



# Developing a Choice Theory-based Family Resilience Intervention Program

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## Abstract

This study aims to determine the impact of an online family resilience program based on the choice theory. Data collection was conducted using the Relational Resilience Scale, the Relationship Satisfaction Scale, a subscale of the Relationship Stability Scale, and the Demographic Form. After data recruitment and screening, 24 married women were randomly assigned to the experimental, placebo, and control groups, with eight participants in each group. The Choice Theory-based online family resilience program consisted of eight sessions developed within the Choice Theory and Reality Therapy frameworks. The placebo group watched movies during the eight sessions, while the control group received no intervention as part of the experimental process. The Relational Resilience Scale was used to administer the pretest before the program began, the posttest after the program ended, and the follow-up test 8 weeks after the posttest measurement. Data were analyzed using a two-factor analysis of variance. Results showed that the choice theory-based online family resilience program significantly increased participants' family resilience and that this effect persisted for eight weeks. The results were discussed in the context of previous studies, and suggestions were made for future studies and implications.

**Keywords** Choice theory · Family resilience · Relationship satisfaction · Online family intervention

## Introduction

Within contemporary approaches to psychology, there are an increasing number of studies that focus on positive attributes and aspects of individuals, compared to problem-focused studies (Heffernon & Boniwell, 2010). In family research, studies that focus on dysfunctional families affected by various stressors and studies that focus on family pathologies have given way to studies that focus more on the positive aspects and adaptability of families (Van Breda, 2001). Resilience, which has become an important concept in psychological research (Luthar, Cicchetti, and Becker, 2000), refers to the process of emerging stronger from negative life experiences (Olsson et al., 2003).

Family resilience is one of the new approaches related to family stability and sustainability. Walsh (2002) pointed out that due to social and economic problems and widespread concern about family preservation in recent years, there is a need for directional, useful conceptual models, such as the Family Resilience Framework, that strengthen couple and family relationships. According to family systems models, some families maintain their astuteness and strength, while others display an opposite attitude despite similar difficulties and stresses (McCubbin & McCubbin, 1988; Patterson, 2002a; Walsh, 1996). This fact has led family researchers to explore the concept of 'family resilience' (Patterson, 2002a). Family resilience describes a family that has the capacity to cope with negative events to which it is exposed and to minimize the impact of such events (McCubbin & McCubbin, 1988; Patterson, 2002a; Walsh, 1996).

Family resilience settings help researchers distinguish and describe the elements that are central to resilience in family life and determine the relationships among these elements. The studies that aim to theorize family resilience contribute to our ability to determine experiences worth discovering and describing (Chesla & Leonard, 2017). Although some families are more vulnerable and experience

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more difficulties than others, the family resilience perspective strongly believes in the potential to strengthen families' coping skills. Even those who have experienced severe trauma or difficult relationships have the potential to recover and grow throughout life and across generations (Walsh, 2016a). Family resilience seeks to answer how family members cope with difficulties, protect themselves from stress, and reorganize effectively to maintain family unity (Walsh, 2016b). Examining families' responses to stressful life events allows us to assess family resilience (Hawley & DeHaan, 1996). However, responses to stressful life events vary (Fergusson, Beautrais, and Horwood, 2003). Resilient families show different positive responses to stressful circumstances depending on their attachment, developmental stage, interplay of protective and risk factors, and family member exchanges (Walsh, 2016b).

Studies of resilience focus on risk factors and protective factors that alter the impact of difficulties on the resulting condition (Luthar, 1999). Rutter (1990) described risk factors as a variable that causes disharmony and pathology. After marriage, couples begin to live together and face new responsibilities and difficulties, and couples who cannot establish a satisfactory marital relationship begin to experience some problems. Nichols (2005) explains marital satisfaction as the sense of satisfaction and happiness that individuals derive from the marital relationship. Relationships with higher levels of satisfaction lead to a peaceful life (Kamp-Dush & Amato, 2005). On the other hand, researchers indicate that low marital satisfaction affects partners and children, and such relationships usually end in divorce (Clavarino et al., 2011; Robinson & Neece, 2015). Low marital satisfaction is not only a problem in itself, but also leads to additional problems or greater risks. According to Rutter (1999), the occurrence of cumulative risk facilitates other risks and increases the number of daily problems that families must manage. When families do not have an adequate repertoire for coping with difficulties, they are more likely to experience other risks (Patterson, 2002b). Family studies show the deleterious effects of cumulative risks on both individual and whole family functioning. (Larson et al., 2008; Trentacosta et al., 2008). In addition, crises and the facts of life affect all family members and disrupt family functioning (Walsh, 2016a). Therefore, low relationship satisfaction is described as a risk factor in this study. While risk factors increase the impact of negative events, protective factors can buffer the negative consequences (Luthar, 1999). Protective factors can reduce, halt, or even prevent risks (Greene & Conrad, 2002). Couples' awareness of each other's needs and their efforts to create a loving and dynamic relationship in which those needs are met increase their marital satisfaction (Weaver & Schofield, 2015). In a marital relationship, the fulfillment of physiological and

psychological needs ensures that the relationship persists (Özer & Cihan Güngör, 2012).

Basic needs are the focus of Glasser's Choice Theory. According to this theory, needs are universal, they are not limited to cultural or ethnic groups, and they guide the behavior of all people (Wubbolding, 2015). Glasser (2003) states that we have five basic needs that are encoded in our genes, and that these needs motivate all of our behaviors from birth to death. According to choice theory, underlying our choices are the needs for survival, affection and belonging, power, freedom, and pleasure, which humans must consistently fulfill (Glasser, 1998). When basic needs are not met, it leads to more relationship conflict, less relationship satisfaction, and lower relationship resilience (Noller & Feeney, 2002). When needs are not clearly articulated in marriage, partners and children may suffer (Humphreys & Thiara, 2003). Glasser hypothesizes that people struggle with emotional and behavioral problems because they cannot meet their basic needs (Wubbolding, 2015). According to choice theory, environmental conditions do affect individual choices, but individuals have control over how they choose to behave despite external conditions. Individuals have the ability to choose how they behave. Therefore, individuals must be responsible for their behavior and maintain control over their lives (Glasser, 1998).

The basis of the program is how to meet the basic needs of survival, belonging to love, freedom, power and entertainment, which are universal and which every person should meet in a healthy way, in the family environment. It is expected that meeting the basic needs of all family members individually and together with others, and learning to be sensitive to the needs of family members will have an effect that reduces or prevents the impact of difficulties in crises. Responsibility, which is one of the basic concepts of Choice Theory, becomes more important in the family environment. Because being a family requires family members to take responsibility for each other and make an effort. Taking responsibility of family members in difficult times makes them realize that difficulties have a unifying and integrating power, not tearing apart the family. A change in behavior from external locus of control to internal locus of control facilitates both taking responsibility for behaviors and meeting basic needs.

The current state of family resilience studies includes translating these studies into preventive interventions and strategies (Henry, Sheffield-Morris & Harrist, 2015). Such implementations focus on reducing risk, evoking the strong aspects and resources of the family, promoting adaptability to the family ecosystem, helping the family cope with a problem, and changing the meaning of situational problems (Ungar, 2013). According to Patterson (2002b), while it is theoretically important to find out whether or not the family

is at risk, in reality it is critical to conduct studies on family adaptation. In recent years, studies on family resilience have increased, highlighting the importance of the concept. However, most of these studies are at a theoretical level. O’Leary (1998) says of family resilience that what makes a family cope with and strengthen negative events is not avoiding those negative events, but successfully using protective factors. Families can develop protective factors through intervention programs. Intervention programs not only focus on the negative experiences families face in stressful situations, but they also try to strengthen their capacities as a family and in this way support the family’s adaptation. With the help of family resilience, families can reduce their stress in a crisis, cope with difficult conditions, become stronger as a unit, and gain more resources (Yang, Kim, and Kwon, 2006). According to Patterson (2002b), implementers must address family resilience in order to successfully manage sources of stress. Strong families can never achieve at-risk status. When they experience a traumatic event, they can adapt more successfully and become more resilient.

## Current Study

In this study, researchers developed an intervention program to help families improve their protective factors and examined the effectiveness of the program. In addition, this study is the first to aim to improve family resilience based on Choice Theory.

With the intervention program elaborated in this study, based on Choice Theory, meeting basic needs, sharing responsibilities in the family, moving from the external locus of control to the internal locus of control, and being aware of alternative choices when faced with coercive situations can contribute to the resilience of families. In addition, these factors strengthen families’ capacities and enrich their repertoires to cope with various risk conditions they may face in the future. The resources that will help the family in difficult times have been determined in the context of Choice Theory, and the effect of the basic needs, choice, responsibility and control concepts, which are important concepts of the Choice Theory, on family resilience has been determined. Identifying the resources that will help the family in times of crisis will add a new dimension to the studies on family resilience and the protective factors of the family will be enriched.

In the light of this information, this study assumes that the online family resilience program based on Choice Theory is effective in increasing the family resilience levels of married women.

## Method

The study, which was a mixed split-plot experimental design, aimed to determine the effect of the choice theory-based family resilience program on increasing relational resilience among married women’s relational resilience. Participants were divided into experimental, placebo, and control groups and received a pretest, posttest, and relational resilience scale as follow-up (Aydoğan & Özbay, 2015). The family resilience program based on choice theory was conducted in the experimental group for eight weeks, the placebo group watched movies for eight weeks, and the control group did not perceive any intervention during the experimental process. The College Ethics Committee granted the necessary approvals for this study (REF: 5096 – 050.01.01-E-97,105,791).

## Selection of Participants

In forming the experimental, placebo, and control groups, subtests of the Relationship Stability Test, Relationship Satisfaction Scale, Relational Resilience Scale, and Personal Information Form were created using Google Forms and administered to participants via various online interaction platforms (Whatsapp, Bip, Instagram, Twitter, Facebook). Women who had been married 5–20 years and had at least one child completed the scales.

250 women who participated in the study voluntarily completed the data collection. Data from 250 women were analyzed in a computerized setting. The researchers excluded four participants based on extreme scores. The result of the analysis is that the mean score of the relationship satisfaction scale was ( $\bar{X}$ =33.93,  $S_s$ =10.87) and the mean score of the relationship resilience scale was ( $\bar{X}$ =149.17,  $S_s$ =28.64). After calculating the means and standard deviations, 24 participants whose relationship satisfaction and relational resilience scores are below the mean are divided into the experimental, placebo, and control groups, eight participants in each group. While the professions of the participants in the experimental group were teacher (2 people), musician (1 person), manager (1 person), lawyer (1 person), and housewife (3 people), the professions of the placebo group participants were teacher (2 people), dietician (1 person), lecturer (1 person) and housewife (4 people), the occupations of the control group participants are teacher (1 person), physiotherapist (1 person), sales consultant (1 person), manager (1 person), and housewife (4 person). The age and marriage year information of the experimental, placebo and control group participants are given in Table 1.

The age of participants in the experimental group is 33–43 years ( $\bar{X}$ =37.50), the age of participants in the placebo group is 31–42 years ( $\bar{X}$ =36.37), and the age of participants

**Table 1** Experimental, Placebo and Control Group Participants Age and Marriage Period

Groups	Age		Marriage Period	
	Range	Mean	Rang	Mean
Experimental	33–43	37.50	5–18	11.87
Placebo	31–42	36.37	7–12	9.12
Control	32–43	37.25	7–16	11.37

**Table 2** Variance Analysis Results of the Experimental, Placebo, and Control Group Participants' Scores from Relationship Satisfaction Pre-Test Measurements

Source of Variance	<i>KT</i>	<i>Sd</i>	<i>KO</i>	<i>F</i>	<i>p</i>
Within groups	1.000	2	0.500	0.012	0.988
Between groups	871.50	21	41.50		
Total	872.50	23			

\* $p < .05$

**Table 3** Variance Analysis Results of the Experimental, Placebo, and Control Group Participants' Scores from Relational Resilience Pre-Test Measurements

Source of variance	<i>KT</i>	<i>Sd</i>	<i>KO</i>	<i>F</i>	<i>p</i>
Within groups	111.08	2	55.54	0.297	0.746
Between groups	3928.25	21	187.06		
Total	4039.33	23			

\* $p < .05$

in the control group is 32–43 years ( $\bar{X}=37.25$ ). The duration of participants' marriage was 5–18 years ( $\bar{X}=11.87$ ) in the experimental group, 7–12 years ( $\bar{X}=9.12$ ) in the placebo group, and 7–16 years ( $\bar{X}=11.37$ ) in the control group.

A One-Way Analysis of Variance (ANOVA) was used to test whether there was a difference between the mean scores of the participants in the experimental placebo and control

groups before the experimental procedure. The obtained results are given in Table 2.

According to this finding, it can be said that the pre-test scores of the participants in the experimental, placebo and control groups were similar in the Relationship Satisfaction subscale. A One-Way Analysis of Variance (ANOVA) was used to test whether there was a difference between the mean scores of the participants in the experimental placebo and control groups before the experimental procedure. The obtained results are given in Table 3.

According to this finding, it can be said that the pre-test scores of the participants in the experimental, placebo and control groups were similar in the Relational Resilience subscale.

### The Process of the Intervention Program Development

Prior to the elaboration of the program, a literature review on family resilience, relational resilience, choice theory, and reality therapy is conducted. In this context, theoretical backgrounds and approaches, proposed models, relational and experimental studies, group counseling, and group counseling implementations are reviewed. The researchers then sought expert opinions from counselors working in the field of family counseling and program development areas and began the process of developing and implementing a Choice Theory-based family resilience program. The program outline is summarized in the Table 4.

Taking into account the previous studies, the researchers created a program with appropriate characteristics and length to incorporate choice, responsibility, control, and the five basic needs of Choice Theory and to deliver the

**Table 4** Draft of family resilience program based on choice theory

The purpose of the program	The aim of the choice theory-based online family resilience program is to increase the family resilience levels of the participants.
The approach based on the preparation of the program	While creating the choice theory-based family resilience program, Glasser's Choice Theory perspective was taken as the basis. The concepts of choice theory, choice, responsibility, control and basic needs were utilized, and the group process was structured within the scope of the basic principles of group counseling.
Content of the program	This program has a psychoeducational nature. Information about the concepts of choice, responsibility, control, basic needs and family resilience, which are the concepts of group process choice theory, consists of sessions where awareness is provided about the processes that ensure family resilience. In group sessions, there are experiential activities that members can interact with.
Sample	Married women
Sample determination method	The study group of this program consists of married women with low levels of relationship satisfaction and relational resilience.
Number of Sessions/Frequency/Duration	8 sessions/One session per week/90 minutes
Platform	Sessions will be held via the Zoom program.
Evaluation	In the evaluation of this program, pre-test measures applied to the study group before starting the group sessions, post-test after the program is completed, and follow-up test measures 8 weeks after the completion of the program will be used. After each session, group members are required to fill out the session evaluation form.

**Table 5** Theoretical dimensions of the program

The purposes of the session	Family resilience dimension	Choice theory dimension
Identifying family beliefs	Perspective on negativity	Evaluation of the current situation
Strengthening communication between family members	Clear emotional communication	Expressing basic needs and needs in the family context
Strengthening ties between family members	Mutual support and commitment	The need for love and belonging
Sharing control and responsibility in the family	Collaboration, power sharing, focus on strengths	Locus of control Responsibility Power requirement
Strengthening the creative selves of family members	Creativity, thinking of different solutions, use of humor need for freedom	The need for freedom The need for entertainment
Strengthening the family support system	Social and economic resources	The need for survival
Reinterpreting the challenges	Seeing challenges as meaningful, understandable, and manageable	Courage to see challenges as manageable
Strengthening family spirituality	Learning from challenges, prepare for future challenges	Proactive Stance

**Table 6** The content of the choice theory-based family resilience program

Session 1: Group members and group leader getting to know each other, giving information about the group process, establishing group rules, determining individual goals, The content of this session was the creation of a marriage story story activity, which was an introduction to the program, and thinking about the difficulties in family life.
Session 2: Reflections on the concept of choice in this session, information about the five basic needs, it consists of the way the needs are expressed and the package arrived from the mail activity.
Session 3: In this session, what are the five basic needs of love and belonging, what are the choices made individually and as a family to meet this need, ways to meet the need for love and belonging, ended with offer activity and emotional bank account activity.
Session 4: The content of this session is the concept of control, internal and external locus of control, the relationship of control and responsibility, the sharing of responsibility within the family, the need for power, which is one of the five basic needs, strengths of family members, How these strengths play a role in tackling challenges consists of checklist, inner-external control jars and our positive traits activities.
Session 5: This session needs freedom and fun, what are the choices made individually and as a family to meet these needs, what needs to be done to meet the need for freedom and entertainment, noticing the relationship between external and internal locus of control behaviors and the need for freedom in the previous session, nested circles activity and consists of deserted island activities that enable them to realize their creative side in challenging situations.
Session 6: This session needs to survive, individual and family choices to meet this need, ways to meet the need for survival, information about the people and institutions to be helped in crisis situations they experience as a family, It has been tried to make them realize the social support resources with the activity of spiritual resources and nested circles that can support in difficult times.
Session 7: Making sense of difficulties, recognizing the changes in thinking, emotion, behavior and physiology caused by perceiving difficulties as surmountable, and understanding that difficulties have a unifying power in their own families and other families around them is the content of this session.
Session 8: How much of the individual goals of the group members were achieved, since it was the last session, evaluating the impact of the choice theory-based family resilience program on themselves and their families, the program was ended with the activity of setting new goals for the post-program and bombardment of love.

program in an online style. The choice theory and family resilience perspective of each session are given in Table 5.

In preparing the program content, the objectives of each session were determined based on the theoretical information and the goals of the program, the sessions were structured by determining the skills appropriate for the objectives, and the sessions were supported by activities applicable on an online basis. The content of the choice theory-based family resilience program is given in Table 6.

The program consisted of eight 90-minute sessions so that participants had ample time to express themselves. The prepared program was sent for review to two experts in the field of counseling who have conducted studies on family resilience and one expert in the field of program

development. Following the experts' opinions, the program was given its final form and the pilot test was given a start.

The researchers applied the Choice Theory-based family resilience program to the experimental group once a week for eight weeks through a Zoom application. A placebo and a control group were set to compare and control for the Hawthorne effect in this study. There was no intervention in the control group, however, the placebo group watched online movies through the Zoom application once a week. Participants in the placebo group watched a specific movie each week and discussed those movies during the sessions. When selecting the movies, the researchers made sure that they did not contain themes of family resilience or scenes about family or couple relationships. During the sessions, participants were asked how they would explain

their feeling about the movie in one sentence, which scenes most impressed them, what their feelings and thoughts were about those scenes, and these responses were discussed. The researcher led the placebo group sessions and the sessions lasted approximately 90 min.

After completing the experimental and placebo group interventions and conducting follow-up testing for the experimental, placebo, and control groups, the control group received a briefing on family communication. The content of the briefing included what family communication is, family communication during the pandemic, and ways to strengthen family communication. The researcher developed the one-day briefing and applied it through the Zoom application. The program took approximately 45 min to complete.

### Validity and Reliability Studies

When designing experimental studies, factors that might affect the study or threaten internal and external validity must be identified, and precautions must be taken against these factors (Campbell & Stanley, 1963). In this study, there was a placebo group to control for the Hawthorne effect. Although the placebo group does not exert any real influence, the rehabilitative implementation may help to show the effect of the experimental implementation.

To control for the John Henry effect, participants in this study did not know which group they belonged to: the experimental, placebo, or control group. The researchers told participants in the control group that the interventions had not yet begun and that they attended an information session on family communication after the experimental trial and follow-up test. The sessions of the experimental group and the placebo group are conducted by the same implementer to eliminate the possibility of influencing participants with different attitudes.

In developing the Choice Theory-based online family resilience program, researchers sent the intervention program to two experts in the field of counseling and one expert in the field of educational programs for review. Expert opinion is a type of evidence of the validity of the intervention. The expert opinion found that the family resilience program was created based on choice theory.

In developing the Choice Theory-based online family resilience program, the researchers submitted the intervention program to two experts in the field of counseling and one expert in the field of educational programs for review. Expert opinion is a form of evidence for the validity of the intervention. The expert opinion revealed that the family resilience building program was based on choice theory. In the intervention phase of the choice theory-based online family resilience strengthening program, it is important to

note that the implementers conduct the sessions according to the intervention programs, that is, they remain faithful to the plan to ensure the reliability of the effect. To determine the applicability of the program, the researchers conducted a pilot before the actual experimental intervention. The pilot test allowed the researchers to determine the specific characteristics of the intervention program and the differences between the intervention processes. After the pilot test, the program was redesigned and the experimental intervention process began. During the experimental intervention, an application reliability form was developed to determine if the program was working properly. The researchers conducted the experimental process through the Zoom application, and two experts observed the recorded three session.

### Measures

**Relational Resilience Scale:** The Relational Resilience Scale aims to measure how couples' relationships develop positively after experiencing difficulties, problems, or traumatic experiences (Aydoğan, 2014; Aydoğan & Özbay, 2015). The relational resilience scale is a Likert scale consisting of 27 items with gradations from 1 (never) to 7 (always). The scale has four sub-dimensions such as Actor (sample item: I give my spouse hope that everything will get better), Partner (sample item: My spouse makes me feel that he/she believes in me when it comes to overcoming difficulties), Mutual (sample item: We try to understand each other during difficult times), and Spirituality (sample item: We believe that even negative events are a blessing). Although there are sub-dimensions in the scale, an overall score was obtained in the evaluation. The minimum score one can achieve on the relational resilience scale is 27 and the maximum score is 189. High scores indicate a high level of relational resilience. The fit indices of the scale are good (Aydoğan & Özbay, 2015). The Cronbach Alpha value of the scale for all dimensions is 0.96. In this study, the researchers used the total score of the relational resilience scale and determined a reliability coefficient of 0.96 for Cronbach Alpha.

**Relational Stability Scale:** The Relational Stability Scale was developed by Rusbult et al. (1998) and adapted to Turkish by Büyüksahin et al. (2005). There were three sub-dimensions of the scale: Relationship Satisfaction, Relationship Investment, and Assessment of Quality of Options, each with 10 items. However, Büyüksahin and Taluy (2008) added another dimension of commitment containing 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

**Table 7** Normality Test Results of Experimental, Placebo and Control Groups on Relational Resilience Pre-test, Post-test and Follow-up Measurements

	Experimental Group			Placebo Group			Control Group		
	Pre Test	Post Test	Follow up	Pre Test	Post Test	Follow up	Pre Test	Post Test	Follow up
$N=8$									
Shapiro-Wilk	0.931	0.900	0.894	0.888	0.900	0.873	0.894	0.921	0.953
$p$	0.525	0.289	0.257	0.226	0.286	0.161	0.257	0.437	0.739
Skewness	-0.748	-0.712	-1.00	-0.736	-0.783	-0.879	-1.04	-0.761	-0.504

\* $p < .05$

from 1 (completely wrong) to 9 (completely right). The first five items aim to increase the measurement quality of the last five items. Rusbult et al. (1998) suggest to use all items but to conduct 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 0.90 (Bueyuekşahin 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 0.97.

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

## Data Analysis

This study examines the effectiveness of the Choice Theory-based online family resilience program. The researchers used a  $3 \times 3$  split-plot mixed design in the study. When analyzing data from studies with split-plot designs, analysis of variance is the most commonly used statistical model (Büyüköztürk, 2014). In this study, the researchers used the program IBM SPSS Statistics 25 for all data analysis.

Prior to the data analysis of this study, the researchers examined whether the scores of participants in the experimental, placebo, and control groups on the Relational Resilience Scale met the basic assumptions of parametric tests in order to decide what type of tests to use for data analysis. In order to use parametric tests, researchers must collect data from a normally distributed population; that is, participants' responses on the relational resilience scale from the experimental, placebo, and control groups must have a normal distribution. To test this assumption, the researchers obtained the results of the Shapiro-Wilk normality test and the results of the skewness of the pretest, posttest, and follow-up scores for the participants in the experimental, placebo, and control groups for the relational resilience scale. If the number of participants in the study group is less than 50, it is necessary to apply the Shapiro-Wilk test (Elliott and Woodward, 2007). The results can be found in Table 7.

**Table 8** Homogeneity of Variance Test Results of Experimental, Placebo and Control Groups on Relational Resilience Pre-test, Post-test and Follow-up Measurements

Variable	Measurements	$Sd1$	$Sd2$	$F$	$p$
Relational resilience	Pre Test	2	21	0.175	0.840
	Post Test	2	21	0.737	0.491
	Follow up	2	21	0.665	0.525

\* $p < .05$

The analysis of Table 7 shows that the measurement of the results of the pretest, posttest and follow-up test of the experimental, placebo and control groups does not have a significant deviation from the normal distribution according to the results of the Shapiro-Wilk normality test ( $p > .05$ ). In accordance with the results, the values of relational resilience of the experimental, placebo and control groups correspond to the normal distribution.

To test the equivalence of the participants of the experimental, placebo and control groups, that is, their level of representation in the population, the researchers analyzed the homogeneity of their variance. The results of the analyzes can be found in Table 8.

Table 8 shows that when tested for homogeneity of variances, there is no significant difference between the variances of the groups with respect to the pretest scores of the experimental, placebo, and control groups. [ $F(2-21)=0.175$ ;  $p=.840$ ;  $p > .05$ ]. There is also no significant difference between the variances of the experimental, placebo, and control groups on the posttest [ $F(2-21)=0.737$ ;  $p=.491$ ;  $p > .05$ ] and follow-up test [ $F(2-21)=0.665$ ;  $p=.525$ ;  $p > .05$ ].

## Results

The researchers determined the arithmetic mean and standard deviation in relation to the pre-test, post-test, and follow-up measurements for participants in the experimental, placebo, and control groups of the relational resilience test. The results can be found in Table 9.

Table 9 shows that for the relational resilience scale, participants in the experimental group achieved a pretest mean of ( $\bar{X}=138.37$ ), posttest mean of ( $\bar{X}=158.75$ ), and posttest mean of ( $\bar{X}=159.25$ ). Participants in the placebo

**Table 9** Arithmetic Mean and Standard Deviation Values of Experimental, Placebo and Control Groups on Relational Resilience Pre-test, Post-test and Follow-up Measurements

Measurement Groups	Pre Test		Post Test		Follow up	
	$\bar{X}$	$S_s$	$\bar{X}$	$S_s$	$\bar{X}$	$S_s$
Experimental	138.37	14.13	158.75	7.79	159.25	7.99
Placebo	133.25	14.29	133.12	13.97	133.62	13.66
Control	136.87	12.54	135.87	13.06	135.50	12.43

**Table 10** Two-Factor Variance Analysis Results of Experimental, Placebo and Control Groups on Relational Resilience Pre-test, Post-test and Follow-up Scores

Source of variance	$KT$	$Sd$	$KO$	$F$	$p$	$\eta^2$
Intergroup	13989.98	23				
Group (E/P/C)	4944.19	2	2472.097	5.739	0.001*	0.353
Error	9045.792	21	430.752			
Intergroup	2985.99	48				
Measurement (Pre/Post/Fol.)	680.861	2	340.431	20.221	0.000*	0.491
GroupXMeasurement	1598.056	4	399.514	23.731	0.000*	0.693
Error	707.083	42	16.835			
Total	16975.97	71				

\* $p < .05$

group achieved a pretest mean of ( $\bar{X}=133.25$ ), posttest mean of ( $\bar{X}=136.87$ ), and posttest mean of ( $\bar{X}=133.62$ ). Participants in the control group achieved a pretest mean of ( $\bar{X}=133.25$ ), posttest mean of ( $\bar{X}=135.87$ ), and posttest mean of ( $\bar{X}=135.50$ ). These results show that participants in the experimental group have higher mean scores for the posttest and follow-up test compared to participants in the pretest. To determine if there was a significant difference in the mean scores of the pretest, posttest, and follow-up tests of the Relational Resilience Scale between participants in the experimental, placebo, and control groups, a two-factor analysis of variance for mixed measures was conducted. The results of the analyzes can be found in Table 10.

The researchers found that in the analysis of variance of the means of the participants in the experimental, placebo, and control groups for the pretest, posttest, and posttest measures of relational resilience, the effect of the test group was significant and the effect size of the eta squared was large [ $F(2.21)=5.739$ ;  $p < .01$   $\eta^2=0.353$ ]. This result shows that without distinguishing the pre-test, post-test, and post-test measurements between the experimental, placebo, and control groups, there is a significant difference between the mean scores of the relational resilience scale. The results also show that there is a significant difference between pre-test, post-test, and follow-up tests conducted at different times and that the eta squared value has a large effect size [ $F(2.42)=20.221$ ;  $p < .001$   $\eta^2=0.491$ ]. Moreover, the joint effect of group and measurement is at a significant level [ $F(4.42)=23.731$ ;  $p < .001$ ]. At the same time, the eta-squared value has a large effect size ( $\eta^2=0.693$ ). When the change in the mean scores of the Relational Resilience Scale for the experimental group is examined, the post-test score

is 14.49% higher than the pre-test score. The result of the follow-up test is 15.21%, which is higher than the pre-test result

To determine the differences between the groups, the Bonferonni test was performed for the mean scores of the pretest, posttest and follow-up test of the Relational Resilience Scale. Bonferonni test results are given in Table 11.

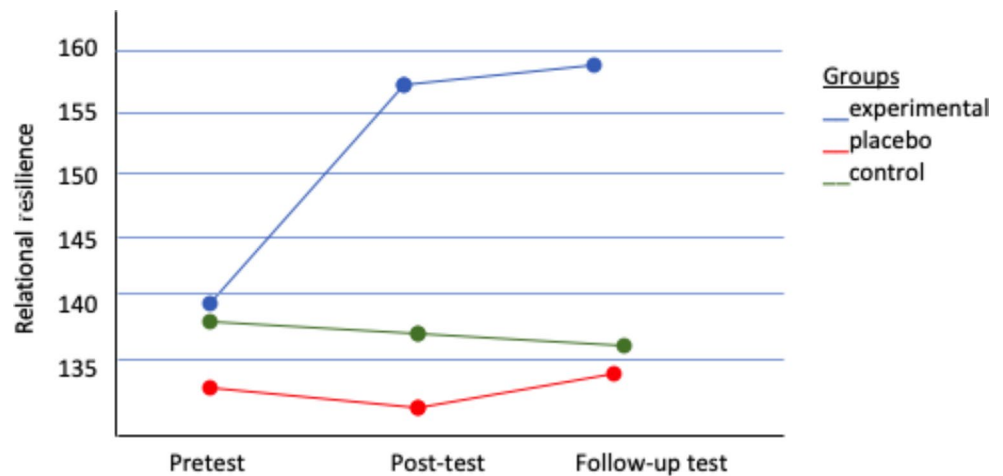
For the experimental group, there is a significant difference between the pretest and posttest and pretest and posttest measures of relational resilience. There is also a significant difference between the results of the post-test of relational resilience of the experimental group, the placebo group, and the control group, and between the results of the follow-up test of relational resilience of the experimental group, the placebo group, and the control group.

The diagram showing the mean scores of the pretest, posttest, and follow-up tests of the experimental, placebo, and control groups for relational resilience is shown in Fig. 1.

The interaction plot in Fig. 1 shows the mean values of the relational resilience measurements obtained from the pre-test, post-test, and follow-up test of the experimental, placebo, and control groups. This graph illustrates the mean values of the results obtained using analyzes regardless of whether there is a significant difference in the pre-test, post-test, and post-follow-up test measures of relational resilience of participants from the experimental, placebo, and control groups. Graph 1 shows that in the experimental group, participants' post-test mean scores for relational resilience increased compared to pre-test mean scores, while in the placebo and control groups, participants' post-test mean scores decreased compared to pre-test mean scores.

**Table 11** Bonferroni Test Results Regarding Relational Resilience Pre-Test, Post-Test and Follow-Up Test Measuring Mean Scores of Experimental, Placebo, and Control Groups

		Experimental Group			Placebo Group			Control Group		
		Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
Experimental	Pretest		-20.37*	-20.87*	5.12			1.50		
	Posttest			-0.500		25.62*			22.87*	
	Follow-up						25.62*			23.75*
Placebo	Pretest					0.125	-0.375			
	Posttest						-0.500			
	Follow-up									
Control	Pretest							1.00		1.37
	Posttest									0.375
	Follow-up									

**Fig. 1** Mean values of relational resilience obtained from the pretest, posttest, and follow-up test of the experimental, placebo, and control groups

The researchers conducted the follow-up test 8 weeks after the completion of the intervention program, and the increase in mean relational resilience scores continued in the experimental group. In the placebo group, the mean of the follow-up test increased only slightly, while it decreased only slightly in the control group.

## Discussion

Consistent with the results of implementing the Choice Theory-based online family resilience program, the program is effective in increasing participants' family resilience and this program has a lasting impact. The literature review on intervention programs shows that Kissane et al.'s (2006) family-centered grief therapy program facilitates coping with difficulties and similarly increases participants' family resilience. Riley et al. (2008) developed the Keeping Families Strong (KFC) program as a preventive intervention to meet the needs of families lacking communication, harmony, consistent parenting, coping skills and social support, and intimacy, or families experiencing miscommunication and problematic family functioning affected by maternal depression. Programs such as Tea and Families Education

and Support (TAFES), developed by Weine et al. (2008), and Coffee and Families Education and Support (CAFES) also increase family resilience. Landau and Saul (2004) implemented community resilience programs and helped increase family resilience through.

The Families Over Coming Under Stress program (FOCUS) was developed at the College of California, Los Angeles (UCLA) and Harvard Medical School and is a strengths-based, family-centered resilience education program that aims to reduce the likelihood of problematic outcomes occurring in families and family members and to support the healing process after stress, trauma, or loss based on improvements in trauma therapy, prevention studies, and developmental psychopathology (Saltzman et al., 2011). The FOCUS program is effective in strengthening family resilience (Lester et al., 2013). Dodge et al. (2018) found that family resilience increased in 14 fathers who had young children and participated in a military family strengthening program. the Family Resilience-Strengthening Program (FRSP), a psychoeducational intervention aimed at improving family resilience processes for families experiencing various difficulties, focuses on increasing family resilience by improving family ties, family communication, and social and economic resources (Isaacs et al., 2018).

Through the Choice Theory-based family resilience program, families become aware of their basic needs and learn how to meet those needs together. Meeting universal and basic human needs in a family setting is important for healthy family functioning and a key factor in overcoming crisis. In developing intervention programs to strengthen family resilience, the needs for survival, affection, belonging, strength, freedom, and joy play an important role. Glasser (1998) notes that some problems arise from inadequate satisfaction of basic needs. Similarly, Ryan and Deci (2002) and Williams et al. (2000) express that individuals cannot fully function when their need satisfaction is obscured. The degree of need satisfaction is directly related to the individual's well-being (Buunk & Nauta, 2000; Ryan & Deci, 2000; Deci et al., 2001). This research study will develop the intervention program and examine its effectiveness. The basic framework of the program includes the needs of survival, affection, belonging, strength, freedom, and pleasure, as well as the concepts of choice, control, and responsibility of choice theory. Thus, considering the interviews with the participants, the increase in family resilience of the participants can be explained as a function of the basic philosophy of Choice Theory.

It gains importance in meeting the survival needs of families in crisis. According to Luthar and Brown (2007), resilience is exhibited not despite difficult conditions, but because of difficult conditions. In addition, Walsh (2002) notes that negative events allow the family to overcome crises and improve. Even people who experience severe trauma or very problematic relationships have the potential to recover and grow throughout life and generations (Walsh, 2016b). Therefore, the experience of resilience in the family is a process that meets the needs of survival. Walsh (2003) describes the concept of resilience as the ability to survive and overcome crises and problems.

Families provide belonging, a sense of attachment, and emotional security. A secure attachment serves to organize relationships (Masten & Monn, 2015). Place et al. (2002) found that a warm, harmonious, and positive family interaction pattern is one of the most important protective factors for families suffering from parental depression. Satisfying this need is necessary for the individual's growth, integration, development, mental health, and well-being (Ryan & Deci, 2000). When individuals perceive themselves as valuable, their esteem for and commitment to a group or community also increases (McCubbin & McCubbin, 1989). Among all community resources, social support is the most important tampon to prevent family breakup due to stress (McCubbin & McCubbin, 1989; McCubbin et al., 1997). Daneshpour (2017) asserts that the lack of necessary community resources to support basic family functioning results in weakening family resilience. Families, peer groups,

communities, schools, workplaces, and other social systems are entities that support family resilience (Herdiana, Suryanto & Handoyo, 2018). As communicative beings, we owe our growth and improvement throughout life to our connections with others (Walsh, 2016b). According to Deci et al. (1996), a social support system that helps individuals meet their needs also ideally increases the likelihood that they will reach their potential. A supportive social environment is very important for need satisfaction. Therefore, social support could fulfill the need for strength.

According to Walsh (1996), positive relationships also have a positive impact on family resilience. Family resilience is a combination of individual characteristics, relationship patterns, and family-member interaction. In this way, strong and positive relationships within a family make the family strong (Figley & Burnette, 2017). Experiencing resilience in the family could help satisfy the need for power in the family. According to Hooper (2009), personal satisfaction after difficulties, success in work, family, or social life results from resilience. A sense of responsibility and traits related to success are among the specific resilience traits related to family stress (Elder, 1974). Individuals who experience a sense of competence believe they can successfully achieve their goals (Williams, Gagne, Ryan and Deci, 2002). Families need to believe in their own strength and abilities to be resilient (Srivastava, 2011).

According to Madden-Derdich and Herzog (2005), families who resist change are at higher risk for stress, various dysfunctions, and crises. Those who want to change must make choices. Flexibility is one of the key processes of family resilience according to Walsh (2016b). Flexibility means making adaptive changes to overcome difficulties (Walsh, 2006). Making changes and choices is important to fulfill the need for freedom. In order to effectively adapt stressors, individuals must believe they can influence and actively respond to negative events (Juby & Rycraft, 2004).

Walsh (2006) notes that routines and rituals occupy an important place in the family resilience process. McCubbin et al. (1997) emphasize that family celebrations, family time and routines, and family customs are among the protective factors of the family. More time spent together and participation in joint activities fulfill the need for belonging and enjoyment (Glasser, 1998). In the family strengths model, Stinnett and Defrain (1985) state that one of the strongest aspects of family is liking time spent together. McCubbin and McCubbin (1988) point out that celebrating important days, family members' leisure activities, family customs and habits are protective factors for family resilience. Patterson (2002b) states that daily routines and rituals provide a sense of being a family and contribute to the family resilience process. Spending pleasurable time together could satisfy family members' need for enjoyment.

## Future Directions and Limitations of the Study

The Choice Theory-based Family Resilience Intervention Program appears to be effective in meeting the needs for survival, affection, belonging, strength, freedom, and joy. This program helps promote resilience by meeting these needs. Counselors working in the field of family counseling could apply this structured program to married women who suffer from the effects of some difficulties or crises and cannot meet their basic needs in the family environment. Researchers working in the field of family counseling could expand this program to include other family members. Since the researchers developed the program online, participants can easily participate via the Internet, which increases the accessibility of the program. In addition, it is appropriate for people who are afraid to participate in face-to-face programs after the Covid 19 pandemic.

The researchers conducted the Choice Theory-based online family resilience intervention program with female participants. Therefore, this study is limited to women. This study was the first time the researchers examined the effect of this intervention program on increasing family resilience. The effectiveness of the study's method in increasing family resilience could be tested with different experimental studies and the results could support the consistency of the findings. It is possible to compare the effect of Choice Theory in increasing family resilience with different theoretical approaches (existentialist, Adlerian, etc.). The Choice Theory-based online intervention program for enhancing family resilience could be extended to include other family members such as spouses, children, or both. After implementation with different samples (married men or couples), its effectiveness can be retested. This intervention program was developed on an online basis. Revisions would be needed for in-person implementation. In this research study, the pilot project before the experimental phase showed that some sessions took longer than planned. Before the experimental phase, the sessions and session times were reorganized. Nevertheless, some sessions lasted longer than the planned time, despite this organization. Thus, by increasing the number of sessions, each basic need could be addressed in more sessions.

The datasets generated and/or analyzed during the current study are available upon reasonable request to the corresponding author.

## Declarations

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

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

**Ethical Approval Statement** The questionnaire and methodology for this study was approved by the Human Research Ethics committee of the University of Hasan Kalyoncu (Ethics approval number: 5096-050.01.01-E-97105791).

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