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The effect of an acceptance and commitment therapy-based self-compassion program on self-compassion and psychological flexibility in mothers

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The modern parenting process has become a complex, yet needed, structure that challenges caregivers' ability to manage their own emotional burdens and respond sensitively to their children's developmental needs. In this context, this study aims to examine the effect of a self-compassion psychoeducation program based on Acceptance and Commitment Therapy (ACT) on mothers of non-working children aged 4–6, focusing on their levels of self-compassion and psychological flexibility. Conducted using a quasi-experimental design, the study involved 30 volunteer mothers, divided into an experimental and a control group. The experimental group received an eight-session structured psychoeducation program, while the control group received no intervention. Data collection utilized the Self-Compassion Scale and the Psychological Flexibility Scale, with measurements taken before the program, midway through the process, and at the end. Quantitative data were analyzed using MANOVA and two-factor ANOVA. The findings revealed a significant and sustained increase in self-compassion levels among participants in the experimental group, as well as positive changes in psychological flexibility scores following the intervention process. Qualitative data supported the effectiveness of the psychoeducation program, not only in enhancing emotional awareness but also in influencing attitude and behavior. Participants reported positive experiences in applying self-compassion skills to daily life and developed more accepting and sensitive approaches toward themselves and their surroundings.

Keywords Self-compassion, Psychological flexibility, Acceptance and commitment therapy, Psychoeducation program

Parenting represents an important transitional period in an individual's life, while also being a process that involves high levels of psychological and emotional demands. Parents of children aged 0–6, in particular, have to cope with their children's increasing demands for autonomy, emotional regulation deficits, and behavioral boundary violations[1,2]. This process can trigger stress, guilt, feelings of inadequacy, and self-critical internal dialogue in parents[3,4]. The relationship parents establish with their internal experiences directly affects not only their own psychological well-being but also the attachment relationship they establish with their child[5,6]. Therefore, assessing individual psychological resources in the context of parenting is important for both protective and preventive mental health practices[7]. In recent years, self-compassion and psychological flexibility have been identified as two crucial personal resources for parents in managing stress[8,9]. Self-compassion refers to developing a kind, understanding, and accepting attitude toward oneself in the face of challenging life experiences[10], while psychological flexibility is a cognitive-behavioral emotion that enables individuals to openly accept unwanted thoughts, feelings, and bodily sensations and act in accordance with their values. The intersection of these two concepts lies in the development of a non-judgmental, mindful approach to accepting one's internal experiences[11]. The literature indicates that parents with high levels of self-compassion exhibit fewer depressive symptoms, perceive themselves as more competent, and are less likely to engage in punitive parenting[12]. In addition, Acceptance and Commitment Therapy (ACT), one of the third-wave therapy approaches that has become widespread in recent years, helps individuals restructure their inner experiences

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by increasing psychological flexibility[8]. ACT supports individuals in staying present, recognizing their values, separating from their thoughts, and committing to action through a model consisting of six core processes[13,14]. ACT-based interventions are effective in regulating parents' responses to their children's behavioral problems in numerous studies[15,16]. This approach, which supports psychological flexibility, reduces parents' emotional exhaustion, increases self-awareness, and enables them to develop more adaptive parenting attitudes[11].

Acceptance and Commitment Therapy-based psychoeducation programs have been shown to have a significant impact on enhancing individual awareness and internal resources in various groups, making significant contributions to both protecting parental mental health and supporting child development[17]. Therefore, the development of ACT-based self-compassion psychoeducational programs and the testing of their effectiveness at the experimental level represent an important need in the field of mental health[18]. This study focuses on non-working mothers who spend most of their time with their children during the child-rearing process and are therefore more susceptible to emotional strain. Non-working mothers are considered a high-risk group that could benefit more from psychoeducation programs due to their limited access to social support resources. In this context, the study aims to fill this gap by examining the effect of an ACT-based self-compassion psychoeducational program developed for non-working mothers with children aged 4–6 on participants' psychological flexibility and self-compassion levels.

Theoretical background

In recent years, academic interest in the psychological variables that shape parenting behaviors has increased. In this context, the concepts of self-compassion and psychological flexibility have gained prominence. Self-compassion refers to an individual's ability to adopt a compassionate, understanding, and accepting attitude toward themselves in the face of failure, inadequacy, or painful life events[9,19]. This structure, consisting of three core components—self-kindness, common humanity, and mindfulness—supports the individual in moving away from harsh internal criticism of themselves, viewing their mistakes as part of the universal human experience, and recognizing and regulating their emotional responses[20–22]. In this context, self-kindness is not only a protective factor for the individual's mental health. Still, it is also considered an important resource that enhances the individual's self-efficacy and transforms the parent-child relationship in stressful life roles such as parenting[12,23,24]. Research shows that parents with high levels of self-compassion exhibit more patient, empathetic, and sensitive behaviors toward their children; they also experience lower levels of parental burnout, anger, and guilt[23,25–29]. All these findings indicate that self-compassion plays a critical role in alleviating parents' emotional burdens and supporting functional parenting behaviors; in this process, the concept of psychological flexibility, which involves the individual's capacity to accept their internal experiences, develop emotional awareness, and act in a values-based manner, also emerges as a complementary element.

Psychological flexibility is defined as an individual's capacity to recognize and accept their internal experiences and to act in ways that are valuable to them despite these experiences. This concept has been particularly structured within Acceptance and Commitment Therapy[8,30]. The ACT approach aims to enhance an individual's psychological flexibility, enabling them to develop functional coping strategies in the face of challenging internal states such as stress, anxiety, and burnout. This approach is structured around six core processes: cognitive defusion, acceptance, mindfulness, contextual self, values, and committed action[31]. When evaluated specifically in the context of parenting, individuals with high levels of psychological flexibility have been shown to respond more functionally to stressful situations, have more developed emotional regulation skills, and contribute positively to children's behavioral and emotional development[15,32]. Psychological flexibility reduces negative parenting behaviors such as yelling, physical punishment, and punitive attitudes, while supporting empathetic relationship-building, staying in the present moment, and value-based parenting skills[33,34]. With these characteristics, psychological flexibility emerges as a critical variable that not only enhances an individual's internal resilience but also improves the quality of parenting provided to children.

Acceptance and Commitment Therapy is one of the third-wave cognitive behavioral therapy approaches that directly intersects with self-compassion, aiming to help individuals develop a more flexible and accepting approach to their internal experiences[30]. ACT's values-based structure enables parents to focus on long-term goals in their relationships with their children. At the same time, self-compassion fosters a compassionate and supportive internal foundation for navigating the emotional challenges that arise during this process[21]. ACT components such as "non-identification with the self," "acceptance," "cognitive defusion," and "focus on the present moment" align with the structural elements of self-compassion and enable the individual to recognize their judgmental thoughts and accept them without attempting to change them[35,36]. More specifically, ACT encourages individuals to observe their thoughts and emotions from a decentered "self-as-context" perspective, which parallels the mindfulness and self-kindness dimensions of self-compassion. Through cognitive defusion, self-critical thoughts are experienced as temporary mental events rather than objective truths, reducing over-identification with negative self-judgments. Likewise, ACT's acceptance and present-moment awareness processes cultivate emotional openness and tolerance, fostering a compassionate attitude toward personal suffering. These overlapping mechanisms illustrate how ACT processes naturally facilitate the development and strengthening of self-compassion. ACT-based interventions not only support individual psychological well-being but also reduce parenting stress, depression, and anxiety by increasing self-compassion; they also enhance parental self-efficacy and empathetic communication[17,32,37,38]. At this point, third-wave therapies—particularly ACT, Compassion-Focused Therapy (CFT), and Mindfulness-Based Cognitive Therapy (MBCT)—go beyond traditional behavior-focused interventions by aiming to transform the individual's relationship with their internal experiences and target more lasting change[8,39–41].

As a result, this holistic theoretical approach, which considers self-compassion and psychological flexibility together, is important not only for supporting individual mental health but also for its potential to transform parenting behaviors that directly affect children's development[15,17]. The primary reason for focusing specifically

on non-working mothers in this study is that this group may be more exposed to parenting stress due to their more intensive involvement in child care responsibilities. Indeed, social isolation, a lack of emotional support, and increased caregiving burdens during the day can have suppressive effects on the levels of self-compassion and psychological flexibility among non-working mothers[23]. Additionally, these mothers have more limited access to external support sources (e.g., work environment, social interaction), making the strengthening of internal coping resources even more critical. Although ACT- and self–compassion–based interventions have been implemented separately in parental populations, the literature reveals a notable gap regarding structured programs that intentionally integrate both approaches within a unified framework for mothers of young children. This study, therefore, addresses an important need by offering one of the first structured ACT/self-compassion combined psychoeducation models specifically tailored for non-working mothers. In the long term, the broader goal of this line of research is to develop an intervention that is scalable, feasible for community implementation, and capable of being integrated into existing parent-support infrastructures such as family counseling centers, public health programs, and early childhood education settings. Strengthening parental psychological flexibility and self-compassion is also expected to support child socio-emotional development indirectly, positioning this work as a foundation for future studies examining child-level outcomes. In this context, the hypotheses of the study are as follows:

- H1. The self-compassion levels of mothers in the experimental group who participated in the ACT-based self-compassion psychoeducation program will increase significantly after completing the program, compared to their levels before the program.
- H2. The psychological flexibility levels of mothers in the experimental group who participated in the ACT-based self-compassion psychoeducation program will increase significantly after completing the program, compared to their levels before the program.
- H3. After the program, the self-compassion levels of mothers in the experimental group are significantly higher than those of mothers in the control group.
- H4. After the program, the psychological flexibility levels of mothers in the experimental group are significantly higher than those of mothers in the control group.

Method

Research design

In this study, a pretest–intermediate test–posttest–follow-up test quasi-experimental design was used to examine the effect of a self-compassion psychoeducation program based on Acceptance and Commitment Therapy (ACT) developed for non-working mothers with children aged 4–6 years on participants' levels of self-compassion and psychological flexibility[42,43]. The procedural steps of the application process, as conducted in the pre-test, middle test, post-test, and follow-up test, are presented in detail in Table 1 for the control group quasi-experimental design used in this study.

Ethical considerations

The study was conducted in accordance with established ethical and scientific standards, and ethical approval was obtained from the Istanbul Sabahattin Zaim University Ethics Committee (Decision No. 2024/08, dated October 31, 2024). All procedures adhered to the principles of the Declaration of Helsinki, and informed consent was obtained from all participants prior to data collection. As all participants were adults, parental or guardian consent was not required. Official permissions were additionally secured from relevant district governorships and school administrations to implement the study within institutional settings. The research does not meet the criteria for clinical trial preregistration because it does not involve medical, pharmacological, or therapeutic clinical procedures but rather an educational, psychoeducational group intervention conducted within an academic research framework; therefore, registration in platforms such as ClinicalTrials.gov or ISRCTN was not mandatory. Nevertheless, in line with international transparency and reporting standards, a CONSORT-style flow diagram was incorporated to document the participant recruitment, eligibility assessment, allocation, follow-up, and analysis processes. This detailed documentation ensures methodological clarity and enhances the transparency of the study's implementation and reporting.

Study group

The study group for this research consists of individuals selected through criterion sampling, in line with the study's purpose. Criterion sampling involves systematically examining all individuals who meet predetermined

Group	Pre-test	Process	Middle-test	Process	Post-test	Follow up-test
Experimental	Self-Compassion Scale Psychological Flexibility Scale	Acceptance and Commitment Therapy-Based Self-Compassion Psychoeducation Program	Self-Compassion Scale Psychological Flexibility Scale	Acceptance and Commitment Therapy-Based Self-Compassion Psychoeducation Program	Self-Compassion Scale Psychological Flexibility Scale	Self-Compassion Scale Psychological Flexibility Scale
Control	Self-Compassion Scale Psychological Flexibility Scale	–	Self-Compassion Scale Psychological Flexibility Scale		Self-Compassion Scale Psychological Flexibility Scale	Self-Compassion Scale Psychological Flexibility Scale

Table 1. Research design procedures.

criteria relevant to the research objective[44,45]. These criteria may be defined originally by the researcher or based on previously accepted standards. Selecting participants who best fit the research purpose enhances both the validity of the data and the depth of the study[43,46]. In this context, the sample consists of mothers who (a) have children aged 4–6 years, (b) are not employed, and (c) volunteered to participate. Demographic information regarding the participants is presented in Table 2 below.

As shown in Table 2, the average age of participants in the experimental group is 33.6 years. Of these mothers, 26.7% have one child, 46.7% have two children, and 26.7% have three children. Their education levels are as follows: 20% primary/middle school, 33.3% high school, 20% associate degree, and 26.7% bachelor's degree. Regarding the ages of their children, 33.3% are 4 years old, 40% are 5 years old, and 26.7% are 6 years old. The average age of the control group is 34.8 years. Of these mothers, 20% have one child, 46.7% have two children, and 33.3% have three children. Their education levels are distributed as follows: 20% primary/middle school, 26.7% high school, 13.3% associate degree, and 40% bachelor's degree. The age distribution of their children shows that 33.3% are 4 years old, 13.3% are 5 years old, and 53.3% are 6 years old. The recruitment, eligibility screening, group allocation, and analysis flow of participants is presented in Fig. 1 below.

Figure 1 illustrates the recruitment, eligibility assessment, allocation, and analysis process followed in the study. A total of 60 mothers were evaluated for eligibility, 30 of whom were excluded because they did not meet the predetermined inclusion criteria. The remaining 30 participants were assigned equally to the experimental and control groups ($n = 15$ per group), and no participant was lost to follow-up or withdrew from the study. All participants completed the intervention or control procedures as planned and were included in the final analyses. This flow diagram ensures transparency regarding participant selection and adherence to CONSORT reporting principles.

Participants who met the inclusion criteria were allocated equally to the experimental and control groups. Due to institutional and practical constraints, random assignment was not feasible; therefore, allocation was based on participant availability and compatibility with session scheduling. This non-random allocation procedure may introduce a risk of selection bias, which has been explicitly acknowledged in the manuscript. However, the demographic equivalence of the groups and the absence of pre-test differences help reduce this risk.

Data collection tools

Self-Compassion Scale. The Self-Compassion Scale, developed by Neff[19], consists of a total of 26 items and six subscales. Participants are asked to indicate how often they behave in the manner described in the statements. This assessment is conducted using a 5-point Likert-type scale ranging from "Almost never" (1) to "Almost always" (5). The adaptation of the scale into Turkish and the examination of its psychometric properties were carried out by Deniz et al.[47]. In the Turkish adaptation study, unlike the original scale, it was observed that the scale had a unidimensional structure as a result of construct validity, and two items with a total item correlation value below 0.30 were removed, resulting in a total of 24 items. The results of the analyses showed that the internal consistency coefficient of the scale was 0.89. The test-retest reliability was 0.83. Additionally, within the scope of criterion-related validity studies, significant correlations were obtained between self-compassion and self-esteem (0.62), life satisfaction (0.45), positive emotions (0.41), and negative emotions (−0.48).

Psychological Flexibility Scale. The Psychological Flexibility Scale was developed by Francis et al.[48] and adapted into Turkish by Karakuş and Akbay[49] with the participation of 310 adults. The scale consists of a total of 28 items and five subscales. These subscales are structured as follows: Values and Values-Based Behavior (10 items), Being in the Moment (7 items), Acceptance (5 items), Contextual Self (3 items), and Dissociation (3 items). As a result of confirmatory factor analysis, it was determined that the model fit well; the KMO value was 0.789, the chi-square (χ^2) value was 3096.080, and the result was statistically significant ($p < .001$). The factor loadings of the items in the scale ranged from 0.47 to 0.81, and the total explained variance was found to be 60%. In the reliability analyses, the Cronbach Alpha internal consistency coefficient was calculated as 0.79. The total

Variable	Experimental group ($n = 15$)	Control group ($n = 15$)	Total ($n = 30$)
Age of mothers (years)	$M = 33.6$	$M = 34.8$	$M = 34.2$
Number of children			
1 child	26.7%	20.0%	23.3%
2 children	46.7%	46.7%	46.7%
3 children	26.7%	33.3%	30.0%
Educational level			
Primary/secondary school	20.0%	20.0%	20.0%
High school	33.3%	26.7%	30.0%
Associate degree	20.0%	13.3%	16.7%
Bachelor's degree	26.7%	40.0%	33.3%
Child age distribution			
4 years old	33.3%	33.3%	33.3%
5 years old	40.0%	13.3%	26.7%
6 years old	26.7%	53.3%	40.0%

Table 2. Demographic characteristics of the participants (experimental vs. control groups).

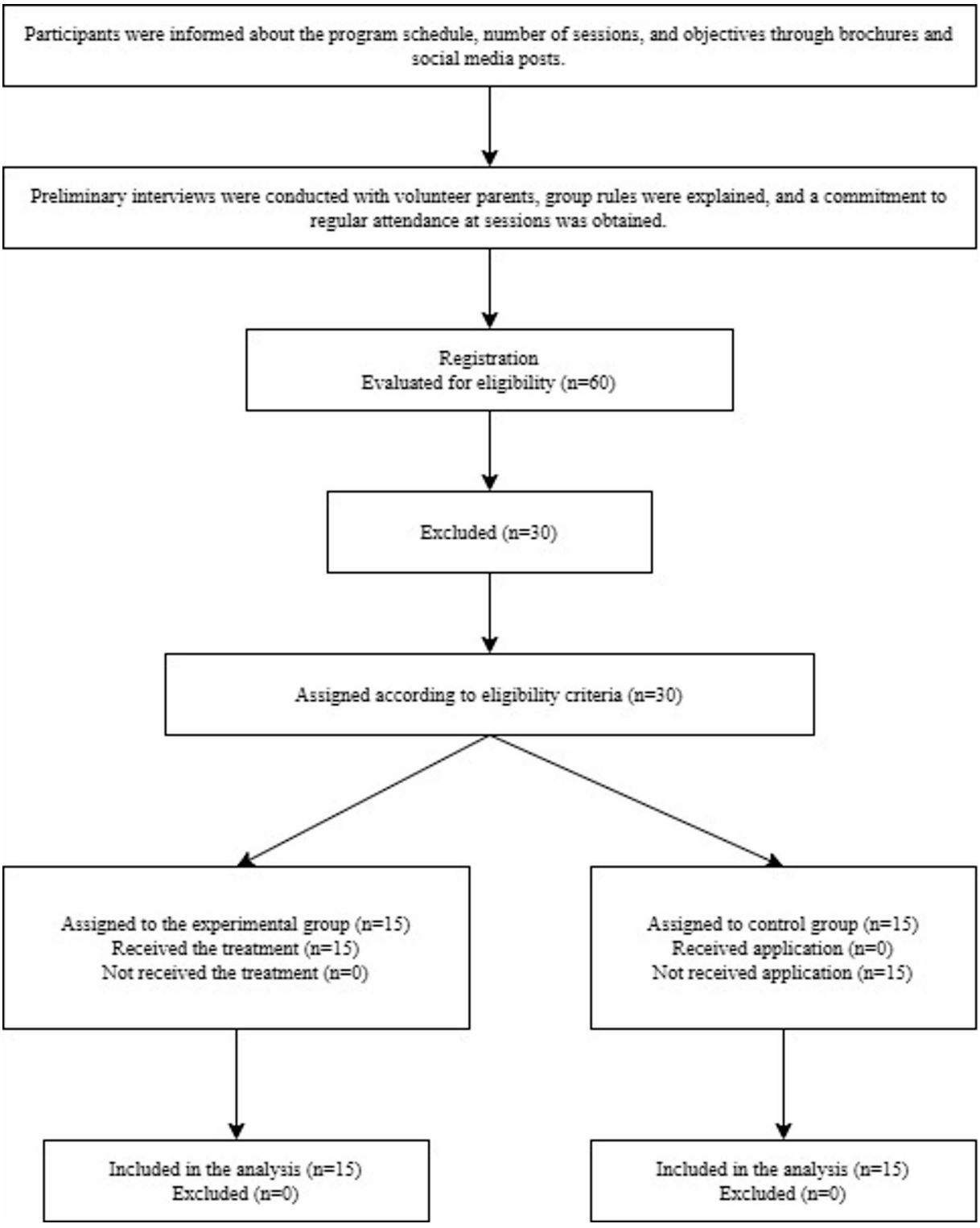

Fig. 1. Flow of participant eligibility screening, allocation, intervention delivery, and analysis.

score that can be obtained from the scale ranges from 28 to 196, and some items are reverse-coded (2, 3, 5, 6, 8, 18, 20, 22, 23, 24, and 25). High scores obtained from the subscales indicate that the individual has a high level of psychological flexibility.

Description of the ACT-based psychoeducation program

A psychological counselor with training in Acceptance and Commitment Therapy and experience in group-based interventions with parents delivered the ACT-based self-compassion psychoeducation program. The

intervention consisted of eight structured 90-minute group sessions based on ACT principles (mindfulness, acceptance, defusion, values, and committed action) integrated with self-compassion practices. Fidelity to the intervention protocol was ensured by following a standardized session guide; each session was conducted in the same order, with identical activities applied across groups. A fidelity checklist was completed after each session, and the practitioner received periodic supervision to maintain consistency in delivery.

Each session followed a structured sequence consisting of (a) brief check-in, (b) psychoeducation, (c) experiential exercises, (d) group reflection, and (e) home practice assignments. Session 1 introduced the components of self-compassion and established group norms. Session 2 focused on mindfulness and present-moment awareness through grounding and sensory-based exercises. Session 3 explored values clarification, and Session 4 emphasized committed action toward these values. Session 5 targeted cognitive defusion and reducing the impact of self-critical thoughts. Session 6 addressed acceptance of difficult emotions. Session 7 developed awareness of the "contextual self," and Session 8 integrated the skills gained, supporting transfer to daily parenting experiences. A summary of session objectives, content, and techniques is presented in Table 3.

Data analysis

In line with the study's main objective, the Multivariate Analysis of Variance (MANOVA) method was employed to determine whether there was a significant difference in levels of self-compassion and psychological flexibility among mothers who participated in an Acceptance and Commitment Therapy-based self-compassion psychoeducation program. MANOVA is a multivariate analysis technique that tests whether there is a statistically significant difference in the group means of multiple dependent variables[42]. Before this analysis, the basic assumptions of MANOVA were checked to ensure they were met. The first assumption is that the number of participants in each group should be equal or similar[50]. The presence of 15 participants in each of the experimental and control groups in this study indicates that this assumption is met. The second assumption states that the number of participants in each group must be greater than the number of dependent variables (Coakes et al. 2009). Since this study had two dependent variables (self-compassion and psychological flexibility), the presence of 15 participants in each group indicates that this condition was also met. The third fundamental assumption is that the data exhibit univariate and multivariate normality. Univariate normality refers to the distribution of each variable being normal, whereas multivariate normality requires that combinations of variables exhibit a normal distribution together[42]. In this context, since the sample size was less than 50, the normality of the individual distributions of the variables was assessed using the Shapiro-Wilk test, and the results are presented in Table 4.

According to the Shapiro-Wilk normality test results presented in Table 4, p-values were found to be greater than 0.05 in all pre-test, mid-test, post-test, and follow-up test data for the psychological flexibility and self-compassion variables. This indicates that the scores obtained in the experimental and control groups for both variables are normally distributed. The assumption of multivariate normality is a fundamental prerequisite, especially in multivariate analyses such as MANOVA, and Mahalanobis distances are often recommended

Number of sessions	Time	Session themes	Objectives	Application steps	Techniques
1 st Session	90 min	Introduction to self-compassion	Introducing the concepts of self-compassion and ACT by creating a safe group environment, raising awareness of emotions	Introduction games, establishing group rules, psychoeducation on the components of self-compassion, and an emotion mapping exercise	Structured group work, creative expression, use of metaphors, and self-compassionate inner dialogue
2 st Session	90 min	Contact with An	To develop participants' ability to stay in the moment and increase their level of awareness, enabling them to turn to their inner experiences with a self-compassionate attitude	Engaging in silent mindfulness walks, playing mindfulness games with Jenga, practicing raisin exercises, and engaging in mindfulness breathing	Mindfulness-based practices, sensory-focused exercises, and compassionate inner guidance
3 st Session	90 min	Values	Enabling participants to recognize the fundamental values they find meaningful and develop actions consistent with those values	Implementing a 'treasure hunt' activity with value cards, creating a value compass, and conducting group sharing on internalizing values	Value recognition and selection, psycho-education, small group sharing, and individual reflection
4 st Session	90 min	Commitment to value-based actions	Developing the ability to take decisive action by recognizing internal barriers encountered in value-based lifestyles	Game structured with value and obstacle cards, developing solution strategies, and sharing support within the group	Role-playing, metaphorical gamification, solution-focused thinking, supportive group interaction
5 st Session	90 min	Cognitive disengagement	Develop cognitive dissociation skills by recognizing thoughts as mental events and offering ways to cope with internal criticism	Thought bubble exercise, recognizing inner criticism, and developing self-compassionate responses using theater techniques	Cognitive metaphors, creative drama, introspection, and reframing exercises
6 st Session	90 min	Acceptance	Developing an acceptance-based approach instead of struggling with challenging emotions, and making space for emotions with self-compassion	Sharing feelings with emotion cards, emotional timeline, and emotion modeling with play-dough, acceptance exercise	Timeline, modeling, body awareness, acceptance-based guidance
7 st Session	90 min	Contextual self	To enable participants to become aware of their automatic self-definitions and to acquire the ability to observe their contextual self	Self-wheel activity, mask making to distinguish between external and internal self, observing self exercise	Metaphor, creative use of materials, contextual narration, observation, and externalization
8 st Session	90 min	Making room for yourself and integration	Supporting the transfer of psychological flexibility and self-compassion skills gained throughout the process into daily life	Psychological Flexibility Tree exercise, writing letters to oneself, group sharing with concept-memory-insight cards	Visualization, written narration, self-compassionate assessment, and individual integration exercises

Table 3. ACT-based self-compassion psychoeducation program.

Group type		Pre-test			Middle-test			Post-test			Follow up-test		
		Statistic	df	*p*	Statistic	df	*p*	Statistic	df	*p*	Statistic	df	*p*
Psychological flexibility	Experiment	0.956	15	0.619	0.963	15	0.751	0.970	15	0.86.	0.983	15	0.987
	Control	0.921	15	0.201	0.928	15	0.258	0.966	15	0.789	0.929	15	0.267
Self-compassion	Experiment	0.921	15	0.198	0.967	15	0.812	0.965	15	0.776	0.941	15	0.395
	Control	0.945	15	0.445	0.973	15	0.899	0.932	15	0.289	0.982	15	0.983

Table 4. Shapiro-Wilk normality assumption findings.

Value	F (d_1, d_2)	*p*
13.115	1.107 (10, 3748.21)	0.353

Table 5. Box's M results for findings obtained from the Self-Compassion Scale.

for evaluating this assumption. The assumption of multivariate normality is a fundamental prerequisite for multivariate analyses such as MANOVA, and Mahalanobis distances are often recommended in assessing this assumption[50]. In this study, Mahalanobis distances were calculated for each variable in the experimental and control groups to test whether multivariate normality was met. Due to the three measurements being considered together, the critical value at the,001 significance level was determined to be 18,47 according to a chi-square distribution with 4 degrees of freedom[51]. In the experimental group, the Mahalanobis distances were calculated as 5,28 for Self-Compassion, 8,24 for Values, 7,13 for Being in the Moment, 5,98 for Acceptance, 5,93 for Contextual Self, 8,32 for Dissociation, and 5,63 for Psychological Flexibility. In the control group, these values were 6,10 for Self-Compassion, 9,88 for Values, 8,10 for Mindfulness, 8,87 for Acceptance, 6,92 for Contextual Self, 5,06 for Dissociation, and 5,57 for Psychological Flexibility. The Mahalanobis distances obtained for all variables in both groups, being below the critical value of 16,27, indicate that there are no multivariate outliers in the dataset and that the assumption of multivariate normality is met. Despite the small sample size, all necessary assumptions for MANOVA and repeated measures ANOVA (including normality, equality of covariance matrices, and absence of multivariate outliers) were met, supporting the suitability of the analyses. A power analysis was performed based on the observed effect sizes of the MANOVA and repeated measures ANOVA results. The power values obtained for significant effects ranged from 0,89 to 1,00, indicating that the statistical power is sufficient despite the sample size. These results demonstrate that, despite the relatively small sample size, it is sufficient to reliably detect the observed intervention effects. SPSS 26.0 software was used for all quantitative data analysis operations.

Qualitative data were evaluated through content analysis of participant responses obtained from semi-structured interview forms, based on the thematic analysis steps (reading and coding data, converting codes into categories, and creating and interpreting themes) proposed by Cernasev and Axon[52]. Two independent researchers coded the resulting themes, and the inter-rater agreement rate was calculated as 91%. Interview data were analyzed using MAXQDA 2020 software, and the findings are presented with direct participant statements supporting the themes. In the qualitative component of the study, data were collected through semi-structured interview forms administered to participants in the experimental group at the end of the intervention. The interview form included open-ended questions designed to explore participants' experiences of the program, perceived changes in self-compassion and psychological flexibility, and reflections on the applicability of the techniques in daily life. Examples of guiding questions included: "*Which parts of the program were most meaningful for you?*" and *"Have you noticed any changes in the way you respond to difficult emotions since participating in the sessions?"* Interviews lasted approximately 20–25 min and were conducted in a quiet room within the school setting, yielding detailed written responses. A thematic content analysis approach was followed, including data familiarization, initial coding, category development, and theme refinement. To enhance methodological rigor, two independent researchers conducted the coding process, and discrepancies were resolved through *peer debriefing* meetings. Researcher triangulation was employed to strengthen analytical reliability. Coding consistency was high, with an inter-rater agreement of 91%. Direct quotations were used to support the reporting of themes, ensuring credibility, transparency, and depth in presenting participant experiences.

Findings

Findings related to self-compassion

The Box M test was used to examine the equality of variance-covariance matrices for the self-compassion scale. The findings are presented in Table 5.

According to the Box M-test results in Table 5, the assumption of homogeneity of the variance-covariance matrices related to the self-compassion scale has been met (Box's M = 13,115; F = 1,107; df1 = 10; df2 = 3748,207; p =,353). The significance level being above 05 indicates that there are no significant differences between the groups in terms of variance-covariance matrices and that this assumption is not violated in multivariate analyses. In this context, Box's M test is acceptable in terms of the reliability of the analyses.

The findings regarding the Pillai's Trace test statistics, used to evaluate the effects of multiple variables in the study, are presented in Table 6.

Effect		Value	F	*p*	Partial η^2
Time	Pillai's trace	0.633	14.978	0.000	0.633
Time * group (pre-test, mid-test-post test-follow-up test)	Pillai's trace	0.618	13.994	0.000	0.618

Table 6. Findings of the MANOVA test related to self-compassion.

Effect	F(df1, df2)	*p*	Partial η^2
Time	18.23 (2.46, 68.83)	< 0.001	0.394
Time * group (pre-test, mid-test-post test-follow-up test)	12.42 (2.46, 68.83)	< 0.001	0.307

Table 7. Findings of variance analysis of repeated measurements related to Self-Compassion.

Effect	Component	F	*p*	Partial η^2
Time	Linear	44.822	< 0.001	0.616
	Quadratic	2.190	0.150	0.073
	Cubic	1.026	0.320	0.035
Time * group (pre-test, mid-test-post test-follow-up test)	Linear	31.951	< 0.001	0.533
	Quadratic	0.011	0.919	0.000
	Cubic	0.162	0.691	0.006

Table 8. Linear and contrast analyses related to self-compassion.

According to the MANOVA results in Table 6, time was found to have a significant multivariate effect on self-compassion, Pillai's Trace = 633, F(3, 26) = 14.98, $p < 0{,}001$, partial $\eta^2 = 0{,}633$. The Time × Group (Pre-test, Mid-test, Post-test, Follow-up Test) interaction was also significant, Pillai's Trace = 0,618, F(3, 26) = 13,99, $p < 0{,}001$, partial $\eta^2 = 0.618$, indicating that the rate of change differed between groups over time.

Variance analyses of measurements over time for the experimental and control groups were performed using repeated measures ANOVA to evaluate both between-group and time effects. The results are presented in detail in Table 7.

As shown in Table 7, the main effect of time on self-compassion was significant, $F_{(2.46,\ 68.83)} = 18{,}23$, p <,001, partial η^2 =,394, indicating a substantial increase across measurement points. The Time × Group interaction was also significant, $F_{(2.46,\ 68.83)} = 12{,}42$, p <,001, partial η^2 = 307, demonstrating that the experimental group improved more than the control group over time.

Linear and quadratic contrast analyses were performed to determine the trend of changes observed over time, and the findings are presented in Table 8.

According to the linear and contrast analyses presented in Table 8, the linear effect of time on self-compassion was statistically significant, $F_{(1,\ 28)} = 44{,}822$, $p < 001$, partial η^2 =,616, indicating a steady increase across measurements. Quadratic and cubic trends were not significant (p =,150 and p =,320), showing that the change occurred linearly. For the time × group interaction, only the linear trend reached significance, $F_{(1,\ 28)} = 31{,}951$, p <,001, partial η^2 =,533, indicating that the experimental group demonstrated a greater and consistent linear improvement over time compared to the control group.

Finally, parametric estimates were analyzed to examine the differences in self-compassion levels between the experimental and control groups in more detail, according to measurement times. The findings are presented in Table 9.

According to the parameter estimates presented in Table 9, no significant group differences were observed at the pre-test (B = −3,93, p =,490) or mid-test (B = 4,80, p =,430). At the post-test, the experimental group's self-compassion scores were higher, but the difference was marginally significant (B = 10,66, $p = 0{,}074$). A statistically significant difference emerged at the follow-up measurement in favor of the experimental group (B = 18,93, p =,007, partial η^2 =,280), indicating that the effects of the ACT-based psychoeducation program strengthened over time and were most pronounced at follow-up.

A line graph of estimated marginal means was created to show the change in self-compassion levels in the experimental and control groups over time. This graph visually illustrates how the differences between the groups changed over time. The relevant findings are presented in Fig. 2.

As shown in Fig. 2, the change in self-compassion levels over time for the experimental and control groups is visualized. In the experimental group (blue line), a linear and continuous increase in self-compassion levels is observed from the pre-test to the follow-up test, indicating that the applied ACT-based psychoeducation program is effective. In the control group (red line), however, only a very limited increase in self-compassion levels is observed, and a decrease in this level occurs after the post-test. The fact that the difference between the groups becomes increasingly apparent over time, especially in the follow-up test phase, where the experimental group achieves higher average scores than the control group, supports the strength of the interaction effect. This graph is consistent with the findings obtained through parametric analyses.

Measurement	Group	B	*p*	Partial η^2
Pre-test	Experiment	−3.93	0.490	0.017
	Control	0[a]	–	–
Mid-test	Experiment	4.80	0.430	0.022
	Control	0[a]	–	–
Post-test	Experiment	10.66	0.074	0.109
	Control	0[a]	–	–
Follow-up	Experiment	18.93	0.007	0.280
	Control	0[a]	–	–

Table 9. Parameter estimates. [a]This parameter is set to zero because it is redundant.

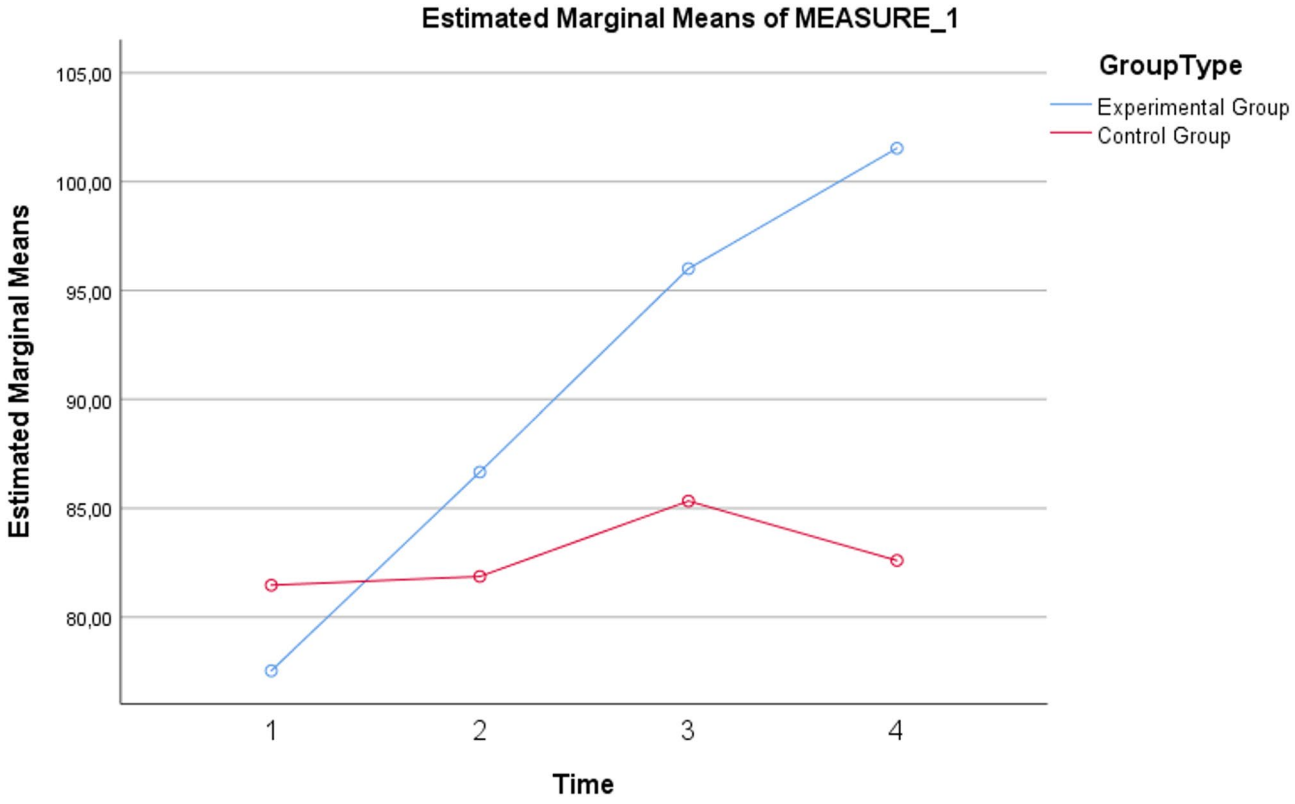

Fig. 2. Graph showing changes in self-compassion levels over time in the experimental and control groups.

Value	F (d_1, d_2)	*p*
13.859	1.169 (10, 3748.207)	0.306

Table 10. Box's M results related to findings obtained from psychological flexibility.

Findings related to psychological flexibility

The assumption of equal variance, one of the key assumptions for performing MANOVA analysis to determine the effectiveness of the experimental study, was also examined. The findings are presented in Table 10.

According to the results of the Box's M test, the assumption of homogeneity of variance–covariance matrices related to the psychological flexibility scale is satisfied (Box's M = 13,859; F = 1,169; df1 = 10; df2 = 3748,207; p =,306). Since the significance level is above,05, there are no significant differences between the groups in terms of the variance–covariance matrices, indicating that this assumption is not violated in the multivariate analyses. In this context, Box's M test can be considered acceptable in terms of supporting the reliability of the analyses.

In this regard, the findings related to Pillai's Trace test statistics used to evaluate the multivariate effects in the study are presented in the table below.

Effect		Value	F	*p*	Partial η^2
Time	Pillai's trace	0.229	2.568	0.076	0.229
Time * group (pre-test, mid-test-post test-follow-up test)	Pillai's trace	0.513	9.144	0.076	0.513

Table 11. Findings of the MANOVA test related to psychological flexibility.

Effect	F(df1, df2)	*p*	Partial η^2
Time	3.196 (2.50, 70.089)	< 0.05	0.102
Time * group (pre-test, mid-test-post test-follow-up test)	11.081 (2.50, 70.089)	< 0.05	0.284

Table 12. Findings of repeated measures analysis of variance on psychological flexibility.

Effect	Component	F	*p*	Partial η^2
Time	Linear	7.005	< 0.05	0.200
	Quadratic	4.800	0.831	0.002
	Cubic	20.167	0.640	0.008
Time * group (pre-test, mid-test-post test-follow-up test)	Linear	24.602	< 0.001	0.468
	Quadratic	0.104	0.749	0.004
	Cubic	0.293	0.593	0.010

Table 13. Linear and contrast analyses related to psychological flexibility.

According to the MANOVA results presented in Table 11, the main effect of time on psychological flexibility was not statistically significant (Pillai's Trace =,229; F = 2,568; p =,076), indicating that psychological flexibility did not show a general multivariate change across the measurement points. The effect size for the time variable (partial η^2 =,229) suggests a moderate but non-significant trend. The Time × Group interaction effect was also not statistically significant at the multivariate level (Pillai's Trace =,513; F = 9,144; p =,076). Although the interaction displayed a relatively large effect size (partial η^2= 0,513), the p-value above 0.05 indicates that the experimental and control groups did not differ significantly in their multivariate change patterns over time. Although this finding may seem contradictory to subsequent analyses, it is important to note that MANOVA evaluates the multivariate time effect across all repeated measurements simultaneously and is therefore more conservative. For this reason, the non-significant multivariate time effect does not contradict the significant univariate time effect obtained in repeated-measures ANOVA, which assesses within-subject changes in each variable separately. Thus, the two sets of results are methodologically compatible and complementary in explaining patterns of change in psychological flexibility.

Variance analyses of measurements over time for the experimental and control groups were performed using repeated measures ANOVA to evaluate both between-group and time effects. The results are presented in detail in Table 12.

The results in Table 12 show that time has a significant effect on psychological flexibility levels, $F_{(2,50,\ 70,089)}$ = 3,186, p <,05, partial η^2=,102. This finding reveals a significant increase in psychological flexibility scores as the measurements progress. Furthermore, the Time × Group interaction was also found to be significant, $F_{(2,50,\ 70,089)}$ = 11,081, p <,05, partial η^2=,284; this indicates that the experimental group showed more improvement compared to the control group throughout the process.

Linear and curvilinear contrast analyses were performed to determine the trend of changes observed over time, and the findings are presented in detail in Table 13.

According to the linear and contrast analyses presented in Table 13, the linear effect of time on psychological flexibility was statistically significant, F = 7,005, p <,05, partial η^2=,200, indicating a steady increase across measurement points. In contrast, the quadratic and cubic components were not significant (p =,831 and p =,640), demonstrating that the change followed a predominantly linear pattern rather than a curvilinear trajectory. For the time × group interaction, only the linear trend reached significance, F = 24,602, p <,001, partial η^2=,468, showing that the experimental group exhibited a greater and more consistent linear improvement over time compared to the control group. The nonsignificant quadratic and cubic interaction effects (p =,749 and p =,593) further indicate that group differences emerged in a straightforward linear manner without more complex higher-order trends.

Finally, parametric estimates were analyzed to examine the differences in psychological flexibility levels between the experimental and control groups in more detail, according to measurement times. The findings are presented in Table 14.

According to the parameter estimates presented in Table 14, no significant group differences were observed at the pre-test (B = −0,200, *p* = 0,981) or mid-test (B = 12,800, *p* = 0,161). At the post-test, the experimental group's psychological flexibility scores were significantly higher than those of the control group (B = 20,400, p =,005, partial η^2=,249). A statistically significant difference emerged at the follow-up measurement in favor of

Measurement	Group	B	*p*	Partial η^2
Pre-test	Experiment	− 0.200	0.981	0.000
	Control	0[a]	—	—
Mid-test	Experiment	12.800	0.161	0.069
	Control	0[a]	—	—
Post-test	Experiment	20.400	0.005	0.249
	Control	0[a]	—	—
Follow-up	Experiment	31.000	0.000	0.390
	Control	0[a]	—	—

Table 14. Estimates of parameters related to psychological flexibility. [a]This parameter is set to zero because it is redundant.

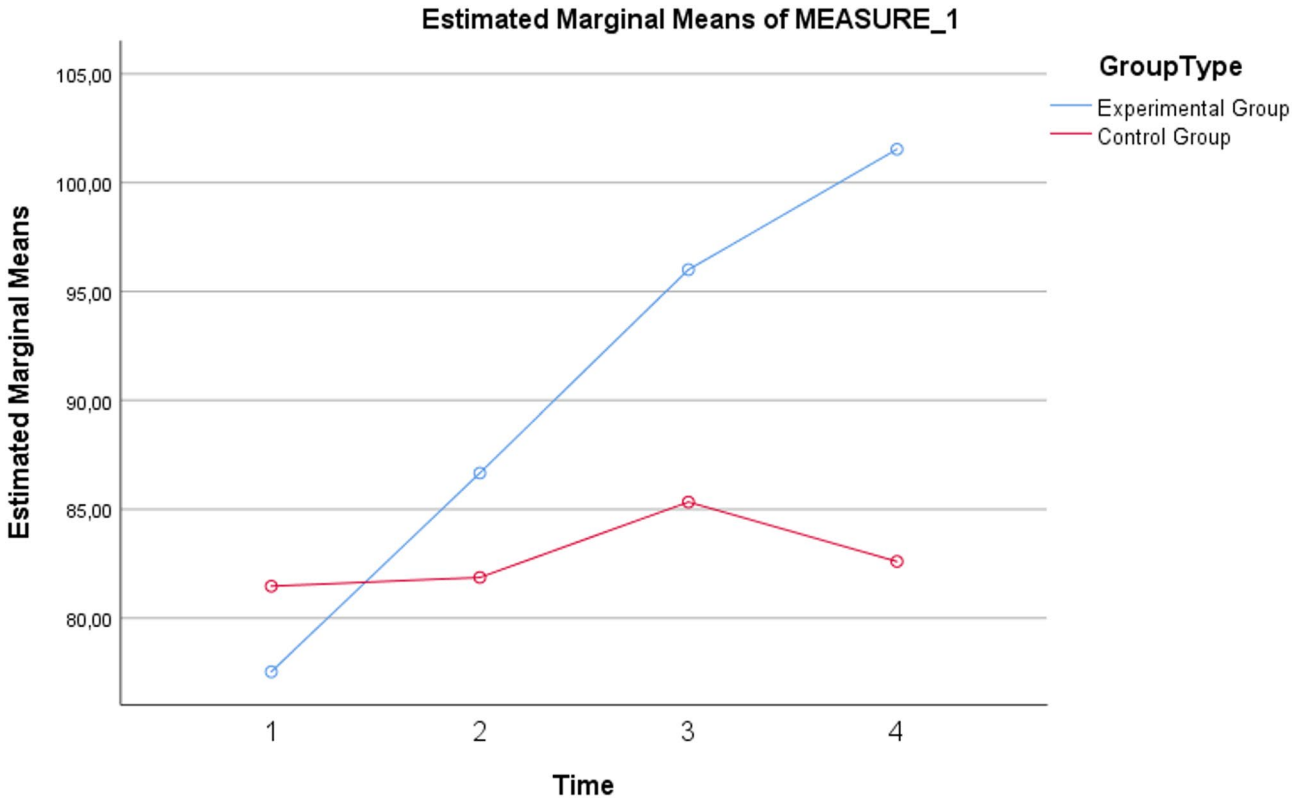

Fig. 3. Graph showing changes over time in the psychological flexibility levels of the experimental and control groups.

the experimental group (B = 31,000, p <,001, partial η^2=,390), indicating that the effects of the intervention on psychological flexibility continued to strengthen over time and were most pronounced at follow-up.

A line graph showing the estimated marginal means was created to compare changes in psychological flexibility levels between the experimental and control groups over time, and is presented in Fig. 3.

Figure 3 illustrates the changes in psychological flexibility levels of the experimental and control groups over time. The psychological flexibility level of the experimental group (blue line) showed a linear and steady increase from the pre-test to the follow-up test, indicating that the ACT-based psychoeducation program was effective on the experimental group. In contrast, the control group (red line) showed only limited and fluctuating changes in psychological flexibility levels, with a decline after the post-test. The widening gap between the groups over time supports the strength of the interaction effect, indicating that the program's effect is sustained in the long term. The graphical findings consistently reflect a significant improvement in favor of the experimental group, consistent with the parametric analysis results.

Participants' experiential feedback

The qualitative analysis results of the psychosocial education program, based on Acceptance and Commitment Therapy, show that participants experienced a multidimensional transformation in their emotional awareness,

self-perception, and behavior. Participant opinions, shaped around five main themes, revealed that the program provided meaningful gains at both the individual and social levels.

- *Pre-program Knowledge Level and Difficulties*. Most participants reported being unfamiliar with the concept of self-compassion before participating in the program. They expressed that this lack of knowledge made it difficult to cope with emotional difficulties. For example, K3 described this situation: "*I was putting pressure on myself and couldn't think clearly*." Similarly, K10 expressed their tendency to suppress their emotions and feel alone with the following words: "*I thought that I was the only one experiencing these events and emotions… thanks to the program, I learned that everyone was in the same situation*."
- *Awareness and Change in Perspective*. During the program, participants stated that they developed a more non-judgmental, accepting, and understanding attitude toward themselves. The participants internalized concepts such as mindfulness, a sense of shared humanity, and inner compassion. K6's words reflect this transformation: "*I realized that I had never been present in the moment and had never taken the time to listen to myself*." K13 described how negative patterns from the past were reevaluated: "*The feeling of inadequacy was slowing me down in every way. I struggled a lot with not getting angry at myself and not criticizing myself*."
- *Emotional Change and Self-Perception*. Participants reported significant improvements in coping with challenging emotions such as guilt, worthlessness, and anxiety. K3 described this change: "*I no longer fight my emotions. I try to understand what I'm feeling*." K11 described developing a more compassionate inner voice: "*I stopped fighting with myself. I'm not perfect, and that's very comforting*."
- *Transfer to Daily Life and Behavioral Change*. Most participants reported applying new skills in their daily lives, such as setting boundaries, saying "no," and taking time for themselves, and felt more comfortable exhibiting these behaviors. K2 expressed this as follows: "*I used to compromise too much, but now I'm starting to learn to say 'no.'*" Similarly, a softening of parenting attitudes and an increase in empathy were observed. K14 said: "*As I started treating myself better, I also began to be more compassionate toward my child*."
- *General Evaluation and Dissemination of the Program*. Nearly all participants evaluated the program as "useful," "transformative," and "self-discovery-enabling." In this regard, it was emphasized that the program should not be limited to a specific group, but rather expanded to all mothers and women. K7's statement reflects this view: "*This program should not be limited to a specific group but should be offered to all mothers*." K6 expressed both the gain in insight and the desire to participate again: "*If such an education were offered again, I would participate without hesitation*." Some participants suggested that a second-level version of the program should be developed. K4 expressed this request: "*What I think should be developed in the program is a second-level, advanced version. I recommend it to others. The reason is that feeling important is every woman's right*." Finally, K13's statement shows that the program's individual effects have been elevated to a social need: "*Many people in life experience so many problems because they don't know self-compassion. People must first learn to love themselves*."

The findings suggest that the self-compassion-based psychoeducation program has a significant impact on participants, both in the short term and in terms of long-term sustainability. The program fostered individual awareness and had a positive impact on participants' social relationships, parenting attitudes, and overall well-being. Qualitative findings support quantitative data, thereby supporting the broader applicability of such structured interventions.

Discussion

This study examined the effect of an Acceptance and Commitment Therapy-based self-compassion psychoeducation program on the self-compassion and psychological flexibility levels of non-working parents with children aged 4–6. Within this scope, the study revealed that the Acceptance and Commitment Therapy-based self-compassion psychoeducation program significantly increased self-compassion levels among non-working mothers with children aged 4–6, and that this effect was sustainable during the process and follow-up phases. The main effect of the time variable and the interaction between time and group were statistically significant; a linear and significant increase in self-compassion levels was observed in the experimental group. This finding aligns with theoretical approaches that argue structured interventions can foster self-compassion[9,53]. The high effect size and observed power levels supported the program's effectiveness. Similar studies in the literature also confirm these results[21,54–60]. It has been emphasized that self-compassion is a multifaceted construct encompassing cognitive, behavioral, and emotional components, and that it contributes to developing a compassionate attitude toward oneself by recognizing one's internal criticisms[9]. The findings support the positive effects of self-compassion on psychological resilience, positive parenting attitudes, and relational well-being. In particular, they demonstrate that self-compassion serves as an internal resource in the context of parenting[61–65]. Additionally, the role of ACT-based group interventions in developing self-compassion is consistent with previous research[38,66–69]. Self-compassion is effective in reducing symptoms of depression, anxiety, and social phobia[20,70–75] and is associated with variables such as subjective well-being, mindfulness, and self-efficacy[76–79]. These results indicate that self-compassion plays a protective and transformative role in individual and relational functioning. As a result, participants have restructured their perceptions of self-worth at the individual level and developed a more patient, understanding, and compassionate approach in their parenting roles; thus, this significant increase in self-compassion levels has been evaluated as a functional gain in terms of both personal transformation and family interactions. The follow-up assessment was conducted approximately eight weeks after the intervention was completed, allowing for the evaluation of short-term maintenance of program gains.

Although the study's sample size was small, power values obtained from subsequent analyses (ranging from 0.89 to 1.00) indicate that the statistical power was sufficient to detect significant changes observed in both outcome variables. Similar studies of ACT and self-compassion-based interventions in the literature have also

been conducted with comparable sample sizes (generally between 20 and 40 participants)[38,54], suggesting that the current sample size is consistent with methodological practices in the field. Therefore, despite the small sample size, the robustness of the effect sizes and power estimates strengthens the validity of the findings. Overall, both quantitative and qualitative findings demonstrated that all four hypotheses of the study were supported, indicating consistent improvements aligned with ACT and self-compassion theory.

Although the multivariate MANOVA results indicated that the main effect of time on psychological flexibility was not statistically significant, the repeated-measures ANOVA revealed a significant univariate time effect. The non-significant multivariate time effect observed in MANOVA and the significant univariate time effect detected through repeated-measures ANOVA are methodologically compatible, as the two analyses address different statistical questions and vary in sensitivity. This difference is methodologically expected, as MANOVA evaluates multivariate changes across variables simultaneously, whereas repeated-measures ANOVA is more sensitive to within-subject changes in a single variable over time. When these complementary findings are considered together, they suggest that psychological flexibility did not exhibit a general multivariate time effect; however, meaningful within-person improvements emerged specifically in the experimental group. The findings demonstrate that structured ACT-based interventions enhance individuals' capacity to form flexible relationships with challenging emotions[80], thereby supporting psychological well-being. Similar results have been reported in the literature; ACT-based programs are effective for parents of children with special needs[81–84] and similar sample groups in Turkey[85–89]. Additionally, its effects on parent-child relationships have been highlighted[15,90,91]. On the other hand, similar effects have been observed in various demographic groups[92–103]. These findings are consistent with the results of the current study and demonstrate that the program offers sustainable effects in both the short and long term. This finding may be attributed to the fact that the psychoeducational program goes beyond mere knowledge transfer, fostering an internalized transformation process by enhancing participants' emotional awareness and understanding. In particular, the self-compassion-based structure, which supports individuals in accepting challenging thoughts and emotions rather than fighting them, can be considered the primary reason for the increased psychological flexibility.

Conclusion

This study examined the effect of an ACT-based structured self-compassion psychoeducation program on the self-compassion and psychological flexibility levels of unemployed parents with children aged 4–6. The findings suggest that the program may contribute to increases in self-compassion levels, and these improvements appear to be maintained during the follow-up period. Regarding psychological flexibility, the results suggest the potential for favorable changes over time, particularly among participants in the experimental group. While the quantitative analyses point toward potential benefits of structured, group-based interventions in fostering awareness and acceptance of internal experiences, the qualitative findings provide supportive—but not definitive—evidence that some participants perceived meaningful changes in their daily emotional and parenting processes. Taken together, the results suggest that ACT-based self-compassion psychoeducation may *be* a beneficial intervention tool for supporting parents' mental resilience and self-care skills.

Limitations

The relatively small sample size is a limitation of the study, and future research should employ larger samples or statistical methods more robust to small sample conditions (e.g., mixed-effects models). In addition, due to the limited sample size ($n = 30$), confirmatory factor analysis (CFA) could not be conducted for the measurement instruments; therefore, the study relied on previously established validity and reliability evidence from Turkish adaptation studies. In addition, the use of a specific demographic group limits the generalizability of the findings. Therefore, future studies should replicate the program with broader and more diverse populations to enhance external validity. Another important limitation is that the study did not assess developmental or behavioral outcomes in the participating parents' children. Future research should investigate whether increases in parental self-compassion and psychological flexibility lead to measurable improvements in children's emotional, behavioral, and relational functioning.

Recommendations

Based on the findings of this study, the ACT-based self-compassion psychoeducation program appears to support increases in parents' self-compassion and psychological flexibility. Future work, however, should extend beyond these intrapersonal outcomes and examine whether such gains translate into observable improvements in parenting behaviors, such as emotional attunement, reduced harsh parenting, and value-consistent caregiving practices. Additionally, longitudinal and multi-informant studies could investigate how parental changes—particularly in flexibility and self-compassion—impact child socio-emotional and behavioral outcomes over time. Such work would clarify the broader developmental significance of ACT-based interventions within family systems. Regarding feasibility, although the current program successfully implemented eight 90-minute sessions, future research should evaluate the practicality of this structure for large-scale dissemination. Many mothers may face barriers related to caregiving responsibilities, time constraints, and limited access to mental health services. Therefore, researchers and practitioners may consider developing shortened modules, micro-sessions, online or hybrid formats, or parent-delivered home practices that retain therapeutic components while increasing accessibility. Evaluating the acceptability, feasibility, and cost-effectiveness of modified program formats will be crucial for informing policy decisions and integrating them into school-based or community mental health systems. In this context, collaboration between researchers, practitioners, and policymakers will be essential for adapting the program to diverse family needs and ensuring its sustainable implementation.

Importantly, the findings also suggest that this structured group program may serve as a low-cost yet effective complement to individual therapy for non-working mothers, particularly when participants do not present with

severe trauma histories or major psychiatric conditions. Because group-based psychoeducation requires fewer resources than one-on-one therapy, such programs have the potential to improve parental mental health while simultaneously reducing service delivery costs in community settings. Therefore, integrating ACT-based self-compassion programs into community centers, family support units, or school counseling services may offer a scalable and economically efficient pathway for supporting parental well-being.

Data availability

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

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Author contributions
This study was conducted as part of R.Ç.'s master's thesis under the academic supervision of O.S. R.Ç. was responsible for performing the data analysis and writing the discussion and implications sections. O.S. oversaw the implementation of the intervention program and contributed to the development of the literature review and methodology sections. Both authors collaboratively developed the research design. All authors reviewed and approved the final version of the manuscript.

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Declarations

Ethical procedures and process
This study was approved by the Ethics Committee of Istanbul Sabahattin Zaim University (Decision No: 2024/08, dated 31.10.2024). All procedures complied with the principles of the Declaration of Helsinki. Informed consent was obtained from all participants prior to their inclusion in the study. Since all participants were over the age of 18, parental or legal guardian consent was not required. In addition, official permissions were obtained from the relevant district governorships and school administrations to conduct the study within the institutions.

Competing interests
The authors declare no competing interests.

Additional information
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