

# Effectiveness of Compassion-Focused Therapy on Interpersonal Emotion Regulation and Frustration Tolerance among Students of Pouyandegan Danesh Institute of Higher Education

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### ABSTRACT

**Purpose:** This study aimed to determine the effectiveness of compassion-focused therapy (CFT) in improving interpersonal emotion regulation and frustration tolerance among students of Pouyandegan Danesh Institute of Higher Education.

**Methods and Materials:** This applied study employed a quasi-experimental pretest-posttest design with a control group. The statistical population consisted of all students enrolled at Pouyandegan Danesh Institute of Higher Education during the second semester of the 2025–2026 academic year. Following recruitment and screening, 30 eligible students who demonstrated poorer levels of interpersonal emotion regulation and frustration tolerance were selected and randomly assigned to an experimental group (n=15) and a control group (n=15). Data were collected using the Interpersonal Emotion Regulation Questionnaire developed by Hofmann et al. (2016) and Harrington's Frustration Discomfort Scale (2005). The experimental group received compassion-focused therapy based on Gilbert's (2009) protocol in eight 60-minute sessions, whereas the control group received no intervention during this period. Both groups subsequently completed the posttest assessments. Data were analyzed using descriptive statistics and multivariate and univariate analyses of covariance (MANCOVA and ANCOVA) in SPSS version 27.

**Findings:** Inferential analyses indicated that, after controlling for pretest scores, compassion-focused therapy produced a statistically significant improvement in interpersonal emotion regulation among students in the experimental group compared with the control group. The intervention also resulted in a significant reduction in frustration intolerance, indicating an increased capacity to tolerate frustrating and adverse situations. Overall, the covariance analyses confirmed significant between-group differences in both dependent variables in favor of the compassion-focused therapy group.

**Conclusion:** Compassion-focused therapy appears to be an effective psychological intervention for strengthening adaptive interpersonal emotion regulation and increasing frustration tolerance among university students. Accordingly, this therapeutic approach may be incorporated into university counseling and psychological support programs to enhance students' emotional regulation capacities and their ability to cope constructively with frustrating experiences.

**Keywords:** Compassion-Focused Therapy; Interpersonal Emotion Regulation; Frustration Tolerance; University Students

## 1. Introduction

University education represents a developmental period characterized by substantial academic, interpersonal, and psychological demands. Students are required to adapt simultaneously to increasing educational responsibilities, changing social roles, performance expectations, uncertainty about future employment, and the developmental challenges associated with emerging adulthood. University attendance itself intersects with broader developmental transitions involving autonomy, identity formation, interpersonal relationships, and adaptation to new social environments, making this period particularly important for psychological adjustment (Kohútová & Kohút, 2024). Contemporary approaches to student mental health therefore emphasize that well-being in higher education should not be understood merely as the absence of psychological symptoms, but rather as a multidimensional capacity involving effective stress management, emotional adaptation, supportive relationships, and the ability to respond constructively to academic and personal difficulties (Fang et al., 2025). Within this framework, two psychological capacities appear especially relevant to students' adaptation: the ability to regulate emotions through interpersonal processes and the ability to tolerate frustration when goals, expectations, or desired outcomes are obstructed.

Emotion regulation refers broadly to the processes through which individuals influence the occurrence, intensity, duration, expression, and experience of their emotions. Although early theoretical and empirical work often conceptualized emotion regulation primarily as an intrapersonal process, recent research has increasingly emphasized that emotions are frequently regulated in social contexts. Interpersonal emotion regulation refers to the intentional use of social interactions to influence one's own emotional state or that of another person. Individuals may seek reassurance, support, alternative perspectives, emotional soothing, validation, or positive social engagement when attempting to regulate distress, and these processes form an important component of everyday emotional functioning (Niven & López-Pérez, 2025). Evidence from daily-life research indicates that interpersonal emotion regulation occurs routinely across ordinary social interactions and that people employ a diverse repertoire of strategies depending on emotional intensity, relational context, and the availability of others (Tran et al., 2024). Consequently, understanding emotion regulation in

students requires attention not only to internal cognitive strategies but also to how they use peers, family members, classmates, and other significant individuals as resources for emotional management.

Interpersonal emotion regulation is not a unitary process. Strategies such as seeking comfort, enhancing positive affect through social contact, observing how others cope with similar circumstances, and obtaining alternative perspectives can facilitate emotional adjustment, particularly when they are used flexibly and within supportive relationships. Research across adulthood suggests that both the selection and effectiveness of interpersonal emotion regulation strategies may vary according to relational and developmental characteristics, including the age and role of the interaction partner (Springstein et al., 2024). Similarly, recipients' evaluations of emotion-regulatory interactions indicate that the effectiveness of interpersonal support depends not simply on whether another person attempts to help, but on the quality, appropriateness, and interpersonal consequences of that interaction (Swerdlow & Johnson, 2022). These observations are particularly relevant to university students, whose emotional experiences are embedded in frequently changing relationships with classmates, instructors, friends, and family members. Difficulty using these relationships adaptively may contribute to persistent distress, social misunderstandings, maladaptive reassurance seeking, withdrawal, or escalation of negative emotion.

Reliable measurement of interpersonal emotion regulation has also allowed its relationships with psychological functioning to be investigated more systematically. Studies examining the Interpersonal Emotion Regulation Questionnaire have supported the psychometric utility of assessing distinct interpersonal strategies and have demonstrated meaningful associations between interpersonal emotion-regulatory patterns and indicators of psychopathology (Messina et al., 2022). Additional psychometric work has confirmed the applicability of this construct across cultural contexts, supporting the assessment of dimensions such as enhancing positive affect, perspective taking, soothing, and social modeling (Faustino & Pascoal, 2024). These findings reinforce the view that interpersonal emotion regulation constitutes a meaningful dimension of emotional functioning rather than merely a secondary consequence of social support. For students who repeatedly encounter academic evaluation, social comparison, interpersonal conflict, and performance-related stress, the capacity to

engage in adaptive interpersonal regulation may therefore play an important protective role.

A second construct closely connected with adaptive functioning in stressful environments is frustration tolerance. Frustration emerges when access to a desired outcome is blocked, delayed, withdrawn, or made more difficult than expected. From a learning and motivational perspective, frustrative nonreward is not inherently pathological; rather, responses to unavailable or withdrawn rewards can serve adaptive functions by facilitating behavioral modification, disengagement from ineffective responses, and adjustment to changing environmental contingencies (Papini, 2022). Problems arise when individuals experience frustration as intolerable and respond with disproportionate emotional distress, avoidance, impulsive action, rigid persistence, or withdrawal. Frustration intolerance may therefore undermine the capacity to remain engaged with challenging goals and can interfere with effective coping when individuals face failure, delay, criticism, ambiguity, or unmet expectations.

The relevance of frustration tolerance is particularly evident in educational settings. University students frequently encounter experiences capable of generating frustration, including demanding assignments, examinations, unfavorable evaluations, delayed achievement, financial pressure, competitive environments, interpersonal tensions, and uncertainty regarding professional futures. Empirical evidence indicates that frustration intolerance is meaningfully associated with academic functioning and should be considered alongside emotional competencies in explaining university students' educational performance (Ruiz-Ortega & Berrios-Martos, 2025). The broader role of frustration tolerance in mental health has also been demonstrated among student populations. For example, frustration tolerance has been identified as an important psychological mechanism connecting coping patterns with mental health, alongside psychological resilience, suggesting that the capacity to withstand unpleasant internal experiences may influence how stressful demands translate into psychological outcomes (Wang et al., 2023). Theoretical and applied work in performance contexts similarly suggests that rigid demands, low tolerance for discomfort, and irrational beliefs concerning difficulty or failure can intensify dysfunctional emotional responses and impair adaptive performance (Grove et al., 2024).

Interpersonal emotion regulation and frustration tolerance are conceptually distinct but potentially

interrelated. Students who perceive distress, disappointment, criticism, or rejection as unbearable may find it more difficult to regulate their emotions constructively during social interactions. Conversely, limited access to adaptive interpersonal emotion-regulation strategies may leave individuals with fewer psychological resources for managing frustration. Both processes can be intensified by self-criticism. When students respond to setbacks with harsh self-evaluation, shame, or perceived personal inadequacy, the original frustration may be amplified by a secondary layer of emotional distress. Repeated self-criticism can also interfere with help seeking, perspective taking, emotional soothing, and receptive engagement with supportive others. Accordingly, interventions capable of reducing self-critical responding while strengthening emotional regulation and tolerance of distress may be particularly relevant for students experiencing difficulties in these domains.

Compassion-focused therapy (CFT) provides one such framework. Compassion-focused approaches were developed to help individuals cultivate a more supportive, warm, courageous, and understanding relationship with themselves and others, particularly when self-criticism, shame, threat sensitivity, and difficulties with emotional soothing are prominent. CFT conceptualizes emotional functioning partly through interacting threat, drive, and soothing systems and uses techniques designed to increase access to affiliative and soothing emotional processes. Clinical practice in CFT commonly incorporates compassionate attention, soothing-rhythm breathing, compassionate imagery, compassionate reasoning, compassionate behavior, work with fears and resistances to compassion, and the development of a compassionate self capable of responding constructively to distress (Petrocchi et al., 2024). Rather than treating compassion as passive reassurance, the approach conceptualizes it as sensitivity to suffering combined with motivation and commitment to alleviate or manage that suffering wisely.

The interpersonal dimension of CFT is particularly relevant to the present study. Compassion-focused therapy is grounded not only in intrapersonal self-compassion but also in interpersonal processes involving safeness, affiliation, care, responsiveness, and the regulation of threat within relationships. The therapeutic relationship and compassionate interactions can provide contexts in which individuals learn alternative responses to shame, self-attack, rejection sensitivity, and perceived interpersonal threat (Cwinn et al., 2023). This interpersonal emphasis suggests a plausible pathway through which CFT may influence

interpersonal emotion regulation: individuals who become better able to recognize distress without immediate self-judgment, activate soothing responses, and adopt compassionate perspectives may be more capable of seeking support appropriately, benefiting from alternative viewpoints, and remaining emotionally regulated during difficult interactions.

Accumulating research supports the beneficial effects of compassion-based interventions on emotional regulation. A narrative review of CFT has documented positive outcomes across various dimensions of psychological well-being and emphasized its potential to promote adaptive emotional functioning and positive mental health (Kotera et al., 2024). Experimental evidence further indicates that even relatively brief self-compassion interventions can reduce state emotion dysregulation among individuals reporting elevated psychological symptoms, suggesting that compassion-related processes may exert relatively immediate effects on emotional responding (De Herrera & Turk, 2025). In a randomized controlled trial involving a nonclinical population, compassion-focused and emotional-competency interventions were also found to reduce emotion dysregulation, providing evidence that the utility of compassion-based approaches is not confined to clinical disorders (Pauksik et al., 2024).

Findings from different populations similarly indicate that CFT and self-compassion training can improve emotion-regulation-related outcomes. Among women with breast cancer, group compassion-focused therapy has been examined in relation to difficulties in emotion regulation as well as pain and quality of life, supporting its relevance to individuals facing substantial psychological and physical stressors (Mehrabian et al., 2025). Compassion-focused therapy has also demonstrated beneficial effects on cognitive emotion regulation strategies and related psychological characteristics among women with major depression (Sahebi et al., 2022). Among women affected by marital infidelity, compassion-focused therapy has been associated with improvements in affect control and emotion regulation, indicating its applicability to emotionally intense interpersonal experiences (Khosravi et al., 2021). Likewise, mindfulness-based self-compassion therapy has shown beneficial effects on emotion regulation and related difficulties in individuals with borderline personality disorder, a population in which emotional and interpersonal dysregulation are especially prominent (Kouhi Khajehha et al., 2024).

Evidence from student and adolescent samples is particularly relevant because compassion-based interventions may help individuals manage developmental and educational stress before patterns of maladaptive regulation become entrenched. Compassion therapy has been compared with acceptance and commitment therapy and cognitive behavioral therapy in students with social anxiety, with emotion regulation included among the central therapeutic outcomes (Shahrouei et al., 2024). Self-compassion intervention research among female students with suicidal ideation has likewise indicated beneficial effects on cognitive emotion regulation, suggesting that compassion-based methods may strengthen regulatory capacities even among psychologically vulnerable student groups (Parvarde et al., 2025). Among male upper secondary school students with high-risk behaviors, comparison of emotion-regulation training and a compassion-based intervention has further demonstrated the relevance of compassion-oriented methods to both emotional regulation and social psychological functioning (Atashafrouz et al., 2025). Together, these findings support the potential value of compassion-based approaches for younger populations whose emotional functioning is strongly shaped by peer interactions, academic demands, and social evaluation.

Compassion may also have direct relevance to frustration tolerance. A compassionate stance toward personal difficulty can reduce the tendency to interpret failure or discomfort as evidence of personal defectiveness and may facilitate remaining psychologically engaged with unpleasant experiences rather than escaping from them. By replacing harsh self-criticism with balanced acknowledgment, supportive internal dialogue, and a sense of common humanity, individuals may become more capable of tolerating setbacks without escalating emotional distress. Empirical studies provide support for this possibility. Self-compassion training has been reported to improve frustration tolerance among female lower secondary school students, alongside reductions in impulsivity (Maleki, 2023). Self-compassion training has also been examined among women with migraine and found to be effective in improving frustration tolerance, suggesting that its relevance may extend beyond educational samples (Mirzaei, 2024). Similarly, self-compassion training among adolescents with inadequate guardianship was associated with improvements in frustration tolerance and affect control, illustrating the potential usefulness of compassion-based skills among individuals exposed to challenging psychosocial conditions (Esfatdoost Sani et al., 2024).

The potential effectiveness of CFT for both study variables may be explained through several complementary mechanisms. Soothing-rhythm breathing and compassionate imagery may reduce physiological and emotional activation in frustrating situations. Identifying the threat system may help students recognize why criticism, rejection, academic setbacks, or interpersonal misunderstandings trigger strong reactions. Developing a compassionate self may encourage wiser and less defensive responses to these experiences, while compassionate letter writing can transform hostile or punitive internal dialogue into a more supportive form of emotional processing. Work on fears of compassion may further reduce resistance to self-kindness and interpersonal support. These processes may enhance the ability to remain with uncomfortable affect while simultaneously increasing the adaptive use of social relationships in emotion regulation. Research emphasizing the interpersonal foundations of compassion-focused therapy supports this linkage between compassionate responding and relational emotional processes (Cwinn et al., 2023), while current conceptual work on interpersonal emotion regulation highlights the need to investigate not merely whether individuals regulate emotions socially but how particular regulatory processes can be improved through targeted intervention (Niven & López-Pérez, 2025).

Despite the expanding evidence base, important gaps remain. Much of the existing literature has examined emotion regulation as a predominantly intrapersonal construct, whereas fewer intervention studies have specifically focused on interpersonal emotion regulation as an outcome. Similarly, studies of compassion-based interventions and frustration tolerance remain relatively limited, and many have been conducted with adolescents or specific clinical and psychosocial groups rather than general university populations (Effatdoost Sani et al., 2024; Maleki, 2023; Mirzaei, 2024). Research on interpersonal emotion regulation has meanwhile concentrated substantially on conceptualization, measurement, naturally occurring strategy use, and interactional processes (Faustino & Pascoal, 2024; Messina et al., 2022; Springstein et al., 2024; Swerdlow & Johnson, 2022; Tran et al., 2024). This creates a need for intervention studies examining whether a structured compassion-focused program can modify interpersonal emotion-regulatory functioning directly.

This gap is especially relevant within higher education, where emotional well-being, academic persistence, interpersonal adjustment, and tolerance of setbacks are closely intertwined. Students often need to maintain

functioning despite delayed goals, negative feedback, social tensions, and academic uncertainty, and the psychological resources they use in these situations may influence both immediate well-being and longer-term adaptation. Contemporary higher-education research increasingly calls for multifaceted approaches to student well-being that extend beyond symptom reduction and strengthen practical capacities for coping with stress and emotional demands (Fang et al., 2025). At the same time, evidence linking frustration intolerance with university academic functioning indicates that this construct deserves greater attention in student-focused psychological interventions (Ruiz-Ortega & Berrios-Martos, 2025). Compassion-focused therapy may provide a theoretically coherent approach because it simultaneously targets threat sensitivity, self-criticism, emotional soothing, supportive interpersonal responding, and tolerance of difficult internal experiences.

Accordingly, examining CFT among students can contribute to both theoretical and applied knowledge. From a theoretical perspective, such research can clarify whether compassion-related processes extend beyond general emotional distress to measurable changes in interpersonal emotion regulation and frustration tolerance. From an applied perspective, a brief, structured group intervention may be feasible for use in university counseling services, where scalable psychological approaches are needed to address common emotional and adjustment difficulties. The growing evidence supporting compassion-focused interventions across clinical, nonclinical, student, adolescent, and medically affected populations provides a strong empirical basis for such investigation (Kotera et al., 2024; Mehrabi et al., 2025; Paucsik et al., 2024). At the same time, the specific combination of interpersonal emotion regulation and frustration tolerance represents a comparatively underexamined outcome profile, particularly among students in Iranian higher education institutions.

Therefore, the present study aimed to determine the effectiveness of compassion-focused therapy on interpersonal emotion regulation and frustration tolerance among students of Pouyandegan Danesh Institute of Higher Education.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study was applied in terms of purpose and employed a quasi-experimental pretest–posttest design with an experimental group and a control group. The statistical

population consisted of all students enrolled at Pouyandegan Danesh Institute of Higher Education during the second semester of the 2025–2026 academic year. After obtaining the required administrative permissions and coordinating with the relevant authorities of the institute, information about the study was disseminated through classrooms and the institute's communication channels, and interested students were invited to participate. Volunteers who met the preliminary eligibility requirements completed the Interpersonal Emotion Regulation Questionnaire developed by Hofmann et al. (2016) and the Frustration Discomfort Scale developed by Harrington (2005) during the pretest stage. Based on the screening results, 30 students who demonstrated comparatively less favorable scores on interpersonal emotion regulation and frustration tolerance were purposively selected. The selected participants were then randomly assigned to an experimental group and a control group, with 15 students in each group. The inclusion criteria consisted of willingness to participate in the study and provision of informed consent, the ability to attend the compassion-focused therapy sessions regularly, absence of concurrent participation in another psychological or psychotherapeutic intervention, and sufficient ability to understand and respond to the study questionnaires and participate in the therapeutic exercises. The exclusion criteria included absence from more than two intervention sessions, voluntary withdrawal from the study, initiation of another psychological intervention during the study period, and failure to complete the research instruments at either the pretest or posttest stage. Following administration of the pretest, participants in the experimental group received compassion-focused group therapy in eight 60-minute sessions based on Gilbert's therapeutic framework, whereas participants in the control group received no psychological intervention during the same period and continued their usual activities. Upon completion of the intervention, both groups completed the posttest assessments under conditions comparable to those of the pretest. Ethical principles were observed throughout the study, including obtaining informed consent, maintaining the confidentiality of participants' information, emphasizing their right to withdraw from the study voluntarily at any stage without adverse consequences, and using the collected data exclusively for scientific and research purposes.

## 2.2. Data Collection Tools

The Interpersonal Emotion Regulation Questionnaire developed by Hofmann et al. (2016) was used to assess participants' interpersonal emotion regulation. This self-report instrument was designed to evaluate the ways in which individuals regulate their emotional experiences through interactions with other people. The questionnaire contains 20 items distributed across four dimensions, including enhancing positive affect, soothing, social modeling, and perspective taking. These dimensions assess different interpersonal strategies through which individuals seek to modify, understand, or manage their emotional states with the assistance or presence of others. The original psychometric evaluation of the instrument indicated satisfactory internal consistency for its dimensions, with reliability coefficients of 0.98, 0.94, 0.93, and 0.91 for enhancing positive affect, soothing, social modeling, and perspective taking, respectively. Factor-analytic findings also supported the multidimensional structure of the questionnaire. In the Iranian context, Lotfi et al. (2020) examined the psychometric properties of the instrument, and exploratory and confirmatory factor analyses supported an acceptable factor structure. Cronbach's alpha was reported as 0.90 for the total scale, while the internal consistency coefficients for enhancing positive affect, soothing, social modeling, and perspective taking were 0.84, 0.82, 0.80, and 0.81, respectively. Higher scores on the relevant dimensions indicate greater use of interpersonal strategies for regulating emotional experiences.

Frustration tolerance was assessed using the Frustration Discomfort Scale developed and validated by Harrington (2005). The instrument consists of 35 closed-ended items rated on a five-point Likert scale ranging from completely disagree to completely agree. The scale evaluates individuals' tolerance or intolerance of frustrating, unpleasant, demanding, and emotionally difficult circumstances and encompasses several dimensions related to emotional intolerance, discomfort intolerance, achievement-related frustration, and reactions to perceived unfairness or dissatisfaction. Depending on the direction of scoring, higher levels of frustration intolerance indicate greater difficulty tolerating adverse circumstances, whereas lower intolerance reflects greater capacity to endure frustration and emotional discomfort. Harrington reported satisfactory internal consistency for the instrument, with Cronbach's alpha coefficients indicating adequate to strong reliability across the total scale and its dimensions. The scale

was subsequently translated and psychometrically evaluated in Iran by Nabizadeh and Liaqat in 2019. In the Iranian validation study, Cronbach's alpha was reported as 0.84 for the overall instrument, while coefficients for emotional intolerance, discomfort intolerance, achievement-related intolerance, and intolerance of unfairness and dissatisfaction were 0.50, 0.61, 0.52, and 0.71, respectively. In Harrington's original sample, reliability coefficients were generally higher, ranging from approximately 0.87 for discomfort intolerance to 0.94 for the total scale. The instrument was used in the present study at both the pretest and posttest stages to determine changes in participants' capacity to tolerate frustrating and emotionally challenging situations.

### 2.3. Intervention

The experimental group participated in an eight-session compassion-focused therapy program based on Gilbert's 2009 framework, with each session lasting approximately 60 minutes and delivered in a group format. The first session focused on introducing participants to one another, establishing therapeutic rapport, defining group rules, and creating a safe and nonjudgmental environment in which students could discuss frustrating and stressful experiences arising in academic, family, and peer relationships. Initial case formulation emphasized the roles of self-criticism, shame, and defensive reactions in intensifying emotional difficulties and reducing frustration tolerance, while soothing breathing was introduced as a basic technique for reducing physiological arousal. The second session concentrated on self-compassion and self-criticism, helping participants identify critical patterns of self-relating and understand how these patterns can amplify emotional reactions to conflict, rejection, failure, and interpersonal misunderstanding. The third session introduced the three emotion-regulation systems of threat, drive, and soothing, with particular attention to recognizing activation of the threat system during frustrating interpersonal situations and learning to deliberately activate the soothing system through compassionate attention and self-acceptance. In the fourth session, compassionate imagery was introduced as a method for regulating emotional responses, and students practiced constructing a mental image characterized by warmth, support, wisdom, and safety that could be activated during conflict, criticism, academic failure, or other emotionally demanding situations. The fifth session focused on developing the compassionate self through the qualities of wisdom, strength, warmth, and responsibility, enabling

participants to respond to interpersonal tension and personal setbacks with greater emotional balance rather than self-attack or defensive behavior. The sixth session introduced compassionate letter writing as a technique for modifying harsh internal dialogue and developing supportive, understanding, and constructive responses to failure, rejection, or relational difficulties. The seventh session addressed fears of compassion and inhibitory beliefs, such as the belief that self-kindness signifies weakness or leads to reduced motivation, and participants were encouraged to identify and challenge these beliefs while practicing compassion toward the fears themselves. The final session reviewed and consolidated all previously learned skills and helped participants develop an individualized continuation plan involving soothing breathing, compassionate imagery, compassionate letter writing, and management of fears of compassion. Throughout the intervention, therapeutic exercises and between-session assignments were explicitly linked to the two principal outcomes of the study: improving the adaptive regulation of emotions within interpersonal interactions and increasing the ability to remain engaged with difficult, disappointing, or frustrating situations without impulsive, avoidant, or emotionally dysregulated responses.

### 2.4. Data Analysis

The collected data were analyzed using both descriptive and inferential statistical procedures. Descriptive statistics, including frequency, mean, and standard deviation, were calculated to summarize participants' demographic characteristics and scores on interpersonal emotion regulation and frustration tolerance at the pretest and posttest stages. To evaluate the effectiveness of compassion-focused therapy while statistically controlling for baseline differences between the experimental and control groups, multivariate analysis of covariance (MANCOVA) was used to examine the overall intervention effect across the dependent variables. Subsequently, univariate analysis of covariance (ANCOVA) was conducted separately for interpersonal emotion regulation and frustration tolerance in order to determine the intervention effect on each outcome after adjustment for the corresponding pretest score. Before conducting covariance analyses, the relevant statistical assumptions were examined to ensure the appropriateness of the inferential procedures. All statistical analyses were performed using IBM SPSS Statistics version 27, and statistical significance was evaluated at the conventional 0.05 level.

### 3. Findings and Results

A total of 30 students participated in the study, including 15 participants in the experimental group and 15 participants in the control group. The mean age of participants in the experimental group was 24.47 years ( $SD=4.241$ ), whereas the mean age of participants in the control group was 25.07 years ( $SD=4.403$ ). Regarding educational level, 3 students (20.0%) in the experimental group were enrolled in associate degree programs, 9 students (60.0%) were undergraduate

students, and 3 students (20.0%) were master's students. In the control group, 2 participants (13.33%) were associate degree students, 10 participants (66.67%) were undergraduate students, and 3 participants (20.0%) were master's students. Thus, undergraduate students constituted the largest proportion in both groups. Overall, the experimental and control groups demonstrated relatively similar demographic characteristics in terms of age and educational level.

**Table 1**

*Descriptive Statistics for Interpersonal Emotion Regulation and Frustration Tolerance in the Experimental and Control Groups*

| Variable                         | Group        | Pretest Mean | Pretest SD | Posttest Mean | Posttest SD |
|----------------------------------|--------------|--------------|------------|---------------|-------------|
| Interpersonal Emotion Regulation | Experimental | 47.93        | 7.363      | 54.13         | 5.866       |
| Interpersonal Emotion Regulation | Control      | 48.93        | 7.066      | 48.47         | 7.596       |
| Frustration Tolerance            | Experimental | 115.13       | 8.280      | 107.40        | 8.551       |
| Frustration Tolerance            | Control      | 112.60       | 6.791      | 111.47        | 7.060       |

As shown in Table 1, the mean score of interpersonal emotion regulation in the experimental group increased from 47.93 ( $SD=7.363$ ) at pretest to 54.13 ( $SD=5.866$ ) at posttest, whereas the control group showed only a slight change from 48.93 ( $SD=7.066$ ) to 48.47 ( $SD=7.596$ ). In addition, the mean frustration intolerance score in the experimental group decreased from 115.13 ( $SD=8.280$ ) at pretest to 107.40 ( $SD=8.551$ ) at posttest, while the corresponding mean in the control group decreased only slightly from 112.60 ( $SD=6.791$ ) to 111.47 ( $SD=7.060$ ). Given the scoring direction of Harrington's scale, lower scores indicate lower frustration intolerance and, consequently, greater frustration tolerance. Therefore, the descriptive findings indicated an improvement in both interpersonal emotion regulation and frustration tolerance among participants who received compassion-focused therapy.

Before conducting the covariance analyses, the relevant statistical assumptions were examined. Inspection of scatterplots indicated linear relationships between the pretest and posttest scores of interpersonal emotion regulation and frustration tolerance. Box's M test was not statistically significant, Box's  $M=1.881$ ,  $F=0.579$ ,  $p=.629$ , supporting

the assumption of homogeneity of variance-covariance matrices. Levene's tests were also nonsignificant for interpersonal emotion regulation,  $F=0.180$ ,  $p=.674$ , and frustration tolerance,  $F=1.825$ ,  $p=.188$ , indicating equality of error variances across the groups. The Shapiro-Wilk test showed that the distributions of both dependent variables at the pretest and posttest stages did not significantly deviate from normality in either group, as all p-values were greater than .05. Furthermore, the interaction between group membership and the corresponding pretest score was nonsignificant for interpersonal emotion regulation ( $p=.500$ ) and frustration tolerance ( $p=.625$ ), confirming the homogeneity of regression slopes. Accordingly, the assumptions required for conducting multivariate and univariate analyses of covariance were satisfied. The preliminary multivariate analysis further indicated a statistically significant overall group effect on the combined dependent variables after adjustment for pretest scores, Pillai's Trace=.398,  $F(2,25)=8.261$ ,  $p=.002$ , partial  $\eta^2=.398$ , thereby supporting subsequent univariate ANCOVA analyses.

**Table 2**

*Results of ANCOVA for Interpersonal Emotion Regulation and Frustration Tolerance*

| Dependent Variable               | Adjusted Mean, Experimental | SE    | Adjusted Mean, Control | SE    | Sum of Squares | df | Mean Square | F      | p    | Partial $\eta^2$ |
|----------------------------------|-----------------------------|-------|------------------------|-------|----------------|----|-------------|--------|------|------------------|
| Interpersonal Emotion Regulation | 54.500                      | 1.322 | 48.100                 | 1.322 | 297.437        | 1  | 297.437     | 11.365 | .002 | .304             |
| Frustration Tolerance            | 106.450                     | 1.533 | 112.417                | 1.533 | 258.468        | 1  | 258.468     | 7.450  | .011 | .223             |

As presented in Table 2, after controlling for the corresponding pretest scores, a statistically significant difference was found between the experimental and control groups in interpersonal emotion regulation,  $F(1,26)=11.365$ ,  $p=.002$ , partial  $\eta^2=.304$ . The adjusted posttest mean was 54.500 ( $SE=1.322$ ) in the experimental group and 48.100 ( $SE=1.322$ ) in the control group, indicating that students who received compassion-focused therapy demonstrated significantly higher interpersonal emotion regulation. The partial eta squared value of .304 indicated that 30.4% of the variance in posttest interpersonal emotion regulation scores, after controlling for pretest scores, was associated with group membership. A statistically significant between-group difference was also observed for frustration tolerance,  $F(1,26)=7.450$ ,  $p=.011$ , partial  $\eta^2=.223$ . The adjusted posttest mean was 106.450 ( $SE=1.533$ ) in the experimental group compared with 112.417 ( $SE=1.533$ ) in the control group. Because lower scores on Harrington's scale reflect lower frustration intolerance, the lower adjusted mean in the experimental group indicates greater frustration tolerance following compassion-focused therapy. The partial eta squared value of .223 further showed that 22.3% of the variance in posttest frustration tolerance scores, after controlling for baseline differences, was associated with group membership. Taken together, these findings indicate that compassion-focused therapy significantly improved interpersonal emotion regulation and increased frustration tolerance among the students in the experimental group.

#### 4. Discussion and Conclusion

The present study investigated the effectiveness of compassion-focused therapy on interpersonal emotion regulation and frustration tolerance among students of Pouyandegan Danesh Institute of Higher Education. The findings demonstrated that, after controlling for pretest scores, students who received compassion-focused therapy showed significantly better interpersonal emotion regulation than those in the control group. The intervention also significantly improved frustration tolerance, as reflected by lower frustration intolerance scores in the experimental group. The multivariate analysis further confirmed a significant overall effect of group membership on the combined dependent variables. The effect sizes indicated that compassion-focused therapy accounted for a meaningful proportion of posttest variance in both interpersonal emotion regulation and frustration tolerance. These findings suggest that compassion-focused therapy can

simultaneously influence the way students regulate emotions in interpersonal contexts and the extent to which they can endure disappointment, discomfort, and blocked goals without escalating into maladaptive emotional reactions.

The improvement observed in interpersonal emotion regulation is consistent with previous studies showing that compassion-based interventions can enhance various dimensions of emotion regulation. For example, compassion-focused therapy has been reported to improve emotion regulation in women affected by marital infidelity (Khosravi et al., 2021), while compassion-focused intervention has also been associated with improvements in cognitive emotion regulation strategies among women with major depression (Sahebi et al., 2022). Similarly, mindfulness-based self-compassion has been shown to improve emotion regulation in individuals with borderline personality disorder (Kouhi Khajehha et al., 2024). In student populations, compassion-based approaches have also demonstrated beneficial effects on emotion regulation, including among students with social anxiety (Shahruei et al., 2024) and female students with suicidal ideation (Parvarde et al., 2025). The present findings therefore extend prior evidence by suggesting that the effects of compassion-focused therapy are not limited to intrapersonal or cognitive forms of emotion regulation but may also generalize to the interpersonal regulation of emotional states.

This result may be explained through the theoretical structure of compassion-focused therapy. CFT places substantial emphasis on the regulation of threat, drive, and soothing systems and seeks to strengthen the individual's capacity to access affiliative and calming emotional states in the presence of distress (Petrocchi et al., 2024). Students who experience criticism, rejection, interpersonal tension, academic failure, or social comparison may respond through activation of the threat system, which can intensify vigilance, defensiveness, self-criticism, and emotional reactivity. Compassion-focused practices such as soothing-rhythm breathing, compassionate imagery, compassionate self-talk, and the development of a compassionate self may reduce the intensity of these threat responses and provide a more stable emotional base from which students can engage with others. This interpretation is compatible with the interpersonal foundations of CFT, which emphasize safeness, affiliation, responsiveness, and the regulation of distress through compassionate relational processes (Cwinn et al., 2023).

The findings can also be understood in light of contemporary models of interpersonal emotion regulation. Interpersonal emotion regulation involves using social relationships to influence emotional experience through processes such as seeking comfort, enhancing positive affect, obtaining alternative perspectives, and observing the coping strategies of others (Niven & López-Pérez, 2025). Everyday-life research has shown that interpersonal emotion regulation is common and context-sensitive, with individuals relying on different people and strategies depending on the nature of the emotional event (Tran et al., 2024). Compassion-focused therapy may improve these processes by reducing shame and self-condemnation, which otherwise may inhibit help seeking or make supportive interactions feel threatening. When students become less self-critical and more accepting of emotional vulnerability, they may become more willing to receive social support, reinterpret difficult interactions, and remain emotionally engaged with others instead of withdrawing or reacting defensively.

The present result also corresponds with research emphasizing the effectiveness of interpersonal regulation strategies across different relational contexts. Springstein et al. showed that the use and effectiveness of interpersonal emotion regulation strategies vary across adulthood and according to characteristics of the interaction partner (Springstein et al., 2024). Likewise, Swerdlow and Johnson highlighted the importance of the recipient's subjective evaluation of emotion-regulation interactions, indicating that interpersonal regulation is effective when support is experienced as responsive and appropriate rather than intrusive or invalidating (Swerdlow & Johnson, 2022). Compassion-focused therapy may facilitate more constructive emotional exchanges because it teaches individuals to interpret distress from a less judgmental perspective, communicate their needs more adaptively, and respond to both self and others with greater warmth and understanding. Such capacities are especially relevant to university students, whose emotional functioning is embedded within peer, family, and academic relationships.

The psychometric literature on interpersonal emotion regulation also supports the importance of this finding. Studies using the Interpersonal Emotion Regulation Questionnaire have shown that interpersonal emotion-regulation strategies are measurable and meaningfully associated with psychological adjustment and psychopathology (Messina et al., 2022). The validity of these dimensions has also been supported across different

cultural settings (Faustino & Pascoal, 2024). Therefore, the significant improvement in interpersonal emotion regulation observed in the present study likely reflects a meaningful psychological change rather than a nonspecific improvement in mood. Specifically, the intervention may have strengthened students' ability to seek soothing, enhance positive affect through relationships, model adaptive responses from others, and adopt alternative perspectives during emotionally difficult situations.

The present findings are also consistent with studies demonstrating that compassion-based interventions can reduce emotion dysregulation more generally. A brief self-compassion intervention has been found to reduce state emotion dysregulation among individuals with self-reported generalized anxiety disorder (De Herrera & Turk, 2025). In addition, an online randomized controlled trial showed that compassion-focused therapy and emotional-competency training could reduce emotion dysregulation in a nonclinical population (Pauksik et al., 2024). Group compassion-focused therapy has also demonstrated beneficial effects on difficulties in emotion regulation in women with breast cancer (Mehrabani et al., 2025). These studies support the idea that compassion-based interventions may alter fundamental regulatory processes across different populations. The present study contributes to this literature by showing that similar effects can be observed among university students and specifically in interpersonal dimensions of emotion regulation.

The second major finding indicated that compassion-focused therapy significantly improved frustration tolerance. After adjustment for baseline differences, participants in the experimental group showed lower frustration intolerance scores than participants in the control group. This result is consistent with previous studies showing that self-compassion training can improve frustration tolerance. Maleki reported that self-compassion training improved frustration tolerance among female lower secondary school students (Maleki, 2023). Similarly, Effatdoost Sani et al. found that self-compassion training improved frustration tolerance and affect control among adolescents with inadequate guardianship (Effatdoost Sani et al., 2024). Findings from women with migraine also indicated that self-compassion training can positively influence frustration tolerance (Mirzaei, 2024). The present study therefore adds evidence from a university population and suggests that a structured compassion-focused therapeutic program may be effective in reducing the tendency to perceive frustration, discomfort, or failure as intolerable.

This effect may be understood through the relationship between compassion and the experience of aversive emotional states. Frustration is a natural response to blocked goals, delayed rewards, failure, or unmet expectations. From an adaptive perspective, frustrative nonreward can facilitate behavioral adjustment and disengagement from ineffective strategies when individuals are able to tolerate the emotional discomfort involved (Papini, 2022). However, when individuals interpret frustration as unbearable, even relatively ordinary setbacks may produce disproportionate distress, impulsive reactions, avoidance, or rigid persistence. Compassion-focused therapy may alter this process by teaching individuals to remain in contact with unpleasant internal experiences without immediately escalating self-criticism or threat. A compassionate response to disappointment may allow the person to acknowledge emotional pain, regulate arousal, and select a more adaptive behavioral response.

The intervention components used in the present study are particularly relevant to this mechanism. Soothing-rhythm breathing may reduce physiological activation during frustration, while compassionate imagery may provide a sense of emotional safety when students face criticism, rejection, or academic setbacks. The development of the compassionate self may help students respond to failure with wisdom and responsibility rather than shame or self-punishment. Compassionate letter writing may further restructure the internal dialogue that follows disappointment, replacing harsh evaluations with supportive but realistic responses. Finally, work on fears of compassion may help students challenge beliefs that self-kindness is equivalent to weakness or reduced motivation. These mechanisms are consistent with the broader clinical model of CFT, in which compassion is not viewed as passive reassurance but as an active motivational system for approaching and alleviating suffering (Petrocchi et al., 2024).

The relevance of frustration tolerance for university students is also supported by previous findings. Ruiz-Ortega and Berrios-Martos demonstrated that frustration intolerance is related to academic performance in university students and interacts with broader emotional competencies (Ruiz-Ortega & Berrios-Martos, 2025). Wang et al. similarly showed that frustration tolerance plays a mediating role in the relationship between coping styles and mental health among medical students (Wang et al., 2023). These findings indicate that frustration tolerance is not merely a narrow personality characteristic but a psychological resource that

may influence academic adjustment, coping, and mental health. In higher education environments, students routinely encounter delayed rewards, heavy workloads, evaluation pressure, interpersonal disagreement, and uncertainty about future goals. An intervention that strengthens the ability to remain emotionally stable under these conditions may therefore have broad implications for students' functioning.

The findings can additionally be linked to rational-emotive perspectives on frustration. Research in performance contexts has emphasized that low frustration tolerance and rigid demands can intensify maladaptive emotional reactions when individuals encounter difficulty, failure, or discomfort (Grove et al., 2024). Although compassion-focused therapy differs theoretically from rational emotive behavior therapy, both approaches may reduce the tendency to transform difficulty into psychological crisis. In CFT, this may occur through changing the emotional tone of self-evaluation and increasing the individual's capacity to face distress without self-attack. Thus, increased frustration tolerance may reflect not the elimination of negative emotional experiences, but a greater capacity to remain engaged with those experiences without becoming overwhelmed by them.

Another important aspect of the present findings is the simultaneous improvement in interpersonal emotion regulation and frustration tolerance. These two outcomes may reinforce one another. Students with greater frustration tolerance may be less likely to respond impulsively to criticism, rejection, or disagreement, which in turn may improve their ability to seek and use interpersonal support. Conversely, students who can regulate emotions effectively through adaptive relationships may have access to greater social and emotional resources when coping with frustration. Compassion-focused therapy may therefore operate across both domains by reducing threat sensitivity and self-criticism while strengthening affiliative regulation. This interpretation is compatible with evidence showing that compassion-focused therapy can produce broader positive mental health outcomes rather than affecting only isolated symptoms (Kotera et al., 2024).

The results are also consistent with research among younger populations indicating that compassion-based interventions can enhance both emotional and social functioning. Atashafrouz et al. compared emotion regulation training with a compassion-based intervention among male upper secondary school students with high-risk behaviors and reported beneficial effects on emotional regulation and social self-empowerment (Atashafrouz et al., 2025). Such

findings are relevant because interpersonal emotion regulation depends not only on emotional awareness but also on the ability to participate effectively in social exchanges. The present study extends this line of evidence into higher education and suggests that students may benefit from compassion-oriented skills when navigating emotionally demanding interpersonal and academic experiences.

The significance of these findings becomes clearer when considered within the broader context of student well-being. Contemporary models of well-being in higher education emphasize that stress management requires multidimensional psychological resources rather than isolated symptom-focused approaches (Fang et al., 2025). University students are in a developmental period characterized by increasing autonomy, identity exploration, and changing interpersonal roles (Kohútová & Kohút, 2024). These transitions can intensify both emotional demands and frustration. Accordingly, interventions that simultaneously enhance relational regulation and tolerance of discomfort may be especially suitable for university counseling settings. The present findings suggest that compassion-focused therapy may provide such an integrated framework.

The results also correspond with the broader literature indicating that compassion-based interventions can be useful across clinical and nonclinical contexts. The narrative review by Kotera et al. documented positive mental health outcomes associated with compassion-focused therapy across a range of populations (Kotera et al., 2024). Similarly, evidence from women with breast cancer, individuals with depressive symptoms, women affected by marital infidelity, adolescents, and student populations suggests that compassion-oriented interventions can influence emotional regulation, resilience, affect control, and psychological adjustment (Khosravi et al., 2021; Mehrabi et al., 2025; Parvarde et al., 2025; Sahebi et al., 2022). The present study contributes to this growing evidence by demonstrating that CFT may be useful for university students who show difficulties in interpersonal emotion regulation and frustration tolerance.

Overall, the findings support the theoretical assumption that compassion can function as a regulatory resource. By reducing self-criticism, increasing emotional safeness, and helping individuals approach distress with warmth and courage, compassion-focused therapy may weaken maladaptive threat responses and support more flexible emotional and behavioral functioning. In interpersonal contexts, this may promote more adaptive use of others for emotional regulation; in frustrating situations, it may

increase the capacity to tolerate discomfort without avoidance or impulsive reaction. The meaningful effect sizes observed in the present study further suggest that these changes were not trivial and that compassion-focused therapy may have practical relevance for student mental health interventions.

Several limitations should be considered when interpreting the findings. The study included a relatively small sample of 30 students from a single higher education institution, which limits the generalizability of the results to students from other universities, educational settings, age groups, and sociocultural contexts. Participants were initially selected purposively on the basis of less favorable scores in the study variables, which may also restrict the extent to which the findings can be generalized to the broader student population. The study relied exclusively on self-report questionnaires, and the results may therefore have been influenced by response biases, social desirability, or participants' subjective interpretations of questionnaire items. In addition, the study employed only pretest and immediate posttest assessments, with no follow-up period; consequently, the durability of the observed intervention effects remains unknown. The control group received no active intervention, making it difficult to determine the extent to which the results were attributable specifically to compassion-focused therapeutic mechanisms rather than nonspecific factors such as therapist attention, group participation, expectancy effects, or social interaction. Finally, potentially relevant variables such as baseline psychological distress, personality traits, academic stress, prior psychotherapy experience, and quality of social support were not controlled.

Future studies should replicate the present investigation with larger samples drawn from multiple universities and different educational and cultural contexts to increase external validity. Random sampling or broader recruitment procedures could be used where feasible, and stratification by sex, educational level, academic discipline, or psychological risk status may help identify subgroups that benefit most from compassion-focused therapy. Researchers are also encouraged to incorporate follow-up assessments several weeks or months after treatment to determine whether improvements in interpersonal emotion regulation and frustration tolerance are maintained over time. The use of active control conditions, such as stress-management training, cognitive behavioral interventions, or emotion-regulation training, would allow more precise evaluation of the specific contribution of compassion-focused

mechanisms. Future research may also examine mediating variables such as self-compassion, self-criticism, shame, perceived social safeness, emotional awareness, or threat-system activation in order to clarify how the intervention produces change. Combining self-report measures with behavioral tasks, clinician ratings, peer reports, or ecological momentary assessment could provide a more comprehensive assessment of interpersonal emotion regulation and frustration tolerance in everyday settings. Comparative studies may further investigate whether individual, group-based, online, or blended formats differ in effectiveness and whether treatment intensity influences outcomes.

University counseling centers and student-support services may consider incorporating structured compassion-focused programs into preventive and therapeutic services for students who experience difficulties with emotional regulation, interpersonal stress, academic frustration, or maladaptive self-criticism. Brief group-based interventions may be particularly feasible because they can reach several students simultaneously and provide opportunities to practice compassionate communication and interpersonal emotion-regulation skills within a social environment. Counselors can place particular emphasis on soothing-rhythm breathing, compassionate imagery, compassionate self-talk, compassionate letter writing, and techniques for recognizing and managing threat-based reactions during conflict or disappointment. Psychoeducational workshops may also be developed to help students distinguish between self-compassion and passivity and to strengthen their capacity to tolerate academic setbacks without avoidance, impulsive reactions, or excessive self-blame. Training university counselors in compassion-focused principles may facilitate integration of these techniques into routine counseling practice. Screening students who repeatedly experience intense frustration, interpersonal conflict, or difficulties managing emotions may also help identify individuals who could benefit from targeted compassion-focused interventions before these problems contribute to more serious academic or psychological difficulties.

### Authors' Contributions

All authors significantly contributed to this study.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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### Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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