understanding adolescents' internet usage experiences and how they meet their psychological needs. The form consists of 14 open-ended questions. While preparing it, expert opinion was received, and its final form was reached after a pilot interview was held with five adolescents. The form consists of the following questions:

1. What is the internet usage status of adolescents?
2. For what purpose do adolescents use the internet?
3. What do adolescents experience after intense internet use?
4. What feelings and thoughts do adolescents experience when they are deprived of the internet?
5. Which psychological needs do adolescents prefer to use the Internet to meet?
6. What are the metaphors that reflect adolescents' perceptions of the Internet?

Focus Group Interview Form. A form was prepared by the researcher for the focus group interview, which was carried out to determine the effectiveness of the research and to support the quantitative data in more detail. Theoretical explanations of reality therapy and problematic internet use process were used, and the final form was given by taking expert opinion. This form was used in the post-experiment focus group meeting in the 6th week following the end of the Reality Therapy Based-Psycho-Training Program for Reducing the Problematic Internet Use Levels of Adolescents. It consists of four open-ended questions and aims to enable the adolescents participating in the program to evaluate their experiences of the program and their experiences after the program.

Information Questionnaire. The information questionnaire was prepared by the researcher to obtain general information about the participants/subjects. This questionnaire includes questions about the subjects such as gender, age, grade level, the high school they study, contact address (email, phone number), willingness/volunteering to participate in the study.

Process

The processes carried out within the scope of the study are briefly summarized below under three headings: pre-experiment, experiment process, and post-experiment.

Pre-experiment. During the pre-experiment, these were followed respectively: a) preliminary preparation for creating the program, b) creating the program, c) the pilot application, d) determining the subjects for the experiment, and creating the experimental, placebo, and control groups. These are briefly as follows.

a) In the study, firstly the literature was examined, and the ethics committee and application approvals were obtained. Then, the Individual Interview Form was prepared to be used in semi-structured interviews and a pilot application was carried out with 5 adolescents. Afterward, using the interview form, the interviews were conducted with a total of 11 volunteer adolescents who are from 3 different high schools, 6 of whom were girls and 5 of whom were boys. The participant ages vary between 14 and 18, and the average age is 15.63. The interviews lasted about twenty minutes each. The sound recordings were analyzed through NVivo 12. Coding for the themes was completed. Then, to ensure coding reliability, the outputs were examined by an academician who is an expert in the field of psychological counseling and rearranged in the light of feedback. Thus, four different themes were reached: purposes of internet use, consequences of excessive internet use, experiences of internet deprivation, and psychological needs met through the internet.

b) As creating the program, the literature review and the themes obtained from the interviews were taken into consideration. In this framework, the program's general objectives and each session's specific objectives were determined. Activities were designed to suit these objectives. Then, the researcher presented the draft program to 4 academicians who are experts in the field of psychological counseling and 2 academicians who are experts in the field of program development, and opinions were received from the experts.

c) The pilot study was carried out with 12 volunteer high school-age adolescents (9 girls, 3 boys) during 9 weeks in the spring term of 2019. After the pilot, some arrangements were made in the group program from the feedback about the program. For example, in the second session, the members had difficulty understanding the form of "psychological needs in the scale". Thus, the form was revised.

d) As determining the subjects, a data booklet was applied to a total of 522 students from four different high schools at the end of September 2019. 129 adolescents who stated that they wanted to voluntarily participate in the group were ranked from the highest to the lowest in terms of problematic internet use and psychological needs scores. Thus, starting from the adolescents with the highest scores, 36 volunteer adolescents who do not have any psychiatric diagnosis, do not use psychiatric medicines, and whose parental consent was received, were determined as the subjects. With 12 members in each group, the subjects were neutrally assigned to the experimental, placebo, and control groups, considering gender balance.

e) After the groups were created the researchers examined whether the groups were equal in terms of the levels of problematic internet use and the levels of psychological needs. Kruskal-Wallis H test, one of the nonparametric statistics, was used since the number of members in the groups was very small and did not show the normal distribution assumptions as a result of the analyses. The conclusions of this test revealed that there was no significant difference in problematic internet use and psychological need pretest scores of the adolescents in the experimental, placebo, and control groups.

Experiment process. Within the scope of the experiment process, the group applications were carried out for 10 weeks between October and December in 2019. The sessions lasted between 62 and 107 minutes approximately. The sessions in the placebo/interaction group were conducted in the context of the interaction group within the scope of psychological group counseling. The content of the 10 sessions applied to the experimental group was briefly as in Table 1:

Table 1. The content of the reality therapy/approach-based psycho-educational program regarding decreasing problematic internet use of adolescents

Session theme	Content
1. Session: Hello to the group	<ul style="list-style-type: none"> • Introduction activity • Structuring the group process: The List of The Group Rules • Setting expectations and goals: Activity "I am Here Because?" • Understanding the Relationship of Thought - Behavior - Emotion - Physiology: Activity "Which One Would You Be?" • Summing up the group
2. Session: Explaining Problematic Internet Use and Psychological Needs	<ul style="list-style-type: none"> • Warm-up Activity: • Lecture: Problematic Internet Use and Psychological Needs • To help them discover the meanings they attribute to internet use and psychological needs: Internet Use and Psychological Needs Metaphor Activity • Members' review of the relationship between their psychological needs and the internet: Activity of Meeting Psychological Needs • Group interaction • Non-group activity: Internet Usage Chart
3. Session: What do I want?	<ul style="list-style-type: none"> • Initiation of the group process: Internet Usage Chart • Lecture: DDEP (Desire-Doing-Evaluation-Planning) • Discovering their desires: DDEP Desire Activity • Consequences of meeting psychological needs through the internet: Activity "What Do I Do?" • Alternative Activity Development: Activity "Even if Desires Do Not Change, The Ways Change" • Group interaction • Non-group activity: Desire Fulfillment Control Chart
4. Session: Control and Problematic Internet Use	<ul style="list-style-type: none"> • Warm-up activities • Initiation of the group process: Desire Fulfillment Control Chart • Lecture: Control and the Concept of Quality World • Regarding the importance of the internet in their lives and discovering their desires and: Quality World Activity • Recognizing and controlling the effects of the internet on them: Situation Scale Activity • Group interaction • Non-group activity: Internet Control Chart
5. Session: What am I doing?	<ul style="list-style-type: none"> • Initiation of the group process: Internet Control Chart • Lecture: DDEP "Doing" • Discovering their behavior: DDEP Activity "What am I doing?" • Activity for the consequences of internet use: Activity for the Consequences of Internet Use • Group interaction • Non-group activity: Control Chart for the Things I Do
6. Session: Total Behavior and Problematic Internet Use	<ul style="list-style-type: none"> • Warm-up Activity: Creating a car • Initiation of the group process: Control Chart for the Things I Do • Lecture: Total Behavior • Exploring emotion, thought, behavior, and physiology while using the internet: Total Behavior Activity • Creating a Story on Total Behavior with Finger Puppet • Group interaction • Non-group activity: Total Behavior Control Chart
7. Session: I Evaluate and Plan	<ul style="list-style-type: none"> • Initiation of the group process: Total Behavior Control Chart • Lecture: Evaluation and Planning • The consequences of meeting psychological needs through the internet: Activity "Testing My Behavior" • Evaluating their psychological needs and making plans: DDEP Evaluation and Planning Activity • Group interaction • Non-group activity: Plan Control Chart
8. Session: Responsibility and Problematic Internet Use	<ul style="list-style-type: none"> • Initiation of the group process: Plan Control Chart • Lecture: Responsibility • Discovering their delayed responsibilities: Sentence Completion Activity • Recognizing how their delayed responsibilities affect their lives: Responsibility and Irresponsibility Ways Activity • Group interaction • Non-group activity: Responsibility Tracking Chart
9. Session: Identity and Quality World	<ul style="list-style-type: none"> • Initiation of the group process: Responsibility Tracking Chart • Lecture: Successful-Failed Identity • Comparison of meeting psychological needs: Activity of Comparing Psychological Needs in Real and Internet Environment • Understanding the change in their quality worlds: Quality World Activity II • Group interaction • Non-group activity: Development Evaluation Chart
10. Session: Evaluation, Terminating the Group	<ul style="list-style-type: none"> • The members' evaluation of their development throughout the process: Development Evaluation Activity • To discover the change in the meanings they attribute to internet use and psychological needs: Internet Use and Psychological Needs Metaphor Activity II • The group members saying goodbye to each other in a healthy way: Positive Emotion and Imaginary Gift Activity

The 10-session program shown in Table 1 was applied as the experiment to the experimental group. To the placebo/interaction group, interaction group/psychological group counseling where the agenda was determined by the group was applied with sessions such as self-knowledge, emotions, past experiences, communication, conflicts, future, creating plans for the future, and evaluating the process. The losses of the test subjects were experienced in the experimental and control groups during the experiment. Thus, the data of the two members, as one member from the experimental group and one from the control group, were excluded from the study. Then, whether there was a difference among the groups was analyzed again with Kruskal-Wallis H Test. The analysis results found that there was no significant difference among the groups in terms of the pretest scores.

Post-Experiment As completing the experiment, the posttests were made to the experimental, placebo/interaction, and control groups, as well as the follow-up test at the end of the following 6th week. In the statistical comparisons of the groups’ quantitative data, it was decided to use non-parametric tests in the analyses, since the number of members in the groups was very small as 12 and the normal distribution thus could not be achieved. Thus, Friedman Test was used for the pretests, posttests, and follow-up tests within the groups themselves, and Wilcoxon Signed Ranks Test was used when significant. Kruskal-Wallis H Test was utilized for the pretests, posttests, and follow-up tests among the groups, and Mann Whitney U Test was made when significant.

After the experiment, the quantitative follow-up tests were conducted with the adolescents participating in the experimental group 6 weeks after the completion of the group process; afterward, the focus group interview was made, too. A total of 10 volunteer adolescents (7 girls and 3 boys) from the experimental group participated in the focus group interview. The data from this group interview were analyzed using NVivo 12. Expert opinion was obtained from three qualitative analysis experts. One of the experts coded independently from the researcher, and then the similarities and differences were compared. Afterward, the other two experts gave their opinions on the code and theme suitability. In the qualitative analysis, the reliability rate between the coders was calculated as 79%.

Findings

The findings related to the analyses conducted within the scope of the study are given below under the two headings: “findings regarding the levels of problematic internet use” and “findings regarding the levels of meeting basic psychological needs”.

The levels of problematic internet use

To understand whether the program led to a significant decrease in the problematic internet usage level of adolescents (general problematic internet usage level and its sub-dimensions such as the internet’s negative consequences, excessive use, social benefit/social comfort), the statistical analyses were carried out regarding the pretests, posttests, follow-up tests of the experimental, placebo/interaction, and control groups. Table-2 shows the summary findings including the nonparametric statistical analysis results regarding the tests.

Table 2. Summary Findings Regarding the Comparison of the Groups According to Problematic Internet Use and Its Sub-dimensions

Intragroup Comparisons	Sub-dimensions of problematic internet use			
	Problematic internet use (general)	The internet’s negative consequences	Excessive use	Social benefit/ social comfort
Experimental Group	Pre>Post Pre>Follow *	Pre>Post Pre>Follow *	Pre>Post Pre>Follow Follow>Post *	Pre>Post * *
Placebo/Interaction Group	*	*	*	*
Control Group	*	*	*	*
Intergroup Comparisons				
Experimental-Placebo	E.Post < P.Post E.Follow < P.Follow	E.Post < P.Post E.Follow < P.Follow	E.Post < P.Post E.Follow < P.Follow	*
Experimental Control	E.Post < C.Post E.Follow < C.Follow	E.Post < C.Post E.Follow < C.Follow	E.Post < C.Post E.Follow < C.Follow	*
Placebo-Control	*	*	*	*

Pre=Pretest, Post=Posttest, Follow=Follow-up test, E=Experimental group, P=Placebo/Interaction group, C=Control group
*No significant difference

As could be understood from Table 2 a significant decrease was seen in the level of problematic internet use in the experimental group as a result of the experiment. Notably, this decrease was also seen in the sub-dimensions of problematic internet use: the internet’s negative consequences, excessive use, and social benefit/social comfort. In the post-experiment follow-up process, any significant difference was not found

between the follow-up score and the pretest score only in the social benefit/social comfort sub-dimension. In addition, in the problematic internet use and its sub-dimensions as the internet’s negative consequences and excessive use, both posttest and follow-up tests of the experimental group were significantly lower than that of the placebo/interaction and control groups. However, no significant difference was seen among the groups in the social benefit/social comfort dimension of problematic internet use. All these findings indicate that the program applied to the experimental group was generally effective in reducing problematic internet use and after the application was completed, the effect of the program continued, however, the effect of the program in the social benefit/social comfort dimension decreased.

The Levels of Basic Psychological Needs

To understand whether the program led to a significant increase in the adolescents’ level of meeting their basic psychological needs, the statistical analyses were carried out on the pretests-posttests-follow-up tests of the experimental, placebo/interaction, and control groups. Table-3 shows the summary findings including nonparametric statistical analysis results regarding the tests.

Table 3. Summary findings on the comparison of the groups according to psychological needs

Intragroup Comparisons	Sub-dimensions of psychological needs			
	Love/Belonging	Power	Freedom	Fun
Experimental Group	Pre<Follow	*	*	*
Placebo/Interaction Group	*	*	*	*
Control Group	*	*	*	*
Intergroup Comparisons				
Experimental-Placebo	*	*	*	*
Experimental-Control	*	*	*	*
Placebo-Control	*	*	*	*

Pre=Pretest, Post=Posttest, Follow=Follow-up test, E=Experimental group, P=Placebo/Interaction group, C=Control group
 *No significant difference

As could be understood from Table 3, as a result of the experiment, a score increase in the experimental group was observed only in the love/belonging sub-dimension among the psychological need sub-dimensions. Also, no change was observed in the psychological need sub-dimensions of the placebo and control groups. In this context the findings revealed that the general psychological need sub-dimension levels of the experimental, control, and placebo groups did not show a significant difference before and after the experiment and in the 6th week following the experiment. Although the experimental group’s pretest, posttest, and follow-up test scores for the psychological need sub-dimensions did not differ significantly, except for the love/belonging dimension, the scores of the adolescents participating in the study changed.

The Qualitative Follow Up for The Effectiveness of The Program

To determine the change more widely in the experimental group adolescents’ level of problematic internet use, the focus group interview was also conducted, and the effect of the experiment was examined. After the content analysis of the focus group interview, three main themes emerged as “before the group”, “the group process” and “after the group”. Sub-themes were created under these three main themes. In this context, through the sub-themes as the purpose of internet use, internet use, perception of internet, and social impact of internet use, negative effects of the internet were focused under the “before the group” theme. Also, through the sub-themes as the changes, the evaluation of group activities, the effects of group life, and its indirect effects, the changes and their effects on the participants’ lives were emphasized in “the group process” theme. In the “after the group” theme, the changes in the purposes and the group’s effect on this were stressed through the sub-themes as the purpose of internet use, the effect of the group, and the changes. In summary, it was observed that the adolescents used the internet for fun/activity, communication, and social media before the group process, but after the group process, they used it for obtaining information and conducting professional research as well as for fun and communication purposes. In addition, while the negative effects of internet usage on different areas of their lives were mentioned before the group program, this was not stated at the end of the experiment program, and it was stated that the duration and purpose of internet use and the environment to meet the psychological needs changed after the program. Moreover, the program was stated to affect

communication skills, school success, self-confidence, and socialization, as well as changes in problematic internet use behaviors.

Discussion

At the end of the program applied in the study, the adolescents' levels on general problematic internet use and its sub-dimensions as its negative consequences, excessive use, and social benefit/comfort were found to decrease, and via the follow-up tests, this effect was seen to continue, except for the social benefit/comfort sub-dimension. This result indicates that the program developed based on reality therapy is effective in reducing adolescents' level of problematic internet use. Previous research indicates that reality therapy is particularly effective in helping adolescents cope with problematic situations and reduce their negative behaviors (Barker, 1995). Although there is no reality therapy-based program for adolescents' problematic internet use in Turkey, the results of a reality therapy-based program that reduced problematic internet use among adolescents in Malaysia and Indonesia (Mulawarman et al., 2021) supports the findings of this study. It is also similar to the results of research showing that "primary and secondary school" reduces problematic internet use (Shafie, Kahar, Anuar, Rahimi and Ahmad, 2019) and "university" (Odacı and Çelik, 2017) students.

Adolescence is a period in which developmental changes and identity achievement process intensify. Therefore, adolescents who have not yet reached physiological and psychological maturity are more likely to be affected by the harmful aspects of addictive behaviors, compared to adults (Liu and Potenza, 2010). As a matter of fact, in the focus group interview, the adolescents stated that they used the internet excessively before participating in the program and that they were at risk of becoming problematic internet users and internet addicts. In the focus group interview, the adolescents added that internet use behavior had negative effects on their family and friend relationships, eating and sleeping patterns, and school success. With the program applied within this framework, reality therapy's concepts of responsibility, control, psychological needs, total behavior, quality world, and successful identity are thought to be supportive for adolescents to gain awareness of their own internet use behaviors and to take responsibility for change, because it is stated that those who use the internet in a problematic way cannot control time effectively but spend most of their time on the internet (Cao and Su, 2007) and meet their psychological needs on the internet (Canoğulları, 2014). It is reported that spending excessive time on the internet brings along with not spending time for daily work, delaying, and problematic internet use (Günlü and Ceyhan, 2017), while problematic internet use is associated with identity seeking and having a successful identity (Ceyhan, 2010).

As a result, in the case of problematic internet use, there is a tendency to avoid responsibility, decrease behavioral control, and meet certain psychological needs such as fun, power, and belonging unhealthily in the virtual environment (Ögel, 2012). In this respect, problematic internet use is seen to be related to reality therapy concepts. When the lives of adolescents are evaluated in terms of responsibility and control, authoritarian structures such as family, teachers, or school administration can often make choices on behalf of adolescents. Choice brings along responsibility since responsibility is the result of freedom of choice. Adolescents are unlikely to take responsibility for their behavior and choices in an environment where authorities such as family, teachers, or school administration decide on behalf of them (Yorgun and Voltan-Acar, 2014). Adolescents who do not take responsibility for their behaviors and choices inevitably prefer external control. Thus, during the group process carried out within the scope of the study, leaving the control to the adolescents, making them aware that their choices are up to them, and not being an authority position contributed to the effectiveness of the study.

In today's world where the internet is used frequently, the risk of problematic internet use or internet addiction inevitably arises. Furthermore, due to the COVID-19 pandemic, isolation and distance education have also increased adolescents' internet usage time. Increasing the time spent on the internet can pose a risk in terms of problematic internet use (Balcı, Durmuş, and Sezer, 2021; Göker and Turan, 2020). Therefore, protective and preventive studies to be carried out with adolescents gain importance. There are programs prepared with different theoretical perspectives on problematic internet use or addiction (Erses and Müezzın, 2018; Ruggieri et al., 2016; Schatz, 2017). This study, on the other hand, reveals the findings of the first study which was prepared in the context of reality therapy for adolescents' problematic internet use, and the effectiveness of which was presented. A study carried with adolescents to prevent problematic internet use, and compiling the effective intervention programs, states that the contents of preventive studies generally focus on cognitive,

affective, and behavioral themes (Bagatarhan and Siyez, 2017). When the effectiveness of the program is evaluated in this respect; the adolescents in the focus group interview stated that the group process indirectly contributed to communication skills, school success, self-confidence, and socialization, and after the group process, changes occurred in the purpose, duration, and behavior of internet use, and the environment to meet psychological needs. According to this finding, it can be said that the program is effective in coping with negative results such as loneliness, postponement, or failure to fulfill responsibilities, decrease in social interaction, inability to develop social skills, decrease in academic achievement, and academic problems (Doğan and Ersoy, 2020) that adolescents express about problematic internet use. As a result, the adolescents' statements and the changes they experienced in cognitive, affective, and behavioral dimensions can be seen as a sign of the effectiveness of the intervention program.

At the end of the program applied in the study, an increase was observed only in the follow-up tests of the love/belonging sub-dimension among the adolescents' basic psychological needs. Obtained during the focus group interviews in the theme of the changes under the main theme of the group process, the participants' statements about the environment of meeting psychological needs reveal that; the participants living at home would often meet the need for love/belong in a social environment. On the other hand, the participants staying in a dormitory would use the internet as a tool to meet the need for love/belong in social life. Turkish society has a structure giving importance to relations, it cares about group attachments and has intensive family ties, and parents in Turkish society have protective attitudes; all these make it easier for adolescents to meet their love-belonging needs; However, protective-oppressive parental attitudes make it difficult for adolescents to make choices themselves and take responsibility for these choices (Yorgun and Voltan-Acar, 2014). Thus, adolescents can be resistant to meeting their need for power or they make the change more slowly. According to Glasser (1998), there are many options to meet the need for fun and not many obstacles are encountered while meeting this need. In a qualitative study conducted with adolescents, adolescents' purposes of internet use are as follows; 17 adolescents stated that they used it for social media (Facebook, Twitter, Instagram, etc.), 7 adolescents for watching movies and TV series, 5 adolescents for playing games, and 4 adolescents for listening to music (Erol, 2019). The study demonstrated that the purposes of adolescents are generally to meet their needs for fun. The participant adolescents' statements in the focus group interviews in the themes of "before the group" revealed that the participants reduced their internet use for fun or they are now using it for other purposes. In this respect, their inability to create new options to meet the need for fun may have prevented their scores for this need from increasing. On the other hand, realizing that they can meet this need not only through the internet but also from the social environment enabled adolescents to tend to meet their need for fun healthily. Considering the relationship between making choices and the need for freedom, it is thought that this need is not fully met in Turkish culture and the most lacking need is the need for freedom. For example, the pressure of the family on the decision about the school and profession of adolescents may be an obstacle to the need for freedom (Yorgun and Voltan-Acar, 2014). It can be said that the need for freedom remains in the background, due to family attitudes and individuals leaving the choice to someone else instead of taking responsibility. On the other hand, the fact that most of the adolescents participating in the group process stay in dormitories, everything they will do relating power is determined by external control, and they do not have a chance to make choices can also be considered as an obstacle to the need for freedom. The result of the decrease in the problematic internet usage scores in the quantitative data of the research provides supportive findings about which areas and how this decrease occurs thanks to the qualitative data. In addition, although significant changes could not be reached in the part of the quantitative findings related to psychological needs, the qualitative data reveal that the participants tried to meet their psychological needs more in the social environment after the program, and it was the meeting environment that changed, not the psychological needs. This result, on the other hand, provides a perspective on the reason why psychological needs do not differ significantly in quantitative data.

As a result, the program offers an alternative intervention opportunity that can be used by psychological counselors to reduce adolescents' level of problematic internet use and increase the healthy use. However, the study results need to be considered in the context of its limitations. First, the study subjects are limited to adolescents who are high school students from different types of high schools and staying at home or in a dormitory. Therefore, applying the program in different regions and educational institutions is considered

important in evaluating its effectiveness. Accordingly, the current program contributes to reducing and controlling the problematic internet use of adolescents, and thus, serves as an effective tool to be used by mental health professionals in the context of preventive counseling services.

Author Contributions: This study was produced from the dissertation prepared by first author under the supervision of second author. All authors contributed to the conception and design of the study. First author performed the experimental applications and data collection and wrote the paper. Second author supervised all the research process and provided feedback and reviewed the paper. All authors read and approved the final manuscript.

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

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Informed Consent: Informed consent was obtained from all individual participants included in the study.

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Development of Perceived Family Boundaries in Young Adults Scale

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ABSTRACT

The purpose of this research is to develop a relevant and reliable scale that aims to measure the family boundaries perceived by young individuals. A 64-item item pool was created by the researchers, and the content validity index was calculated on the items where opinions from 10 different experts were submitted. The application form, which reduced to 51 items after experts' feedbacks, was applied to a total of 384 people and the observations obtained were analyzed by Explanatory Factor Analysis. EFA relieved that the scale has explained 43% of variance and has 3 subscales. The factors are named as "Freedom", "Rules" and "Privacy". The internal consistency coefficient was found .85. Internal consistency coefficients were obtained as .87 for the Freedom subscale, .78 for the Rules subscale, and .64 for the Privacy subscale. The scale was tested with Confirmatory Factor Analysis to confirm the structure it relieved. It has been found that CFA fit indices are within acceptable limits and the scale has convergent and divergent validity.

Family boundaries can be defined as structures which developed by life experiences, realization of self and surroundings. Boundaries can function both in healthy and unhealthy ways and could be expressed either verbally or behavioral. Family boundaries are important to determine the roles, duties and responsibilities of family members (Minuchin, 1982). It is commonly known that the family in which the individual was born and raised and the relationships within the family are influential on the individual's further life. The behavior and relationship patterns and characteristics inherited from the family of origin can be effective in shaping and conducting the relationships in adulthood. The healthy development of these behavior and relationship patterns is supported by security and attachment from childhood needs (Maslow, 1943). The child, whose need of security is met and therefore is securely attached, can express himself/herself more comfortably within the family structure, and develops a healthier personality in the following years (Bowlby, 1969). Approaches to the present such as Schema Therapy emphasizes that one of the basic needs of childhood is "realistic limits and self-control" (Young, Klosko, & Weishaar, 2003). All these developmental steps are affected by the boundaries within the family system. There are some boundaries that can affect communication in the family positively or negatively, and these boundaries can be effective in the development of different communication patterns (Minuchin, 1974). These patterns could play a very important role within family.

The family boundaries is a concept grounded within the scope of Systemic Family Approaches and tried to be explained by various theorists. Salvador Minuchin, who made detailed explanations about the boundaries, is considered as the founder and also one of the important representatives of Structural Family Therapy (Vetere, 2001). Minuchin states that the family is a social system and consists of parts, the family can only be fully understood by understanding the relationships and boundaries that exist between these parts (Nazlı, 2014). Sub-systems are the relationship structures in which the family members have pairs or more individuals formed

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among themselves. "Structural Family Therapy", built on the family systems model, argues that boundaries regulate the closeness and intimacy between systems (Minuchin, 1974). According to Minuchin (1974), in order to the family to function in the most ideal way, the boundaries should be open, allowing the balance of relationship and autonomy. Besides, Minuchin talks about 3 different boundaries. These are clear (healthy) boundaries, enmeshed (diffuse) boundaries, and disengaged (rigid) boundaries. Clear boundaries are used to express what "should be" within the scope of structural family therapy, in other words "healthy" boundaries. Such boundaries that support autonomy within the system but at the same time a feeling of belonging to the system are important for the family structure to remain strong. In clear boundaries, as the name suggests, boundaries are quite clear, roles and rules are adopted and accepted by all members of the system. In systems with such boundaries, individuals have a much higher chance of differentiating their selves, and this is also supported by the system itself. Rigid boundaries are the boundaries that exist in broken systems. Subsystems with such boundaries or family system have little or no relationship with the outside. This situation may cause miscommunication and disconnection rather than conflicts. It can be said that in families with such boundaries, autonomy is very dominant and that domestic support emerges only in cases of extreme stress. Diffuse boundaries are permeable boundaries in which subsystems interfere with each other. In systems with diffuse boundaries, it is difficult to separate subsystems from each other, and therefore intertwining in relationships is very high. For this reason, diffuse boundaries can be considered as one of the boundaries types with more conflict (Minuchin, 1974; Nichols, 2013, Özabacı & Erkan, 2014). These boundaries within the family structure form the basis of the roles, rules, responsibilities and communication within the system. Boundaries can also be defined as "emotional barriers" that protect the integrity of the family structure and serve to expand the structure. As the literature demonstrates, it is seen that family boundaries can change in developmental periods and take new forms according to family structure and systems.

Boundaries are formed as a result of childhood experiences and family interactions and affect the relationships of the individual with others throughout their life. Undoubtedly, these boundaries can be made more functional with appropriate interventions and are frequently addressed in family system approaches (Minuchin, 1974). Although the structure in question is important, making it visible in the behaviors of individuals, in other words, being measurable may contribute to field studies. In this study, a scale was developed that aims to reveal how young adults in the family system perceive the boundaries in the system. Relationship models and patterns of family members and how they perceive these patterns are important both in Structural Family Therapy and other family-based approaches. It is thought that the scale developed from the study in question will contribute to the studies on the solution of communication problems in the family and the healthy differentiation from the family, which is one of the developmental tasks of the young adulthood, from a systemic perspective.

Method

Research Model

This research is a scale development study that aims to measure the family boundaries perceived by young adults in a statistically reliable way. In the scale development process; one of the approaches based on subject responses, the scaling approach through graduated sums was used, which places the individuals in a different place on the scale based on the responses of the respondent to the items and is the responder-centered (Tezbaşaran, 2004). Creating items pool, focused group meetings, getting experts opinion, conducting analyzes then determination of validity/reliability were stages of scale development.

Study Group

The study group consists of two separate groups of young adults aged from 18 to 30. The first study group was formed for exploratory factor analysis. The data was collected from a second study group in order to perform confirmatory factor analysis to verify the final scale form.

The exploratory factor analysis study group consists of 384 participants. 16 of the 384 data obtained were excluded from the data set because they did not match the age group considered within the scope of the study. The age distribution of the remaining 368 participants was as follows; 7 (1.9%) at the of 18, 22 (6%) at the of 19, 55 (14.9%) at the of 20, 51 (13.9%) at the of 21, 47 (12.8%) at the of 22, 38 (10.3%) at the of 23, 30 (8.2%) at the of 24, 39 (10.6%) at the of 25, 33 (9%) at the of 26, 25 (6.8%) at the of 27, 11 (3%) at the of

28, 7 (1.9%) at the of 29 and 3 (0.8%) at the age of 30. 298 (81%) of the participants were women, 68 (% 18.5) of them were men, 2 participants (0.5%) did not indicate gender. In terms of educational status, 320 (87%) of the participants continue their education at the undergraduate level, 43 (11.7) at the graduate level and 5 (1.4%) at the doctoral level. Finally, 300 of the participants (81.5%) live with their families, while 68 (18.5%) of them live separately.

Table 1. Age Distribution of EFA and CFA Groups

Age	EFA Group	CFA Group
18	1.9	2.8
19	6	2.92
20	14.9	11.87
21	13.9	10.62
22	12.8	11.25
23	10.3	14.17
24	8.2	13.54
25	10.6	11.46
26	9	8.96
27	6.8	5.42
28	3	5.82
29	1.9	--
30	0.8	1.67

CFA group consists of 480 participants. The age distribution for the CFA group is as follows; 11 (2.30%) at the of 18, 14 (2.92%) at the of 19, 57 (11.87%) at the of 20, 51 (10.62%) at the of 21, 54 (11.25%) at the of 22, 68 (14.17%) at the of 23, 65 (13.54%) at the of 24, 55 (11.46%) at the of 25, 43 (8.96%) at the of 26, 26 (5.42%) at the of 27, 28 (5.82%) at the of 28 and 8 (1.67%) participants at the age of 30. 297 (61.8%) of the participants were women, 180 (% 37.5) of them were men, 3 participants (0.7%) did not indicate gender.

Size of study group for CFA which focusing on whether the structure discovered with EFA is verified on a different independent group, and also directed towards collecting additional reliability and validity evidence, is greater than the recommended criterion (Tabachnick & Fidell, 2013). While there is no univariate outlier after the assumptions are tested; 10 observations were not included in this analysis due to multivariate outliers ($X_2 (26; 0.001) = 54.05$); CFA was performed with the remaining 470 observations.

Scale Development Process

For the scale development study which aiming to develop a measurement tool for the family boundaries perceived by young adults, the relevant literature was examined in detail first. Studies conducted in recent years on family boundaries, which have been highly emphasized in structural family therapy, and the theoretical basis of structural family therapy (Minuchin, 1974; Vetere, 2001) was discussed.

After the relevant literature was examined, an item pool was created. While creating the item pool, interviews were made with 4 different experts working in the field of family and couple therapy, apart from the literature. In the interview, a number of questions prepared by the researchers were directed to the experts. The interviews were recorded with the permission of the experts, and the audio recordings were re-examined and new items were added to the item pool by the researchers. The written items were discussed in the focus group discussions held once a week for 4 weeks by a team of 7 experts, and the necessary revisions were made before the expert opinion form.

Based on the literature review, expert interviews and focus group discussions, an expert opinion form consisting of 65 items was created. The expert opinion forms were sent to 12 different experts and feedback was received from 10 different experts. While the feedbacks were made on the basis of "Relevance" and "Openness", each item was evaluated as "4: Very Relevant-Very Clear" "1: Not Relevant at all – Not Clear at all". After receiving feedbacks from experts, content validity rates were calculated separately for each item. Davis Technique (1992) was used while calculating the content validity rates. Then, based on the minimum values (0.80) of the content validity rates at the $p = 0.05$ significance level (Ayre & Scally, 2014), the

researchers decided to exclude the 10 items below this value from the trial form. In addition, 14 items were revised in terms of language. After the scope validity ratio calculations and revisions, the trial form was created with the remaining 51 items. The items in the trial form were graded as 5-point Likert-type "Completely True", "True", "Undecided", "False" "Completely False".

The trial form was transferred to the online environment and submitted to individuals aged between 18-28. Analyzes were conducted on the data collected from 368 people in total.

Obtaining Data

Participation in the study was based on volunteerism. Each item in the created trial form was transferred to a digital platform by the researchers, and it was shared by the researchers to collect data on this platform. Applications took 15-20 minutes for EFA and 10-15 minutes for CFA.

Data Analysis

Within the scope of validity studies in data analysis; for construct validity, exploratory factor analysis, for convergent and divergent validity, confirmatory factor analysis was used to give information about the relationship between the factor and the items under it.

Cronbach Alpha reliability determination method (for both study groups used in the study) and combining reliability (only for the CFA study group within the scope of the study) were used in the reliability analysis. As suggested in the context of this study, the unified reliability (CR) value was calculated based on the findings obtained from the CFA result. Unified reliability is used to measure the general reliability of similar expressions (Raykov, 1998).

The data were analyzed with SPSS 22 statistic package program. In order to reveal the structure of the scale under development, exploratory factor analysis was conducted. Factor analysis is a multivariate statistical method that transforms different variables that are related to each other in fewer numbers, around a specific theme and independent from each other (Büyüköztürk, 2014). Before starting the exploratory factor analysis, the missing data problem with multivariate statistical numbers, discarding single and multivariate outliers, factoring of R, multicollinearity problem, assumptions of independence of errors were tested on the data set.

368 observations obtained from the study conducted with the trial form of the scale were analyzed. First of all, no missing data was found in the data set. For univariate outliers, items with a Z value between -3 and +3 were examined and no univariate outliers were found. For multivariate outliers, Mahalanobis distances for the items were calculated. Based on the chi-square critical value (Tabachnick & Fidell, 2013), the 20 observations above the value of $X^2(51; 0.001) = 87.96$ were excluded from the data set because they were multivariate outliers.

For the multicollinearity problem, VIF and tolerance values were examined. The VIF values for each item were less than 5 and the tolerance values were greater than 0.20. In this case, it is understood that there is no multicollinearity problem in the data set (Tabachnick & Fidell, 2013). KMO (Kaiser Meyer Olkin) coefficient was calculated in order to understand whether the obtained data can be factored or not. The KMO coefficient being close to 1 indicates that the data set can be factored (Büyüköztürk, 2014). KMO coefficient was obtained as 0.83 for the data set analyzed within the scope of the study. In addition, Barlett Sphericity Test results were significant ($X^2 = 7522,47; p < .01$).

As a result of the analyzes carried out, the total correlations of the items in the scale, factor loads, common variance of factors, internal consistency coefficients and factor loads after rotation were obtained.

After factors were explored with EFA and the factor loadings were obtained, the construct validity of the scale was tested with Confirmatory Factor Analysis (CFA). Before proceeding to the confirmatory factor analysis multivariate statistics assumptions which are the missing data problem, the elimination of single and multivariate outliers, the multicollinearity problem, and the assumptions of independence of errors were tested on the data set.

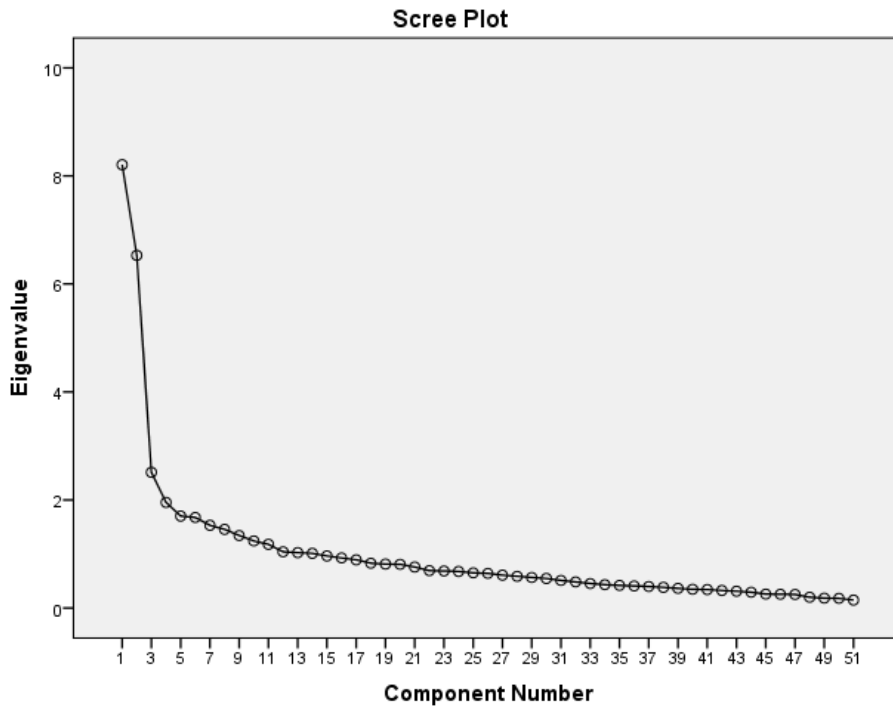
When the assumptions were tested, it was seen that there was no missing data or single outlier in the data set. In the calculation of multiple outliers, the 10 observations above the critical value ($X^2(26; 0.001) = 54.05$)

were removed from the data set. In addition, it has been determined that there is no multicollinearity problem in the data set.

Findings

As a result of the factor analysis carried out in the first stage, after reaching the conclusion that the data set is factorable, a structure with 14 factors which explains 63.55% of the total variance was reached. Then the scree-plot chart was examined and it was, as suggested in scree-plot chart, decided to limit the number of factors to 3.

Figure 1. Scree Plot Graphic



Within the scope of the analysis carried out in the second stage, the number of factors was limited to 3. The 3-factor structure explains 33% of the total variance. Subsequently, 25 items with a factor load of less than 0.45 were excluded from the analysis (Çokluk et al., 2014; Tabachnick & Fidell, 2013). The exploratory factor analysis was conducted with the remaining items.

As a result of the factor analysis performed again in the third stage, it was seen that the structure explained 43% of the total variance. In addition, it was found that one item was not loaded under any factor. This item was removed from the analysis and factor analysis was repeated.

As a result of the fourth exploratory factor analysis, it was concluded that the 3-factor structure explained 44% of the total variance. It is considered sufficient for scale development studies in social sciences that scale explains between 40% and 60% of total variance (Scherer, Wiebe Luther & Adams, 1988). Cronbach alfa score for "Independence" subscale was found to be .87, for "Rules" subscales was .78 and for "Privacy" subscales was .64. The results obtained are given in Table 1.

Table 1. Factor Loads, Explained Variance Ratios, Eigenvalues, Communalities and Cronbach Alpha Coefficients Regarding the Perceived Family Boundaries in Young Adults Scale

Item	Communalities	Factor 1 Independence	Factor 2 Rules	Factor 3 Privacy
43	.722	.838		
39	.623	.756		
7	.539	.725		
44	.596	.700		
28	.490	.694		
5	.455	.659		
38	.533	.592		
40	.318	.556		
42	.399	.554		
14	.361	.534		
9	.282	.498		
19	.542		.702	
2	.494		.696	
47	.398		.621	
37	.400		.611	
3	.386		.601	
15	.504		.588	
30	.330		.558	
1	.357		.536	
16	.307		.492	
41	.249		.478	
6	.248		.474	
34	.639			.788
35	.556			.722
36	.480			.675
33	.343			.503
Explained Variance		%20.099	%16.370	%7.959
Eigenvalues		5.226	4.256	2.069
Cronbach Alfa		.87	.78	.64

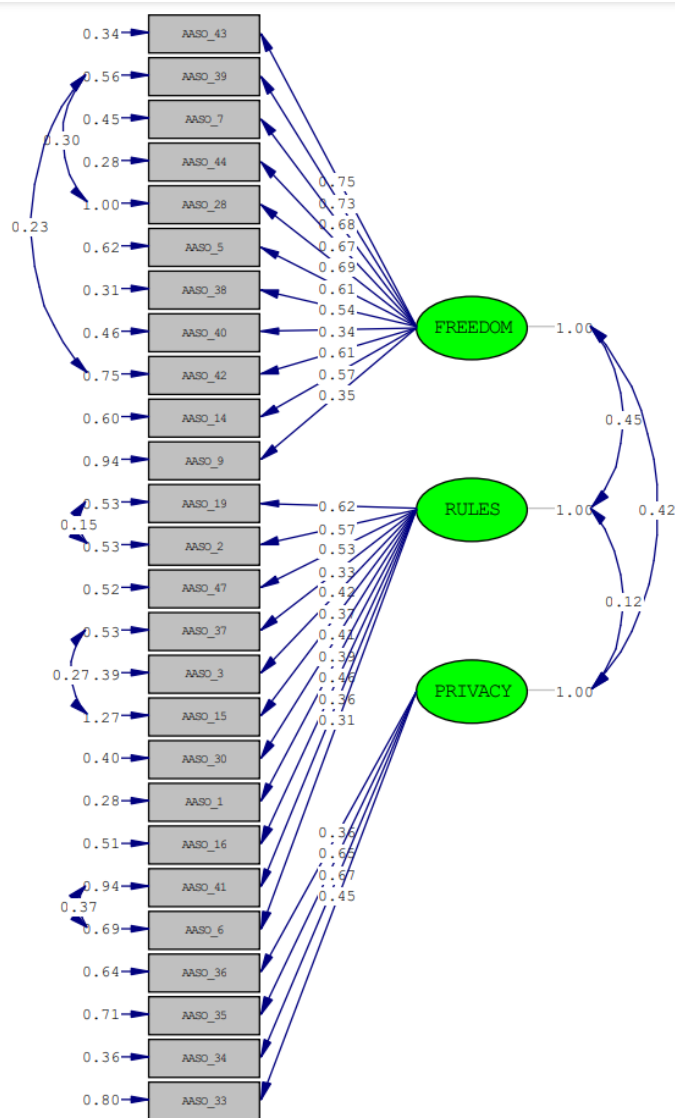
After the factor loadings were determined, the construct validity of the scale was tested with Confirmatory Factor Analysis (CFA). A total of 480 observations were obtained for CFA. After these observations were passed through multivariate normality tests, 10 observations were removed from the data set because there were multivariate outliers and CFA was applied to the remaining observations. Since the fit indices were not at the desired level in the first CFA analysis, the modifications proposed by the LISREL program (Schreiber, Nora, Stage, Barlow, & King, 2006) were examined by the researchers and modifications were applied among the items in the same sub factors. The model did not need to be reconstructed since the modifications bring the fit indices to the desired level. It was observed that some of the fit indices of the model obtained after the modifications were good fit and some of them were among acceptable values (Bentler & Bonnet, 1980; Hu & Bentler, 1998; Hu & Bentler, 1999). Values for fit indices are given in Table 2.

Table 2. Fit Indices Regarding the Scale of Perceived Family Boundaries in Young Adults

Model	Chi-square	Cs/df	NNFI	NFI	CFI	RMSEA
Three Factor Model	938,35	3,22	0,93	0,91	0,93	0,07
Criteria		<5	>0,90	>0,90	>0,90	<0,08

All of the fit indices obtained, show that the measurement model for the structure determined as a result of the exploratory factor analysis is within acceptable limits. This finding is presented as additional evidence for construct validity. In addition, convergent validity, divergent validity and CR values were also calculated in this study based on the findings of confirmatory factor analysis obtained. Convergent and divergent validity conditions (Fornell and Larcker, 1981) were examined for construct validity. For convergent validity, AVE (Average Variance Explained), CR (Composite Reliability) values for the scale were calculated. The results obtained show that the CR values of the scale are greater than the AVE and meet the convergent validity conditions. In addition, MSV (Maximum Shared Variance) and ASV (Average Shared Variance) values for the scale were calculated for divergent validity. From the sub factors, MSV value for Freedom was .20 ASV value was .18, MSV value for the Rules sub factor was .20 ASV value was .10, and MSV value for Privacy sub factor was .17 and ASV value was .09. It was observed that the MSV and ASV values, which are the conditions for divergent validity, were lower than the AVE value, and the scale was found to meet the divergent validity conditions. As a result of the calculations performed, it can be said that the scale has construct validity. The measurement model for the scale developed after analyzes and validity calculations is as in Figure 2.

Figure 2. Measurement Model for Perceived Family Boundaries in Young Adults Scale



Chi-Square=938.35, df=291, P-value=0.00000, RMSEA=0.068

The modifications applied in the measurement model were made between the 39th item and 28th and 42nd items, between the 19th and 2nd items, between the 37th and 15th items, and finally between the 41st and the 6th items. When these items were examined, it was seen that the modified items belong to the same sub-factors and measure similar structures. For example; Item 39, *"I can easily open private issues about myself to my family."* with the item 28 *"When I have a romantic relationship, I can easily share it with my mother / father."* and item 42, *"I can directly share my disappointments with my family members."* statements measure the same structure. For this reason, modifications can be made between error variances. In addition, the statement of the 19th item *"It is important for me to be with my family at meals"* and the 2nd item *"It is important for my family to be together at meals"* measure similar structures. Likewise, item 37 *"If I am going to come home late, I have to inform my family."* with the statement of 15th item, *"Home entry times are determined."* expressions measure similar structures within the same sub-factor. Finally, item 41 *"My family wants to meet with my friend's family."* And item 6 *"My family wants to know my friends."* overlaps on the same structure. It is seen that the applied modifications were made between similar structures under the same sub-factors.

Results, Discussion and Suggestions

Psychotherapy approaches have basically gone through three different periods in the last century. These periods are; the psychoanalytic model in which Sigmund Freud explains the source of the problems on the internal processes of individuals, later on the communication model that emerged with the World War II and finally the organismic model in which the systemic perspective was affected (Levenson, 1972). According to the organismic model, it is not correct to deal with individuals and their problems alone because each individual is also a part of a system. In other words, neither should focus only on internal processes as Freud said, nor should problems be taken only through bilateral relations, as the communication model suggests, it is important to deal with the whole system in which the individual is located. Salvador Minuchin's Structural Family Therapy model suggests that understanding the boundaries and communication patterns within the system is the main goal and only in this way to help to system (Minuchin, 1974).

The aim of this study is to develop a statistically valid and reliable measurement tool that enables to measure how young adults perceive the boundaries within the family system. In order to develop the scale, an item pool of 64 items was created and examined by experts. The examined items were tested in terms of content and appearance validity. Observations were collected with the 51-item form created after expert opinions. According to EFA results, the scale has 3 sub-factors and explains 43% of the total variance. This resulting structure was tested by CFA. The validity of the resulting structure has been verified by validity calculations. High scores obtained from the developed scale indicate that perceived family boundaries are clear (healthy), low scores indicate that perceived boundaries are rigid boundaries.

Subscales of the study were named as follow; independence, rules and privacy. Subscales were named in this way because items which loads under certain factor explained a specific family dynamic. These family dynamics were mentioned in different family therapy approaches such as Minuchin's Structural Family Therapy, Bowen's Intergenerational Approach and Don Jackson's Mental Research Institute. Independence subscale explains freedom and dependency of subsystems within the family. Rules subscale explains that if rules are flexible within the family system and are able to modify themselves. Privacy subscale explains that if subsystems of family give enough space to each other or not. When correlations between subscales examined, it's seem that there are significant ($p < 0.01$) and positive correlations. Correlation between independence and rules subscales found to be .45 while correlation between independence and privacy is .42 and finally correlation between rules and privacy is .12. It is expected that subscales to have significant positive yet weak correlations since they're different part of same structure. Strong correlations between subscales, otherwise, cause multicollinearity problem (Büyüköztürk, 2007).

Minuchin (1974) suggest that it's possible and more appropriate to act proactively to create healthy family structures. While doing that therapist should pay attention to structure, subsystems and boundaries (Connel, 2010). Boundaries are the rules which manage the members of the family system to how they act and join within the family structure. Based on structural family therapy view, it seems crucial to have healthy boundaries in order to have healthy communication and roles. This scale development study gives us a

perception on how young adult within the family system perceive these boundaries. This perception gives therapists a wider area to work with during the sessions. Also, it's thought that having the perception on how the members perceive boundaries within the family system is really important key point to start discussion about change. As it is known, structural change is main goal of the structural family therapy. According to Colapinto (2019) each boundary and functionality of the boundaries should be diagnosed, after that therapist should carefully consider each of these boundaries to work with family in better way. This scale aims to help therapist to determine to tendency of the perceived boundaries so as Colapinto mention that they could carefully work with the family and its members.

It is very important for counselors who work in the field of family therapy to obtain information about family system correctly. When the relevant literature is examined, it is seen that there is no measurement tool to measure how the family boundaries are perceived. It is thought that this scale developed will be helpful especially for field practitioners. This tools, also, could be using in the family research field. Further studies with all family members or subsystems will give clearer idea about how these boundaries actually affect to system itself and communication within the system.

The study conducted is only a scale development study on how young adults perceive family boundaries. In future studies, researchers can work on different measurement tools that will cover the entire family system. Another limitation of this study was it was conducted with simple sampling method, future studies could use different sampling method to create study groups. Also further researches can focus on qualitative studies.

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Conflicts of Interest: Authors declare no conflict of interest for this study.

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

Ethics Approval and Consent to Participate: Authors declared that study carried out within ethical scope. Participants were given informed consent form and were volunteer to participate to study. Ethic committee approval was obtained from Mersin University Social and Human Sciences Ethic Committee (29/12/2020-039).



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The Relationship between Intolerance to Uncertainty, Health Cognition and Depression, Stress and Anxiety of COVID-19 Pandemic

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ABSTRACT

The aim of this study was to determine how the uncertainty created by the COVID-19 affected participants' levels of depression, stress and anxiety along with their health-related cognition. Using an easily accessible sampling model, considering the pandemic process, scales were sent to the participants via social media. With the web-based data collection technique, a total of 556 volunteers, 415 women (74.6%) and 141 men (25.4%), were reached. The age range was between 18 and 80 with the mean value 33.22. Depression Anxiety Stress Scale, Health Cognitions Survey and Intolerance to Uncertainty Scale were used. The research emphasized that health cognition and intolerance to uncertainty are predictors of stress. Among the findings, it was emphasized that "negative self-evaluations about uncertainty" and "uncertainty preventing action" caused stress by intolerance to uncertainty. In the study, it was determined that there is a significant relationship between depression and anxiety, there are negative self-evaluations about uncertainty, and especially uncertainty prevents taking action. In the study, intolerance to uncertainty was emphasized as a predictor of anxiety during the COVID-19 pandemic process.

The virus, which emerged in China in December 2019, had high transmission and mortality rates, and World Health Organization on March 11, 2020, has declared that the COVID-19 virus is a cause of a worldwide pandemic (WHO, 2020). On February 19, 2021, 109,594,835 COVID-19 cases and 2,424,060 deaths due to COVID-19 occurred (WHO, 2021). The harsh measures taken to control the high rate of spread of the virus and the high mortality rates have increased the levels of insecurity and uncertainty of individuals and caused sharp life changes. (Ge, Wan, Zheng, & Zhang, 2020). Constant concern for the health of individuals themselves and their family members is a major risk factor for mental health illness (Li et al 2020).

Intolerance to uncertainty first described by Frenkel-Bruswik in 1948 as a personality trait that activates when an individual perceive or interpret a situation as a threat or a source of discomfort and anxiety (Grenier, Barette and Ladouceur, 2005). Budner (1962) described intolerance to uncertainty as the interpretation of the uncertain situations as threat. Freestone et al. (1994) defined intolerance to uncertainty as a tendency to give prejudiced negative cognitive, emotional and behavioural responses due to erroneous cognitions, where it is difficult to cope with the situation or phenomenon due to anxiety. Cognitive, emotional, and behavioural negative reactions to uncertain situations and events, and the inability to perform some functions, are common in individuals with an intolerance to uncertainty (Carleton, Norton, & Asmundson, 2007, Birrell, Meares, Wilkinson, & Freestone, 2011). Uncertainty brings along feelings of worry, anxiety and fear (Sarı & Dağ, 2009). Uncertainty is common in psychosocial crises that affect the entire population, such as the uncertain future and

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pandemics (Gu, Gu, Lei, & Li, 2020). Carleton, Mulvogue, Thibodeau et al. (2012), McEvoy and Mahoney (2012) found that intolerance to uncertainty increases the level of depression and anxiety. The intolerance to uncertainty is an important predictor in generalized anxiety disorders, obsessive-compulsive disorders, and depressive disorders (Gentes and Ruscio, 2011). Fetzner, Horswill, Boelen, and Carleton (2013) found that intolerance to uncertainty is a factor that causes post-traumatic stress disorder due to traumatic experience.

Health cognition is a term used to describe the cognitive processes underlying human behaviour in the face of illness-related conditions and is associated with health anxiety (Patel, Sharma, Kumar, & Binu, 2018). Hadjistavropoulos, Janzen, Kehler, Leclerc, Sharpe, and Bourgault-Fagnou (2012) stated that health cognition consists of the individual's probability of being sick, the horror of the disease, the difficulties in coping with the disease, and the perceptions they develop due to the inadequacy of health services. The importance of health cognitions gain importance with the recognition of psychological and cognitive state of an individual highly effects health condition and behaviours related to health (Altay and Yüksel, 2019). In other words, the concept of health cognitions is used to understand the cognitive processes underlying any condition or possibility of discomfort and illness by making changes in human behavior (Patel et al., 2018).

Depression is one of the mental illnesses that increases the disease burden and has the most common prevalence in society (Sinyor, Rezmovitz, & Zaretsky, 2016). The prevalence of depression was 12.9% before the pandemic (WHO, 2001, Lim, Tam, Lu et al.2018). The negative effects of the COVID-19 pandemic on mental health have been reported by many studies like the increase in tension disorder, fear, anxiety, stress, depression and sleep disorders due to traumatic experience has been reported by many studies (Rajkumar, 2020, Torales, O'Higgins, Castaldelli-Maia and Ventriglio, 2020, Wang, Di, Ye and Wei, 2021).

Taha, Matheson, Cronin, and Anisman (2014) identified the pandemic as a factor that increased anxiety levels in their studies on the HINI pandemic in 2009. Kasapoğlu (2020), who researched the COVID-19, found that intolerance to uncertainty increased anxiety levels. Gica, Kavaklı, Durduran, and Ak (2020) found that psychosomatic symptoms are related with the interpretation of the risk and intolerance to uncertainty. Duman (2020) found a positive significant relationship between fear of COVID-19 and intolerance to uncertainty. Bakioğlu, Korkmaz, and Ercan (2020) found a positive significant relationship between fear of COVID-19 , intolerance to uncertainty, depression, anxiety and stress levels. Karataş and Tagay (2021) found that fear of COVID-19 and intolerance of uncertainty together negatively affect psychological resilience. Rettie and Daniels (2020) found in their study in the United Kingdom that individuals who are more vulnerable in terms of health increased their level of intolerance to uncertainty with the increase of their concerns about their health conditions. Petzold, Bendau, Plag, Pyrkosch, Mascarell Maricic, Betzler, Rogoll, Große, and Ströhle, (2020) found that participants' thinking of being infected more than the physical effects of COVID-19 increased anxiety. Hyland, Shevlin, McBride, Murphy, Karatzias, Bentall, Martinez, and Vallières (2020) found a positive relationship between COVID-19 and generalized anxiety disorder or depression in one out of every four people in their screenings in the first week of the pandemic in Ireland. Havnen, Anyan, Hjemdal, Solem, Gurigard Riksfjord, and Hagen, (2020) found that exposure to stress due to COVID-19 was associated with depression symptoms and this relationship was mediated by anxiety.

The aim of this study was to determine how the uncertainty created by the COVID-19 affected participants' levels of depression, stress and anxiety along with their health-related cognition. Although there are researches that are done to measure the consequences of COVID-19 pandemic on mental health issues the health cognitions and the effects of the situational uncertainty caused by the pandemic and the capacity of bear uncertain situations is not well studied subject yet.

Method

Participants

Using an easily accessible sampling model, considering the pandemic process, questionnaire were prepared and sent to the participants via social media platforms. With the web-based data collection technique, a total of 556 volunteers, 415 women (74.6%) and 141 men (25.4%), were reached. The mean age of the participants

was calculated as 33.22 with the range 18-65. Thirty-three questionnaires were not included to the research due to incompleteness and exceeding the age limits of the scales. 451 (81.6%) of the participants graduated from university and/or higher education and the rest of the participants were had at least high school graduations.

Data Collection Tools

Using an easily accessible sampling model, considering the pandemic process, scales were prepared and sent to the participants.

Socio-Demographic Information Form. The form prepared by the authors included questions on gender, age, fear of the COVID-19 pandemic, and the adequacy of public service ads.

Depression Anxiety Stress Scale (DASS). The Depression Anxiety Stress Scale (DASS) consists of 21 items. DASS developed by Lovibond and Lovibond (1995) and adapted into Turkish by Yıldırım, Boysan, and Kefeli (2018) was used. Internal consistency of the DASS-Depression, DASS-Anxiety and DASS- Stress were calculated as .89, .87 and .90 respectively. DASS-21 have three sub-scales each consist of 7 questions. Total scores obtained for each sub-scale by summing the relevant questions for DASS-Depression, DASS-Anxiety and DASS- Stress. DASS-21 is a 4 point Likert type self-report scale ranging from 0 to 3. DASS-21 can be applied to ages starting from 17 and up.

Health Cognitions Survey. The Health Cognition Survey adapted to Turkish by Yılmaz and Dirik (2018) was developed by Hadjistavropoulos, Janzen, Kehler et al. (2012). The Cronbach Alpha values of the scale, which has a four-factor structure, were reported as .88 for "Difficulty in Coping with Disease" (DCD), .67 for "Insufficiency of Medical Services" (IMS), .66 for "The Probability of Disease" (PD), and .73 for "Frightening of the Disease" (FD). The age range of Health Cognitions Survey is between 18-65. The scale is a 5 point Likert type self-report scale ranging from 1 to 5. Questions 2, 4, 7, 9, 10, 15, 19 and 20 is reverse coded questions and the higher scores indicates dysfunctional health cognitions of the individuals.

Intolerance to Uncertainty Scale. The original form of the scale was in French and was adapted to English (Buhr & Dugas, 2002). Adapted into Turkish by Sarı and Dağ (2009), the Intolerance to Uncertainty Scale consists 26 questions and has four factors: "*uncertainty is stressful and sad*" (USS) (9 items), "*negative self-assessments about uncertainty*" (NSE) (8 items), "*not knowing the future is disturbing*"(NNF) (4 items) and "*uncertainty prevents taking action*"(PA) (5 items). Internal consistency coefficients of the factors was found as .88, .79, .79, and .79 respectively. There is no reverse coded items in the scale. The whole scale score and scores from each factor can be obtained by summing up relevant questions. The scale is a 5 point Likert type self-report scale ranging from 1 to 5. Higher total score and sub-scale scores indicates higher intolerance to uncertainty.

Results

Both Kolmogorov-Smirnov test as well as the Shapiro-Wilk test results suggest that all variables are normally distributed in this sample (Table 1).

Table 1. Values of normal distribution

	N	\bar{x}	SD	K-Smirnov z	p
Anxiety	556	6.600	5.569	1.036	.123
Depression	556	8.451	6.056	1.093	.131
Stress	556	9.248	5.896	1.137	.057
IMS	556	11.907	2.493	1.092	.137
DCD	556	25.446	4.126	1.173	.055
FD	556	14.827	3.425	1.127	.083
PD	556	10.119	3.657	1.087	.142
USS	556	31.259	8.297	1.031	.181
NSE	556	23.971	7.412	1.090	.140
NNF	556	12.261	4.264	1.110	.101
PA	556	14.983	4.673	1.097	.126

In terms of gender variable, it was observed that the difficulty in coping with the disease scores, which is the sub-dimension of intolerance to uncertainty, showed a significant difference, $t=2.351$, $p < .05$. (Table 2)

According to this result, male participants scored significantly higher in coping with the disease than female participants, for male=26.149+4.246 and for female=25.207+4.062. There was no other significant differences between the scales, $p > .05$.

Table 2. The t-test for the gender variable

		N	\bar{x}	SD	df	t
Difficulty coping with the disease	Female	415	25.207	4.062	554	2.351*
	Male	141	26.149	4.246		

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

When the obtained results are examined (Table 3), anxiety, fear of the disease, illness probability cognitions and negative self-evaluations about uncertainty scores showed a significant difference in terms of fear of the Covid-19 pandemic variable, values respectively $F(2,552) = 3.495$, $p < .05$; $F(2,551) = 7.887$, $p < .001$; $F(2,551) = 4.036$, $p < .05$. Tukey, one of the Post Hoc Tests, was conducted to determine among which groups these differences exist. According to this, the difference in anxiety level was between the participants who stated that they had a very high level of fear and the participants who stated that they had a low level of fear, for high level $\bar{x} = 7.248$ and for low level of fear $\bar{x} = 5.239$; Among the participants who stated that the fear of illness was very low, moderate and low, values for very low $\bar{x} = 15.610$, for moderate $\bar{x} = 14.656$ and for low $\bar{x} = 13.269$; disease probability cognition level is between very high ($\bar{x} = 10.807$) to medium $\bar{x} = 9.916$ and very high to low $\bar{x} = 8.910$, $p < .05$; Negative self-assessment scores regarding uncertainty were determined to be between very high $\bar{x} = 24.431$ and low $\bar{x} = 21.597$ and medium level $\bar{x} = 24.228$ and low, $p < .05$.

Table 3. Examination according to the level of fear of the Covid-19 pandemic

		Sum of squares	df	Mean square	F
Depression	Between groups	88.707	2	44.354	1.208
	Within groups	20230.753	551	36.716	
	Total	20319.460	553		
Anxiety	Between groups	215.016	2	107.508	3.495*
	Within groups	16948.413	551	30.759	
	Total	17163.430	553		
Stress	Between groups	189.374	2	94.687	2.735
	Within groups	19078.229	551	34.625	
	Total	19267.603	553		
IMS	Between groups	11.880	2	5.940	0.954
	Within groups	3429.239	551	6.224	
	Total	3441.119	553		
DCD	Between groups	28.637	2	14.319	0.840
	Within groups	9387.391	551	17.037	
	Total	9416.029	553		
FD	Between groups	294.482	2	147.241	13.086***
	Within groups	6199.570	551	11.251	
	Total	6494.052	553		
PD	Between groups	205.225	2	102.613	7.887***
	Within groups	7168.912	551	13.011	
	Total	7374.137	553		
USS	Between groups	238.960	2	119.480	1.743
	Within groups	37763.668	551	68.537	
	Total	38002.628	553		
NSE	Between groups	439.029	2	219.515	4.036*
	Within groups	29967.825	551	54.388	
	Total	30406.854	553		
NNF	Between groups	71.272	2	35.636	1.970
	Within groups	996.6723	551	18.088	
	Total	10037.995	553		
PA	Between groups	62.276	2	31.138	1.431
	Within groups	11993.717	551	21.767	
	Total	12055.993	553		

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

When the obtained results are examined (Table 4), depression, USS, NSE, NNF and PA scores were found to be significant, values respectively $t = -2.346$, $p < .05$, $t = -3.963$, $p < .001$, $t = -2.609$, $p < .01$, $t = -2.390$, $p < .05$, $t = -2.091$, $p < .05$. According to this, depression and USS, NSE, NNF and PA scores were higher, values respectively $33.216 + 7.498$, $25.103 + 7.417$, $12.870 + 4.057$, $15.557 + 4.680$.

Table 4. Results of the t-test for sufficient public service ad

		N	\bar{x}	SD	df	t
Depression	Yes	365	7.100	6.052	548	-2.346*
	No	185	9.270	5.931		
Anxiety	Yes	365	6.367	5.588	548	-1.193
	No	185	6.962	5.410		
Stress	Yes	365	9.027	5.898	548	-1.151
	No	185	9.638	5.828		
IMS	Yes	365	11.948	2.484	548	0.659
	No	185	11.800	2.491		
DCD	Yes	365	25.542	4.024	548	0.946
	No	185	25.189	4.353		
FD	Yes	365	14.699	3.507	548	-1.282
	No	185	15.091	3.177		
PD	Yes	365	10.019	3.682	548	-.809
	No	185	10.287	3.619		
USS	Yes	365	30.288	8.516	548	-3.963***
	No	185	33.216	7.498		
NSE	Yes	365	23.373	7.417	548	-2.609**
	No	185	25.103	7.212		
NNF	Yes	365	11.956	4.326	548	-2.390*
	No	185	12.870	4.057		
PA	Yes	365	14.680	4.633	548	-2.091*
	No	185	15.557	4.680		

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

Table 5. Multiple regression results for stress

	B	SE	β	t	p
Constant	-3.155	1.617		-1.951	.052
IMS	0.040	0.068	.017	0.588	.557
DCD	-0.171	0.043	-.120	-3.995	.000
FD	0.068	0.059	.039	1.145	.253
PD	0.170	0.051	.105	3.318	.001
USS	0.115	0.040	.161	2.897	.004
NSE	0.286	0.046	.360	6.284	.000
NNF	0.072	0.080	.052	0.895	.371
PA	0.149	0.062	.118	2.398	.017

$R = .748$, $R^2 = .560$, $F(8,547) = 87.084$, $p < .001$

When the analysis of predictors of stress (Table 5), another dependent variable of the study, was examined, it was found that all sub-dimensions of health cognition and four dimensions of intolerance to uncertainty together predicted the stress level (Table 4), $R = .748$, $R^2 = .560$, $F(8,547) = 87.084$, $p < .001$. In light of this finding, it can be stated that 56% of the variance related to stress can be explained by health cognition and intolerance to uncertainty. When examining which variable explains the variance in question, the difficulty in coping with illness ($p < .001$) and the probability of illness ($p < .01$), which are sub-dimensions of healthy cognition, are stressful and distressing ($p < .01$) due to intolerance to uncertainty. It was determined that

negative self-evaluations ($p < .001$) and uncertainty preventing action ($p < .05$) were significant predictors of stress. It was observed that other sub-dimensions were not significant predictors of stress level ($p > .05$).

Table 6. Multiple regression results for depression

	B	SE	β	t	p
Constant	-3.243	1.804		-1.798	.073
IMS	0.051	0.076	.021	0.674	.500
DCD	-0.173	0.048	-.118	-3.607	.000
FD	0.072	0.066	.040	1.084	.279
PD	0.205	0.057	.124	3.596	.000
USS	0.066	0.044	.091	1.505	.133
NSE	0.246	0.051	.301	4.835	.000
NNF	0.046	0.090	.032	0.515	.607
PA	0.254	0.069	.196	3.656	.000

R=.694, R²=.481, F(8,547)=63.425, p<.001

When Table 6 is examined, it was observed that the four dimensions of the IMS, DCD, FD, PD and intolerance to uncertainty were all predictors of depression, $R = .694$, $R^2 = .481$, $F(8,547) = 63.425$, $p < .001$. It was found that 48% of the variance related to depression can be explained by health cognition and intolerance to uncertainty. Examining which variable explains the variance in question, it was determined that difficulty in coping with the disease, probability of illness, negative self-evaluations about uncertainty, and uncertainty preventing taking action were significant predictors of depression, $p < .001$. It was observed that other sub-dimensions were not significant predictors of depression, $p > .05$.

When the regression analysis was examined (Table 7), it was observed that all sub-dimensions of health cognition and four dimensions of intolerance to uncertainty together were predictors of anxiety, $R = .657$, $R^2 = .431$, $F(8,547) = 51.894$, $p < .001$. It was found that 43% of the variance related to anxiety can be explained by health cognition and intolerance to uncertainty. When examining which variable explains the variance in question, difficulty in coping with the disease, disease probability, negative self-evaluations about uncertainty and uncertainty preventing action it was determined that anxiety is a significant predictor, p scores respectively $p < .05$, $p < .01$, $p < .001$, $p < .01$. It was observed that other sub-dimensions were not significant predictors of anxiety, $p > .05$.

Discussion and Conclusion

In the study, the effects of "depression", "stress" and "anxiety" levels on individuals' health cognition were investigated, depending on the uncertainty created by the COVID-19 pandemic situation. During the pandemic, an increase in anxiety, depression and stress levels of individuals were detected along with intolerance to uncertainty, whose intensity increased. It has been investigated whether intolerance to uncertainty differs between gender variables. Among the findings of the study, intolerance to the uncertainty created by the pandemic emphasized that the difficulty in coping with the disease was significantly higher in men. Broche-Pérez et al. (2020) found that female participants, on average, experienced significantly more fear of COVID-19 than male participants. This research has shown that there is a significant relationship between fear of the COVID-19 pandemic and negative self-assessments about anxiety, fear of illness, cognition of illness probability, and uncertainty. This finding is supported by the previous study by Bakioğlu, Korkmaz and Ercan (2020). Satici et al. (2020) found a positive relationship between intolerance to uncertainty and fear of the COVID-19 pandemic. In the study of Duman (2020), a positive significant relationship was found between intolerance to uncertainty and fear of the COVID-19 pandemic.

Participants stated that they did not find public service ads at a sufficient level. According to this, it was emphasized that depression and intolerance to uncertainty scores of the participants who do not find the public spot sufficient were higher. Gica, Kavaklı, Durduran and Ak (2020) found a relationship between the perceived COVID-19 risk of psychosomatic symptoms and intolerance to uncertainty.

The research emphasized that health cognition and intolerance to uncertainty are predictors of stress. Among the findings, it was emphasized that "negative self-evaluations about uncertainty" and "uncertainty preventing action" caused stress by intolerance to uncertainty. In a similar study, Havnen, Anyan, Hjemdal, Solem, Gurigard Riksfjord, and Hagen (2020) stated that exposure to stress due to fear of the COVID-19 pandemic was associated with depression symptoms and this relationship was mediated by anxiety. In the study, it was also emphasized that depression is a predictor of health cognitions and intolerance to uncertainty. In the study conducted by Simms, Fear and Greenberg (2020), it was stated that the perception of the individual not having sufficient health equipment is an important relationship between the globally deteriorating health system and emotional problems. In the study, it was emphasized that there is a significant relationship between depression and anxiety, negative self-evaluations about uncertainty and uncertainty preventing taking action. This finding has been reported previously by Carleton, Mulvogue, Thibodeau et al. (2012) and McEvoy and Mahoney (2012) found in their study that "intolerance to uncertainty increases the level of depression and anxiety". In the study, intolerance to uncertainty was emphasized as a predictor of anxiety during the COVID-19 pandemic process. In the study of Taha, Matheson, Cronin, and Anisman (2014), HINI (2009) found that the pandemic process was a factor that increased anxiety. This is similar to the work done. In the study, a significant relationship between the probability of illness as a predictor of anxiety was emphasized. Petzold, Bendau, Plag, Pirkosch, Mascarell Maricic, Betzler, Rogoll, Große, and Ströhle (2020) stated that thinking about being infected increases anxiety level. The purpose of this study is to examine how the intolerance to the uncertainty created by the COVID-19 pandemic affects the levels of depression, stress and anxiety, and the health-related cognition of the individuals participating in the study.

The present study finding show that male participants scored significantly higher in coping with the disease than female participants. In addition, there is no significant difference was found among intolerance to uncertainty, health cognition, depression, anxiety and stress levels. All sub-dimensions of health cognition and four dimensions of intolerance to uncertainty together predicted the stress level. The four dimensions of the Health Cognition Survey and intolerance to uncertainty were all predictors of depression. Difficulty in coping with the disease, probability of illness, negative self-evaluations about uncertainty, and uncertainty preventing taking action were significant predictors of depression. The other result is that difficulty in coping with the disease, disease probability, negative self-evaluations about uncertainty and uncertainty preventing action it was determined that anxiety is a significant predictor.

Studies to analyze psychological problems with the COVID-19 pandemic have been a great importance for both application and research areas. During and post pandemic period caused significant psychological and social problem to whole population especially grown up individuals because lock-down and curfew changed the overall life style. Start working at home and do the house-work especially cause a burden for females. On the other hand, domestic violence cases increase drastically in that period again. The mentioned issues also change the psychological wellbeing of people. It is well known knowledge that pandemic increase the prevalence of mental disorders like obsessive-compulsive disorders, depressive disorders, sleep disorders and anxiety disorders. In line with the results of the study, it is recommended to prepare practices to protect the psychological health of individuals during the pandemic process. The above mentioned practices can be psycho-educational programs that can be reached via online participation, public announcement can be develop to inform different age groups including children and older aged individuals. Longitudinal studies to be conducted in the future will also shed light on the problems that may develop depending on the course of the pandemic process.

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The Last 20 Years of Psychodrama in Turkish and International Academic Papers: A Document Analysis Study

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ABSTRACT

Objective: This study aims to examine its distribution according to problem areas of the publications in which the effectiveness of psychodrama is examined between 2001 and 2021 in Turkish academic papers and international academic papers.

Method: In this study, document analysis, which is a qualitative data collection method, was used. A total of 48 publications were reached within the scope of this research. Content analysis was performed.

Results and Conclusions: It is noted that studies examining the effectiveness of psychodrama on psychological health in Turkish academic papers and international academic papers are at the forefront and that there is limited research on career development. It has been found that articles and thesis studies in Turkish academic papers mostly focus on the effect of psychodrama on psychological health, social skills, and interpersonal relations; while studies in international academic papers focus on its effect on psychopathology and psychological health. It is seen that the publications examining the effectiveness of psychodrama in Turkish academic papers and international academic papers are most frequently related to young adults, and least frequently related to children and middle-aged adults. When compared to its use as a method, it has been concluded that psychodrama is mostly used as a technique in publications in Turkish academic papers and international academic papers.

Moreno (1963), the founder of psychodrama and group psychotherapies, defined psychodrama as a science that explores reality with a dramatic method and offers the individual an opportunity to have a new, wider experience that goes above and beyond reality. Today, the definition of psychodrama has expanded even further. There are now many definitions of psychodrama, such as a method of psychotherapy in which problems are examined not only by talking, but also staging and encouraging clients to continue and finalize their actions (solving their problems) through dramatization and role-playing (Kellermann, 2013a); a body of well-executed, flexible techniques that can be used in any psychotherapy approach (Naar, 2007); a type of group psychotherapies that approximate real life (Özbek & Leutz, 2011); and a way of living without being punished for our mistakes (Karp, 2013). The diversity in these definitions reflects the potential for diverse application of psychodrama.

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There are many studies in which psychodrama is used both as a method and a technique in individual, group, and family therapies; psycho-education; personal development and interaction groups; and Bibliodrama (a form of role-playing or improvisational theater using Bible stories). Studies have tested its effectiveness on various populations and subject/problem areas, from vocational training to the teaching of course subjects in schools, from children to the elderly, from students to teachers, from nurses to counselors, and from undiagnosed/healthy individuals to diagnosed/disadvantaged individuals (Avest, 2017; Dorothea, 2016; Wieser, 2013; Okur Berberoğlu, 2017; Abu Al Rub, 2018; Maya, Jiménez, Lorence, del Moral and Hidalgo, 2020; Farmer and Geller, 2005; Prima, Putri and Sudargo, 2017; Çoşkun and Çakmak, 2005; Altıncılıç, Ateşçi and Uğurlu, 2020; Karadağ, Kalkan Oğuzhanoğlu, Özdel, Ergin and Kaçar, 2010; Akbıyık, Soygür and Karabulut, 2012; Varma, Karadağ, Kalkan Oğuzhanoğlu and Özdel, 2017; Çiçek, 2019; Konopik and Cheung, 2012; Kılıç, 2019; Parkan, 2015; Gürkan, 2020; Kalkan Oğuzhanoğlu and Özdel, 2005; Aktaş, 2014; Gökçaya and Özdel, 2016; Göveç Taşpınar, 2014; Çınar, 2011; Karataş, 2008; Karataş, 2011; Karataş and Gökçakan, 2009; Orkibi, 2011; Dorothea, 2016; Bakalım, Yörük and Şensoy, 2018; Durmuş, 2019; Şener, 2018; Aytan Erdoğan, 2010; Hamamcı, 2002; Gürkan, 2006; Karataş, 2014; Ulupınar, 2014; Bal and Şener, 2015; Katmer, Demir, Çekiç and Hamamcı, 2020; Chae and Kim, 2017; Işiker and Fırınçı, 2008; Doğan, 2012; Orkibi, 2011; Ulusoy and Güçray, 2019; Ortakale, 2008; Gürkan, 2020; Atlı Özbaş, 2014; Gezgin, 2019; Terzioğlu, 2019; Tavakoly, Namdari and Esmaili, 2014; Agten, 2019).

The results of meta-analyses and systematic literature reviews on studies examining the effectiveness of psychodrama (Kipper and Ritchie, 2003; Wang, Ding, Chen, Zhang, Shen, et al., 2020; Wieser, 2013; Cruz, Sales, Alves, & Moita, 2018; Orkibi and Feniger-Schaal, 2019) support that the evaluations of participants in psychodrama are positive, with no reports of negative side effects (Kellermann, 2013a). Although the history of psychodrama, which has wide use in both clinical and educational settings, dates back to the early 1900s (Imholz, 2008; Ersever, 1994), there is a limited number of studies examining the effectiveness of psychodrama studies conducted before the 21st century (Carroll and Howieson, 1978; Ragsdale, Robert, Cox, Finn, and Eisler, 1996; Carbonell and Partelena Barehmi, 1999; Lambie, Robson, and Simmonds, 1997; Doğaner, 1996; Gökler, 1998; Gündüz, 1996). In other words, interest in psychodrama has increased in the last two decades. Although there are existing psychodrama-related meta-analyses (Kipper & Ritchie, 2003; Wang, Ding, Chen, Zhang, Shen, et al., 2020); reviews (Chung, 2013; Liberali & Grosseman, 2015) and systematic literature reviews on the subject (Wieser, 2013; Cruz, Sales, Alves, & Moita, 2018; Orkibi & Feniger-Schaal, 2019), no study has compared the effectiveness of psychodrama in domestic and foreign studies conducted after the 20th century, that is, in the last 20 years (eg according to criteria such as sample group, problem area, etc.).

As Wieser (2013) stated, it cannot be said that psychodrama has yet been fully accepted by the scientific community. It is thought that systematically examining the domestic and international studies examining the effectiveness of psychodrama will reveal whether psychodrama is effective with evidence-based studies. In addition, it is thought that this study will give an idea about which problem areas psychodramatis will focus on and who needs psychodrama. Moreover, considering that psychodrama is less preferred for mental health professionals who can become psychodramatists after completing a long education period in Turkey; Evidence-based findings on the effectiveness of psychodrama may change the minds of mental health professionals who stay away from psychodrama education. For this reason, it can be said that there is a need to examine the effectiveness of psychodrama with document analysis in the last two decades, both at home and abroad.

Comparing domestic and international studies on the effectiveness of psychodrama is important in terms of both revealing a general pattern regarding effectiveness and revealing the problem areas and age groups within which effectiveness has not been sufficiently examined in certain countries. To close this gap, there is a need for document analysis of studies conducted in the last two decades on the effectiveness of psychodrama. The general purpose of this research is to determine which problem areas and age groups have been the focus of studies published in Turkish and international English-language academic papers in the last two decades and to identify the different ways in which the method/technique of psychodrama was used in these studies. In this context, this research seeks to answer the following questions:

- 1) What is the distribution of studies conducted in the last two decades on the effectiveness of psychodrama, both in Turkish and international academic papers, by problem areas?
- 2) What is the distribution of studies conducted in the last two decades on the effectiveness of psychodrama, both in Turkish and international academic papers, by sample population (age groups)?
- 3) What is the distribution of studies conducted in the last two decades on the effectiveness of psychodrama, both in Turkish and international academic papers, by the use of psychodrama as a method or technique?

Method

Research Model

This is a descriptive study, as it aims to reveal which problem areas and age groups have been the focus of studies on the effectiveness of psychodrama in Turkish and international academic papers, as well as to understand the application of psychodrama in these studies as a method or technique. The study applied a document analysis method, which refers to the systematic interpretation and analysis of printed or web-based data (Bowen, 2009). Document analysis is a frequently used data collection method in qualitative research (Merriam, 2013). Documents can be used to collect data about the context in which research was conducted, to analyze the content of the cases observed and the questions asked in research, to provide additional data to existing research, to follow the change and development in a field of inquiry, and to verify the findings obtained from other data sources (Bowen, 2009). In this research, documents were used to collect data on the context and background of the examined studies.

The sample

The sample of the study comprises articles and theses on the effectiveness of psychodrama published between 2001 and 2021 that are scanned and available in the Dergipark, Yök Tez, ERIC, and/or Proquest databases. Forty-eight experimental studies were ultimately included in the sample.

Data collection and analysis

The first step in document analysis is to find appropriate documents. The documents should be necessary and useful (Merriam, 2013), reliable, original, and accurate (Bowen, 2009). As this study aims to review experimental studies on psychodrama published between 2001 and 2021 in Turkish and international English-language academic papers, the researcher utilized the keywords "psychodrama/psychodrama" in search engines. The goal was to collect documents available via widely used and distinguished databases. Bowen (2009) argued that researchers must decide whether the documents they include in the research process are equivalents (with similar content/details) and whether they are suitable for the conceptual framework of the research. For this reason, this research included the articles and theses indexed in the specified databases with experimental design content and similar details that were accessible and published between 2001 and 2021.

The Thesis Search Center (tez.yok.gov.tr) and Dergipark (dergipark.org.tr) databases were used to collect publications and theses in Turkey. The ERIC (eric.ed.gov) database and Proquest database (<https://www.proquest.com/index>) were used to collect theses and publications produced abroad. A total of 63 articles and 45 theses were identified.

A search of the keyword "psikodrama" in the Dergipark database produced 24 domestic articles. A total of 16 articles were published in 2001 or after. Among these articles, 12 addressed the effectiveness of psychodrama. However, some of these articles did not directly examine effectiveness. Five studies were excluded for this reason. One presented a psychodrama case taken from another study, one discussed psychodrama as an educational intervention, one conducted a literature review, one was a book review, and one summarized a thesis (the thesis is included instead of this article). The remaining seven articles were examined. When the word "psikodrama" was searched in all thesis summaries in Yök Thesis Center, the result was a total of 31 domestic theses. Twenty-seven of these theses were published in the period 2001-2021, and 20 of those examined the effectiveness of psychodrama and were included in this research. Seven theses were excluded from the scope of this research as they had content related to drama-based intervention, music and theater education, and analysis of movies and theater plays.

The ERIC database was used to collect international articles published in English. As a result of this search, 31 publications were highlighted. However, only 20 were available, of which 14 articles examined the effectiveness of psychodrama and were therefore included in this research. Four articles — including one describing a game used in psychodrama, one focusing on the process analysis in psychodrama, one focusing on reconceptualizing psychodrama terms, and one discussing the place of role-playing in games and the virtual world — were excluded from the scope of this research. The Proquest database was used to collect theses written abroad. A search produced a total of 21 theses with the word "psychodrama" in the title published in the period 2001-2021. Of the 21, 18 theses examined the effectiveness of psychodrama and were included in this research. A total of four theses — including two analyzing psychodrama concepts, one examining the effectiveness of psychodrama education (for psychodramatists), and one containing a discussion of concepts through cases — were excluded from the scope of this research.

Document analysis involves superficial review, comprehensive review, and interpretation. This iterative process integrates elements of content and thematic analysis. Content analysis is the process of categorizing the document data in regards to the research questions. Thematic analysis is the process of coding data, creating categories, and creating themes about a phenomenon (Bowen, 1999). In quantitative research, content analysis is used when examining documents (Merriam, 2013). In this research, the data obtained from the documents were coded according to the research questions and divided into categories. The triangulation technique is one of the most frequently used methods to ensure internal validity, which is the strongest determinant of significant qualitative research (Merriam, 2013). In this research, the analyst triangulation technique was used: the data were analyzed together by the researchers and the final decisions regarding the categories were reached through the code.

Findings

Table 1 provides the descriptive statistics regarding the problem areas (Research Question 1) of the studies included in this research.

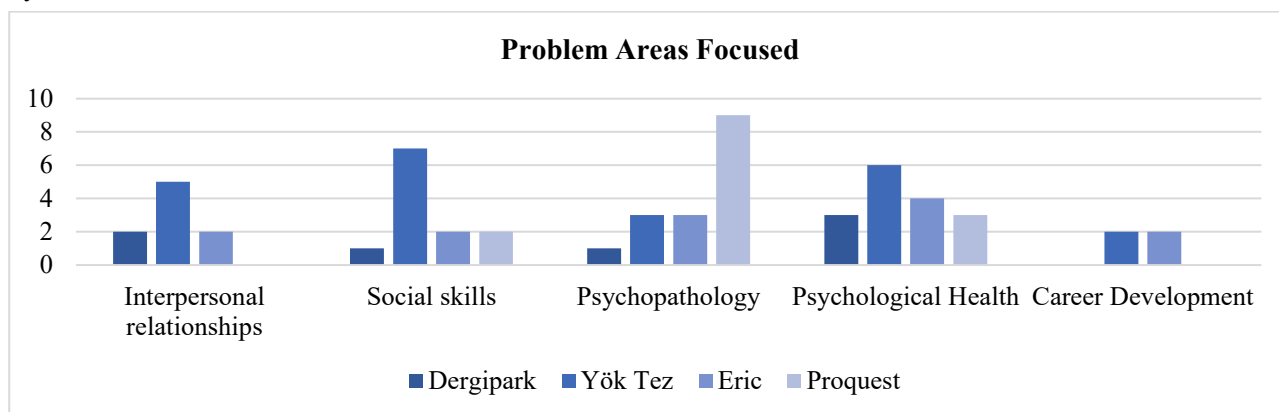
As Table 1 reflects, the problem areas were divided into five categories: psychopathology, psychological health, social skills, interpersonal relations, and career development. While the dominant problem area category among domestic articles was psychological health, domestic theses also often concentrated on the problem area categories of social skills, psychological health, and interpersonal relations. In general, the psychological health category is at the forefront in domestic publications on the effectiveness of psychodrama.

Table 1. Frequency distribution of problem area categories among publications examining the effectiveness of psychodrama, by database

Databases	Problem categories	Codes	f	Number of Publications
Dergipark	Psychopathology	Psychiatric symptoms	1	1
		Self-acceptance	1	
	Psychological health	Life satisfaction	1	3
		Well-being	1	
Social skill	Empathy	1	1	
	Interpersonal relations	Building healthy relationships		2
Yök Tez	Psychopathology	Psychiatric symptoms (all sub-dimensions of SCL-90-R)	2	3
		Suicidal tendency	1	
		Autism	1	
		Resilience/psychological empowerment	2	
		Psychological well-being	1	
	Psychological health	Despair	1	6
		Life satisfaction	1	
		Self-respect	1	
		Mood	1	
		Burnout	1	
		Perceived social support	1	
		Anger management	2	
	Social skill	Coping with stress/difficult life events	2	7
		Mediation	1	
		Expressing feelings	1	
		Exam anxiety	1	
	Interpersonal relations	Developing rational beliefs/functional attitudes	3	5
		Building healthy relationships	2	
		Making professional decisions	1	
	Career development	Professional maturity	1	2
Risk management		1		
Eric	Psychopathology	Anxiety	1	3
		Aggression	1	
		Asperger's syndrome	1	
		Self-awareness	2	
	Psychological health	Self-value	1	4
		Subjective well-being	1	
		Adjusting to divorce	1	
		Resilience	1	
	Social skill	Expressing feelings	1	2
		Conflict resolution	1	
	Interpersonal relations	Origin family relationships	1	2
		Building healthy relationships (attachment styles)	1	
	Career development	In-service education	1	2
		Vocational education/teacher training	1	
Proquest	Psychological health	Locus of control	1	3
		Well-being	1	
		Self-sufficiency	1	
		Self-respect	1	
		Discovery of the self	1	
		Trauma	3	
		Suicide risk	1	
	Psychopathology	Anxiety	1	9
		Stress	1	
		Obesity	1	
		Neurosis	1	
	Social skill	Eating disorders	1	2
		Cyberbullying	1	
Conflict resolution		1		

Among the articles published abroad, the problem area most frequently studied was the psychological health category, while theses published abroad mostly focused on the category of psychopathology. Figure 1 presents a distribution chart of the problem areas of the examined studies, by database.

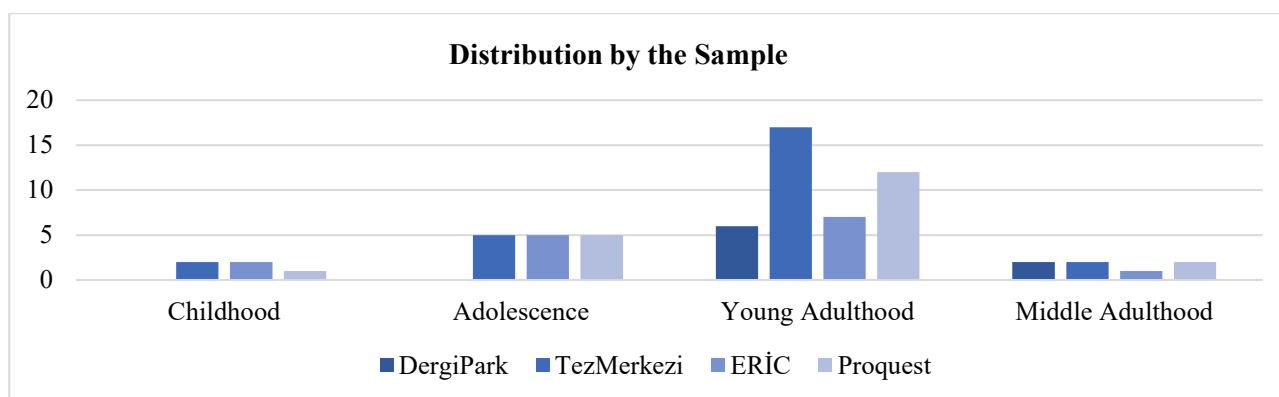
Figure 1. Distribution of problem area categories among publications on the effectiveness of psychodrama, by database



As illustrated in Figure 1, the most commonly addressed problem area in the examined studies on psychodrama is psychopathology; the least commonly addressed problem area is career development. All four databases published studies in almost all categories, with the exception of interpersonal relations and career development. Only the publications available via the Yök Tez and ERIC databases fell into the career development category, and no publications fell into the category of interpersonal relations in the Proquest database.

Figure 2 provides a distribution chart of the sample population (age groups) of the examined studies in Turkish and international academic papers, organized by database.

Figure 2. Distribution of sample populations among publications on the effectiveness of psychodrama, by database

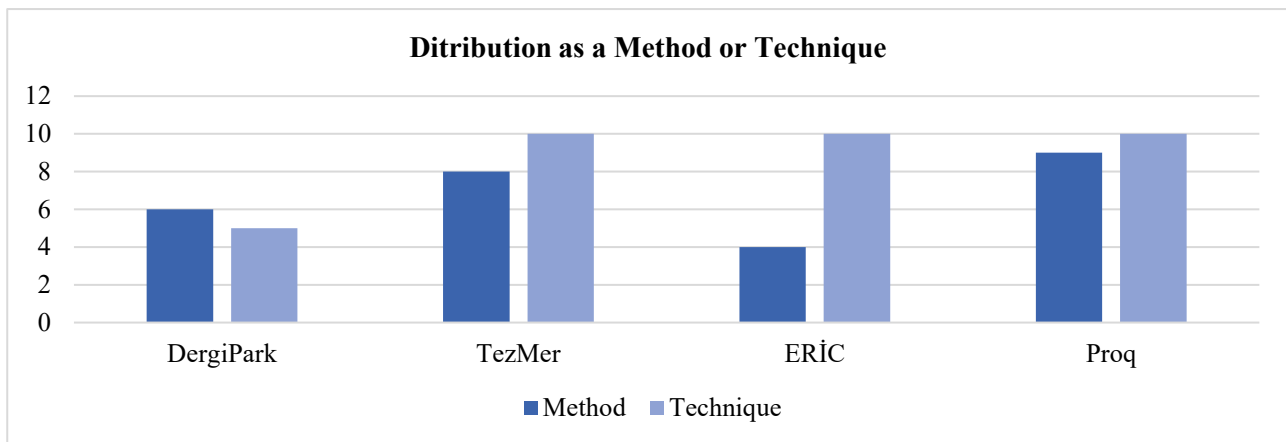


As seen in Figure 2, studies examining the effectiveness of psychodrama were divided into four different sample populations: children, adolescents, young adults, and middle-aged adults. All databases had available publications on the effectiveness of psychodrama for adults. However, the search revealed no Turkish publications on the effectiveness of psychodrama for children and adolescents. Thus, the publications mostly focused on young adults and focused on children and middle-aged adults the least.

Figure 3 provides a distribution chart of the use of psychodrama as a method or technique among the examined studies, organized by database. As the figure illustrates, the publications in all four databases primarily

examined psychodrama as a technique. Psychodrama was least frequently used as a technique in the articles in Turkish academic papers, and least frequently used as a method in international academic papers.

Figure 3. Distribution of applications of psychodrama among publications, by database



Discussion and Conclusion

This study investigated articles and theses on the effectiveness of psychodrama published between 2001 and 2021 in Turkish and international English-language academic papers and available in any of four different databases. The study identified the distribution of studies by the problem areas of focus, the sample populations studied, and the use of psychodrama as a method or technique. The studies included in this research were categorized into five problem areas: psychopathology, psychological health, social skills, interpersonal relations, and career development. The results reveal that the articles and theses in Turkish academic papers mostly focused on the effectiveness of psychodrama on psychological health, social skills, and interpersonal relationships. In contrast, the articles and theses in international papers mostly focused on the effectiveness of psychodrama on psychopathology and psychological health. There was limited research on career development. The studies in both Turkish and international academic papers on the effectiveness of psychodrama on psychopathology represent the forefront of research in the field.

Since the action method on which psychodrama is based aims to strengthen communication, increase physical and mental well-being, develop skills, and clarify problems (Blatner, 2002; Konopik and Cheun, 2013), it is logical that studies would examine the effectiveness of psychodrama on psychological health, social skills, and interpersonal relations. The availability of studies on the effectiveness of psychodrama on psychopathology confirms that psychodrama is an approach that can be used on many mental problems (Vieira and Risques, 2013). However, while the studies on the effectiveness of psychodrama both in Turkish and in international academic papers focused primarily on psychological health, the minimal focus on career development can be explained by the developmental needs of those participating in psychodrama. For example, being valued, successful, and loving/loved are at the top of the list for university students who participate in psychodrama (Girgin Büyükbayraktar, Bozgeyikli, & Kesici, 2018), and educational and career development needs are critical for secondary and high school students (Çetinkaya Yıldız, Derin and Boran, 2018). As the majority of participants in psychodrama are young adults according to the studies in this research, it is unsurprising that the primary focus in these studies is on psychological health. In addition, limited or insufficient documentation on a subject may mean that little attention has been paid to the subject under investigation. However, it may also be true that additional resources need to be reviewed (Bowen, 1999). In the literature on interventions in the field of career development, counseling and psycho-education practices are frequently encountered (Turan, 2017; Şeker, 2020; Konuk, 2020; Dahlan, S., Idris, E. and Susanto, 2020; Grant, Springer, Tuttle and Reno, 2021). Based on these findings, it is evident that career development is a problem area to which psychodramatists devote little attention.

According to the theses and studies published in Turkish and international academic papers, the participants in psychodrama are generally young adults. Children are the least common group in psychodrama studies.

Although psychodrama does not have a particular target audience, the majority of participants in the examined studies were between the ages of 20 and 50 (Kellermann, 2013a). Psychodrama is an approach shaped by role-playing that requires basic skills such as mobility, role-playing skills, and giving creative responses (Holmes, Karp and Watson, 2013). It is therefore understandable that the majority of studies were carried out with young adult participants, as individuals in this age group possess most of these skills. Although psychodrama is a very suitable approach for children with limited verbal skills (Blatner, 1993), the fact that psychodrama studies are rarely conducted with children may be due to the fact that psychodramatists have little experience/knowledge/skills in working with children. All kinds of psychotherapy performed with children are different from those performed with adults; to work with children, therapists may need to have the skills to include different methods, such as artistic activities and play dough, in addition to their verbal skills (Gelgard, Gelgard and Yin Foo, 2019). For example, the play therapy approach (Axline, 2020), which is thought to be very close to psychodrama and is frequently used when working with children, requires therapists to have sufficient knowledge about child development and the nature of play (Ray, 2019). Therefore, psychodramatists may prefer not to work with children because working with children requires additional knowledge and skills.

According to the theses and articles examined in this work, psychodrama is used more often as a technique than a method. That psychodrama offers a flexible approach that can be integrated with many other types of therapy (Blatner, 2002) has an impact on the use of psychodrama as a technique in research. In addition, psychodrama training takes many years, and further training is required to apply it as a method (Blatner, 2002). Being a psychodramatist means knowing and applying multiple skills, such as individual psychotherapy, psychoanalysis, group psychotherapy, behavioral therapy, and theater acting (Kellermann, 2013b). These requirements may lead practitioners to use psychodrama as a technique rather than a method. Given that the technical use of psychodrama is less effective in solving problems (Creekmore and Madan, 1981), however, practitioners/researchers need to be encouraged to use psychodrama as a method based on these research findings.

This research performed a document analysis of articles and theses on the effectiveness of psychodrama published between 2001 and 2021 in Turkey and internationally. The included studies were divided into five different problem areas of focus: psychopathology, psychological health, social skills, interpersonal relations, and career development. The findings indicate that studies examining the effectiveness of psychodrama on psychological health both in Turkish and international academic papers are at the forefront of the field, while studies examining its effectiveness on career development are limited. In general, there is a limited number of studies examining the effectiveness of psychodrama on young adults and on children in Turkish and international academic papers. In addition, the results indicate that psychodrama is used more commonly as a technique than a method.

As document analysis is not sufficient to provide all of the details for answering a research question (Bowen, 1999), researchers should plan future studies to understand the problem areas/sample groups that psychodramatists focus on and their views on choosing psychodrama as a method/technique. As only articles and theses published between 2001 and 2021 were taken into consideration in this study, the results do not address which problem areas/sample groups were the focus of psychodrama studies prior to 2001 nor the use of psychodrama as a method/technique prior to this date. For this reason, researchers should plan studies that examine the effectiveness of psychodrama through theses and articles published before 2001. Furthermore, considering only experimental studies that resulted from a keyword search of psychodrama/psikodrama is a limitation of this research. In future studies, researchers should expand their research to include different applications of psychodrama, such as sociodrama and monodrama.

Finally, in order to graduate as a psychodramatist from Abdulkadir Özbek Institute, which provides psychodrama training in Turkey and is a member of FEBTO (Federation of European Psychodrama Training Organizations), it is necessary to pass a psychodrama training that lasts for at least four years and consists of 880 hours in total (<http://www.akadirozbeke.com/akadirozbeke-mkd/egitim/5475/fepto-egitim-criteria>). These

criteria intimidate mental health professionals in Turkey, so many of them prefer to stay away from psychodrama training. Since this study reveals that psychodrama is used at every developmental level and on many problem areas, from children to the elderly; It is recommended that mental health professionals who stay away from psychodrama in Turkey reconsider their distance regarding psychodrama education, even if it is long-term.

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Rumination As a Transdiagnostic Notion

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ABSTRACT

Transdiagnostic, in other words ‘beyond diagnosis’ is a term that which is generated as an alternative to some negative situations which are caused by diagnostic approach. Transdiagnostic approach is a comprehensive perspective which adopts diagnosis as a tool and crossover rather than the main purpose. Rumination means that repetitive and compulsory thoughts which provokes a lot of negative circumstances. Rumination is seen in many psychopathologic diagnosis as symptom even it is not mentioned as an exact diagnosis in the literature. Some notions like rumination which are not described as exact diagnosis but provide some criterias which are seen as general psychopathologic symptoms qualified as transdiagnostic. The aim of this study is evaluating rumination in the concept of transdiagnostic view by reviewing literature and discussing its advantages. Studies show that ruminations effects on many diagnoses persistence, occurrence and relapse like depression, anxiety, stress, alcohol addiction and substance addiction helps to understand transdiagnostic feature of itself. At the same time, factors like adding a meaning to evaluation of the relationship between diagnoses, occurring important effects on consistence of diagnosis as being mediator role and implicit role provide a view to understand transdiagnostic characteristic of rumination.

The excess of psychological signs, diagnoses, and classifications in psychological science causes some difficulties in both academic and clinical fields. To these difficulties, cases such as stigmatizing people with diagnosis, the inability to identify common processes that cause psychological signs, neglecting people by virtue of over-focusing on classification, the change of diagnoses during the treatment process and the possibility of multiple diagnoses being made to a person can be given as examples (Oğuz and Batmaz, 2020). In order to prohibit such negativities, transdiagnostic approach has been suggested as an alternative to the ‘diagnostic’ approach, with the thought that clients cope with much more than just a diagnosis. (Linton, 2013) In comparison with the diagnostic approach, the transdiagnostic approach has differences such as the belief that a certain psychopathological sign may be involved in more than one diagnosis, the fact that diagnosis is not necessary for every treatment and it has an holistic approach (Mansel et al., 2009).

Rumination

When considering negative psychological states, not only diagnosis-oriented but also concept-oriented thinking will help to clarify psychopathological framework and evaluate it in a qualified way. When negative, repetitive and compulsive thoughts that are effective in the development process of psychopathology are also considered within these concepts, ‘rumination’ is included in the glossary (Yılmaz, 2014). Rumination literally means a repetitive, mostly self-directed thought pattern that associated with stress symptoms that is the result of another psychopathological problem (Johnson et al., 2016). The content of repetitive thoughts consists of the emotions and problems of the people rather than the specific thoughts. On the other side, rumination is

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closely related with negative perception and interpretation; maladaptive thought behaviors such as unhappiness, pessimism, intense self-criticism, impulsivity, addiction, need for approval, and neuroticism. (Nolen-Hoeksema et al., 2008)

Rumination does not only prevents people from finding solutions or taking action, but also increases stress, leads to the continuation of psychopathological signs and further reduces functionality in daily life. Among the effects of rumination that reduce functionality, there are signs such as experiences, and negative thoughts about oneself, bad interpretation of events, constant self-criticism, low problem-solving skills, decreased social support, impaired concentration and increased stress sources (Lyubomirsky and Tkach, 2004).

Evaluating by the frequency of rumination it's been stated that women are diagnosed at higher rates than men; nonetheless, the tendency to ruminative thinking increases with age (Bugay and Erdur-Baker, 2011). It's known that tendency of women to have more rumination especially after puberty increases also the risk of experiencing depression (Shors et al, 2017). On the other hand, there are approaches stating that ruminative thoughts do not make a difference according to gender, but there is a significant relationship between rumination and depression (Johnson & Whisman, 2013).

It's been seen that the possibility of depression and recidivation increases and the age of onset of depression is also earlier in people with rumination (Nolen-Hoeksema et al., 2007; Nolen-Hoeksema et al, 2008). In addition to depression, it's known that rumination also increases the risk of other psychopathological diagnoses such as anxiety, eating disorder, substance dependence, and comorbidity (Johnson et al., 2016). However, although rumination is associated with psychological sign patterns, it is also common in people who do not have any psychological disorder (Yılmaz, 2014). Hence it can be said that rumination can be seen in a psychopathological process, cause this process and it can be seen as independent of any psychopathology.

When the relationship between depressed, and poor state of mind and rumination is evaluated, there are approaches that emphasize the development of ruminative thoughts can be evaluated within the framework of a bidirectional relationship, and there are also approaches that emphasize a process in which depressive mood causes rumination and rumination causes depressive mood again. For example, according to Nolen-Hoeksema's (1991) "Response Style Theory", the development of rumination in the presence of depression is evaluated as the person's repetitive and passive thinking about depressive symptoms. In other words, the rumination in the person is a set of signs that the person is depressed, including the presence, outcome, and meaning of depressive symptoms (Papageorgiou and Wells, 2004). During ruminative thinking, the person constantly asks, "Why can't I start? What is wrong with me? I don't feel like I can overcome them.", far from contributing to the solution process, one repeats negative thoughts in one's mind (Nolen-Hoeksema, 2004). The important difference here is that as depressive symptoms and ruminative thoughts affect each other, rumination and depressive symptoms become permanent and increase the risk of major depression.

In addition to Nolen-Hoeksema's The Response Styles Theory, Martin and Tesser's "Goal Progress Theory" or "Goal Conflict Theory" also provides insight to understand better the development of rumination. According to Martin and Tesser (2006), people tend to think more ruminatively when they have trouble reaching the goal they set, and rumination ends when they reach their goals, make progress in line with the goal or give up on their goals. Therefore, the development of rumination occurs when the person lives through the behavioral inhibition instead of playing an active role as a consequence of the difficult struggle he/she experiences. After then, rumination also leads to other psychopathological diagnoses and mental symptoms (Grierson et al., 2016).

When depression and rumination are evaluated together, it should be considered that not every repetitive negative thought will lead to depression or other psychological problems. Yet research has shown that rumination's specific characteristics cause adverse outcome and other forms of thought, such as self-focus and self-awareness, can also produce constructive results, provide coping skills, make it easier to keep up, and increase psychological well-being (Johnson et al, 2016). In this context, it is reported that when evaluating psychopathologic risks and situations, distinguishing rumination and other repetitive thoughts is of great importance because different thought states produce different results (Trapbell and Campbell, 1999).

Rumination, which is mostly seen as a symptom of depression and considered together with depression in the

transdiagnostic approach, has also been examined within other diagnoses. For example, in a study by Michael et al. (2006), it was seen that rumination plays an important role in determining post-traumatic stress disorder triggers memories of trauma. Moreover, it's known that rumination is seen as sign of depression and anxiety; plays an intermediary role between the two diagnoses and has a significant effect on anxiety (McLaughlin and Nolen-Hoeksma, 2011). Additively, in a research conducted on participants with eating disorders, it was found that people who with rumination were also more likely to have an eating disorder (Eckern et al, 1999). It has been supported by studies that rumination also causes physical problems as it reduces sleep quality and level, has an effect on heart diseases and negatively affects the treatment after heart disease and causes physical problems (Guastella and Mouds, 2007; Radstaak et al., 2011).

Transdiagnostic Approach

Apart from the presence of longstanding and increasingly widespread diagnostic approaches to psychological problems, the function of “transdiagnostic” notion, which has been discussed recently and increasingly agreed by researchers, has also come into question. The transdiagnostic approach aims to gain an unusual understanding of psychological disorders by transcending the boundaries of classical diagnostic classifications and setting aside what the diagnoses indicate. (Dalglesih et al., 2020).

Transdiagnostic approach was primarily seen as an alternative to the diagnostic approach and problems such as stigmatization of diagnostic classification, strict boundaries between diagnoses, and misdiagnosis. On the other hand, there are approaches that find transdiagnostic notion non-functional because it does not evaluate a clear diagnosis, deals with symptoms rather than diseases and does not contain diagnostic information (Fusar-Poli et al., 2019). For example, Dalglesih et al. (2020) listed the disadvantages of the transdiagnostic approach as that it is not based on theory, the fact that transdiagnostic notions are mostly based on mental processes that cannot be clearly defined, it throws the diagnoses into the background, renders studies on diagnostic classifications worthless, and makes it difficult to perform targeted treatments.

Although the transdiagnostic notion is evaluated from different perspectives by researchers, it would not be wrong to state that this notion, which is still new to be defined, is accepted and supported by most researchers. Even though the biggest criticism brought to the concept is that it is seen as contrary to the diagnostic classification that is now accepted as the basic for the evaluation of psychological diseases, the transdiagnostic notion provides a great advantage in terms of forming the theoretical transition between diagnoses and looking at it from a general perspective (Harvey et al., 2004). In addition, the transdiagnostic approach makes it possible to evaluate the signs that do not belong to any diagnostic classification but goes together with a certain diagnosis or sign. For this reason, transdiagnostic approach provides a considerable advantage in order to deal with notions such as “rumination” that are not included in the diagnostic classification but are closely related to psychopathological conditions.

Transdiagnostic approach is used in the interpretation process of multivariate diseases as well. For example, it has been an accepted approach by most researchers that the diagnostic classifications that have existed to date are seen as dysfunctional in the evaluation of multisource diseases. (Nolen-Hoeksema and Watkins, 2011). All that and then some, the inconsistent progress of this process hinders the qualified evaluation of other diseases. Transdiagnostic approach on the other hand, intervenes in the interpretation of this process and offers a healthier perspective suitable for the nature of psychopathology. Furthermore, it provides a framework for understanding the comorbidity relationship between diseases. Considering that at least more than half of people with any psychopathological diagnosis have encountered another diagnosis, it would not be wrong to say that the transition between diagnoses is also high and there are no sharp boundaries (Kessler et al., 2005) Transdiagnostic concepts offer a new perspective, by the reason of the fact that they facilitate the prevention of such problems caused by diagnostic classifications. Evaluation transdiagnostic approach provides qualifications in many aspects, especially in diagnoses with high comorbidity rate and in cases where it is seen that some symptoms such as 'rumination' cause flexibility between diagnoses, evaluating with a transdiagnostic approach provides qualifications in many respects.

Rumination and Transdiagnostic Approach

The relationship of rumination with other psychopathological symptoms such as anxiety, depression, and eating disorders has been one of the arguments previously supported by most researchers (Nolen-Hoeksema

et al., 2007). However, the general feature of these studies is that rumination is evaluated directly in relation to certain diagnoses rather than being a sign on its own. Longitudinal and cross-sectional studies conducted by Nolen-Hoeksema et al. in recent years have provided supporting evidence regarding the transdiagnostic nature of rumination and its underlying simultaneous sign (Nolen-Hoeksama, 2011). Additionally, along with the situations such as suppression of thoughts as transdiagnostic concepts, producing solutions and re-evaluation, the inclusion of rumination in cognitive emotion regulation strategies will also contribute significantly to the understanding of most psychopathologies (Aldao and Nolen-Hoeksema, 2010). One of the hypotheses supporting that rumination is a transdiagnostic symptom is that ruminative thinking is a symptom in many diseases such as depression, anxiety, generalized anxiety disorder, and social phobia (Ehring and Watkins, 2008). For example, it is known that rumination is involved in the form of overthinking and repetitive thinking about depressive symptoms in depression seriously affects the level of depression and the risk of hypostrophe (Nolen-Hoeksema, 1991). In generalized anxiety disorder, along with the repetition of negative thoughts about uncontrollable situations is given as an example of rumination, it is also stated that there is a parallel relationship between rumination and anxiety (Yılmaz, 2014). As for in social fobia, rumination is seen as the person's evaluation of their own acceptability in social environments and thinking over and over again about the events in the mind after the events experienced (Kashdan and Roberts, 2007).

The evaluation of rumination, which is seen as a joint sign in most diagnoses, as a transdiagnostic symptom was explained by Watkins as being effective in the onset, persistence, and relapse of multiple diseases and comorbidities (Watkins, 2015). Although it is known to be effective in depression, generalized anxiety disorder, social anxiety and post-traumatic stress disorder, it has been supported by most studies to be associated with substance use, eating disorders and alcohol disorders (Caselli et al., 2010). Excluding the most obvious signs that appear in the first stage in these diseases, it has been seen that rumination is seen as a joint component in explaining the relationships between diseases and provides support in understanding possible relationships (McLaughlin and Nolen-Hoeksema, 2011).

Rumination is also defined as a transdiagnostic concept by researchers because it provides a relationship between most diseases and psychopathological signs and explains the comorbidity situation. Though rumination is directly related to some of the diagnoses, it affects some diagnoses indirectly or may occur as a result of the diagnoses (Ehring and Watkins, 2008). In this context, Harvey et al. (2004) argue that while evaluating the structure of diagnoses, future research is more functional than evaluating the relationship between the transdiagnostic processes of different diagnoses, rather than evaluating absolute diagnostic differences. While discussing the notion of rumination, considering it within this framework, not directly in the context of absolute diagnoses, but within the scope of the transdiagnostic structures of diagnoses will help to understand the transdiagnostic formation of rumination.

Studies on the Transdiagnostic Nature of Rumination

In the model they developed in order to understand the transdiagnostic process in psychopathology, Watkins and Nolen-Hoeksema (2011) divided the variables into two classes: variables that are generally risk factors in the formation of diagnoses and that they are risk factors specifically for certain diseases. In other words, they considered transdiagnostic factors with their more distal and proximal relationship with psychopathological symptoms. At this point, the critical situation for understanding the transdiagnostic structure is the importance of associating the proximal risk factor with psychopathology after associating the distal factor with the proximal risk factor. To elaborate on the distal and proximal risk factors, environmental conditions and biological factors causing psychopathology are stated as distal; factors directly related to the person and balancing the relationship between distal risk factor and sign are stated as proximal (Watkins & Nolen-Hoeksema, 2011).

When rumination is considered in the distal and proximal risk factors model, sexual or emotional abuse, excessively oppressive and neglective parents are included in the context of environmental factors; BDNF Polymorphism is included in the context of biological factors. Rumination occurs as a proximal risk factor when the distal risk factor is accompanied by several possible mechanisms such as neglective and abusive parents causing alertness, stress intolerance, inadequate ability to produce solutions, and feelings of

inadequacy. The presence of rumination as a proximal risk factor causes many diseases within the transdiagnostic process, accompanied by possible mechanisms and mediator factors. In summary, the transdiagnostic nature of rumination is indicated by certain risk factors that cause it to occur before and after it causes other diseases with certain risk factors.

The requirements for accepting a symptom as transdiagnostic can be summarized as follows: to play a mediator role between diagnoses, to have a distal or proximal effect on the formation of certain diagnoses, and to take part in the presence, maintenance and relapse of multiple diagnoses (Caseli et al. 2010; Watkins, 2015; Ehrind and Watkins, 2018). While evaluating the treatment of rumination and repetitive negative thoughts as a transdiagnostic concept, in addition to these criteria Hall et al. suggested that rumination should cause other diagnoses as an implicit factor and that each measurement data of rumination should be closely related to specific signs (Hall et al., 2016).

For this purpose, they focused on two goals in their research: First, to obtain evidence supporting whether the suggested repetitive thoughts cause a single implicit factor, and second, to obtain data to demonstrate that these implicit factors cause psychopathological symptoms. When we look at the previous studies, it was thought that it is highly probable to obtain similar data for this study, since it was seen that rumination was associated with other diagnoses as an implicit factor (Nolen-Hoeksema et al., 2007; Johnson et al., 2016). As a result of the study, both hypotheses were confirmed; they found that the implicit factor was positively related to certain other diagnoses such as depression and anxiety, and rumination as an implicit variable plays a role in the formation of other diagnoses (Hall et al., 2016).

Samtani, in his study examining the transdiagnostic parameters of rumination, aimed to obtain findings regarding the relationship between diagnoses by using a large number of scales (Samtani, 2015). The scales used by Samtani to measure transdiagnostic rumination are as follows: The perseverative thought scale developed by Ehring et al. (2011) and the repetitive thought scale developed by McAvoy et al. (2010). As a result of the examination of the relationship between many diagnoses and rumination, it was seen that the findings mostly focused on depressive rumination and anxiety. Nevertheless, the fact that the transdiagnostic structure of rumination functions in association with depression and anxiety by most studies led the researcher to comment on expanding the transdiagnostic model and further processing the relationship of rumination with other diagnoses that have not been discussed much, such as mood disorder (Samtani, 2015). Observing the transdiagnostic model of rumination in the field of clinical psychology will provide clinicians with extra time and opportunity as they will act by considering the transition between diagnoses.

Unlike other studies, Grierson et al.'s approach to the transdiagnostic model of rumination was carried out by considering them in the context of developmental psychology and cognitive factors (Grierson et al., 2016). In this approach, by discussing cognitive emotion regulation and coping methods in general, they analyzed the developmental course of rumination along with its development and the diagnoses that it was highly associated with, such as anxiety and depression. It has been stated that rumination, which disrupts the subjective well being of individuals, plays a mediating role between gender and the difficulties experienced in the early period (Kessler et al., 2005). Incidentally, it has been observed that rumination plays a mediating role between genetic susceptibility and pathological symptoms caused by genetic susceptibility (Chen and Li, 2013). The mediator effect of rumination in the normative developmental course of rumination in emerging psychopathological conditions, together with developmental, biological and cognitive factors, presented a finding that supports the idea that it is a transdiagnostic notion (Grierson et al., 2016).

Discussion and Conclusion

In general, rumination is a psychopathological symptom consisting of negative content, mostly self-directed and repetitive thought patterns (Johnson et al., 2016). Considering other psychopathological symptoms, rumination is mostly associated with stress, anxiety and depression; it also coincides with the finding that the functionality of people who frequently experience ruminative thoughts decrease in parallel (Lyubomirsky and Tkach, 2004). However, other diagnoses in which anxiety, depression and rumination are common are stated as eating disorders, substance and alcohol addiction, and mood disorders (Caselli et al., 2010).

One of the distinctive features of rumination is that it meets the criteria of transdiagnostic notions and in this context, it is evaluated as transdiagnostic by researchers. The most distinctive feature of a notion to qualify as

transdiagnostic is that it is a common symptom in most diagnoses. Rumination, on the other hand, has been studied by most studies in relation to other diagnoses within the context of transdiagnostics, and it has been found to be a symptom in many diagnoses (Grierson et al., 2016; Samtani, 2015).

One of the other criteria for considering rumination as a transdiagnostic concept is that it plays an active role in the formation, maintenance and relapse of diagnoses. It is also supported by the researchers that there is sufficient evidence that rumination both plays a big role in the diagnosis of the effects of distance and other factors, and has a close and direct effect on the diagnoses (Hall et al., 2015; Watkins and Nolen-Hoeksema, 2011). In addition, rumination is considered as transdiagnostic as it plays a mediator role between diagnoses and can be considered as a joint sign in evaluating the relationships between diagnoses (Caseli et al., 2010; Watkins, 2015).

Some models developed on rumination as a transdiagnostic notion provide support for understanding it as a transdiagnostic notion. For example, Grierson et al. dealt with rumination through cognitive, developmental and biological factors and associated it with each factor (Grierson et al., 2016). On the other hand, Watkins and Nolen-Hoeksema's evaluation of diagnoses by examining rumination with distal and proximal factors in the context of transdiagnostic perspective presented a wide framework (Watkins and Nolen- Hoeksema, 2011).

In summary, the transdiagnostic approach provides support for understanding the symptoms that are not fully characterized as a diagnosis but have an impact on the formation and continuation of most diagnoses. In this context, rumination is not included as a clear diagnosis in diagnostic classifications, but continues to exist as a sign in most diagnoses. Therewithal, the reasons such as providing the transition by acting as a mediator between the diagnoses, having an effect as a mediator among the signs of the diagnoses and being seen as a joint sign have also supported the acceptance of rumination as a transdiagnostic notion.

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‘Do Conflicts Strengthen My Relationship?’ The Role of Relational Resilience on Conflict Frequency and Relationship Satisfaction from the Viewpoint of Turkish Women

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ABSTRACT

This study sought to determine whether relational resilience plays a role in the relationship between women's conflict frequency and relationship satisfaction. The sample of the study consisted of 255 Turkish women over the age of 18 who had at least one child. The data collection instruments used were the "Conflict Zone Determination Scale" the "Relationship Stability Scale" the "Relational Resilience Scale" and the "Personal Information Form" developed by the researcher. SPSS 25.0 and Hayes's macro PROCESS 4.0 were used to analyze the data. As a result of the analyzes, it was found that there were low negative significant relationships between conflict frequency and relationship resilience, high positive relationships between relationship resilience and relationship satisfaction and low negative significant relationships between conflict frequency and relationship satisfaction. As a result of this research, it was found that conflict frequency predicted relational resilience, relational resilience predicted relationship satisfaction, and conflict frequency predicted relationship satisfaction. At the same time, relational resilience was found to play a mediating role in the relationship between conflict frequency and relationship satisfaction.

In our time, there are serious conflicts in many marriages and this condition is an undeniable threat to marital satisfaction and happiness of couples (Omeje, 2014). Conflict, considered an inevitable part of human relationships (Taylor, Peplau, and Sears, 2015), is described as a dynamic process that occurs between two or more individuals and can lead to negative emotional reactions in situations where the individual feels that his or her goals have been compromised or rejected (Barki and Harwick, 2004). Conflict is an inevitable relationship experience in marriage. Therefore, all couples face conflict in their relationships (Marchand, 2004). Marital conflict is a tension or state of stress between partners in the marriage that occurs in the performance of marital tasks (Tolorunleke, 2014). In a more general sense, marital conflict is a fight, argument, disagreement, or dispute over opposing needs, ideas, beliefs, values, or goals between spouses or sometimes with other family members (Olugbenga, 2018).

Marital conflict is a factor that affects marital quality and predicts marital dissatisfaction, separation, and divorce (Fincham et. al., 2000). From a gender perspective, women experience more disappointment, dissatisfaction, and negative feelings in marriage. As a result, women tend to opt for separation or divorce

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(Bernard, 1972). The literature on socioeconomic changes following divorce suggests that women are more affected than men (Roxburgh, 2014). Women are responsible for the majority of housework and childcare, even when they work outside the home. Work overload and problems related to women's roles lead to marital dissatisfaction and divorce (Kim, 2009). In recent years, divorce rates in the world have been steadily increasing, and this fact brings additional problems. Every year, one million families are divorced in Europe and more than 60% of these families have children (Rodriguez and Martinez-Aedo, 2018). In Turkey, the divorce rate has increased by 47% in the last 20 years (TÜİK, 2021).

The factors that cause conflict in a relationship vary. Marital conflicts can manifest in different ways, such as abuse of the partner, irresponsibility in the marriage, struggle for control between partners or other abusive behaviors, as well as problems such as childlessness, forced marriage, incompatibility, economic situation, infidelity, lack of appreciation, lack of communication, interference from relatives or others (Osarenren, 2013). In addition, disagreements about role allocation and role expectations between partners can lead to disharmony and marital conflict in marital relationships (Pathan, 2015). The issues that lead to conflict between spouses can vary from the wife's work situation to the birth of a child. Problematic circumstances such as the birth of a child, job loss, or serious illness increase the likelihood of conflict (Bradbury, Fincham, and Beach, 2000).

Conflict within marriages leads to various personal, family, physical, or psychological conditions (Tasew and Getahun, 2021). Fincham (2000) states that marital conflict has a detrimental effect on psychological, physical, and family health. Therefore, it is understandable to pay attention to the issue of marital conflict. Researchers indicated that higher levels of marital mismatch, tension, or conflict are associated with more physical problems (Hawkins and Booth, 2005; Kiecolt-Glaser and Newton, 2001; Robles et. al, 2014; Sandberg et. al, 2013). Researchers theorized that marital conflict triggers spouses' physiological responses, thus causing chronic physical problems that affect health and impair physical health (Robles, 2014; Tasew and Getahun, 2021). Marital conflict can affect parental performance and children's harmony and increase conflict among all family members (Tasew and Getahun, 2021). From a psychological perspective, marital conflict is associated with lower well-being (Choi and Marks, 2008; Umberson et. al, 2006; Yuan et. al, 2010).

Marital conflict affects another area: marital satisfaction. The level of marital satisfaction has an important impact on marital stability and quality (Bloch et. al., 2014). Relationship satisfaction is one of the most important areas of life to be adjusted (Bagarozzi, 2014). Marital satisfaction is the degree to which an individual's needs, expectations, and desires are met in their marriage. It is a subjective state (Baghipour, 2010) and a personal and general evaluation of the individual about marriage (Erhabor and Ndlovu, 2013). Family researchers emphasize that women consistently experience much lower marital satisfaction compared to men (Jackson, Miller, Oka, and Henry, 2014; Umberson, Williams, Powers, Liu, and Needham, 2006). Therefore, according to Connides (2001), researchers hypothesize that women have lower relationship satisfaction compared to men. One of the factors that negatively affect marital satisfaction is stressful conditions in marriage (Li and Wickrama, 2014). Low marital satisfaction is not only a problem in itself, but also provides the foundation for additional problems or greater risks to develop. When families do not have an adequate foundation for coping with difficulties, they are also more likely to experience other risks (Patterson, 2002b).

There are relational processes that can be helpful in coping with stressful or negative life events (Kayser and Acquati, 2019). One of these processes is resilience. Researchers describe resilience as resistance to difficulties, positive adaptability, and the ability to bounce back after difficulties (Luthar and Cicchetti, 2001).

In the field of relationships, couple resilience is a recently developed concept to understand how couples adapt to negative conditions (Suriyad, Prasad, and Saraswati, 2021). In a couple relationship, resilience is a process in which the couple develops relationship behaviors that help them adapt to negative life conditions and maintain their well-being (Sanford et. al., 2016). In relationship resilience, the couple's recovery strength after crisis conditions they experience during their relationship process is important (Afifi, 2018, Walsh, 2002). Relationship resilience is described differently in the literature: Coping skills of the couple when faced with negative conditions (Venter and Snyders, 2009), abilities to cope effectively and adapt (Solomon, Rothblum, and Balsam, 2004), potential strength revealed by the couple when experiencing difficult conditions to protect

themselves (Connolly, 2005), and the ability to build strong and improve relationships after being exposed to stressful experiences (Jordan, 2013). To discuss the impact of resilience, there must be negative and compelling life conditions in the individual's life (Masten, 2014). Relational resilience-based approaches aim to describe interactional processes that help them overcome destructive life events and difficult periods (Walsh, 1996).

Conflicts are stressful life events experienced within marriage (Bloch et. al., 2014). The focus of the resilience approach is that even people who have experienced severe trauma or very problematic relationships have the opportunity to recover, grow, and live throughout their lives. Therefore, they have the potential to experience resilience as they overcome difficulties that any family may face (Walsh, 2007). This process can end with people broadening their perspective, learning something positive, developing new coping strategies, or expanding their social relationships after a stressful experience (Carver, 1998; Feeney and Collins, 2014; Park and Fenster, 2004). Resilience requires more than coping with stressful situations, carrying a millstone, or surviving after suffering. It involves the potential for personal and relational change and growth. Resilience experiences enable couples and families to become stronger, more loving, and more competent through suffering, struggle, collaboration, and mutual support (Walsh, 2016). Researchers claimed that couples' coping behaviors are related to relationship satisfaction rather than life satisfaction (Bodenmann, Meuwly, and Kayser, 2011). Consequently, there is a positive relationship between relational resilience and relationship satisfaction (Bradley and Hojjat, 2016).

Current Study

Research studies on marital conflict and satisfaction (Han and Kim, 2017; Prabhu et. al., 2020) have found that depending on their biology and responses to various stressors in daily life, women's negative feelings increase, and this condition increases marital conflict. Negative feelings and behaviors resulting from conflict transfer to couples' interactions and decrease marital satisfaction (Zhao et. al., 2017). Neff and Karney (2017) note that such stressful conditions reduce the possibility of engaging in activities that strengthen the relationship. Therefore, they may increase the possibility of conflict and tension, leading to a decrease in relationship satisfaction (Breitenstein et al., 2018). Studies (Aydoğan and Dinçer, 2020; Aydoğan and Kızıldağ, 2017) show that relational resilience comes from the help of strong characteristics and resources that appear in a relationship after some negative and traumatic experiences. The prerequisite for couples to experience resilience in their relationships is exposure to negative life events. Although conflict is an inevitable part of any marriage (Noller and Feeney, 2002), some couples overcome the difficulties they experience in their marriage and provide satisfaction in their marriage. This study examines the role of women's relational resilience in the relationship between the frequency of conflict and relationship satisfaction. Although there are studies that examine the relationship between conflict frequency and relationship satisfaction, there is no study that examines the mechanisms by which conflict frequency influences relationship satisfaction. One of the mediators that could potentially contribute to relationship is relationship resilience. Conducting the study with a sample that includes women would be an important contribution to the literature. The study examines relational resilience, a factor that influences relationship satisfaction, from the perspective of women. Based on the above theoretical framework, this study assumes that relational resilience plays a mediating role between women's conflict situation and their relationship satisfaction.

Method

Participants and Procedure

All procedures performed in the studies were approved by the Ethics Committee of Hasan Kalyoncu College. The College Ethics Committee granted the necessary approvals for this study (REF: 22557- 050.01.01-E-97105791). This study is a cross-sectional study conducted with women from different regions of Turkey. 255 individuals who scored above average on the Conflict Zone Scale were included in the study. The researchers reached out to participants through Google Forms and sharing in online platforms. Random-digit-dialing methods were used for sampling. Participants provided informed consent and participation in the study was

voluntary. Participants were free to stop participation whenever they wished. Demographic information can be found in Table 1.

Table 1. Demographical information of participants

Variables	Frequency (n)	Percentage (%)
Age		
18-29	85	33,3
30-39	110	43,1
40+	60	23,5
Duration of Marriage		
1-5 years	102	40,0
5-10 years	72	28,2
10+	81	31,8
Number of children		
1	172	67,5
1+	83	32,5

According to Table 1, 85 of the participants (33.3%) are 18-29 years old, 110 of the participants (43.1%) are 30-39 years old, 60 of the participants (23.5%) are 40 years and older. 102 of the participants (40.0%) have been married for 1-5 years, 72 of the participants (28.2%) have been married for 5-10 years, 81 of the participants (31.8%) have been married for more than 10 years, 172 of the participants (67.5%) have one child and 83 of the participants (32.5%) have more than one child.

Measures

Scale for Determination of Conflict Zones. Özbay, Aydođan, Tomar, Akçabozan, and Eker (2018) developed a marital conflict zone scale to measure conflict in marriage. It provides an assessment of the frequency and prevalence of conflict zones in marriage. It includes 17 items consisting of conflict phrases, and the scale is a 6-point Likert scale. The items are scored as follows: "Not appropriate" (1 point), "Never" (2 points), "A few times in the last 6 months" (3 points), "A few times a month" (4 points), "A few times a week" (5 points), and "Daily/always" (6 points). The total scale score ranges from 17 to 102, with higher scores on the scale representing higher conflict frequency. There are no reversed items in the scale. In this study, the Cronbach alpha coefficient of the scale is .80.

Relational Resilience Scale. The relational resilience scale was developed by Aydođan and Özbay (2015) to determine how couples' relationships transition into a positive process after experiencing difficulties. The relational resilience scale is a 7-point Likert scale consisting of 27 items ranging from 1 (never) to 7 (always). The scale has four sub-dimensions: Actor (sample sentence: With my behavior, I make my spouse feel that I understand him/her), Partner (sample sentence: In difficult times, my spouse makes me feel that everything will get better), Commonality (sample sentence: My spouse and I do not give up in the face of difficulties), and Spirituality (sample sentence: We seek refuge in God to avoid facing worse conditions). The researchers make the evaluation using the subscales and the total score. The total scale score ranges from 27 to 189, with higher scores indicating higher relational resilience. The Cronbach alpha coefficient of the scale is .96 for all dimensions of the scale. In this study, the researchers used the total score of the relational resilience scale, and the reliability coefficient of Cronbach Alpha is .96.

Relationship Stability Scale. Rusbult, Martz, and Agnew (1998) developed the Relationship Stability Scale and Büyüksahin, Hasta, and Hovardaođlu (2005) performed the adaptation of the scale into Turkish. The scale consists of three subscales with 10 items: relationship satisfaction, relationship investment, and evaluation of the quality of options. and Büyüksahin and Taluy (2008) added an additional sub-dimension of commitment

consisting of 7 items. For the relationship stability scale, the first five items of the relationship satisfaction subscale (example sentence: Our relationship makes me very happy) have a 4-point Likert type from 1 (completely wrong) to 4 (completely right) and the other items have a 9-point Likert type from 1 (completely wrong) to 9 (completely right). For the relationship satisfaction, relationship investment, and option quality assessment subdimensions, the first five items aim to increase the measurement quality of the last five items. Rusbult et. al (1998) suggest using all items, but conducting the analyzes with the last five items for these dimensions. After adapting to Turkish language, the internal consistency coefficient of the scale Cronbach Alpha for relationship satisfaction is .90 (Büyüksahin et. al., 2005). In this study, the researchers used the Relationship Satisfaction subscale of the Relationship Stability scale and the Cronbach Alpha reliability coefficient of the scale is .97.

Demographic Information Form. The researcher prepared the demographic data form to collect information about the participants (age, length of marriage, occupation, etc.).

Statistical Analyses

The researchers collected data using Google Forms and conducted data analysis of the study using SPSS 25.0 and PROCESS macro by Hayes. The study examined whether relational resilience mediated the relationship between conflict frequency and relationship satisfaction using Model 4 from PROCESS macro. In this study, the analysis used the 5000 resampling option with the bootstrap technique, and 95% bias-corrected confidence intervals were created from the identified effects. The study accepted confidence intervals that did not contain zero as statistically significant ($p < .05$) (Hayes, 2018). The researchers conducted tests for normality assumptions prior to the correlational analyzes and the mediation analyzes. The results of the normality test can be found in Table 2.

Table 2. Normality test results of variables

	Conflict Resolution	Relational Resilience	Relationship Satisfaction
Kolmogorov-Smirnov	.168	.138	.206
p	.000	.000	.000
Skewness	.903	-1,00	-1,42

Review of Table 2 reveals that the values for conflict frequency, relational resilience, and relationship satisfaction do not have a normal distribution, as indicated by the results of the Kolmogorov-Smirnov test designed to examine the normal distribution of the data ($p < .05$). The skewness coefficient values are .90 for conflict frequency, -1.00 for relationship resilience, and -1.42 for relationship satisfaction. The skewness values range from -2 to +2, so the values do not show a significant deviation from the normal distribution (George and Mallery, 2003). After the normality test, the researchers conducted a multicollinearity test. The VIF value is 1.07, the tolerance value is .93, and the Durbin-Watson value is 1.49. These results show that there is no multicollinearity problem, which is consistent with the suggestion of Field (2013).

Results

The research results take place in this part. First, there are descriptive statistics on the frequency of conflict, relationship resilience, and relationship satisfaction. The results of the analyzes can be found in Table 3.

Table 3. Descriptive statistics related to variables

Variables	N	Min	Max	\bar{X}	S_s
Frequency of Conflict	255	52,00	91,00	64,25	9,65
Relational Resilience	255	64,00	180,00	140,01	28,45
Relationship Satisfaction	255	5,00	45,00	31,96	11,00

Table 3 shows the mean scores of conflict frequency ($X=64.25$), relationship resilience ($X=140.01$), and relationship satisfaction ($X=31.96$) for the participants in the study.

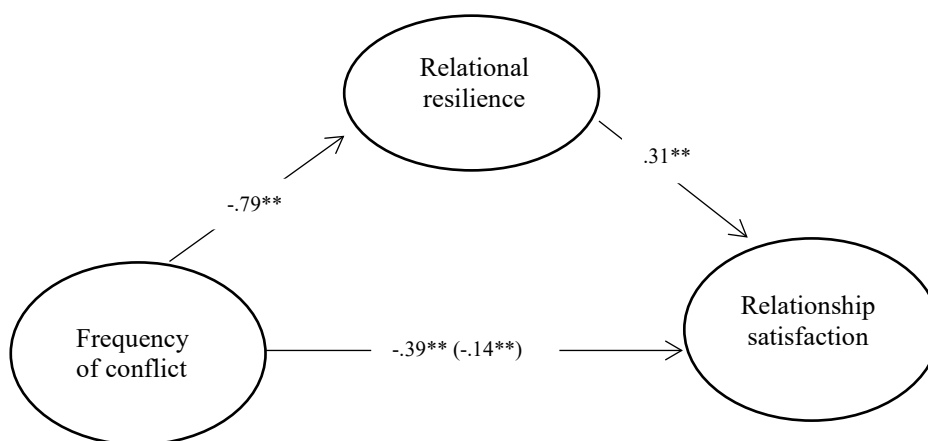
The results of the Pearson correlation analysis of the variables can be found in Table 4.

Table 4. Pearson Correlation Analysis Results of Variables

	Conflict Resolution	Relational Resilience	Relationship Satisfaction
Frequency of Conflict	1	-.27**	-.35**
Relational Resilience		1	.85**
Relationship Satisfaction			1

According to Table 4, there is a negative and significant relationship between conflict frequency and relational resilience ($r = -.271, p < .05$) and between conflict frequency and relationship satisfaction ($r = -.349, p < .05$). In addition, there is a positive and significant relationship between relational resilience and relationship satisfaction ($r = .845, p < .05$). In this study, the researchers examined the mediating role of relational resilience on conflict frequency and relationship satisfaction. The conceptual model is shown in Figure 1.

Figure 1. Mediating role of relational resilience on frequency of conflict and relationship satisfaction.



Direct and indirect influences about mediating role are in Table 5.

Table 5. Mediating role of relational resilience

Mediating role of relational resilience	<i>B</i>	<i>CI</i>
Direct		
Frequency of conflict-Relationship satisfaction	-.14	(-.22, -.07)
Frequency of conflict –Relational resilience	-.79	(-1.15, -.44)
Relational resilience - Relationship satisfaction	.31	(.28, .33)
Indirect		
Frequency of conflict - Relational resilience – Relationship satisfaction	-.25	(-.38, -.11)

Frequency of conflict negatively and significantly predicts the level of mediating variable of relational resilience ($B = -.79, SE = .17, 95\% \text{ CI } [-1.15, -.44], p < .01$). Mediating variable of relational resilience positively and significantly predicts marital satisfaction ($B = .31, SE = .01, 95\% \text{ CI } [.287, .339], p < .01$).

Additionally, frequency of conflict score negatively and significantly predicts relationship satisfaction scores as the dependent variable ($B = -.39, SE = .06, 95\% \text{ CI } [-.529, -.265], p < .01$). When frequency of conflict is in the regression equation together with relational resilience, the direct influence of frequency of conflict on marital satisfaction decreases ($B = -.14, SE = .03, 95\% \text{ CI } [-.223, -.070], p < .01$).

Frequency of conflict has a significant effect with mediating role of relational resilience ($B = -.25$, $SE = .06$, $95\% \text{ CI } [-.383, -.108]$). Relational resilience has a mediating role in the relationship between frequency of conflict and relationship satisfaction. Researchers used Macro insertion of PROCESS Model 4 developed by Hayes (2018) There is no zero value within confidence interval of 95% and it means that the mediating influence is significant (Hayes, 2018).

Discussion

This research study found that relationship-related resilience mediates the relationship between the frequency of conflict and marital satisfaction in women. There are no studies in the literature that assess these three variables together. However, the bilateral relationships between these variables indicate that there is a negative significant relationship between conflict frequency and relationship satisfaction. That is, the women whose conflict frequency is high have lower relationship satisfaction. It is generally believed in the literature that all couples face conflict situations and that how they handle these conflicts is related to relationship satisfaction, change in relationship satisfaction, and relationship stability (Gottman, 1994; Heavey et. al, 1993; Markman et. al, 1993; Noller and White, 1990). Grych and Fincham (1990) note that in marriage, the concepts of satisfaction and conflict appear to be opposed to each other. Similarly, Zeytinoğlu (2013) found that there is a negative relationship between marital satisfaction and marital conflict. Şengül Öner (2013) showed that as the frequency of conflict increases, marital adjustment decreases. Sabatelli (1988) suggested that the frequency of conflict between spouses reflects the quality of marital relationship satisfaction. At the same time, there are many findings in the literature showing that as marital conflict increases, marital satisfaction decreases (Argyle and Furnham, 1983; Güven and Sevim, 2007; Polat, 2006; Fincham et al., 2000; Christensen and Heavey, 1990; Tezer, 1994; Allen, Herst, and Sutton, 2000; Chui, 1998; Hatipoğlu, 1993). This result of the recent research study consistently supports the research findings of the literature in this area.

There is a negatively significant relationship between conflict frequency and relational resilience. Black and Lobo (2008) describe the characteristics of resilient families as a positive outlook on life, shared spirituality, harmony among family members, flexibility of roles that allow room for adjustments, open communication among family members, strong financial management, quality time in both daily activities and entertainment, routines and rituals for consistent meaning, accessibility to and availability for individual, family, and community networks that provide social support. McCubbin et al. (1998) define family resilience as the ability to adapt and successfully maintain the family despite problems. However, conflict is a process that occurs when someone's behavior interferes with the behavior of others (Taylor, Peplau, and Sears, 2015). Fincham, Beach, and Davila (2004) emphasized that couples who have problems in their marriage make more negative statements during conflict, and when one of the spouses behaves negatively toward the other, the likelihood of a negative response increases. On the other hand, couples who do not have problems in their marriage are more receptive to attempts to make amends and in this way break the negative cycles earlier. The communication of couples who have problems in their relationship is less open compared to couples who do not have problems. Therefore, the frequency of conflict can interfere with the processes necessary for resilience.

There is a positive and significant relationship between relational resilience and relational satisfaction. Resilient families not only focus on negative experiences they encounter under stressful conditions, but also seek to strengthen their abilities as a family, resulting in positive family harmony. With the help of family resilience, families can lower their stress level in a crisis, overcome difficulties, become stronger as a unit, and thus gain more resources (Yang, Kim, and Kwon, 2006). Interventions aim to create family power by solving more problems, thus reducing risk and fragility. The more competent the family becomes, the better it can cope with difficulties (Walsh, 2002). Efforts to increase family resilience aim both to prevent or reduce pathology and dysfunction and to increase functionality and well-being (Luthar et. al., 2000).

One of the findings of this study is that relationship resilience plays a mediating role between the frequency of conflict and relationship satisfaction. The family resilience approach strengthens the family's ability to overcome obstacles (Walsh, 1996, 1998b). The concept of family resilience focuses on "relational resilience," which is a functional unit within the family that goes beyond the concept of individual resilience, and it is a concept that relates assessment and intervention to the family system. Research studies have found that resilient

families improve their relationships and enrich their emotional attachment after difficult experiences (Walsh, 1996). Many studies from the family systems field found that couples and through the journey of pain and struggle, families typically become stronger, more loving, more purposeful, and better able to face future obstacles (Walsh, 2016b). This type of effort strengthens relational bonds and therefore has the potential to benefit all family members. A family resilience framework is a valuable conceptual map that can guide prevention and intervention studies to support and strengthen vulnerable families experiencing crisis. Family resilience encompasses more than coping with stressful situations, reaching a milestone, or overcoming a difficulty. This approach accepts personal and relational transformation and growth to get rid of problems (Walsh, 2002). With collaborative efforts, families could become stronger and more capable by fostering the key processes for resilience (Walsh, 1996). A crisis could be an open call for help and focus attention on what is important. It could be an opportunity to reassess priorities by encouraging new or renewed investment in meaningful relationships and the pursuit of life (Stinnett and DeFrain, 1985). The relational resilience orientation changes women's perspectives from hopelessness to affirmation of their strengths and potential. It encourages women to be proactive, determined, and capable in their efforts to create a better life for themselves and their children (Walsh, 2002).

This study was conducted with Turkish women. From a cultural perspective, Turkish women tend to continue their marriages despite any difficulties. Relationship resilience, on the other hand, is achieved through strong character traits that emerge despite negative life events. For this reason, the women in our sample group may have developed the necessary resources for resilience through the conflicts they experienced. All of this increases marital satisfaction.

Limitations

In addition to the results, there are also some limitations of this study. The relationship between the frequency of conflict and relationship satisfaction did not control for the influence of protective factors that contribute to relationship satisfaction. In this study, the researchers examined the mediating role of relational resilience between conflict frequency and relationship satisfaction. However, there may be other variables that mediate conflict frequency and relationship satisfaction. For example, conflict resolution skills (because family relationships are interpersonal relationships), interpersonal relationships, and communication skills may be potential mediators between the relationship between conflict frequency and relationship satisfaction. Therefore, future studies can examine the role of these concepts in the relationship between conflict frequency and relationship satisfaction. Another limitation of this study is that the researchers used a cross-sectional method instead of a longitudinal design. Future studies can be longitudinal and experimental and focus on the cause-effect relationship. In this study, frequency of conflict is a predictive variable. In the current study, the way conflicts are resolved was not considered. Future studies may consider the influence of conflict resolution styles. This study is limited to female participants. Conflict, relationship satisfaction, and relationship-related resilience experienced in their relationships are examined from women's perspectives. Future studies could also include the other spouse's perspective. Data collection was conducted online, so the researchers used the random sampling method. People who do not have access to the Internet were not included, so the generalizability of the data is limited. In addition, this study included Turkish women. Although it is possible to generalize the results to similar groups, multicultural studies are needed for more meaningful results.

Suggestions

Despite its limitations, this study makes an important contribution to the literature. Frequency of conflict is a risk factor for relationship satisfaction, frequency of conflict negatively affects relationship resilience, and relationship resilience increases relationship satisfaction. These findings add to the literature on marital relationships. If the relationship between relational resilience and conflict frequency is examined, relational resilience programs could be supported by conflict awareness activities. Because the frequency of conflict decreases relationship satisfaction, the frequency of conflict in marital and couples therapy might be an issue

that should be addressed in the interest of therapy effectiveness. Within this framework, programs focused on increasing marital satisfaction could include activities aimed at reducing the frequency of conflict and increasing the resilience of the relationship. It may be important to identify the variables that contribute to the relational resilience of women with a high frequency of conflict in their relationships. With the program to be applied to individuals with a high frequency of conflict in their relationships, it is tried to make individuals realize the sources of resilience. Different activities can be planned about what the resilience resources will be and how these resources can be used. Thus, with the developed program, it can be contributed to increase the relationship satisfaction of individuals. Individual and group psychological counseling programs can be organized for women with a high frequency of conflict in their marriages. Considering the mediation effects in the current study, psychological professionals could take a more holistic approach by considering three variables (conflict frequency, relationship resilience, and relationship satisfaction) instead of one variable. Researchers can investigate different variables that may mediate conflict frequency and relationship satisfaction, and new models can be tried within this framework. It can be tested whether the mediation model tested in this study works with different sample groups.

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Effectiveness of Structured Teaching Program on Level of Knowledge Regarding Obstructive Sleep Apnea (OSA) among Nursing Students

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ABSTRACT

Background/Aim: The increasing prevalence of obstructive sleep apnea (OSA) necessitates the timely diagnosis and treatment of patients. Knowledge of OSA is limited among student doctors and nurses. Hence, we assess the level of knowledge regarding OSA among nursing students and evaluate the effectiveness of a structured teaching program.

Methods: This was a quasi-experimental research study, that included 90 nursing students, selected by purposive sampling. They were asked to fill out a questionnaire consisting of questions regarding OSA, followed by a structured training program about OSA. They were assessed for their level of knowledge regarding OSA post-test.

Results: Mean knowledge score pre-test was 5.39 ± 3.37 , and post intervention was 15.9 ± 2.45 ($P = 0.0001$). Majority of the students (82.2%, $n=74$) had no prior knowledge about OSA, and none had adequate knowledge pre-test. Post-test majority had adequate knowledge (71.11%, $n=64$). Having prior knowledge about OSA pre-test was significantly associated with increased level of pre-test knowledge ($P = 0.0001$).

Conclusion: The knowledge of OSA among nursing students was inadequate, but the structured training program substantially increased their level of knowledge.

Obstructive sleep apnea (OSA) is a common sleep disorder. It occurs due to complete or partial upper airway closure during sleep, causing desaturation of oxyhemoglobin and sleep disturbances. When left unattended or untreated could result in major neurocognitive and cardiovascular outcomes. Common symptoms of OSA include snoring, daytime sleepiness, inability to feel refreshed after waking up from sleep, disturbed sleep at night, nocturia, etc., that overall impair quality of life and day-to-day functioning (Benjafeld et al., 2019; Patel, 2019). It is also known to increase the risk of motor-vehicle accidents and poor work performance (Dragonieri & Bikov, 2020).

Based on the apnea-hypopnea index (AHI), which represents the severity of sleep-disordered breathing, OSA was prevalent among 936 million individuals between 30 and 69 years. They had an incidence of >5 events per hour and with an AHI >15 events per hour. It is prevalent in 425 million individuals worldwide. India ranks

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4th after China, the USA, and Brazil, with the highest cases of OSA. Prevalence in India was found to be 534 million, among which 9.6% had an incidence of >5 events per hour and 5.4% had >15 events per hour (Benjafeld et al., 2019). Despite the increasing prevalence of OSA, symptoms go unnoticed; hence, the patients remain undiagnosed and untreated (Dragonieri & Bikov, 2020).

Poor knowledge and lack of awareness of OSA were reported among the public and (Arous et al., 2017; Sia et al., 2017) adequate knowledge of OSA was observed among physicians and healthcare professionals (Beck et al., 2020; Chang et al., 2020; Devaraj, 2020). However, in India, medical students and graduates are uninformed about the incidence of OSA in adults and children (Goyal et al., 2018; Wadhwa R et al., 2020). Awareness among students can be created by case-based studies during residency and grand rounds, and lecture series. Noting that the public health implications of OSA are high, involving nursing practitioners to promote awareness of sleep hygiene and sleep disorders, can help increase patient knowledge, timely symptom identification and treatment compliance (Assad et al., 2016).

Therefore, this study was carried out to assess the knowledge regarding OSA among nursing students and evaluate the effectiveness of a structured teaching program in improving their knowledge regarding OSA. This study hypothesized that there will be a significant difference between the mean pre-test and mean post-test level of knowledge regarding Obstructive sleep apnea among Nursing students.

We also hypothesized that there will be a significant association between the pre-test level of knowledge regarding obstructive sleep apnea with selected demographic variables among Nursing students.

Methodology

Research Design

The study followed a quasi-experimental one group pre-posttest design. This design was used because the study examined the effectiveness of one group therefore, it was not possible to randomly assign participants to that group. (Polit & Beck, 2021)

This study was conducted at a selected nursing college in Coimbatore, Tamil Nadu, India.

Study Sample

The study sample was selected using purposive sampling technique. This technique carefully selects subjects based on study purpose with the expectation that each participant will provide unique and rich information that adds value to the study (Wu Suen et al., 2014) and included nursing students in their second year of Bachelor of Nursing program with a basic knowledge of the anatomy and physiology of the respiratory system and excluded students who were absent during data collection.

Sample Size

Sample size was calculated by power analysis:

$$n = \frac{(z^2 \times N \times SD^2 p)}{(N - 1)e^2 + z^2 \times SD^2 p}$$

where, N is size of study population (students in 2nd year Nursing program) =93,

e^2 is acceptable error = 0.02,

$SD^2 p$ is standard deviation of population =14.62,

z^2 is standard variation at given confidence interval = 1.96.

Substituting for the formula, n, that is estimated sample size was 90. Therefore, we enrolled 90 students for the study.

Instruments

The level of knowledge on obstructive sleep apnea instrument was developed internally which included a questionnaire with two sections, where one section recorded the demographic details of the students, that is age and prior knowledge of OSA; and second section consisted of the OSA knowledge (OSAK) questionnaire obtained from the OSA knowledge and attitude (OSAKA) questionnaire by Schotland and Jeffe (2003). (Schotland & Jeffe, 2003) that covered 18 items including 3 questions on epidemiology, 4 on pathophysiology, 4 on symptoms, 3 on diagnosis and 4 on treatment. Each response was in true or false format, and correct response carried 1 mark and incorrect response carried 0 mark, each. Total highest score was 18, where scores <10 (<50%) was considered inadequate knowledge, 11-15 (50% -75%) was moderately adequate and 16-18 (>75%) was adequate knowledge (Schotland & Jeffe, 2003). The internal consistency was assessed by Kuder Richardson 20-21 of the questionnaire was found to be 0.70, which indicated that OSAKA was the most efficient questionnaire for the student sample. The content validity was obtained from experts from the fields of psychiatric nursing, psychiatry, clinical psychology, biostatistics and nursing research.

Structured teaching program

Based on modified Wiedenbach's helping art of clinical nursing theory, (Wiedenbach's Helping Art of Clinical Nursing - Nursing Theory, n.d.) the structured training program was formulated after an extensive literature review and discussed with experts before finalizing.

The structured teaching program included lecture sessions using PowerPoint presentations and charts for a duration of 45 minutes, that lasted for a week. The students were extensively taught about OSA characteristics, epidemiology, pathophysiology, symptoms, diagnosis, and treatment. The study was conducted in August 2021. The structured teaching program was undertaken as OSA was covered only as a theory in brief during the Nursing education program, hence, it was necessary to stress on the practical aspects of OSA to the students.

Ethical considerations

The study was approved by Institutional Human Ethics Committee (IHEC) (Project No. 21/064) with reference number PSG/IHEC/2021/Appr/Exp/069, dated April 05, 2021. Written informed consent was obtained from each participating student.

Process

After obtaining informed consent, 90 students were enrolled in the study. Pre-test was conducted using the structured questionnaire for demographics and OSAK, followed by structured training program and finally, post-test was conducted using the OSAK questionnaire. The data was collected from 23rd till 28th August 2021.

Data analysis

Data was recorded in Microsoft Excel and was analysed using IBM SPSS 24.0. Demographics, pre-test, and post-test knowledge was analysed using descriptive statistics. Paired t-test was used to compare pre-test and post-test knowledge scores, and chi-square test was used to evaluate association of age and prior knowledge of OSA with pre-test level of knowledge. Statistical significance was considered at a P value <0.05.

Results

Among the 90 students enrolled for the study, more than half of them (56.7%, n= 51) were 19 years old and the remaining were 20 years old. It was also observed that the majority of the students (82.2%, n=74) had no previous knowledge about OSA.

Distribution of pre-test and post-test level of knowledge about OSA

Table 1 demonstrates the distribution of knowledge about epidemiology, pathophysiology, symptoms, diagnosis, and treatment of OSA, pre- and post-test, respectively. Overall, it was observed that, none of them had adequate knowledge pre-test. However, on assessing post-test, most of them (71.11%, n=64) had adequate knowledge.

Table 1. Distribution of pre-test and post-test level of knowledge regarding obstructive sleep apnea.

Obstructive sleep apnea-related topics	Pre-test			Post-test		
	Inadequate n (%)	Moderate n (%)	Adequate n (%)	Inadequate n (%)	Moderate n (%)	Adequate n (%)
Epidemiology	71 (78.89%)	19 (21.11%)	-	-	10 (11.11%)	80 (88.89%)
Pathophysiology	66 (73.33%)	24 (26.67%)	-	-	21 (23.33%)	69 (76.67%)
Symptoms	76 (84.44%)	14 (15.56%)	-	-	21 (23.33%)	69 (76.67%)
Diagnosis	72 (80%)	18 (20%)	-	-	10 (11.11%)	80 (88.89%)
Treatment	77 (85.56%)	13 (14.44%)	-	-	21 (23.33%)	69 (76.67%)
Overall	80 (88.89%)	10(11.11%)	-	-	26 (28.89%)	64 (71.11%)

Effectiveness of structured teaching program regarding OSA on level of knowledge

In each individual topics related to OSA, the mean knowledge scores significantly increased post-test (Table 2). Overall mean score pre-test (5.39±3.37) had increased significantly (t=23.515, P = 0.0001) post-test (15.9±2.45), indicating the effectiveness of the structured training program.

Table 2. Effectiveness of structured training program on obstructive sleep apnea by comparing pre- and post-test mean knowledge scores.

Level of knowledge on obstructive sleep apnea	Test	Mean ± S.D	Paired "t" value	P value
Epidemiology	Pre-Test	1.16 ± 0.94	t = 15.703	0.0001*
	Post Test	2.89 ± 0.32		
Pathophysiology	Pre-Test	1.23 ± 1.13	t = 13.878	0.0001*
	Post Test	3.28 ± 0.82		
Symptoms	Pre-Test	0.96 ± 0.14	t = 17.711	0.0001*
	Post Test	3.48 ± 0.85		
Diagnosis	Pre-Test	1.02 ± 0.75	t = 20.2	0.0001*
	Post Test	2.89 ± 0.32		
Treatment	Pre-Test	1.02 ± 0.95	t = 17.346	0.0001*
	Post Test	3.37 ± 0.84		

Note. S.D. – standard deviation

*Indicates significance at p<0.05

Association of pre-test level of knowledge with age and prior knowledge about OSA

There was no significant association between pre-test level of knowledge and age ($\chi^2 = 3.258$, degrees of freedom (df) =1, P=0.05), but significant association was observed with previous knowledge of OSA ($\chi^2 = 12.031$, df=1, P =0.0001) (Table 3).

Table 3. Association of pre-test level of knowledge regarding obstructive sleep apnea with selected demographic variables among research participants.

Demographic Variables	Inadequate knowledge		Moderately adequate knowledge		Chi-Square Value
	f	%	f	%	
Age in year					$\chi^2 = 3.258$, d.f=1, p=0.05, NS
19	48	53.33	3	3.33	
20	32	35.56	7	7.78	
Previous Knowledge on obstructive sleep apnea					$\chi^2 = 12.031$, d.f=1, p=0.001, S***
No	74	82.22	0.00	0.00	
Yes	6	6.67	10.00	11.11	

*** $p < 0.001$, N.S – Not Significant

Discussion

Obstructive sleep apnea, despite its high prevalence worldwide, is underdiagnosed and hence, untreated leading to cardiovascular and neurocognitive complications. Increasing awareness among students of nursing and medicine can help in the timely recognition of OSA, its treatment, and educating patients. (Assad et al., 2016; Benjafeld et al., 2019)

In the present study, knowledge levels of nursing students regarding OSA were assessed using the 18-item OSA knowledge part of the OSAKA questionnaire developed by Schotland and Jeffe which is a useful tool with high internal consistency that assesses the knowledge of physicians and can help in identifying and treating patients with OSA (Schotland & Jeffe, 2003) This questionnaire was previously employed in many other studies conducted across geographies, to assess knowledge and attitudes regarding OSA among medical graduates, primary care physicians, speech-language pathologists, etc. (Al-Khafaji H et al., 2021; Chérrez-Ojeda I et al., 2018; Wallace ES et al., 2021).

Different studies that assessed knowledge regarding OSA conducted on nursing practitioners and medical undergraduate students reported fair knowledge among the former, owing to years of experience, (Valerio & Heaton, 2014) but among the latter, the knowledge related to OSA was limited. (Goyal et al., 2018; Ozoh OB et al., 2015; Wadhwa R et al., 2020; Zaidi et al., 2021) In India, medical students and graduates were largely unaware of the incidence of OSA in adults and children. (Goyal et al., 2018; Wadhwa R et al., 2020) (Goyal et al., 2018; Wadhwa R et al., 2020) This was consistent with the current study findings where the majority of the nursing students had inadequate knowledge about OSA. On item-wise analysis, it was found that they lacked adequate knowledge related to the treatment of OSA, followed by symptoms, diagnosis, then epidemiology, and pathophysiology. In the study conducted by Wadhwa et al., (Wadhwa R et al., 2020) item-wise assessment was inconsistent, in that there was no demarcation of subsections of the questionnaire unlike the one used in the present study, however, they saw a lack of knowledge regarding treatment using uvulopalatoplasty, normal AHI, and collar size in men with OSA, which covered aspects of treatment, pathophysiology, and epidemiology, respectively. These three aspects were observed to be lacking in other studies as well. (Goyal et al., 2018; Ozoh OB et al., 2015; Zaidi et al., 2021)

The teaching methods employed in the current study involved lecture series and presentations that extensively focused on OSA characteristics, epidemiology, pathophysiology, symptoms, diagnosis, and treatment. Similar training methodologies have been employed across studies to improve awareness related to OSA. Valerio et al., (Valerio & Heaton, 2014) included concepts on the significance of OSA knowledge, analysis of OSA signs and symptoms, and evaluate clinical symptoms, 16 while Glueckert et al., (Glueckert et al., 2019) focused on OSA definition, background including symptoms, associated health conditions and consequences, diagnosis, screening methods, and treatment options, along with a case study.

The effectiveness of the teaching method employed in the current study was evident with the significant (increase in mean knowledge post-test when compared to the pre-test. Significant improvement was observed among knowledge scores in sub-sections as well. Similarly, significant improvement in OSA knowledge scores was observed in a study conducted among dental hygiene students, where the mean pre-test score was increased post-test. (Glueckert et al., 2019) A recent study conducted on nurse-practitioner students also revealed

significant improvement in sleep knowledge, after going through case-based modules that addressed sleep health and disorders. (Sawyer AM et al., 2022) This highlights the overall need of educating young practitioners and students regarding sleep hygiene and associated disorders which must be included as part of their curriculum (Goyal et al., 2018).

The present study also looked at any association of pre-test knowledge scores of OSA with age and prior knowledge of OSA. Pre-test knowledge scores were found to be significantly associated with prior knowledge of OSA and not age. This study promotes the incorporation of a teaching program regarding OSA as part of the nursing curriculum. An in-service education program, which includes meeting of nursing students with OSA patients, interacting and imparting knowledge about the same to the patients, and educating the patients about management strategies could be taken up by the student nurses.

Limitations

The present study employs a purposive sampling technique that can lead to bias. Hence, a randomized controlled intervention study with a broader category of nursing students across all the years of their education, along with entry-level nurses, needs to be considered for further studies. While the present study focused only on knowledge aspects, future studies should also look at attitudes and practices related to OSA.

Conclusions

This study's findings revealed overall inadequate knowledge related to obstructive sleep apnea among nursing students in the selected nursing college. Educating the students using a structured teaching program significantly improved their knowledge levels related to OSA, revealing the effectiveness of the teaching program.

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Life Satisfaction Scale: A Meta-Analytic Reliability Generalization Study in Turkey Sample

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ABSTRACT

Life satisfaction is the result of comparing one's expectations with the actual situation. The life satisfaction scale developed by Ed Diener and his colleagues is one of the most preferred life satisfaction scales in research. In this study, it was aimed to obtain an approximate estimate of the generalized reliability of the measurement tool through meta-analytic reliability generalization and to determine which sample characteristics of the studies may affect the variability of reliability coefficients. For 24 studies, the generalized reliability coefficient was .84 [.81-.87]. No visual or statistical evidence of publication bias was encountered in the meta-analysis. As a result of the moderator analysis, it was concluded that the year of publication, sample type and the percentage of women in the sample can be shown as sources related to the change in the reliability value. It is thought that it would be useful to report reliability coefficients in accordance with the research conditions and assumptions in future studies.

The concept of life satisfaction has received increasing attention in the last two decades as an important topic in human psychology research. In recent years, researchers have focused on the positive supports and rewards that enable people to form perceptions, be happy and empathize with others, rather than undesirable emotions such as anxiety, depression, sadness and unhappiness. Life satisfaction is among the most widely used concepts to assess subjective well-being. The concept of "life satisfaction", which was first introduced in the literature by Neugarten et al. (1961), has been the subject of many studies. Before defining the concept of life satisfaction, it is first necessary to define the concept of "satisfaction". Satisfaction is the fulfillment of expectations, needs and wishes. "Life satisfaction" is the state or result obtained by comparing a person's expectations (what they want) with what they have (what they have) (Diener, 1984). Life satisfaction can be defined as the cognitive evaluation of one's overall satisfaction with one's current life according to one's own criteria of what a satisfying life means (Diener et al., 1985). Life satisfaction evokes happiness in the mind through a sense of self-worth, peace of mind, satisfaction with work life, tolerance for difficulties, and positive perceptions and attitudes towards oneself, others and society. These factors are important for well-being; they result in perceptions of self-efficacy, self-esteem, good personality, positive emotions and attitudes, and also increase career success.

Numerous studies underscore the positive outcomes associated with high levels of life satisfaction. For instance, research has persistently shown that people who are more satisfied with their lives usually have stronger social bonds, enjoy better social support, and display greater contentment in their marital lives compared to their less satisfied counterparts (Barger, Donoho, & Wayment, 2009; Diener & Seligman, 2002; Pavot & Diener, 2008). From a professional standpoint, life satisfaction proves to be beneficial as well. Employees with a higher degree of life satisfaction tend to perform better at their jobs, express greater

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satisfaction with their careers, demonstrate a higher commitment to their organizations, and are less likely to leave their jobs (Erdogan, Bauer, Truxillo, & Mansfield, 2012). Moreover, high life satisfaction is linked to improved health outcomes and longevity. Research suggests that people with high life satisfaction tend to have better overall health and fewer chronic health problems (Siahpush, Spittal, & Singh, 2008). Importantly, high levels of life satisfaction significantly reduce the risk of mortality, thus contributing to a longer lifespan (Lyyra, Törmäkangas, Read, Rantanen, & Berg, 2006; Xu & Roberts, 2010).

Several research studies have highlighted that life satisfaction also plays a pivotal role in fostering positive educational outcomes. For instance, alongside the absence of psychological distress, a high level of life satisfaction significantly contributes to student engagement and academic success among university students (Antaramian, 2015; Renshaw & Cohen, 2014). Furthermore, university students who report high life satisfaction often express greater contentment with their academic journey (Duffy, Allan, & Bott, 2012; Ojeda, Flores, & Navarro, 2011). Life satisfaction has been linked with optimistic academic expectations, enhanced academic self-confidence, the perception of being closer to achieving personal goals, and reduced academic stress (Ojeda et al., 2011; O'Sullivan, 2011). Additionally, some research indicates a correlation between positive life satisfaction and superior grade point averages (GPAs) among university students, underscoring the significance of life satisfaction in academic performance (Howell, 2009; Rode et al., 2005).

The first scale development study on the concept of life satisfaction was conducted by Diener et al. (1985). Validity and reliability studies were also conducted for different groups (Diener, Pavot, Colvin, & Sandvik, 1991; Diener & Pavot, 1993). In addition to these studies, different scale development studies have taken place in the literature to measure life satisfaction of groups with different characteristics (Andrews & Withey, 1976; Lavalley, Hatch, Michalos, & McKinley, 2007; Lightsey Jr, McGhee, Ervin, Gharghani, Rarey, Daigle, Wright, Powell, 2013). When the literature is examined, life satisfaction scales adapted to Turkish culture are found. It is noteworthy that these are scales created by adapting the life satisfaction scales developed by researchers such as Diener et al. (1985), Lavalley et al. (2007) and Huebner (1991) into Turkish and applying them to different groups (Köse, Çobanoğlu, & Sarı, 2022).

When the literature was examined, it was determined that one of the most preferred life satisfaction scales within the scope of the studies was the life satisfaction scale developed by Ed Diener and his colleagues (Diener et al., 1985; Pavot & Diener, 1993). Life satisfaction is a factor in the more general structure of subjective well-being. Theoretical studies and research in fields other than rehabilitation show that subjective well-being has at least three components: positive emotional appraisal, negative emotional appraisal and life satisfaction (Pavot & Diener, 2008). Life satisfaction differs from emotional appraisal in that it is cognitive rather than emotionally driven. Life satisfaction can be assessed specific to a particular life domain or globally. Life satisfaction scale is considered as a global measure of life satisfaction.

The Life Satisfaction Scale (Diener et al., 1985) consists of 5 items and the items are in a seven-point Likert-type rating form/format. Scores that can be obtained from the scale vary between 5-35. High scores indicate high satisfaction with life. Diener et al. (1985) reported Cronbach's alpha internal consistency coefficient as .87 and test-retest (2 months interval) coefficient as .82. The Life Satisfaction Scale (LSS) has been used in various cultures and populations and translated into various languages. A large body of research has also examined the psychometric properties of the LSS. Exploratory and confirmatory factor analyses supported the unidimensional structure of the LSS as conceptualized by Diener et al. The instrument also has acceptable convergent validity; it is related to, yet distinct from, constructs such as anxiety, depression, happiness, self-esteem, negative and positive affect, as well as psychological distress.

Reliability is one of the most important key concepts in the process of evaluating test scores. Reliability provides information about how close the test or measurement scores are to each other over repeated measures (Traub & Rowley, 1991). Contrary to popular belief, reliability is a dynamic characteristic of test scores rather than a fixed value for measurement results and can vary according to the characteristics of the data (Thompson & Vacha-Haase, 2000). Reliability should therefore be recalculated after each measurement and reported in each study, as reliability can be affected by sample characteristics such as gender, age or language (Thompson, 2002), that is, it can vary across different administrations. Internal consistency, a commonly employed measure of reliability, offers insights into the degree to which the items within a measurement instrument evaluate a

single underlying construct (Semma et al., 2019). There are many methods to assess reliability in terms of internal consistency, such as Cronbach's alpha, dividing the test into two halves, and Kuder-Richardson. Among these methods, Cronbach's alpha is the most widely used reliability estimator (McNeish, 2018; Dimitrov, 2002) and can be calculated as follows:

$$\alpha = \frac{n}{n-1} \left[1 - \frac{\sum_{i=1}^n V_i}{V_{total}} \right]$$

The formula mentioned above includes variables such as n , representing the number of items in the scale, V_i , representing the variance of each specific item's score, and V_{total} , representing the variance of all scores (Cronbach, 1951). Psychometric theory points out that reliability is not an inherent characteristic of a test but may vary from one application to another. Considering that reliability can vary from one administration to another and can be greatly affected by sample characteristics, it is necessary to recalculate reliability for different samples. Variables such as gender, age, language and ethnicity can affect reliability estimates (Thompson, 2002). By examining such factors, sources of heterogeneity in reliability values can be examined. Consequently, the best way to meet expectations about the reliability of scores is to quantitatively integrate the various reliability estimates obtained from different administrations of the instrument.

Meta-analysis allows researchers to statistically combine multiple reliability coefficients resulting from the application of a particular test to different samples and contexts. Vacha-Haase (1998) used the term Meta-Analytic Generalization of Reliability (MARG) or simply Reliability Generalization (RG) to refer to this type of meta-analysis. MARG, aside from estimating the average reliability of test scores, aims to assess the variability of reliability coefficients reported across different studies that employ the same test. When encountering high variability, another objective is to investigate which characteristics of the studies may be statistically associated with the reliability estimates. This involves examining potential sources of heterogeneity in reliability values using various meta-analytic techniques (Henson & Thompson, 2002; Rodríguez & Maeda, 2006; Sánchez-Meca et al., 2013).

The same measurement result may vary in terms of reliability from case to case depending on the setting and sample, so different study characteristics such as design, format and setting and different participant characteristics such as age, gender and ethnicity may affect the differences in reliability (Vacha-Haase, 1998). When the measurement results of a study are valid for different target groups or different situations, the study is considered to have an acceptable level of generalizability (Onwuegbuzie & Larry, 2000). On the contrary, if the measurement results can only be applied to a subgroup of the sample or to a very specific situation, the generalizability of the relevant study is said to be weak (Vacha-Haase, 1998). Generalizability is one of the three different qualities that researchers use together with validity and reliability to assess the quality of their studies in general (Taylor, 2012). In this case, considering that reliability is the consistency and reproducibility of measurement results determined through a measurement tool applied to a defined sample group at a specific time and under specific conditions (Crocker & Algina, 1986) and the possibility that gender may affect reliability differences, sample type and gender variables were used in moderator analyses within the scope of this reliability generalization study.

The concept of life satisfaction is one of the most widely used well-being measures in the literature (McCulloch, 1992). Considering the fact that the concept of life satisfaction is frequently used as a variable within the scope of research, demographic trends and increasing interest in the concept of healthy aging, it is important that the psychometric properties of the concept of life satisfaction are well understood by researchers. The aim of this study is to apply meta-analytic reliability generalization to empirical studies using the LSS. At this point, it is aimed to obtain an approximate estimate of the overall reliability of the LSS and to determine which sample characteristics of the studies may affect the variability of the reliability coefficients. At the same time, the results to be obtained from this study will inform future research on the range of reliability estimates that can be expected for the LSS.

Method

This section explains the type of the study, the process of data collection, the establishment of coding criteria, the validity and reliability of measurement results, and the method of data analysis.

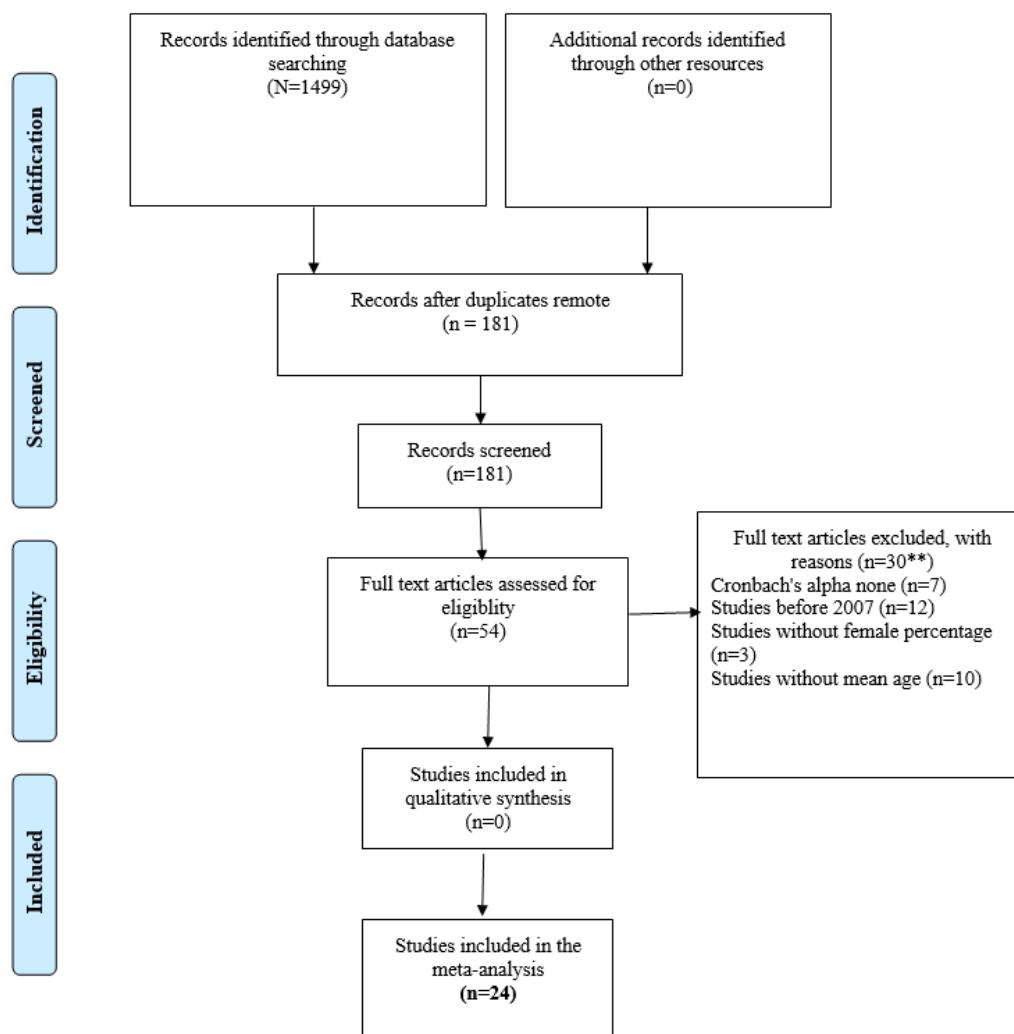
Type of Research

This research falls under the category of RG research. RG, a meta-analytical method, investigates the origins of error variance when multiple studies employing a specific instrument or a set of instruments to measure the same construct are taken into account (Vacha-Haase, Henson, & Caruso, 2002).

Data Collection Process

In the global academic community, it is advised to incorporate the flow diagram as outlined in the PRISMA statement and adhere to the PRISMA guidelines when conducting systematic review and meta-analysis studies. The purpose of following these guidelines is to ensure the accurate execution and enhance the presentation and reporting of systematic review and meta-analysis studies (The PRISMA Group, 2009). In this context, two researchers independently scanned the studies published in TR-Dizin and Adnan Menderes University library database between 2007 and 2022 in which the LSS was used. The databases were searched with the keywords "Life satisfaction" and "Yaşam doyum" and a total of 200 studies were analyzed according to their titles and abstracts. Then, the same studies were removed and the full texts of the remaining studies were analyzed.

Figure 1. Flow Diagram



Data Analysis

After the identical studies were removed, the full texts of the remaining studies were analyzed. Before proceeding to the analysis phase, coding reliability was calculated.

Coding of the Studies

At this stage, inclusion criteria were determined. The criteria determined are; i) ULAKBIM, Google Scholar and Adnan Menderes University library database, ii) Cronbach's Alpha coefficient is reported or calculable, iii) the sample group, sample size, mean age of the sample, scale form or number of items are included in the study, iv) the participants in the study were individuals of Turkish origin, and v) the language used in the research was either English or Turkish. Two authors independently coded the studies based on the inclusion criteria, and the inter-coder agreement percentage was found to be 90%, indicating a high level of agreement. The Krippendorff Alpha coefficient, which measures inter-coder reliability, was calculated to be .88, further supporting the high level of agreement between the coders. Ultimately, 24 studies met the inclusion criteria and were included in the meta-analysis, ensuring a robust dataset for analysis.

Statistical Analyses

All analyses of the study were conducted using JAMOMI and R software. The jamovi program was used to create funnel plots and forest graphs with high resolution. Other calculations related to the study were carried out through the "meta" package available within the R software. The distributions of Cronbach's Alpha coefficients are not normally distributed. Therefore, the distribution of reliability coefficients was normalized by using Bonett (2002) transformation. The reliability generalization study was carried out using the coefficients obtained as a result of the transformation, and the comments were made by converting the last value obtained into Cronbach's Alpha coefficient. In determining whether the studies evaluated within the scope of meta-analysis show a heterogeneous distribution, that is, in determining the sources of variability of reliability values within the scope of individual studies, the Q statistic, the I^2 statistic, which is a function of the Q statistic, and the lower and upper confidence interval for the generalized reliability value were used. Due to the fact that Bonett's VC model is fundamentally a random effects model according to Holland (2015), and the random effects model is considered to be a more accurate reflection of real-world scenarios as stated by Field (2003b), the research opted for the random effects model (REM). For the estimation of between-study variance under REM, the Sidik-Jonkman estimator, which has better features and produces better results than other estimators, was preferred.

During the coding of the studies selected according to the criteria for inclusion in the meta-analysis, the following study characteristics were considered: (i) study name, (ii) author(s) name, (iii) year of publication, (iv) language of publication, (v) reliability coefficient, (vi) type of reliability, (vii) sample size, (viii) sample type. The studies were coded by two researchers according to the specified characteristics, and the percentage of inter-coder agreement was 93% and the Krippendorff Alpha coefficient was .91, and these results were considered as an indicator of high inter-coder reliability.

This meta-analysis study has some limitations like other meta-analysis studies. The first one is the limitations of the meta-analysis method itself. Within the scope of the study, only the studies in which Cronbach's alpha value was calculated and only the studies conducted within the scope of Turkey sample were evaluated. At the same time, only articles were reviewed within the scope of the study. Although all of the postgraduate studies of individual researchers were reached, only those that were published and open to the access of readers could be reached due to the different dates of acceptance and publication of the articles in accordance with the publication policies of peer-reviewed scientific journals. Although a rich keyword pool was created for individual studies obtained with the help of search engines and databases, the fact that studies that were not shown or could not be reached as a result of the search could not be included in the list is seen as another important limitation. In addition, the study is limited to the analysis of coded moderator variables.

Within the scope of the study, funnel diagram, Egger's regression test and Kendall's tau were used to examine publication bias. In addition, the fail-safe N method was also used to obtain information about how many studies with an effect size value of zero should be conducted in order to eliminate the significance of the meta-analysis result. Within the scope of the study, the year of publication (Between 2007 and 2018/2018 and beyond, sample type (university student/non-university student), percentage of female students (more than half female students/more than half male students), mean age (continuous) were considered as moderator variables.

Meta-regression and Analog ANOVA were used to determine the effect of these moderator variables on the variability of reliability estimation.

Results

In this section, publication bias findings are presented first, followed by heterogeneity, effect size and moderator analysis findings.

Table 1 presents the descriptive statistics of the studies analyzed within the scope of the research.

Table 1. Characteristics of the Studies Included in the Meta-Analysis

Authors	Year	Sample Size	Female Populaion	Mean Age	Target Population
Bulut, M. B., & Yıldız M.	2020	602	324	20.86	University students
Recepoğlu, E., & Tümlü Ülker, G.	2015	94	31	45.02	Others
Sincar et al.	2020	1180	592	20.33	University students
Odacı et al.	2021	235	133	21.23	University students
Akbıyık, M.	2020	5208	2742	22.00	University students
Aydiner Boylu, A., & Güner, G.	2018	516	165	66.00	Others
Tepeli Temiz, S., & Ulusoy Gökçek, M.	2020	206	89	22.38	University students
Şahin, G., & Balcı Akpınar, R.	2016	194	57	37.24	Others
Balaban, T. et al.	2021	987	439	32.76	Others
Meryem Kara, F. et al.	2018	336	165	20.45	University students
Kolbaşı, E., & Bağcı, Z.	2019	131	28	50.00	Others
Atasoy, I., & Turan, Z.	2019	214	191	31.10	Others
Amanak, K., & Sevil, Ü.	2020	112	112	37.50	Others
Gençay, S., & Akkoyunlu, Y.	2012	233	108	22.14	University students
Yıldırım, J. C. et al.	2021	403	266	23.38	Others
Uğurlu, O.	2013	246	95	21.09	University students
Çattık, M., & Aksoy, M.	2018	225	139	35.80	Others
Erdoğan, M. Y.	2021	435	215	16.21	Others
Akyüz, H.	2020	146	58	21.92	University students
Çırpan, H. et al.	2019	284	119	31.31	Others
Kahyaoğlu Süt, H.	2019	455	394	20.50	University students
Dil, K. et al.	2020	230	104	45.80	Others
Bozoğlan, B.	2015	444	236	54.12	Others
Şeker, B. D., & Sirkeci, İ.	2014	125	125	35.06	Others

When Table 1 is examined, it is noticeable that there are 24 studies evaluated within the scope of the research. When Table 1 is re-examined, it is seen that the publication year of the studies varies between 2013 and 2021, and the study with the largest sample is Sincar et a. (2020). In addition, the study with the largest female population is Akbıyık et al. (2020).

Below are the results of the publication bias analysis conducted within the scope of the study.

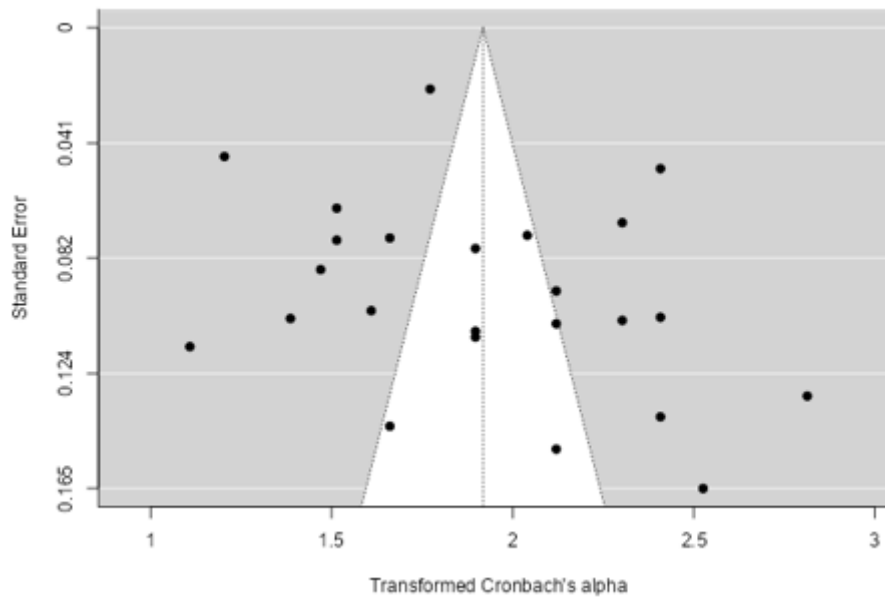
Results on Publication Bias

Within the scope of the research, before calculating the average effect size of the meta-analysis, evidence for the detection of publication bias in the studies examined within the scope of the analysis was sought. For this purpose, Mullen, Muellerleile, and Bryant's (2001) formula, funnel plot, Egger's linear regression test, Kendall's tau value, and Duval and Tweedie clipping and filling method were used.

Mullen, Muellerleile, and Bryant (2001) pointed out that the resilience of the results of meta-analysis studies against future studies can only be realized when the value calculated using the formula $N/(5k+10)$ is greater than 1. Using the relevant formula, it was determined that the value obtained for the total population of 13,241 people was greater than 1. The fact that the calculation results for these values are greater than 1 can be interpreted as the publication bias of this meta-analysis study is very low.

One of the most widely used methods for collecting visual evidence of publication bias is the funnel plot. Figure 2 shows the funnel plot.

Figure 2. Funnel Graph



In a funnel plot, studies are expected to be symmetrically distributed around the uncertainty line (the line that cuts the overall magnitude of reliability). Although Figure 2 shows that individual studies are approximately symmetrically distributed to the right and left of the overall effect size for Cronbach's alpha, this interpretation is subjective (Borenstein, 2019). For a more objective interpretation, Egger's regression test should be utilized. The fact that the result of Egger's Linear Regression test (EggerValue= 1.70, $p=0.08>0.05$) is not statistically significant is another indication that there is no evidence of publication bias. In addition, the Begg and Mazumdar rank correlations statistic was examined for contributing/not contributing to the lack of asymmetry in the funnel plot. When the Begg and Mazumdar rank correlations statistic is analyzed, it is concluded that there is no asymmetry in the funnel plot (Kendall's Tau=0.13, $p=0.16>0.05$). Finally, the Duval and Tweedie trimming and filling test result was examined and it was concluded that there was no difference between the observed and actual effect sizes. In conclusion, as a result of the tests on the asymmetry of the funnel diagram, it was concluded that the funnel diagram was symmetrical and there was lack of publication bias.

Within the scope of the research, the numerical output of the meta-analysis regarding the Fail-Safe N, which is a way of defining the p value, was also analyzed. The fact that the p-value for the Fail-Safe N is smaller than the alpha value ($p<0.001$) indicates that the study is a strong study with low reliability. Within the scope of the study, it was determined that the p value for the Number of Error Protections was less than the alpha value of 0.05 (FSN=117.03, $p<.001$). According to this result, it can be said that the study is a strong study with a high level of reliability.

Results on the Generalized Effect Size of the Reliability of the Satisfaction with Life Scale

After carrying out a search for any signs of publication bias concerning the studies that are part of the study's sample, the generalized effect size should be computed. This computation should be done within the context of the chosen random effects model, taking into consideration the study's sampling frame. Table 2 displays the calculated generalized effect size along with the upper and lower confidence interval values associated with the generalized effect size.

When Table 2 is examined, it is observed that the Cronbach's alpha value or the generalized effect size value of the GES is 0.85 with an error of 0.09. The lower limit for reliability is 0.82 at 95% confidence interval and the upper limit is 0.87. When the point estimation value of 0.85 and the lower and upper values of the confidence interval are interpreted considering the effect size classification of Cohen et al. (2011), it can be said that the Cronbach's Alpha value of the Satisfaction with Life Scale is high.

Table 2. Output on Overall Effect Size

Model	Effect Size	Standart Error of Measurement	Z	p	Lower Confidence Level	Upper Confidence Level
Random Effects	0.85	0.09	21.19	< .001	0.82	0.87

Within the scope of the research, first the heterogeneity statistics in Table 3 were given.

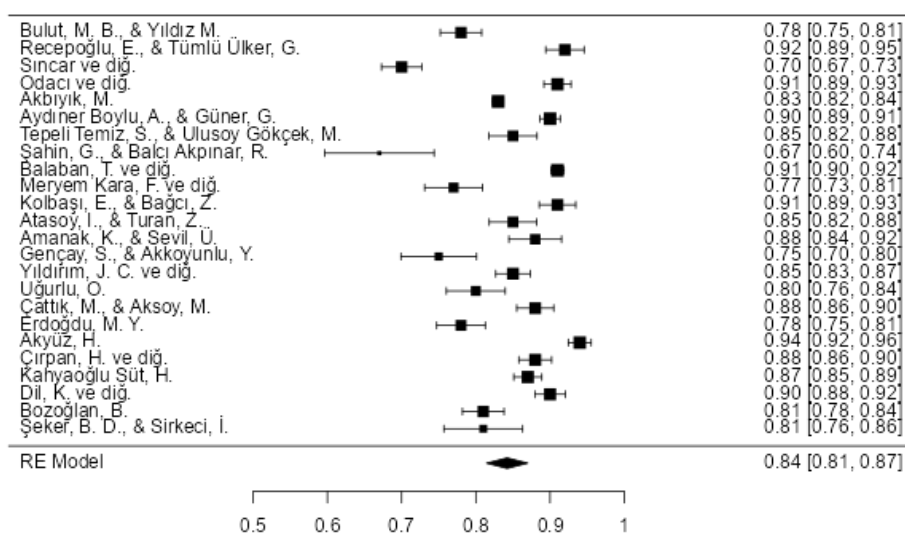
Table 3. Heterogeneity Statistics

I ²	df	Q	p
%97.22	35	668.23	<0.0001

When Table 3 is examined, Cochran's Q Test result is statistically significant ($Q \sim (df = 23) \sim = 668.23, p < .0001$). In other words, the change in the reliability values of the LSS is larger than expected from the sampling error. According to this result, it can be said that the actual effect size related to reliability varies according to the studies. The I² statistic, another statistic that provides information about heterogeneity, shows the rate of change in the observed effect size attributable to sampling error. Table 3 shows that I² = 97.22%. I² provides information about the degree of inconsistency of the findings of the studies within the scope of meta-analysis and reflects the extent to which the confidence intervals obtained from different studies overlap with each other (Borenstein, 2019). The I² value obtained within the scope of this study is relatively large and this value means that the reliability value of the LSS varies significantly within the scope of individual studies. In addition to the Q and I² statistics, the lower limit value of 0.82 and the upper limit value of 0.87 in the 95% confidence interval for the mean effect size (based on standard deviation) provide information about how widely the reliability values vary between populations. Considering the statistically significant result of the Q statistic, the relatively high I² value and the relative width of the prediction interval, it can be said that there is a heterogeneity that needs to be examined. Within the scope of the research, moderator analyses were used to explain the sources of heterogeneity, that is, the sources of variation in the reliability values of individual studies.

Another output of the meta-analysis is the forest plot. Figure 3 shows the forest plot.

Figure 3. Forest Graph



Considering the data on the reliability values of the studies included in the study, it is seen that the reliability values of the studies vary between 0.67 (Şahin & Balcı Akpınar, 2016) and 0.94 (Akyüz, 2020). When the statistical results of the reliability values of the studies are evaluated in a holistic manner, it is noticeable that the reliability of all the studies constituting the sample is above the acceptable level. The forest plot also includes study weights. The size of the square representing each study in the forest plot shows the weight of the study. When the study weights in the forest plot are examined, it can be said that the weight of the study conducted by Akbıyık (2020) is the highest.

Results of Moderator Analyses

In the previous stage of this meta-analysis, it was concluded that examining the sources related to the change in the reliability values of individual studies was worth examining statistically. In this framework, the final aim of the study was to determine the differentiation of the reliability values of the LSS in terms of subgroups related to year of publication, sample type, percentage of female students and mean age. For this purpose, first, Analog ANOVA was performed by considering categorical variables and then meta-regression was performed by using continuous variables. The results of the Analog ANOVA are presented in Table 4.

Table 4. Analog ANOVA Results

Moderator Variable	Moderator Variable Levels	Number of Studies	ES _{mean}	ES _{lower}	ES _{upper}	df	Q _B	p
Publication year	2007-2018	16	0.86	0.82	0.88	1	0.79	<0.0001
	2018 and beyond	8	0.83	0.77	0.88			
Sample type	University students	10	0.83	0.77	0.87	1	1.15	<0.0001
	Others	14	0.86	0.83	0.89			
Percentage of women in the sample	More than half are women	11	0.84	0.80	0.86	1	1.15	<0.0001
	More than half are men	13	0.86	0.81	0.86			

The first row of Table 4 is the place to be examined to determine whether the change in the reliability value of the LSS according to publication year subgroups is statistically significant. The first value to be examined to determine the sources of heterogeneity is the Q value. When the moderator analysis result for the first row was examined, it was concluded that the change in the reliability value of the LSS was statistically significant ($Q=0.79$, $p<.0001$) when the categories of the publication year (Between 2007 and 2018/2018 and beyond) variable were taken into consideration. Accordingly, whether the studies were published between 2007 and 2018 or in 2018 and beyond can change the reliability of the LSS. When the average of the reliability values is analyzed, it is seen that the reliability values for the LSS used in the studies published between 2007 and 2018 are higher.

The second row of Table 4 is the place to be examined to determine whether the change in the reliability value of the LSS according to the sample type subgroups is statistically significant. When the Q value as a result of the moderator analysis for the second row was analyzed, it was concluded that the change in the reliability value of the LSS was statistically significant when the categories of the sample type (university student/other) variable were taken into consideration ($Q=1.15$, $p<.0001$). According to this, the status of being a university student/not being a university student of the individuals constituting the sample can change the reliability of the LSS. When the average of the reliability values is analyzed, it is seen that the reliability values of the LSS used in the studies whose sample does not consist of university students are higher.

The last row of Table 4 is the place to be examined in order to determine whether the change in the reliability value of the LSS according to the subgroups of the percentage of women in the sample is statistically significant. When the Q value as a result of the moderator analysis for the third row was analyzed, it was concluded that the change in the reliability value of the LSS was statistically significant when the categories

of the percentage of women in the sample (more than half women/more than half men) were taken into consideration ($Q=1.15$, $p<.0001$). According to this, in the studies in which the LSS is used, the fact that more than half of the sample is female or male can change the reliability of the LSS. When the average of the reliability values is analyzed, it is seen that the reliability values of the LSS used in the studies in which more than half of the sample was male were higher.

The meta-regression results of the moderator analysis using the moderator variable of mean age are presented in Table 5.

Table 5. Meta-Regression Results

	Estimate	SE	Z	p	R ²	Q _E
Mean Age	0.001	0.001	1.22	0.22	0	557.27

When Table 5 is examined, the mean age variable was not found to be statistically significant according to the random effects model. In other words, the mean age variable is not a statistically significant predictor for the average reliability value of the LSS. At the same time, it is seen in Table 4 that the mean age variable does not contribute to the explained variance ($R^2=0$). The Q value presented for the residuals, which is one of the meta-regression outputs, was found to be statistically significant ($Q_{(22)}= 557.27$; $p<.0001$). This means that the assumptions of the fixed effect model are violated, that is, the actual reliability value varies even for studies with participants of the same age in their samples.

Discussion, Conclusions and Recommendations

The aim of this meta-analytic reliability generalization study was to obtain the average reliability of the LSS and to examine the moderating variables that would reveal the variability between studies. For this purpose, a meta-analysis was conducted for 24 studies that used the LSS and met the inclusion criteria. Within the scope of the research, statistical and graphical outputs related to publication bias were examined and it was determined that there was no evidence of publication bias. The average reliability coefficient for 24 studies was .84 [.81-.87]. Based on this value, it can be said that the general estimation of Cronbach's alpha is adequate (Nunnally & Bernstein, 1994). Köker (1991) found that the test-retest coefficient of the scale applied at three-week intervals was 0.85 in a study conducted within the scope of adaptation of the related measurement tool to Turkish culture. It is noticeable that the values obtained in two different studies are very close to each other. As a result of the reliability generalization of the life satisfaction scale, which was conducted by Vassar (2007) and sampled 62 studies, it was concluded that the average reliability was .78. Wallace and Wheeler (2002) conducted a reliability generalization study on the life satisfaction index. 34 studies constituted the sample and as a result of the study, it was concluded that the average reliability coefficient was .79. Considering the average reliability coefficients obtained within the scope of three different studies conducted by this study, Vassar (2007) and Wallace and Wheeler (2002), it was concluded that the three results were above the acceptable reliability value(s) (DeVellis, 1991; Cortina, 1993) and relatively close to each other.

Within the scope of the research, it was concluded that the heterogeneity between the studies was statistically significant. This shows that it would not be appropriate to generalize the reliability coefficients of the LSS as they take different values in different samples. Moderator variables that may be the source of the variation in reliability coefficients, that is, the source of heterogeneity, were analyzed. Within the scope of moderator analyses, three categorical variables (publication year, sample type, percentage of women in the sample) were included as independent variables.

As a result of the moderator analyses, it was concluded that whether the studies were published before 2018 or after 2018 or later could change the reliability of the LSS. When the average of the reliability values is analyzed, it is seen that the reliability values of the LSS used in the studies published before 2018 are higher. When the descriptive statistics of the moderator variables used in the research are examined, it is observed that there are 16 studies published before 2018 and 8 studies published in 2018 and later. The fact that the number of studies before 2018 is twice the number of studies published in 2018 and after is thought to be the main

reason for this situation. At the same time, considering the fact that psychological structures can change over time and that the LSS was developed approximately 37 years ago, it is more understandable that the reliability of the studies conducted before 2018 is high. Although the result is in favor of the studies conducted before 2018 in terms of high reliability, the fact that Cronbach's alpha values for both time periods are very close to each other ($r_{\text{before 2018}} = 0.86$ and $r_{\text{2018 and beyond}} = 0.83$) is another striking result.

Within the scope of the research, it was concluded that the reliability value changed according to the sample type. When the results are examined, it is seen that the reliability values of the LSS used in studies whose sample does not consist of university students are higher. Özdemir, Yıldırım, and Tan (2020) examined the meta-analytic reliability generalization of the short and long form of the Oxford Happiness Scale (OHS), which measures a construct similar to the construct measured by the LSS, for the Turkish sample and included 95 Cronbach Alpha coefficients obtained from 92 studies in the meta-analysis. As a result of the study, when the sample type variable was examined for the short form of the measurement tool, it was determined that the average α values for studies with and without students were .75 and .77, respectively. The result of this study is similar to the result of Özdemir, Yıldırım, and Tan (2020). In addition to this, Caruso et al. (2001), Vacha-Haase (1998), and Yin and Fan (2000) concluded that sample type affects the overall reliability estimation. It has been determined that the LSS yielded more reliable results in the sample of non-student individuals. However, as the reliability value of .83 for the student sample and the reliability value of .86 for the sample consisting of non-students are acceptable and close to each other, it can be said that the measurement tool can be used in both student and non-student samples for the Turkish sample.

As a result of the research, it was concluded that in the studies in which the LSS was used, the fact that more than half of the sample was male or female could change the reliability of the LSS. When the results are examined, it is seen that the reliability values of the LSS used in studies where more than half of the sample is male are higher. Vassar (2007) concluded that there was a low positive correlation between the percentage of women in the sample and Cronbach's alpha ($r = 0.28$; $p < .05$). Wallace and Wheeler (2002) concluded that there is no statistically significant relationship between the percentage of women in the sample and Cronbach's alpha. The result of this study is not surprising in terms of the premises of need fulfillment and livability theory. Social and institutional structures that advantage men should not be expected to lead to similar subjective welfare levels between men and women. This result in favor of men can be explained by the fact that the samples of the studies examined within the scope of the research are based on a country like Turkey, which is not advanced in terms of gender equality.

In this study, it was observed that the reliability value did not change when the mean age variable was taken into consideration. As a result of the study conducted by Wallace and Wheeler (2016), it was concluded that the reliability value of the life satisfaction index did not vary according to the mean age variable. In the study conducted by Vassar (2007), a negative relationship was found between the reliability and the samples consisting mostly of young people aged between 12 and 16, and in the same study, it was mentioned that the life satisfaction scale may need to be applied to adult populations as a result of this negative relationship. Within the scope of this study, 24 individual studies and 32 individual studies within the scope of the study conducted by Vassar (2007) were included in the meta-analysis. Within the scope of the study conducted by Wallace and Wheeler (2002), 62 studies were included in the meta-analysis. It is thought that the fact that the number of studies included in the meta-analysis within the scope of Vassar (2007) and this study is small and close to each other and that the use of mean age in the two studies and the use of age groups as moderator variables in the study conducted by Wallace and Wheeler (2002) play a role in the different results of the studies.

The disclosure of reliability values related to the study sample is critical for enhancing the validity, generalizability, and quality of the research findings (Wilkinson, 1999; Onwuegbuzie and Daniel, 2002). The notion of treating reliability as a constant attribute of the scale is termed "reliability induction" (Vacha-Haase et al., 2000). Deditius-Island and Caruso (2002) further expounded on this by identifying two forms of reliability induction. The first form involves researchers referencing a test manual or previously published reliability coefficients and applying these statistics to their own data. In the second, more subtle form, researchers either downplay reliability or quietly assume their own scores to be reliable simply because others have found them to be so. The first method is known as "by report" reliability induction and the second as "by

omission" reliability induction (Shields & Caruso, 2004). Researchers are generally advised against using reliability induction, except in special circumstances.

Within the scope of this study, studies in which Cronbach's alpha value was reported for the reliability of the measurement results related to LSS were included in the sample. Considering some of the assumptions of Cronbach's alpha statistic that are difficult to understand, the use of alpha by academic circles as if there is "only one" reliability coefficient brings to mind the idea that alpha is a marketing concept (Cho & Kim, 2015). Even if researchers are aware of the situations where the alpha coefficient is insufficient, they may be lazy in obtaining information about other reliability coefficients. At the same time, researchers may be afraid of the penalties that may be imposed as a result of the fact that the majority of thesis committees and editors are familiar with the alpha coefficient and are not familiar with the alternatives to the alpha coefficient. It is recommended that academic journal editors and well-known researchers be advised to make frequent use of alternatives to the alpha coefficient. Therefore, it is thought that it would be useful to report reliability coefficients appropriate to the research conditions and assumptions in future studies. Within the scope of this study, the fact that only Cronbach's alpha coefficients were included in the meta-analysis can be considered as a limitation.

In this study, the Bonett (2002) transformation was used to adjust the reliability values for the reliability estimator. Future research could explore and compare reliability estimates using other transformation techniques like Fisher's z-score transformation or the Hakstian-Whalen (1976) transformation.

Further reliability generalization research could also be undertaken for other reliability estimates that scrutinize different sources of measurement error. Similar studies can be executed by pinpointing variables such as the mean and standard deviation of the measurements obtained from the assessment tool, the language used in the research, sample size, ethnicity, marital status, type of reliability, research design, etc. as different sources of variability.

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Conflicts of Interest: The authors declare no conflicts of interest.

Data Availability: The authors can provide the data upon request.

Ethical Disclosure: Due to the utilization of secondary data for the reliability generalization meta-analysis in this study, ethical approval was not required.

Studies included in the current reliability generalization meta-analysis are marked with an asterisk (*).

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Effectiveness of the Acceptance and Commitment Therapy-Based Intervention Program for Mothers

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ABSTRACT

This study aims to examine the effectiveness of the acceptance and commitment-oriented intervention program for mothers who have children at primary school on psychological resilience and flexibility. The study sample consisted of 22 mothers, 11 of whom were in the experimental group (average age of 32.6) and 11 in the control group (average age of 33.2). The inclusion criteria for the mothers were that they were not working, had not received any psychiatric diagnosis regarding mental health, and were not using any psychiatric treatment medication. "The Brief Psychological Resilience Scale" and "Psychological Flexibility Scale" were used to evaluate the program's effectiveness in this study. The intervention program applied in the study was developed based on the acceptance and commitment therapy approach. In addition, the program was applied once a week and each session was 90 minutes. The results obtained from the study show that the intervention program effectively increased the participants' psychological resilience and psychological flexibility levels after the sessions ended. It is observed that these positive results were maintained in the two-month follow-up study.

The concept of parenting refers to the roles of mother and father, which have important duties and responsibilities such as teaching the social skills necessary for the child's survival while meeting the child's basic needs such as nutrition, care, love, and safety (Moyer & Sandoz, 2014; Renshaw, 2005). Mothers and fathers may sometimes have negative feelings and thoughts in the face of the duties and responsibilities that being a parent requires (Coyne & Wilson, 2004; Kaner et al., 2011). These adverse psychological reactions experienced by parents in the face of parenting roles and requirements are considered parenting stress (Bernardo, 2017). Many factors, such as duties and responsibilities, the quality of the child's relationship, the child's general psychological and social state, and the parent's mental state, impact parenting stress (Deater-Deckard, 1998). However, in daily life, parents must cope with various stress factors such as economic, social, and emotional issues, work life, and the stress the parenting role brings (Bornstein, 2005). It is important for parents to cope with these stressful risk factors and the effects of protective factors and to develop their ability to adapt to emotional and situational demands (Çalışkan, 2020). Resilience, which is an important concept in stress, refers to an individual's ability to successfully cope with stressful experiences (Greene, 2013). From the family perspective, parental resilience includes the family's capacity to make sense of a negative experience and adapt to the stressor (Walsh, 2016). Studies have found that parents with high levels of resilience experience lower levels of parental stress (Rajan & John, 2017). In studies examining the psychopathological symptoms related to the pandemic, it was found that high level of psychological resilience is a protective factor on parents (Spinelli, Lionetti, Pastore & Fasolo, 2020). In addition, a study found that parents' psychological

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resilience was the strongest predictive variable to predict parenting stress. High psychological resilience scores were associated with low parenting scores, and women's parenting stress was also found to be higher than men's (Çalışkan, 2020). Therefore, this study examined the effectiveness of the acceptance and commitment therapy-based intervention program for the resilience and psychological flexibility of mothers performing the parenting role.

Acceptance and Commitment Therapy (ACT), also called the third wave, is among the cognitive-behavioral therapies that include mindfulness and acceptance-based interventions. Besides, acceptance and commitment therapy focuses on helping to cope with parenting stress and difficulties (Strosahl & Robinson, 2009). The approach guides parents in determining their parenting values, coping with their thoughts and feelings without struggling, and accepting them (Cheron et al., 2009). In addition, the approach emphasizes self-compassion to avoid the mistakes made in the journey of mother and fatherhood and the stress and anxiety experienced as a result of these mistakes and to be a competent parent (Coyne & Murrell, 2009; Coyne & Cowley, 2006; Murrell et al., 2004). From this point of view, it was thought that the intervention approach focused on acceptance stability therapy could improve resilience and flexibility. Considering the acceptance and commitment therapy-based intervention programs in the literature, Tümlü (2021) found that the psychological flexibility levels of the parents participating in the program increased in the psychoeducation program for parents with children with autism. In the same study, it was stated that psychological resilience and marital satisfaction levels of mothers also increased. In another study, it was reported that parents participating in the program reduced their psychological rigidity levels (Blackledge & Hayes, 2006).

Psychological flexibility is one of the important concepts of acceptance and commitment therapy and it is defined as acting in line with one's values and developing awareness by staying in touch with the present moment without trying to change their behavior (Hayes et al., 2012). In addition, it also includes accepting what is beyond the control of the individual, being determined to continue the behaviors that will enrich his life, and following his life values as a guide when there are behaviors that need to change (Harris, 2018). While psychological flexibility is necessary for the individual's mental health, it is also an important mechanism for the family as it directly affects parenting roles and children (Burke & Moore, 2015; Çalışkan, 2020). Psychological flexibility in parenting means that the mother or father accepts their unwanted feelings or thoughts towards their child when they arise and maintains the parent-child relationship healthy (Brassell et al., 2016). For example, parental psychological flexibility is when a parent who feels anger and yells towards his/her child accepts these feelings and impulses without fighting them and continues to show love to his/her child and set healthy boundaries (Burke & Moore, 2015). A lack of psychological flexibility may result in parents' decreased sensitivity to their children and their needs (Burke, 2013). Psychological flexibility in parents is the parent's ability to use an individual emotional regulation resource in negative subjective experiences in the role of parent (Fonseca et al., 2020). It is expected that parents who use this skill effectively will have a high level of focus on their children by providing present-day contact and be able to make flexible choices in their relations with their children (Burke, 2013). Thus, it can be expected that the parent's sense of competence will increase, they will feel more competent and satisfied, their relationship with their children will be strengthened, and their mental health will also be positively affected. In studies on this subject, it has been observed that mothers with low psychological flexibility experience high parenting stress and use negative parental attitudes more (Fonseca et al., 2020).

Another concept covered in this research is psychological resilience. Psychological resilience means that the protective and risk factors interact in the face of difficult life events, and the individual adapts to these challenging situations or innovations in the individual's life (Kararmak, 2006; Masten, 2001). According to Tugade and Fredrickson (2004), resilience is the capacity to adapt to negative emotional experiences and stressful life experiences. Therefore, resilience is the ability of a person to recover easily and return to his old self after negative events, negative emotions, and challenging situations (Ramirez, 2007). The individual's resilience in challenging situations results from personal abilities and relationships (Gartland et al., 2011). People with high resilience can act flexibly against negative experiences and overcome problems (Kamya, 2000).

The ability of parents to adapt to negative emotions and situations that arise in the face of a difficult life event is considered important not only for the individual but also for the mental health of all family members (Russel et al., 2022). Studies show that people with parental roles experience more stress in the face of difficult life events than those without (Fussel & Lowe, 2014; Russel et al., 2020). This is explained by the fact that parents carry additional care burdens from their children other than themselves (Kerns et al., 2014). Therefore, the concept of resilience has been discussed in the context of the family as well as the concept of family resilience, and the concept of family resilience has been put forward. Family resilience is families' resilience to negative disruption in the face of change and difficulties and their adaptation to crises (Patterson, 2002). Factors such as the harmony of family members, communication, spending time in the family, routines, rituals, and sources of social support are important for family resilience (McCreary & Dancy, 2004). These factors support family members to adapt when they are exposed to stress and distress related to their role in the family (Walsh, 1998). Relationships that provide emotional, informative and social support in the form of financial assistance can be considered protective factors in case of negative experiences in the role of parents (Schaefer et al., Lazarus, 1981). Considering the mother in particular, getting help from both the children's father and distant support sources can contribute positively to the mother's mental health by taking on a protective task against the stress factors brought about by the parenting role (Cohen & Wills, 1985). Studies show that the difficulties experienced by parents differ according to the child's developmental period (Briggs-Gowan et al., 1996). This research's scope consists of mothers with children of primary school age. Since the child's primary school period includes processes such as separation from the mother, adaptation to school, learning to read and write, other academic duties, and friendship relations, it is a period in which parents experience difficulties and stress. If parents cannot demonstrate different skills during these periods, they may feel inadequate, and their control over the child may decrease (Coyne & Murrell, 2009).

It is known that the stress experienced by parents due to this role is higher in mothers than in fathers (Dereli & Okur, 2008). This can also be explained by the fact that women are more vulnerable to stress factors (Beesdo et al., 2009; Parker & Brotchie, 2010). However, especially in traditional societies, the mother is seen as the parent with a higher burden of care in terms of parenting roles (Downs, 2003). In such a society, it can be assumed that the person who takes care of the school and development process of the school-age child and communicates about the problems and expectations of the child at school is the "mother" who does not work anywhere and is characterized as a housewife. The reason for this situation is explained by the fact that the basic duty of women is expressed as "motherhood" by both genders. When we evaluate it in terms of Turkish society, it is thought that the existing cultural values and religious structure impose a responsibility on the sanctity of motherhood, especially on women (Seçkin & Tural, 2011). Considering that the duties, responsibilities, rights, and personal characteristics of women and men in society are shaped according to gender roles (Oakley, 2016), it is known that the traditional roles that still exist in our country impose housework and childcare on women's shoulders by making a discriminatory division of labor (Urhan, 2016). According to the "scarcity theory," which is one of the hypotheses produced about the effect of the multiple roles of mothers on mental health, the more roles individuals have, the lower their energy will be due to excessive role overload, and the level of psychological stress will increase (Rosenfield, 1989). In other words, it can be thought that having more than one role for a woman will negatively affect her well-being. However, Norris et al. (2002) stated that "being a woman" is one factor that increases the negative risk outcome in the face of a challenging situation.

In addition to being a woman, being a housewife is considered a risk group in terms of mental health (Dıġrak & Koçođlu, 2015). Working in an income-generating job helps women develop self-confidence, have social support, make decisions, feel safe, and increase their life satisfaction (Özvurmaz & Aksu, 2017). However, having a financial income enables women to gain economic independence and the power to participate in family decisions (Artazcoz et al., 2011). Therefore, it can be said that working in a job gives women some values in society (Kađıtçıbaşı, 1990). Studies have shown that working status in women affects mental problems such as stress and depression and quality of life (Çilli et al., 2004; Etiler, 2015; McDonough et al., 2002; Tetikli-Nart, 2019). This is explained by the fact that working women have two main sources of satisfaction: work and family, and they have more power, prestige, and economic freedom.

Considering the above explanations, developing a program to develop resilience and flexibility for mothers in the parenting role is an important mission of this study. In this acceptance, stability therapy-based intervention was tested. The study can be considered school-based intervention in the school environment regarding the parental stakeholder regarding the child's mental health and education process. The family is one of the leading institutions that significantly affect people. The child's habits, attitudes, value judgments, and basic feelings about life are formed, and the self-concept is shaped (Kuzgun, 2008). On the other hand, school is another important institution in human life. The individual takes the first step into society after the family, learns to live with people, and gains universal knowledge and values (Genç, 2005). In today's societies, school is not just an institution responsible for transferring knowledge. While school plays a role in preparing and socializing children and young people for life, it also has to help parents in their education (Zembat & Unutkan, 2001). In studies (Edward et al., 2010; Sommers-Flanagan et al., 2015), it was stated that as a result of consultation studies conducted with families, parenting competencies increased, the use of negative discipline methods and anxiety and stress levels of parents decreased, parent-child interaction increased, and negative child behaviors decreased.

As a result, this study aims to examine the effectiveness of the acceptance and commitment-oriented intervention program for mothers on psychological resilience and flexibility. For this purpose, the hypotheses of the research are as follows:

1. There will be statistically significant differences in the final measurement of psychological resilience and psychological flexibility scores of the mothers in the experimental group compared to those in the control group.
2. The psychological resilience and psychological flexibility levels of the mothers in the experimental group will be statistically significantly different from their post-test and pre-test scores.
3. When the psychological resilience and flexibility levels of the mothers in the experimental group are compared with the last measurement scores obtained two months after the application, there will be no statistically significant differences.

Method

Research Pattern

In this study, an experimental design, one of the quantitative research methods, was used to reveal the differences in the psychological resilience and psychological flexibility levels of mothers who participated in an 8-week acceptance and commitment therapy-oriented intervention program and mothers who did not. In the 2x3 split-plot (mixed) design used in the study, the first factor shows the treatment groups (one experimental, one control), and the second factor shows the measurements related to the dependent variable (pre-test, post-test, follow-up). The independent variable in the study was an intervention program with an acceptance and commitment therapy orientation. The dependent variable is the scores of the mothers on the brief psychological resilience and psychological flexibility scales. The design of the study is presented in Table 1.

Table 1. Research Pattern

Group	1st. Measurement	Process	2nd. Measurement	3rd. Measurement
Experiment	Pre-Test	Experimental Process (Intervention program based on acceptance and commitment)	Post-Test	Follow-up Test
Control	Pre-Test		Post-Test	Follow-up Test

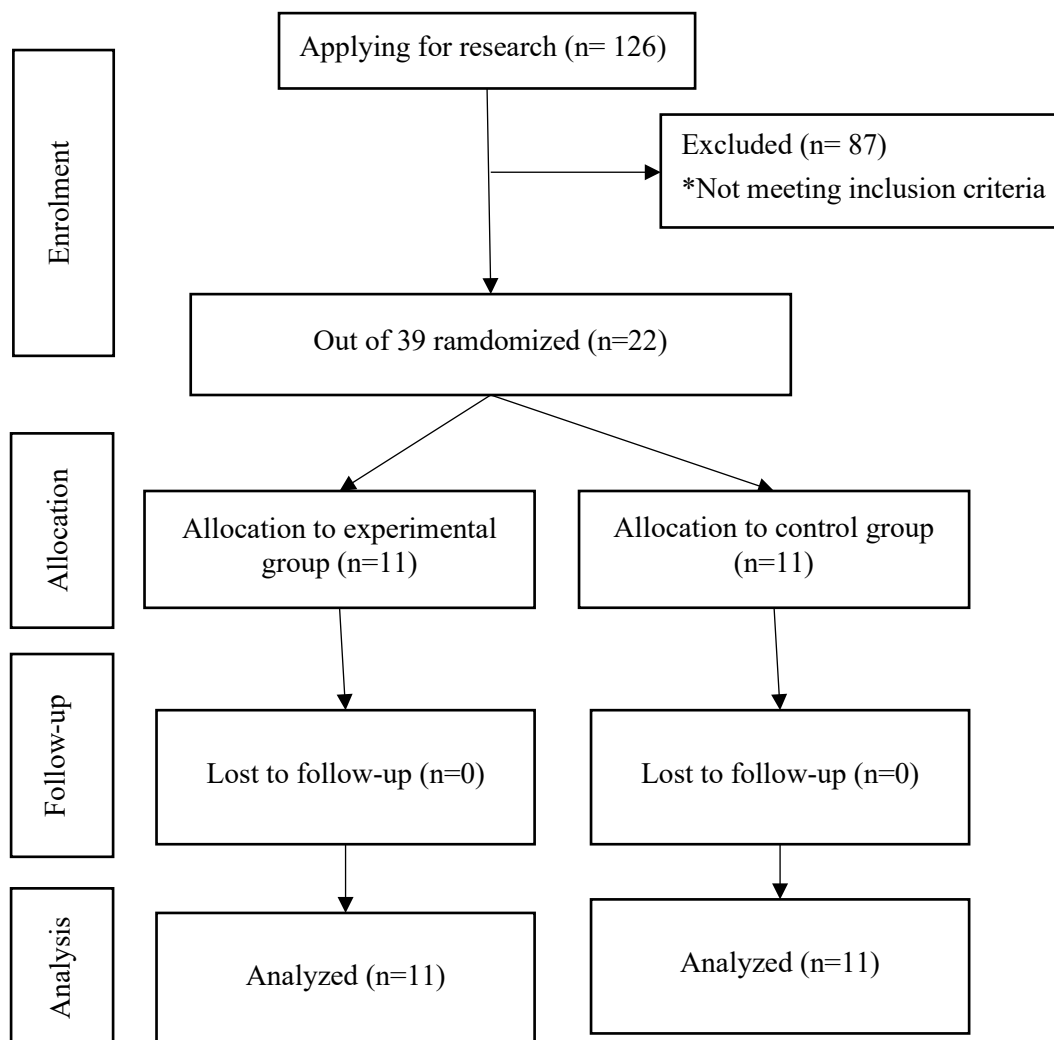
Participants

To identify the mothers who would participate in the study, firstly, the school counseling and guidance service prepared a group counseling announcement and distributed to the students' mothers. Preliminary interviews were conducted with 126 mothers who applied for psychological counseling with the group, and the " Brief

"Psychological Resilience Scale" and "Psychological Flexibility Scale" were applied. After the interviews and the scale applications, the school counselors identified 39 mothers whose resilience and flexibility levels were lowest among the participants, who volunteered to participate in the study, and who met the research criteria. Finally, 22 mothers were randomly selected among 39 mothers and assigned to the experimental and control groups in an impartial way (Figure 1). The inclusion criteria for the mothers were that they were not working, have at least one child, had not received any psychiatric diagnosis regarding mental health, and were not using any psychiatric treatment medication.

The mean age of 11 mothers in the study's experimental group is 32.6. Ten of the mothers are married, and one is divorced. However, 2 of them have one child, 7 have two children, and 2 have three children. One of the mothers is a secondary school graduate, 7 of them are high school graduates, and 3 of them are undergraduates in the experimental group. The mean age of 11 mothers in the study's control group is 33.2. Nine of the mothers are married, and two are divorced. However, 2 of them have one child, 8 of them have two children, and 1 of them has three children. Three of the mothers are secondary school graduates, 6 of them are high school graduates, and 2 of them are undergraduates in the control group.

Figure-1. The Experimental Process Flowchart



Data Collection Tools

"The Brief Psychological Resilience Scale" and "Psychological Flexibility Scale" were used to evaluate the program's effectiveness in this study.

The Brief Psychological Resilience Scale. The Brief Psychological Resilience Scale (PSRS) developed by Smith et al. (2008) was adapted into Turkish by Doğan (2015). The PSRS is a 6-item, 5-point Likert-type scale. Items 2, 4, and 6 are scored in reverse. The adaptation study was conducted with 295 university students, 186 women, and 109 men. According to the results obtained during the adaptation study of the scale, it was seen that the single-factor structure of the scale explained 54.66% of the total variance (Doğan, 2015). As a result of the Confirmatory Factor Analysis conducted within the scope of this research, it is seen that the factor loads vary between .70 and .82. As a result of the analysis, since all output values were within the desired value range, no improvement was required. When we examine the CFA results for PSRS in terms of fit indices, it is seen that the structure of the measurement tool for this study was confirmed. ($\chi^2 = 14,443$, $sd = 9$, $\chi^2 / sd = 1.605$, $GFI = .99$, $AGFI = .97$, $RMSEA = .03$, $CFI = .99$, $SRMR = .02$, $TLI = .99$).

Psychological Flexibility Scale. The Psychological Flexibility Scale was developed by Francis, Dawson, and Golijani-Moghaddam (2016) and adapted into Turkish by Karakuş and Akbay (2020). According to the exploratory factor analysis, the model consisting of 28 items and five dimensions was evaluated to have good fit values ($KMO = 0.789$; $X^2 = 3096.080$; $p = 0.00$). According to the factor analysis results, the scale consists of 28 items and five factors, and factor loads vary between .47 and .81. The scale explains 60% of the variance. The scale's Cronbach Alpha internal consistency reliability coefficient was .79.

Process

Before starting a research, informed an informed consent form was distributed to the mothers participating in the study and their consent was obtained. In addition approval was obtained from XXX University Social and Human Sciences Ethics Committee (Date: 25.01.2022/ Meeting No: 2022.01).

This application is an 8-session application, 90 minutes, once a week developed based on the basic principles of the ACT approach. The program is designed to help individuals get rid of their disturbing feelings, thoughts, and memories, accept them instead of trying to control them, focus on the present moment, determine the values that will add meaning and direction to their lives, and take decisive action in this direction. Goals were set for each session, and activities to be carried out were determined in line with these goals. After the program was prepared using the literature, the suggested corrections and additions were made by taking the opinion of an expert who applied ACT.

To determine the mothers who will participate in the research, a psychological counseling announcement was prepared with a group to be carried out within the scope of the research by the school psychological counseling and guidance service and distributed to the students' mothers. Preliminary interviews were conducted with 126 mothers who applied for psychological counseling with the group, and the "Brief Psychological Resilience Scale" and "Psychological Flexibility Scale" were applied. After the interviews and the scale applications, the school counselors identified 39 mothers whose resilience and flexibility levels were lowest among the participants, who volunteered to participate in the study, and who met the research criteria. Finally, 22 mothers were randomly selected among 39 mothers and assigned to the experimental and control groups in an impartial way. After the experimental and control groups were formed, an eight-week acceptance and commitment therapy-focused psychoeducation program were conducted with the experimental group. While developing the program and planning the sessions, the researchers benefited from the relevant studies in the literature (Harris, 2019; Luoma et al., 2017) and ACT therapist materials. Psychoeducational sessions were held online due to pandemic conditions. The application was carried out with a single leader. Each session lasted 90 minutes. No application was made to the participants in the control group. At the end of the psychoeducation process, the scales were reapplied to the participants in the experimental and control groups as a post-test. Two months after the experiment, the scales were applied again to the participants in the experimental and control groups as a follow-up test.

The achievements targeted by the program for sampling are as follows:

1. Being able to connect with the world: Contacting with the moment, noticing feelings and thoughts, connecting with the body
2. Being able to get away from distressing feelings and thoughts: Noticing the distressing thoughts, naming them, and being separated from these thoughts.

3. Being able to accept unpleasant feelings and thoughts.
4. Being able to act by their values:
 - a. Recognizing the relationship between values, goals, and actions
 - b. Setting goals in line with values,
 - c. Taking action in line with values
 - d. Being able to continue the action decisively
5. Being able to show self-compassion in times of distress

Implemented Intervention Program

Session 1. It was aimed to give information about the group's formation, the introduction of the general aims and features of this psychoeducational program, the determination of the individual goals of the participating members for the program, and the general principles of the acceptance and commitment therapy approach. In line with these purposes, the first acquaintance activity was held. The joint contribution of the members determines group rules. Information was given about the group's purpose and the program's general features, while the basic aspects of acceptance and commitment therapy were discussed. In this context, sharing was made to determine the individual goals the group members wanted to achieve at the end of the program. Participants were asked to note down their goals.

Session 2. In the second session, information was given about daily stressful situations. Information about the sources of stress, its physical and psychological effects, being stuck in thoughts and feelings, and moving away from the values, as a result, was given with examples from daily life and the sharing of members. In their daily lives, when they realized that they were caught in their thoughts and feelings, simple exercises were arranged so that they could focus on themselves and make contact with their surroundings. Exercises were carried out on breathing exercises, eating with awareness, focusing on the body, and noticing five things around it.

Session 3. The third session aimed to notice and name the distressing feelings and thoughts. For this purpose, ABC formulation was explained, information about cognitive integration and dissociation was given, and it was reinforced through examples with the participation of the members. Pushing the board and hooking the fishing line activities were carried out.

Session 4. This session aims to develop the ability to accept unpleasant and distressing feelings and thoughts. For this purpose, the "Creatures on the Boat" and "Desperate Parrot" activities were held. The members' experiences of getting away from their goals due to their negative feelings and thoughts were discussed through these metaphors. The session ended with a psychodrama activity about accepting and focusing on one's goal instead of escaping or struggling with distressing thoughts.

Session 5. This session aimed to raise awareness about the characteristics of values through various metaphors, imagination activities, and questions for individual discovery of values. An activity was carried out to find values in unpleasant activities. A study was carried out to determine the members' individual goals and the values that cause these goals to be determined.

Session 6. This session aims to enable the group members to take action towards their values in their lives, to recognize the internal and external obstacles they encounter in this process, to overcome the obstacles, and to gain the skills to take action.

Session 7. In the seventh session, the activity "Being a Friend with Yourself" was held for the group members to realize their thoughts about themselves in distressing situations, not to have cruel thoughts, to approach themselves with kindness and compassion, and to care about their needs.

Session 8. In this session, which was planned as a closing session, a general summary of the basic principles of ACT was made, feedback was received from the group members about the program, and the program was concluded with farewell activities. And the scales applied before the program were applied again.

Analyses of Data

To analyze the data in the study, the scores of both groups from the pre-test, post-test, and follow-up tests were calculated, then analyzed with the SPSS package program. The significance level was taken as .05. In the analysis of the data, firstly, it was examined whether the data belonging to the experimental and control groups could meet the basic assumptions of the parametric tests. The Shapiro-Wilk test (Ahad, Yin, Othman, &

Yaacob, 2011), which gives the most sensitive and best results in small samples, was used to test the normality of the data. In cases where the Shapiro-Wilk values of the participant's scores in the groups were greater than .05, parametric tests were used, assuming that the groups showed a normal distribution. In cases where Shapiro-Wilk values were less than .05 (resilience, it was accepted that they did not show the normal distribution and were analyzed using non-parametric tests. The Shapiro-Wilk Test results regarding the psychological resilience of the mothers in the experimental group are as follows; pre-test = .00, post-test = .80, follow-up test = .59. The Shapiro-Wilk Test results regarding psychological flexibility are as follows; pre-test = .47, post-test = .12, follow-up test = .63. The Shapiro-Wilk Test results regarding the psychological resilience of the mothers in the control group are as follows; pre-test = .17, post-test = .83, follow-up test = .54. The Shapiro-Wilk Test results regarding psychological flexibility are as follows; pre-test = .48, post-test = .67, follow-up test = .56.

The Mann Whitney-U Test was used to determine whether there was a significant difference between the experimental and control participants' pre-test, post-test, and follow-up test scores. In addition, the variances of the scores of the participants in the experimental and control groups and the group covariances for the pairwise combinations of the measurement sets were found to be equal. To determine the joint effect of GroupXMeasure on the effectiveness and permanence of the counseling program with the acceptance and commitment-oriented group, Bidirectional Analysis of Variance for Repeated Measures and Bonferroni test were applied for split-plot (Büyüköztürk, 2002). For the study, the Mauchly Sphericity Test was used to determine whether the assumption of sphericity was met to apply the analysis of variance for repeated measures (Gamst, Meyers, & Guarino, 2008) and in cases where the assumption of sphericity was not met, the univariate approach was preferred, and the results of the analysis of variance were obtained using the Greenhouse-Geisser correction (Tabachnick & Fidell, 2006). While testing the significance levels of the differences between the means, the significance level was taken as .05 in all analyzes.

Findings

This section presents the findings for testing the effectiveness of the acceptance and commitment therapy-oriented group psychological program. First, descriptive statistics regarding the pre-test, post-test, and follow-up test data obtained from the experimental and control groups are given. Then, the groups were compared with the pre-test, post-test, and follow-up-test data obtained from the experimental and control groups.

Table 2. Descriptive Statistics

Score	Groups	Mean			Standard Deviation			Standard Error		
		Pre Test	Post Test	Follow-up Test	Pre Test	Post Test	Follow-up Test	Pre Test	Post Test	Follow-up Test
Psy. Resilience	Experim.	16.09	22.54	22.63	2.66	3.64	3.38	.80	1.10	1.02
	Control	15.00	16.18	17.09	5.76	7.64	9.29	1.36	1.80	2.19
Psy. Flexibility	Experim.	98.81	139.18	140.0	9.40	11.39	10.67	2.83	3.43	3.22
	Control	97.09	95.64	98.09	10.50	9.76	7.58	3.17	2.94	2.29

As seen in Table 2, the pre-test mean scores of the participants in the experimental group of the brief psychological resilience scale was 16.09 (SD: 2.66; SE: .80); post-test mean score was 22.54 (SD: 3.64; SE: 1.10), and follow-up test mean score was 22.63 (SD: 3.38; SE: 1.02). Again, the pre-test means a score of the participants in the experimental group on the psychological resilience scale was 98.81 (SD: 9.40; SE: 2.83); the post-test mean score was 139.18 (SD: 11.39; SE: 3.43), the and the follow-up test mean score was 140.0 (SD: 10.67; SE: 3.22). On the other hand, the pre-test mean score of the participants in the control group of the brief psychological resilience scale was 15.00 (SD: 9.40; SE: 2.83); The post-test mean score was 16.18 (SD: 11.39; SE: 3.43), and the follow-up test mean score was 17.09 (SD: 10.67; SE: 3.22). Again, the pre-test score means of the participants in the control group on the psychological resilience scale was 97.09 (SD: 10.50; SE: 3.17), the post-test mean score was 95.64 (SD: 9.76; SE: 2.94), and the follow-up test means score was 98.09 (SD: 7.58; SE: 2.29).

Table 3. Comparison of Pre-Test, Post-Test, and Follow-Up Tests Regarding The Brief Resilience and Psychological Resilience Scores of the Experimental and Control Groups

	Score	Groups	n	\bar{x}	Σ	<i>U</i>	<i>z</i>	<i>P</i>
Psy. Resilience	Pre-Test	Experimental	11	16.09	141.00	46.00	-.975	.37
		Control	11	15.00	112.00			
		Total	22					
	Post-Test	Experimental	11	22.54	177.50	9.50	-3.366	.00
		Control	11	16.18	75.00			
		Total	22					
	Follow-up	Experimental	11	22.63	178.00	9.00	-3.399	.00
		Control	11	17.09	75.00			
		Total	22					
Psy. Flexibility	Pre-Test	Experimental	11	98.81	135.00	52.00	-.561	.61
		Control	11	97.09	118.00			
		Total	22					
	Post-Test	Experimental	11	139.18	187.00	71.00	-3.975	.00
		Control	11	95.64	66.00			
		Total	22					
	Follow-up	Experimental	11	140.0	187.00	78.50	-3.976	.00
		Control	11	98.09	66.00			
		Total	22					

As seen in Table 3, according to the results of the Mann-Whitney U Test conducted to compare the experimental and control groups as a result of the pre-test, post-test, and follow-up test applications, it was seen that there was no significant difference between the psychological resilience pre-test scores of the participants in the comparison between the groups. However, when the experimental and control groups were compared, it was seen that there was a significant difference in favor of the experimental group between the resilience post-test and follow-up test scores of the participants. Again, it was observed that there was no significant difference between the psychological flexibility pre-test scores of the participants. However, when the experimental and control groups were compared, it was seen that there was a significant difference in favor of the experimental group between the psychological flexibility post-test and follow-up test scores of the participants.

As understood from these findings, repeated measurements two-factor analysis of variance were applied to determine whether there was a change in the post-test and follow-up test mean scores compared to the pre-test mean scores in the experimental group and whether the change, if any, was statistically significant, and the analysis results are given in Table 4.

Table 4. Findings Regarding the Effectiveness of the Program

	Source	Sum of squares	Sd	Mean of squares	F	p	n ²
Psy. Resilience	Between Groups						
	Grup (E/C)	103.278	1	103.278	15.966	.00	.44
	Error	129.374	20	6.469			
	In-group						
	Measurement	245.485	1.57	156.278	37.592	.00	.65
	Measurement*Grup Error	88.576	1.57	56.388	13.564	.00	.40
		130.606	31.416	4.157			
Psy. Flexibility	Between Groups						
	Grup (E/C)	4644.854	1	4644.854	64.484	.00	.76
	Error	1440.626	20	72.031			
	In-group						
	Measurement	6057.212	1.331	4549.469	74.424	.00	.78
	Measurement*Grup Error	6171.030	1.331	4634.956	75.822	.00	.79
		1627.758	26.628	61.129			

According to these findings obtained from the analysis of variance, Bonferroni Test was applied for inter-group and inter-measurement comparisons of the participants in the experimental and control groups depending on the averages of the scores they received from the psychological resilience and psychological flexibility pre-test, post-test, and follow-up measurements to determine between which groups there was a significant difference depending on the measurements. Bonferroni Test, which is one of the post-hoc techniques used at this stage, was preferred because it does not require equal sampling conditions, and it reveals the difference between the groups and the significance level of this difference in a stable manner free from type I and II errors (Miller, 1969).

According to the post-hoc comparison (Bonferroni) results, the difference between the mean scores of the experimental group from the psychological resilience pre-test measurement ($\bar{x} = 16.09$) and the mean scores of the post-test ($\bar{x} = 22.54$) was significant ($+6.45^* p < .05$). Similarly, the difference between the mean psychological resilience pre-test scores of the experimental group ($\bar{x} = 16.09$) and the mean scores obtained from the follow-up test ($\bar{x} = 22.63$) was found to be significant ($+6.56^* p < .05$). When the post-test mean scores of the experimental group ($\bar{x} = 22.54$) and the mean scores of the follow-up test ($\bar{x} = 22.63$) were compared, there was no significant difference ($+0.09 p > .05$). In other words, it is seen that the difference between the pre-test, post-test, and follow-up test scores of the experimental group is significant. In contrast, the difference between the post-test and follow-up test mean scores are not significant.

Again, according to the Post-hoc comparison (Bonferroni) results, the difference between the mean scores of the experimental group from the pre-test measure of psychological flexibility ($\bar{x} = 98.81$) and the post-test mean score ($\bar{x} = 139.18$) is significant ($+40.37^* p < .05$). Similarly, the difference between the psychological flexibility pre-test mean scores of the experimental group ($\bar{x} = 98.81$) and the mean scores obtained from the follow-up test ($\bar{x} = 140.0$) was also found to be significant ($+41.19^* p < .05$). When the post-test mean score of the experimental group ($\bar{x} = 139.18$) and the follow-up test mean score ($\bar{x} = 140.0$) were compared, it was seen that there was no significant difference ($+0.82 p > .05$). In other words, while the difference between the psychological flexibility pre-test and post-test and follow-up test of the experimental group was significant, the difference between the post-test and follow-up test mean scores was not significant.

Discussion and Conclusion

This study examined the effectiveness of an intervention program focused on acceptance and commitment therapy in the context of group psychoeducational studies. According to the results obtained from the study, the intervention program applied significantly increased both the psychological resilience and psychological flexibility levels of mothers after the sessions were over. It is seen that these positive results continue in the two-month follow-up study.

Psychological resilience supports some skills, such as maintaining healthy development and coping with a negative situation (Masten et al., 2013). Considering that in today's world, individuals are struggling with difficult living conditions such as infectious diseases like the Covid-19 epidemic, wars, and economic crisis, intervention studies developed to increase psychological resilience are thought to be important to support effective coping skills. In previous studies aiming to increase psychological resilience, cognitive behavioral therapy (Erden & Eminoğlu, 2020; Songprakun & McCann, 2012; Wert, 2007); narrative therapy (Yazıcı, 2018); music-assisted therapy (Cömert & Özbey, 2021) and mindfulness therapy (Chesak et al., 2015; Pigeon et al., 2014); attention and interpretation therapy (attention and interpretation therapy; Sood 2014) based activities are included. Psychological flexibility, on the other hand, is a structure that enables individuals to establish a balance between their desires, needs, and living spaces. It positively affects interpersonal relations and physical and psychological well-being (Çetinkaya, 2022; Wersebe et al., 2018). Kashdan and Rottenberg (2010) also described psychological flexibility as the basis of mental health. In this sense, it can be accepted that intervention studies aimed at increasing psychological flexibility are important for the mental health of individuals. Similar to our study, previous studies aiming to increase psychological flexibility include acceptance stability therapy-based approaches (Flaxman & Bond, 2010; Luoma & Bilardaga; Ryan, 2014; Kırca & Ekşi, 2020). This study differs from these studies in the literature by studying with a sample of women who have the role of motherhood. Studies show that women struggle with mental problems more than men

and receive more psychological support (Messina et al., 2000). This is explained by the fact that in a society dominated by traditional roles, reflecting these roles in real life is difficult for women and increases their stress levels (Kurtuluş & Bulut-Ateş, 2019). These roles are referred to as gender roles and refer to the behavioral patterns society expects women and men to fulfill (Sheehan & Dooley, 2013). According to traditional roles, society expects women to help men, to be satisfied with their living standards, not to oppose their spouses, and not to question their lives. However, in this process, it is also important for women to do housework and take care of their children (Koç et al., 2017; Özçatal, 2011). In such a society where women do not work and are described as housewives, the social status of women is supposed to be shown as important, and childcare and housework are to be blessed. These assumed roles risk women's mental health (Bekker & Boselie, 2002). Therefore, this study studied mothers who do not work in any job and whose childcare and housework duties are expected.

However, the study's strength is that psychological resilience and psychological flexibility were increased through a psychoeducational intervention focused on acceptance stability therapy. Psychological resilience is a person's ability to successfully overcome negative conditions, adapt to new situations, and recover from stressful experiences (Smith et al., 2008). Psychological flexibility is the ability to be in harmony with one's values in the face of unwanted and challenging internal experiences (Hayes et al., 2011). Both concepts emphasize protective factors that promote adaptation in risky situations such as challenging life conditions. The concepts of psychological resilience and psychological flexibility, which are accepted to be changeable and can be developed through interventions (Bengel, 2012; Hayes et al., 2006), were intervened through intrinsic protective factors in this study. Intrinsic protective factors include a positive and optimistic view of the future, effective problem-solving skills, internal locus of control, self-esteem, and self-efficacy (Gizir, 2016; Mandelco & Peery, 2000). It aimed to reach these internal factors with the achievements of self-compassion, solving problems by their values, recognizing oneself, emotions, and thoughts, and getting away from negative emotions, which are included in this study. Therefore, it may be thought that this intervention program is important in strengthening the protective factors against risk factors. Masten (2014a) also states that various risk factors individuals encounter throughout their lives cannot be completely controlled. In this context, the necessity of developing intervention programs that strengthen protective factors to cope with risk factors is emphasized (Masten, 2014b). However, it is important to strengthen the psychological flexibility of parents to cope with the life challenges encountered in parenting roles. A strong mechanism of resilience and flexibility can support positive parenting practices and the child's healthy development. Therefore, it is thought that this research is important in terms of strengthening parental competence and contributing to mothers' mental health as a result of both prevention and early intervention aimed at increasing resilience and psychological flexibility.

Implications

This study examined the effectiveness of an acceptance commitment therapy-focused psychoeducation program on mothers. In future studies, different experimental studies can be conducted with different age groups using this intervention program. In particular, information can be obtained about the development of resilience and flexibility in children and the course of resilience and flexibility in the transition from childhood to adolescence. Mixed-method studies can be conducted to explore the mechanisms underlying psychological resilience and psychological flexibility. Again, further follow-up studies can be conducted to monitor the results of this acceptance stability therapy-focused psychoeducation program applied to mothers, and longitudinal studies can support the results.

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School Resilience: A Scale Adaptation Study

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ABSTRACT

This study aimed to adapt the School Resilience Scale (Caleon & King, 2020) to Turkish culture. The participants of this study were high school students. The study consisted of three stages. The first stage regarded the scale translation for linguistic equivalence. In the second stage, the structural validity and reliability of the scale were tested. In the third stage, a test-retest reliability of the scale was performed. Fifty-three students (52.8% girls) participated in the first group, 615 students (52.7% girls) in the second group, and 88 students (67% girls) in the third group. The confirmatory factor analysis (CFA) findings to test construct validity showed that the four-factor structure of the scale had an excellent fit index. Next, a two-level confirmatory factor analysis was conducted, which confirmed the two-level model. The Cronbach's Alpha reliability coefficient for the total scale was .89, while it was between .78 and .84 for the sub-dimensions of the scale. In sum, the findings evidenced that the school resilience scale was a valid and reliable measurement tool that can be used to assess Turkish high school students' school resilience.

Resilience derives from Latin ("re" - back, "salire" - leap/ jump), and the literal meaning is "to jump back" (Hunter & Chandler, 1999). The topic has recently raised significant interest in various areas of study, but it has been studied mainly in psychology (Hosseini et al., 2016). Due to its popularity in recent years, different conceptualizations of resilience, such as coping capacity, thriving in the face of adversity, and stability, have been proposed (e.g., Bryan et al., 2019; Fletcher, 2018; Southwick et al., 2014). Resilience has also been conceptualized as a return to the former or original state after exposure to a stress factor (Fletcher, 2019; Hill et al., 2018; Masten, 2001; Pincus et al., 2018; Vella & Pai, 2019). This conceptualization also coincides with the original Latin meaning "to jump back."

Resilience has generally been conceptualized as a relatively stable personality trait in early research (Block & Block, 1980). The view that mental health is better predicted by various distinguishing factors, which have also been conceived as factors that change over time, has led to the conceptualization of resilience as a complex and dynamic adaptation process within the context of significant adversity. Studies on resilience underline that resilience cannot be conceptualized only at the individual level (Fletcher & Sarkar, 2013). A recent review has shown many definitions of resilience in the literature (Bryan et al., 2019). Most of these definitions indicate

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resisting the adverse effects of stressors, bouncing back from stressors, and growing up in the face of stressors. A recent consensus on the definition emerged, which regarded resilience as maintaining mental health despite exposure to stress (Kalish et al., 2017).

The process of resilience concerns the changing condition of one or more systems when they are exposed to an atypical amount of stress (Ungar, 2021). Resilience (the capacity to recover quickly, flexibility, the power to spring back into shape) is regarded as a personality trait that addresses coping with stressors and overcoming complex life events, and individuals with this personality trait are referred to as resilient (recovering easily, flexible, and improving quickly) (Terzi, 2008).

School Resilience

Ungar and Liebenberg (2013) employed a social-ecological perspective on resilience, decentering attention from individuals and their families. In their view, society and the context were essential for understanding resilience (Ungar & Lerner, 2008). Research on resilience highlighted that increasing resilience against stressors or demands involved the integration of bio-psychological, familial/social, school, and institutional systems (Masten, 2007; Wright et al., 2013).

School environments are fundamentally designed to create "protective factors" that can change and reverse potential risks/adverse outcomes and foster resilience in children. When a school promotes a culture where all students' basic needs for support, respect, and belonging are met, motivation for learning increases, and students feel that they have a place in society. Besides, certain practices that use collaborative approaches, such as designing hands-on learning experiences, cooperative learning, peer helping, peer mentoring, and community service, enable students to foster resilience (Newman & Dantzler, 2015). Finally, schools are considered natural shelters where at-risk students can participate in projects where they identify and solve problems (Henderson, 2013).

The school context has been considered a suitable environment to prevent and reduce risky situations for children and adolescents (Masten et al., 2008). Schools are places where children and adolescents spend most of their time. Thus, they have been regarded as ideal places for conducting studies on resilience (Condly, 2006). Fostering resilience also contributes to academic success, increased school safety, and social and emotional development (Ungar, 2011).

The concept of school resilience might bring to mind the concept of academic resilience. However, school resilience is a different concept from academic resilience. Academic resilience is an individual's tendency to maintain academic success despite risks and unfavorable conditions in life (Colp & Nordstokke, 2014). However, school resilience is an individual's ability to recover and adapt despite school-related risk factors (Caleon & King, 2020). The main difference here is the contextual differences of risk factors and adaptation. Family, school and peer group stand out as the factors that affect adolescents' resilience the most (LaRue & Herrman, 2008). The concept of school resilience aims to determine the impact of these factors on adolescents' resilience levels (Caleon & King, 2020). Adolescents' ability to adapt well to school-related risk factors indicates a high level of school resilience.

The Purpose of the Study

Stress has become an even more decisive factor in daily life following the outbreak of COVID-19 in the world. Resilience has become more relevant due to the losses and traumas people have experienced during the pandemic. Resilience has been considered an essential theme in different disciplines, such as clinical, developmental, sports, social and organizational psychology. Studies on resilience revealed that although the protective and risk factors at school were significant matters of discussion, systemic studies carried out in education and schools were relatively scarce (Ungar, 2021). On the other hand, in Turkish, there is no scale to measure school resilience.

Adolescence is a challenging developmental period in which individuals have significant changes in their psychological and social lives. It is often interpreted as a different risk factor (Cunningham & Swanson, 2010; Schulenberg et al., 2004). With the transition from childhood to adolescence, there is an increase in depression and other mental health disorders (Ghandour et al., 2019). Studies have shown that the COVID-19 pandemic has adverse effects on adolescents susceptible to mental health disorders, adolescent depression, anxiety, and

substance abuse increased significantly, and access to the social support that adolescents require decreased significantly (Gazmararian et al., 2021; Magson et al., 2021). COVID-19-related worries such as pathophobia, online learning difficulties, and social isolation contributed to depression and anxiety for adolescents, as short-term research findings indicated (Magson et al., 2021). While the available data has pointed to alarming issues during the COVID-19 pandemic, studies on the factors influencing adolescents' ability to overcome these challenges are scarce. It has been observed that school resilience is essential since adolescents spend the most time in school. Thus, this study aims to adapt the School Resilience Scale developed in Singapore (Caleon & King, 2020) to Turkish language and culture. There has not yet been a scale in the Turkish literature that precisely measures school resilience. Therefore, adopting this scale to Turkish culture fills this gap in the literature. Adapting the resilience scale can enable measuring school resilience levels independently of individuals' resilience levels, which can provide insights for the school counselors about students' school resilience levels.

School counselors play a critical role in supporting the mental health needs of students. They are involved in providing mental health screenings, short-term mental health counseling, universal prevention programming, and advocacy. School counselors may also serve as liaisons between families, schools, and community agencies while supporting the mental health needs of students (Marraccini et al., 2022). School counselors can address the mental health needs of students by providing direct services and working with school staff and community service providers (Kaffenberger & O'Rourke-Trigiani, 2013). School counselors also play integral and vital roles in counseling students and parents, and in providing consultations to parents and teachers (Nishio et al., 2020). With all these competencies, school counselors can also help to increase the level of school resilience of students. School counselors can determine the school resilience levels of students and provide guidance and psychological counseling services to students who need support. They can also carry out preventive guidance and psychoeducation activities for the risk factors that reduce the level of school resilience throughout the school. In addition, school counselors can also have a say in the work related to other important groups in the school, such as families and teachers. Students with high levels of school resilience are also important for schools. It can be determined which characteristics these students have, and these characteristics can be tried to be brought to other students through various activities. In short, activities can also be carried out within the scope of positive psychology. This study inquires, "What is the psychometric evidence of the validity and reliability of the School Resilience Scale (SRS) adapted to Turkish language and culture?"

Methodology

The Participants of the Study

The study population consists of students studying at high schools in Ankara. A convenience sampling method was employed in selecting the participants. Convenience sampling is selecting a sample based on easy accessibility and availability due to various limitations (Büyüköztürk et al., 2017). Cohen et al. (2007) explain convenience sampling as choosing the nearest individuals to serve as respondents and continuing that process until the required sample size has been obtained and accessible. With this method, data was collected from high school students from various socio-economic levels at all grades in schools. And this dataset covers 17 schools from 6 different school types. Three separate groups participated in the research. In the first study group, 53 students (28 girls (52.8%) and 25 (47.2%) boys) who have had English education and studied in the language program in secondary education were selected for developing the linguistic equivalence of the School Resilience Scale (SRS). The students' ages varied between 15-16 ($\bar{x}= 15.7$, $SD= .50$). The second group consisted of 615 students (324 girls (52.7%) and 291 boys (47.3%)) whose scores were used to conduct item analysis, confirmatory factor analysis to test construct validity, and criterion-related validity of the scale. The students' ages varied between 14-18 ($\bar{x}=15.42$, $SD=1.18$). The third group consisted of 88 students (59 girls (67%) and 29 boys (33%)) whose scores were used to examine the test-retest reliability, which assessed the consistency of the scale ($\bar{x}=16.52$, $SD=1.31$). This group was administered the SRS at a four-week interval. Table 1 presents the demographic information of 615 participants in the second part of the study.

Table 1. Frequency and Percentage Distributions by Demographic Variables

Variables	f	%
Gender		
Female	324	52.7
Male	291	47.3
Age		
14	166	27.0
15	169	27.5
16	184	29.9
17	51	8.3
18	45	7.3
Grade		
9	190	30.9
10	272	44.2
11	110	17.9
12	43	7.0
Total	615	100

Six hundred fifteen high school students participated in the research. 52.7% of the students were female, and 47.3% were male. The distribution by age was 16 (29.9%), 15 (27.5%), 14 (27.0%), 17 (8.3%), and 18 (7.3%). The distribution by grade was 10 (44.2%), 9 (30.9%), 11 (17.9%), and 12 (7.0%).

The Procedure

The participants were informed about the purpose of the research before the data collection process, and both the participants and their parents provided written consent to declare voluntary participation in the study. The participants were also explained that they could terminate their participation in the study at any time without any responsibility, their personal information would be kept confidential, and the results would only be used for scientific purposes. This study followed the guidelines for adaptation procedures defined by the World Health Organization (WHO) and the International Test Commission (ITC) in the process of adapting SRS (Caleon & King, 2020) to Turkish culture (ITC, 2018; WHO, 2017).

The first stage of the research aimed to test the conceptual and cultural equivalence of the measurement tool. First, the original scale was sent to two experts fluent in both languages. One of the experts was informed about the process and the purpose of the translation, while the other expert was not provided information about the process. Thus, we intended to obtain alternative translations (Coster & Mancini, 2015; Dorer, 2012). After completing both translations, they were checked and merged into a single translation. However, there needed to be a solution to translating a particular word in a way that could represent its cultural equivalence in Turkish. Therefore, the creator of the original scale was contacted to discuss the intended meaning of the word, which was then discussed with the experts who translated the scale. As a result, we agreed, and the first translation was completed. Next, three experts fluent in both languages were contacted via e-mail, and these experts evaluated the conceptual and cultural translation of the scale. The experts were informed about the translation process. A special note about how to translate the word that caused the problem in the first translation was attached for the experts' attention. As a result of the experts' evaluations, the compliance percentage was examined, and the Content Validity Index (CVI) was calculated. For each item, the experts rated the relevance of each item by choosing one of the responses; (1) not relevant, (2) item needs to be revised to be relevant, (3) relevant but needs minor alteration, and (4) very relevant. The experts' responses were interpreted as a good CVI score if each item had a rating of 3 or 4 with 80% and above (Esin, 2014). No item was rated 1 or 2. Hence, the content validity was 100%. After this review, this version of the scale was back-translated. For this procedure, a specialist with a good command of both languages was contacted for the scale to be translated back to its original language. The scale was translated back to its original language. The back-translation delivered a different wording than the original scale. However, we concluded that no meaningful shifts emerged. Besides, a back-translation does not necessarily produce the exact wording as the original text (Beaton et al., 2007). Then, 53 high school students were selected using purposive sampling. Purposive

sampling is a sampling method that allows researchers to include and control specific characteristics (Özen & Gül, 2010). This study employed a purposive sample to ensure participants had a good command of both languages. The original and Turkish scales were administered to 53 high school students fluent in both languages at a 2-week interval, and the scores were examined. To this end, the students were first given the English scale, and the Turkish scale was applied two weeks later. As a result of these applications, the internal consistency coefficient of the scale was examined, and Cronbach's Alpha reliability coefficient was .928.

The second stage aimed to test the construct validity and reliability of the measurement tool. Thus, whether the measurement tool was valid as a model to assess Turkish high school students' resilience was tested, and item-total score correlation, item discrimination, and Cronbach's Alpha reliability coefficients were calculated. In the second stage, the convenience sampling method was used. The data collection took approximately two weeks. The Adolescent Psychological Resilience Scale (APRS) (Bulut et al., 2013), the Depression, Anxiety and Stress Scale-High School Form (DASS-42) (Akkuş Çutuk & Kaya, 2018), and Personal Information Form created by the researchers were used to examine the relationship of the measurement tool with other constructs. In the third stage, a test-retest reliability study of the scale was performed. One hundred five high school students in Ankara were asked to select a nickname to administer the test. The test-retest reliability of the scale was carried out at a 4-week interval. Of the 105 participants who participated in the first stage, 88 completed the scale again.

Data Collection Tools

The School Resilience Scale (SRS). The SRS measures the students' school resilience, which is defined as positive adaptation despite experiences of significant social and school-related stressors that may impact healthy functioning in the school context (Caleon & King, 2020). Two samples were determined to develop the original scale. A total of 1159 8th-grade students (37% girls and 63% boys) in Singapore participated in the first study, and 190 students from the 8th and 9th grades participated in the second study. The scale was applied to 97 students for test-retest reliability. The School Resilience Scale consisted of 16 items with a four-factor structure (family/home, schoolmate, teacher, academic). The SRS was a 7-item Likert scale (1- strongly disagree, 7- strongly agree). The scale explained 55.13% of the variance and was a single-factor scale. The factor loadings ranged from .66 to .83. The Cronbach's alpha of the school resilience scale for internal consistency was between .82 and .86 (N=1599) in the first study and between .79 and .85 (N=190) in the second study. These values evidenced the reliability of the school resilience scale. The findings section presents the results of this scale's adaptation.

Adolescent Psychological Resilience Scale (APRS). Adolescent Psychological Resilience Scale (APRS) was developed by Bulut et al. (2013). During the scale development, 347 high school students participated in the study, including 133 boys (38%) and 214 girls (62%). Exploratory Factor Analysis (EFA) was performed for construct validity, and the scale consisted of 29 items and six factors that explained 57% of the total variance. The scale items had four options, including (1) very suitable for me, (2) suitable for me, (3) not suitable for me, and (4) not suitable for me at all. In the reliability test, Cronbach's Alpha internal consistency coefficient was found to be .87. The alpha values of the sub-dimensions ranged between .61 and .89. Secondly, after one month, the test-retest results showed a correlation coefficient of .87. In another reliability test, 27% of upper-lower group comparisons revealed significant differences in all items. Lastly, item-total correlations in the item analysis ranged from .59 to .81. Based on these findings, APRS was found to be a valid and reliable measurement tool that can be used in the fields of education and psychology. The Cronbach's alpha coefficient in the present study was .89.

Depression, Anxiety, and Stress Scale-High School Form (DASS-42). DASS-42 was developed by Lovibond and Lovibond (1995) to measure the depression, stress, and anxiety levels of individuals. It was later adapted into Turkish by Akkuş Çutuk and Kaya (2018). The scale consisted of 42 items, 14 for each of the three subscales: depression, anxiety, and stress. Each item was rated on a 4-point Likert scale; (0) did not apply to me at all, (1) applied to me a little, (2) applied to me most of the time, and (3) applied to me very much. The scores obtained from the scale ranged between 0 and 42 for each sub-dimension. Depression, anxiety, and stress were categorized on the scale into normal, mild, moderate, severe, and highly severe (Akkuş Çutuk & Kaya, 2018). The Cronbach's alpha coefficient was found in the present study to be .95.

Personal Information Form. The Personal Information Form was created by the researcher to collect information about the participants' gender, age, and grade.

Data Analysis

SPSS 22 and Lisrel 8.80 programs were used for data analysis. The SPSS program was used to compare the frequency and percentage of demographic variables, descriptive statistics, and comparing scores by groups. At the same time, confirmatory factor analysis and structural equation modeling for scale validity and mediation analysis were performed using the Lisrel 8.80 program. Skewness and kurtosis values were examined for the normality of the scale scores, and the distribution was considered normal when the skewness and kurtosis values were within the range of ± 1.50 (Tabachnick & Fidell, 2013). To analyze the extreme values, the z standard values of the sub-dimensions were examined, and no extreme values were found. Pearson correlation was used to analyze the relationship between scale scores. The maximum likelihood estimation method was used since all observed variables in the Structural Equation Model (SEM) analysis were continuous. A two-stage SEM model was used. First, the measurement model was tested based on the latent and observed variables in the model. Then the SEM model was tested following the measurement model and theoretical framework (Şimşek, 2007). For model-data fit, an essential criterion in SEM and confirmatory factor analysis, the frequently used fit indexes in the literature were considered. The acceptable values of model-data fit based on these fit indexes are presented in Table 2.

Table 2. Bibliographies on the Critical Values of Model-Data Fit

Index	Critical Value	Source
χ^2/sd	≤ 3 ; perfect fit ≤ 5 ; good fit	(Kline, 2005)
RMSEA; SRMR	$\leq .05$; perfect fit $\leq .08$; good fit $\leq .10$; good fit	(Steiger, 1990; Schumacker & Lomax, 1996 Hu & Bentler, 1999; Anderson & Gerbing, 1984; Cole, 1987)
CFI	$\geq .95$; perfect fit $\geq .90$; good fit	(Schumacker & Lomax, 1996; Fan, Thompson & Wang, 1999)
GFI;	$\geq .95$; perfect fit $\geq .90$; good fit	(Schumacker & Lomax, 1996; Hu & Bentler, 1999)
NFI; IFI	$\geq .95$; perfect fit $\geq .90$; good fit	(Hu & Bentler, 1999; Sümer, 2000)

Findings

This section demonstrates the findings concerning the research questions.

Findings of the First Stage

In the first stage of the study, the original scale of the School Resilience Scale and the Turkish version were administered to 53 high school students fluent in both languages one week apart to test the conceptual and cultural equivalence of the measurement tool, and the relations between the scores of the two scales were examined. The descriptive statistics of the scale scores and the values of Pearson's product-moment correlation coefficients are presented in Table 3.

Table 3. Descriptive Statistics and Correlation Coefficients Regarding the Scale Scores

Factors	\bar{x}	Median	Mode	Skew.	Kr.	r
Academic						
English	20.53	22.00	14.00 ⁱ	-.080	-.741	.964*
Turkish	20.11	20.00	23.00	.051	-.438	
Family/Home						
English	11.00	12.00	15.00	-.103	-1.067	.942*
Turkish	11.42	12.00	14.00	-.239	-.799	
Schoolmate						
English	15.79	17.00	18.00	-.262	-1.020	.956*
Turkish	15.74	16.00	17.00	-.081	-.997	
Teacher						
English	15.45	16.00	14.00	-.117	-.938	.958*
Turkish	15.62	16.00	18.00	-.127	-.678	
SRS total						
English	62.77	66.00	28.00 ⁱ	-.130	-1.123	.985*
Turkish	62.89	65.00	73.00	-.023	-.909	

ⁱ: Smallest value from multiple modes, N:53, *p<.01

Note: \bar{x} : Mean, Skew.:Skewness, Kr.:Kurtosis, r:Correlations

As Table 3 shows, Pearson's correlation coefficients between the two measures were .964 ($p < .01$) for the academic factor, .942 ($p < .01$) for the family/home factor, .956 ($p < .01$) for the schoolmate factor, .958 ($p < .01$) for the teacher factor, and .985 ($p < .01$) for the full scale. The Cronbach Alpha reliability test for the internal consistency coefficient of the scale was .940 for the original scale and .928 for the Turkish translation.

Findings of the Second Stage

The second stage aimed to test the construct validity and reliability of the measurement tool. To this end, whether the structure of the measurement tool was valid as a model to use with Turkish high school students was tested, and item-total score correlation and Cronbach's Alpha reliability coefficients were calculated. This study also employed the statistical analyses and methods used in the development stages of the original scale to ensure method equivalence in the adaptation process of the scale. The SRS consisted of 18 items. The original scale had a 4-factor structure. In the original scale, two-level confirmatory and exploratory factor analyses were used for validity analysis. Firstly, the underlying factor structure was identified by exploratory factor analysis, which was then confirmed through confirmatory factor analysis. Since the final scale was adapted in this study, the construct validity was examined by confirmatory factor analysis. The reason for using CFA rather than EFA was that the scale structure was already identified. However, since scale items 2 and 17 were related to items not in their own dimensions and caused an increase in the factor loadings of other factors, they were removed from the scale, and CFA results were reported for a 16-item scale. In the development of the original scale, the identical items were not loaded on the factors sufficiently. However, they were still included in the scale to reduce the positive response clusters (Caleon & King, 2020). Outlier items were analyzed with z standard values for each item. Tabachnick and Fidell (2013) stated that values below and above the z score ± 3.3 should be considered extreme values.

Table 4. t Values for Each Item Based on Confirmatory Factor Analysis

Item	t	Item	t	Item	t
i1	14.86*	i8	19.2*	i13	19.89*
i3	18.84*	i9	18.96*	i14	20.67*
i4	15.03*	i10	21.24*	i15	23.24*
i5	14.51*	i11	24.12*	i16	18.39*
i6	17.55*	i12	16.25*	i18	19.29*
i7	18.76*				

*p<.01

The *t* values of each item in the SRS are shown in Table 4. The *t* values for all items greater than the critical *t* value of ± 1.96 at the alpha level of .05 indicate that the factor loading is significant (Çokluk et al., 2010). The findings showed that the *t*-values of each item in the scale were greater than 1.96 and statistically significant.

Figure 1. The Graph of Path Coefficients

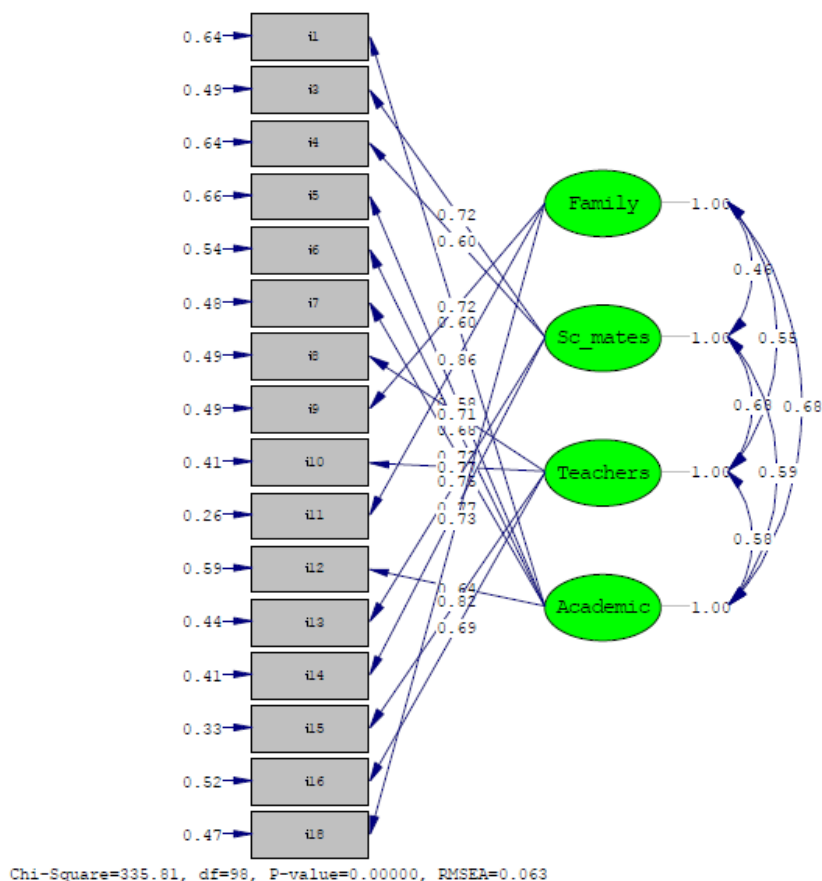


Figure 1 shows the graph of the standard factor loadings for the SRS. Path coefficients for the family/home sub-dimension were 0.72-0.86, 0.60-0.77 for the schoolmate sub-dimension, 0.69-0.82 for the teacher sub-dimension, and .58-0.72. for the academic sub-dimension. The path coefficients were found to be high.

Table 5. Model Fit Index

Index	Perfect Fit	Good Fit	Research Finding	Conclusions
χ^2/SD	0-3	3-5	3.43	Good Fit
RMSEA	.00 ≤ RMSEA ≤ .05	.05 ≤ RMSEA ≤ .10	0.063	Good Fit
CFI	.95 ≤ CFI ≤ 1.00	.90 ≤ CFI ≤ .95	0.98	Perfect Fit
GFI	.95 ≤ CFI ≤ 1.00	.90 ≤ CFI ≤ .95	0.94	Good Fit
NFI	.95 ≤ NNFI ≤ 1.00	.90 ≤ NNFI ≤ .95	0.96	Perfect Fit
IFI	.95 ≤ NFI ≤ 1.00	.90 ≤ NFI ≤ .95	0.98	Perfect Fit
SRMR	.00 ≤ SRMR ≤ .05	.05 ≤ SRMR ≤ .08	0.049	Perfect Fit

(Schumacker & Lomax, 1996)

The model-data fit indexes based on the results of confirmatory factor analysis are presented in Table 5. This research considers the most frequently used model-data fit indexes. Chi-square is affected by degrees of freedom, so the ratio of chi-square to the degrees of freedom is recommended for evaluating the model-fit index (Hoe, 2008). Kline (2005) suggested that a chi-square/degrees of freedom ratio of 3 to 5 was a reasonably good indicator of model fit, and a ratio of less than 3 indicated a perfect fit. Hence, the ratio (335.81/98) of

3.43 indicated a good fit. Another important and frequently used fit index, also known as the misfit index, is the Root Mean Square Error of Approximation (RMSEA). An RMSEA of less than 0.08 indicates a good fit, while less than 0.05 means a perfect fit (Schumacker& Lomax, 1996). The RMSEA value was 0.063, which meant a good fit. Other fit indexes included in the study were the Comparative Fit Index (CFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Goodness of Fit Index (GFI), and Standardized Root Mean Square Residual (SRMR). Based on the results of the confirmatory factor analysis of the SRS adapted with a four-factor structure, the model-data fit was confirmed in consideration of the mentioned fit indexes (RMSEA=.063, CFI=.98, GFI=0.94, NFI=.96, IFI=.98, SRMR= .049).

In the development process of the original scale, the scale items were gathered under a single general concept by conducting a two-level confirmatory factor analysis. In parallel to the original research, this study also used a two-level confirmatory factor analysis, shown in Figure 2.

Figure 2. The Graph of Path Coefficients (Second Level)

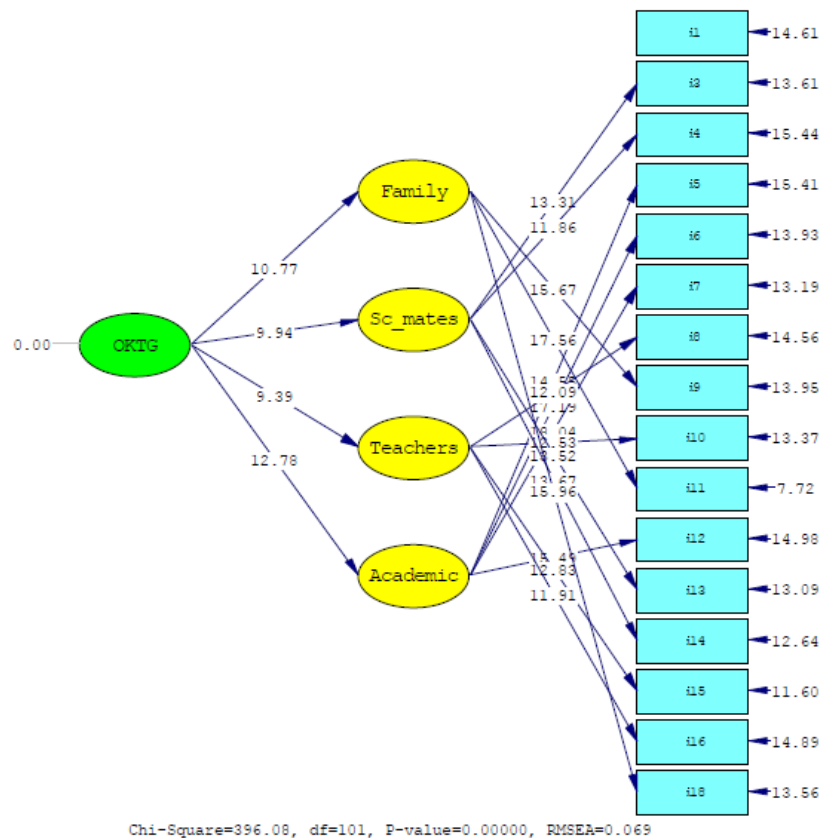


Figure 2 shows the graph of the path coefficients of the second-level factor analysis. All sub-dimensions were gathered under a general scale concept of SRS. The path coefficients were between 0.69-0.82, which indicated statistically significant path coefficients ($p < .05$). According to the model-data fit values for the second-level model, the two-level model with four factors where each factor gathered under a general factor (SRS) was verified. In other words, the model-data fit was satisfactory for this model, which was established as a two-level model, and the construct validity was found sufficient (RMSEA=.069, CFI=.97, GFI=0.92, NFI=.96, IFI=.97, SRMR= .063). The Cronbach's Alpha coefficient calculated for the scale's reliability was .89. The Cronbach's Alpha coefficients of the sub-dimensions were determined as .78 for family/home, .81 for schoolmate, .80 for teacher, and .84 for academic.

One type of validity is convergent validity. Some variables are expected to relate to the variable to be measured. This is called convergent validity (Bademci, 2019). At this stage, Adolescent Psychological Resilience Scale (APRS) (Bulut et al., 2013) was used to test the convergent validity of the scale, and DASS-42 High School Form (Akkuş Çutuk& Kaya, 2018) was used to examine its relations with other constructs. Individuals with a

high level of school resilience were expected to have a high level of resilience and low levels of depression, anxiety, and stress. Research showed a negative relationship between the levels of depression, anxiety, and stress and the level of resilience (Bilge & Bilge, 2020; Eroğlu&Yakşi, 2021; Skrove et al., 2013) as well as a positive relationship between the levels of resilience and school resilience (Caleon & King, 2020).

Table 6. The Correlation Coefficients Between the Scales

Variables	Mean	SD	Skew.	Kr.	1	2	3	4	5
1.School Resilience	81.56	17.19	-.434	-.203	<i>(.89)</i>				
2.Adolescent Psychological Resilience	86.49	12.36	-.369	.052	.589*	<i>(.89)</i>			
3.DASS-42 (Stress)	30.54	7.71	.225	-.537	-.470*	-.492*	<i>(.86)</i>		
4.DASS-42 (Anxiety)	26.97	7.49	.597	-.096	-.511*	-.590*	.690*	<i>(.86)</i>	
5.DASS-42(Depression)	29.31	8.55	.507	-.115	-.556*	-.657*	.757*	.716*	<i>(.90)</i>

N = 615, *p < .01

Note: SD:Standard Deviation, Skew.:Skewness, Kr.:Kurtosis. The values presented in italics in parentheses are Cronbach's Alpha values.

The correlation coefficients in Table 6 showed a positive and moderate relationship between school resilience and adolescent psychological resilience ($r_{615}=.589, p<.01$), while school resilience and stress ($r_{615}=-.470, p<.01$), anxiety ($r_{615}=-.511, p<.01$) and depression ($r_{615}=-.556, p<.01$) were negatively and moderately correlated. Table 7 presents the *t*-test results for the independent samples conducted to examine the differences between the responses of the lower - upper 27% groups, which were identified based on the total scale scores.

Table 7. t-Test Scores of the Lower-Upper Group Means for Scale Items

Item No	Group	N	\bar{x}	SD	<i>t</i>	<i>p</i>
Item-1	Lower Group	166	2.82	1.60	-14,317	<.001
	Upper Group	166	5.39	1.67		
Item-2	Lower Group	166	3.02	1.54	-17,272	<.001
	Upper Group	166	5.70	1.27		
Item-3	Lower Group	166	3.05	1.42	-15,616	<.001
	Upper Group	166	5.45	1.38		
Item-4	Lower Group	166	4.37	2.11	-11,880	<.001
	Upper Group	166	6.54	1.05		
Item-5	Lower Group	166	3.20	1.59	-14,955	<.001
	Upper Group	166	5.69	1.45		
Item-6	Lower Group	166	2.79	1.44	-18,629	<.001
	Upper Group	166	5.67	1.38		
Item-7	Lower Group	166	3.12	1.68	-18,383	<.001
	Upper Group	166	6.11	1.25		
Item-8	Lower Group	166	2.90	1.59	-18,257	<.001
	Upper Group	166	5.93	1.43		
Item-9	Lower Group	166	2.92	1.66	-21,415	<.001
	Upper Group	166	6.23	1.10		
Item-10	Lower Group	166	2.54	1.40	-21,530	<.001
	Upper Group	166	5.90	1.45		
Item-11	Lower Group	166	2.99	1.64	-20,137	<.001
	Upper Group	166	6.18	1.22		
Item-12	Lower Group	166	3.52	1.68	-17,959	<.001
	Upper Group	166	6.18	0.90		
Item-13	Lower Group	166	3.18	1.63	-18,738	<.001
	Upper Group	166	6.12	1.20		
Item-14	Lower Group	166	2.98	1.60	-24,130	<.001
	Upper Group	166	6.47	0.96		
Item-15	Lower Group	166	3.43	1.72	-16,528	<.001
	Upper Group	166	6.18	1.28		
Item-16	Lower Group	166	2.93	1.56	-15,069	<.001
	Upper Group	166	5.60	1.67		

N = 615, *p < .01

Note: \bar{x} : Mean, SD: Standard Deviation, t : t Value, p : Significance

The values in Table 7 showed a significant difference between the item scores of the lower and upper 27% groups ($p < .001$). In conclusion, the scale items had sufficient item discrimination.

Findings of the Third Stage

In the third stage, the test-retest reliability of the scale was examined. Test-retest reliability assesses a measurement's consistency or stability over time (Erkuş, 2005). To administer the test, 105 high school students in Ankara were asked to select a nickname. The test-retest reliability of the scale was carried out at a 4-week interval. Of the 105 participants who participated in the first stage, 88 completed the scale again. The Pearson product-moment correlation coefficient was examined to test the consistency between the scores of the students from both applications. The results showed a high, significant positive correlation between the two applications of the SRS ($r_{88} = .948$, $p < .01$). Hence, the scale was found to have high consistency.

The Turkish version of the SRS is a 7-point Likert-type scale that ranges from (1) "I Strongly Disagree" to (7) "I Strongly Agree." There were no reverse items in the scale. SRS had four sub-dimensions. These were family/home, schoolmate, teacher, and academic dimensions. The total score of the scale can also be used. In short, the scale also measured school resilience as a single dimension. High scores obtained from the scale indicated a high level of school resilience. The SRS proved to be a practical self-report scale that was easy to evaluate. In short, SRS proved to be a valid and reliable scale suitable for Turkish culture and can measure high school students' school resilience levels.

Discussions

This study aims to examine the psychometric properties of the School Resilience Scale developed by Caleon and King (2020) on high school students in Turkey and present it to the national literature. The scales (Alonso-Tapia et al., 2013; Martin & Marsh, 2006) that measure the level of school resilience have some limitations. The scope of these scales was narrow, and they focused only on academic resilience. Therefore, a scale was developed that incorporated all school components and included the stress factors in schools, thus explaining and evaluating the concept of school resilience more accurately (Caleon & King, 2020). A number of tests were conducted to determine whether the scale in question is adapted to the Turkish language and culture. During the linguistic adaptation process of the scale, meticulous efforts were made to minimize the effect of cultural differences. During the translation of the scale into Turkish, it was difficult to find the Turkish equivalent of the word "schoolwork" in the original scale. In this process, the authors of the original article were contacted and asked what the word meant. Then, Turkish language experts determined the Turkish equivalent of the word. The linguistic validity of the adapted scale is high. The two applications of the scale at a one-week interval to determine the linguistic equivalence of the translation revealed a high level of correlation, which can be regarded as an indication of equivalency between the original scale and the Turkish version. For model fit, χ^2/SD values between 3 and 5 were considered a good fit, RMSEA value between .05 and .10 was a good fit, SRMR value of .05 and below indicated a perfect fit, NFI, CFI, and IFI values that were .95 and over meant perfect fit, and a GFI value of .90 and above pointed to a good fit (Hoe, 2008; Kline, 2005; Schumacker & Lomax, 1996; Tabachnick & Fidell, 2013). The model fit findings of the study are similar to the findings of the original scale. In the development process of the original scale, the scale items were gathered under a general concept by conducting a two-level confirmatory factor analysis (Caleon & King, 2020). In parallel to the original research, the present study also performed a two-level confirmatory factor analysis. All sub-dimensions of the scale were put together for the general concept of school resilience. This data is important data for the term school resilience. Because with this test, it can be said that while the academic dimension, family, schoolmate and teacher dimensions, which are the sub-dimensions of the concept of school resilience, can individually reduce the level of school resilience, the system formed by these four sub-dimensions also affects the level of school resilience. The path coefficients were between 0.69 and 0.82, which indicated statistically significant results ($p < .05$). According to the model-data fit values for the second-level model, the two-level model with four factors where each factor gathered under a general factor (SRS) was confirmed. An item's lowest factor loading value can be .30 or .40, as determined in the literature (Şencan, 2005). Moreover, a high correlation between the full scale and its factors suggests a high level of internal consistency. Cronbach's Alpha reliability coefficients also indicated that the scale had a high level of reliability. Kline (2005) indicated that the Cronbach alpha reliability coefficient should be at least .70 in order to state that

the scale provides reliable measurement. In line with this information, it is seen that the Cronbach alpha reliability coefficient of the scale is sufficient. Given the test-retest reliability results, the scale also showed the test-retest consistency. When the item discriminations were examined, all items on the scale showed distinctive features to assess school resilience.

Both the original scale development and the current research used resilience as a variable to evaluate convergent validity. Resilience is a general name given to the ability of individuals to recover from the stressors they have been exposed to. School resilience, on the other hand, shows the level of resilience specific to a contextually specific area (Caleon & King, 2020). The scale used in this study is called Adolescent Psychological Resilience Scale (APRS) (Bulut et al., 2013). Both the original and this study found positive and moderately significant correlations between resilience and school resilience scores. Besides, the original scale used the concept of depressive symptoms, while this study used the Depression, Anxiety, and Stress Scale-High School Form (DASS-42) (Akkuş Çutuk & Kaya, 2018). A moderately significant negative correlation was found between these variables and school resilience in the original scale and this study. There was a statistically significant positive correlation between resilience and school resilience scores (Caleon & King, 2020). The research findings were found to be consistent with the findings of the original study. Considering all these data, it is thought that sufficient evidence has been obtained for the validity and reliability of the scale.

It was determined that the findings were consistent with the literature. Looking at the literature, significant positive relationships were determined between school resilience and resilience and negative relationships with depressive symptoms (Caleon & King, 2020). Moreover, studies in the relevant literature reported a significant negative correlation between resilience and depression (Bilge & Bilge, 2020; Eroğlu & Yakşi, 2021), anxiety (Skrove et al., 2013), and stress (Bilge & Bilge, 2020). Students with high levels of school resilience have a high ability to adapt despite the stressors they are exposed to. In addition, students with high school resilience levels are likely to have low levels of depression, anxiety, and stress.

Since schools are the places where children and adolescents spend most of their time, they have been considered ideal places for resilience studies (Condly, 2006). However, studies (Donaldson et al., 2000; Williamson et al., 2003) have shown that the most common sources of stress for adolescents are related to academic and social areas. In parallel to this, family, school, and peer groups stand out when looking at the factors affecting resilience in adolescents (LaRue & Herrman, 2008). Schools encompass two of these three important factors. Risk factors at school affect students' resilience (Caleon & King, 2020). The four sub-dimensions of school resilience are family, friends, teachers, and academic factor. School resilience is an important concept for adolescents to adapt positively despite the risk factors at school. Another importance of this concept is that it allows interventions at school to have a more specific and clear focus. The level of school resilience can increase with the removal of risk factors at school and interventions related to protective factors. According to the systemic perspective, an increase in students' resilience levels can also be observed with these specific interventions (Ungar, 2021). In short, it may be important to know the school resilience level of adolescents. Teachers, especially school counselors, can identify students' school resilience levels and conduct individual and group activities that can increase these levels.

This research has some limitations. The participants were selected using convenience sampling, which is a limitation regarding the generalizability of the findings. Conducting future studies with participants selected from different regions may provide stronger support for the validity and reliability of the measurement tool. Moreover, since the participants of this study consisted only of high school students, these results cannot be generalized to other age groups. The validity and reliability tests need to be repeated for this scale to be used in different age groups. Finally, since the data of this study were collected through a self-report method, the generalizability of the findings is limited.

Suggestions for Future Studies

Based on the results of this study, some suggestions can be made to researchers. This scale only includes high school students. School resilience is important at all levels of schools. Therefore, a measurement tool that can

measure the level of school resilience in primary, secondary, and universities can be developed or validity and reliability studies of this scale can be conducted in various age groups.

Especially for adolescents, stress factors at school are considered important (LaRue & Herrman, 2008). Therefore, the school resilience levels of students can be determined first and the factors that reduce school resilience can be identified. According to the factors that reduce the level of school resilience, family, teacher, and peer group training can be organized. In addition, both individual and group studies can be organized in areas such as bullying prevention, assertiveness, and emotion regulation skills to cope with risk factors.

If risk factors that reduce students' school resilience and dominate the school in general are identified, preventive group guidance, psychoeducation programs, group and individual psychological counseling, and consultancy activities for teachers and parents can be carried out to eliminate the effects of these factors. The characteristics of students with high school resilience can be identified by correlational and predictive analyses and psychoeducation programs can be created in schools within the scope of positive psychology based on these characteristics. After the life events that have affected a large part of the society in recent years, such as epidemics and earthquakes, school resilience levels of students can be determined and studies can be conducted on the effects of these events on students and thus the protective role of schools can be rebuilt.

Conclusions

This study aimed to adapt the School Resilience Scale (Caleon & King, 2020) to Turkish culture. The confirmatory factor analysis assessing the construct validity showed that the four-factor structure of the scale (family/home, schoolmate, teacher, and academic) indicated a good fit. According to the results of the two-level confirmatory factor analysis, all sub-dimensions of the scale were gathered under school resilience. The school resilience scale was examined in terms of convergent validity, internal consistency reliability, item discrimination, and test-retest reliability. In conclusion, the findings of this study demonstrated that the school resilience scale was a valid and reliable measurement tool to assess the school resilience levels of Turkish high school students.

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Data Availability: Data not available due to privacy/ethical restrictions.

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Appendix

Turkish Form of the School Resilience Scale (SRS)

1: Kesinlikle Katılmıyorum

7: Kesinlikle Katılıyorum

1	Okulda aksilikler yaşadıkdan sonra (örneğin; düşük notlar, derslerle ilgili olumsuz geri bildirimler) kendimi hızla toparlayabilirim.	1	2	3	4	5	6	7
5	Derslerle ilişkili sorunlarla baş etmede iyiyimdir.	1	2	3	4	5	6	7
9	Öğretmenlerle yaşadığım sorunlar cesaretimi kolayca kırmaz.	1	2	3	4	5	6	7
12	Okul arkadaşlarımla olan anlaşmazlıkları etkili bir şekilde yönetebilirim.	1	2	3	4	5	6	7
16	Evdeki sorunların okuldaki performansımı etkilemesine izin vermem.	1	2	3	4	5	6	7
