

*Original Article*

## Emotion-Focused Group Therapy and Its Impact on Emotional Reactivity and Interpersonal Problems in Male Adolescent Students: A Quasi-Experimental Pretest-Posttest Control Group Trial

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### Abstract

**Background and Aim:** The present study aimed to investigate the effectiveness of emotion-focused group therapy on emotional reactivity and interpersonal problems in male adolescent students.

**Materials and Methods:** This was a quasi-experimental study using a pre-test/post-test design with a control group. The statistical population included all male second-grade high school students in Harsin city during the 2024–2025 academic year. A random sample of 30 students was selected and assigned to the experimental and control groups (15 students per group). The experimental group received emotion-focused group therapy over eight 90-minute sessions. The instruments used in this study were the Nock and Matthew Emotional Reactivity Scale (2008) and the Barkham et al. Interpersonal Problems Scale (1996). The data were analyzed using multivariate and univariate analysis of covariance (MANCOVA and ANCOVA) with SPSS-26 software.

**Results:** The results showed that emotion-focused group therapy had a significant effect on the emotional reactivity and interpersonal problems of male high school students ( $P < 0.001$ ), and 36% of changes in emotional reactivity and 20% of changes in interpersonal problems were influenced by the emotion-focused intervention.

**Conclusion:** Based on the findings, it can be suggested that emotion-focused group therapy appears to be associated with improvements in emotional reactivity and interpersonal problems among male high school students. These observed changes may contribute to better mental health, which could, in turn, support individual and social well-being. However, due to the quasi-experimental design of this study, causal inferences should be made with caution, and further research with randomized controlled trials is needed to establish causality.

**Keywords:** Emotion-focused Therapy; Emotional reactivity; Interpersonal problems; Adolescent; Quasi-experimental

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## Introduction

Adolescence is a pivotal developmental stage, commencing with puberty and concluding when an individual achieves relative biological maturity and independence from parents or caregivers (1). This transitional period from childhood to adulthood is marked by rapid and significant changes across various life dimensions, including hormonal fluctuations, increased neural plasticity, and the growth of autonomy (2, 3). Empirical findings indicate that adolescents experience more intense negative emotions and greater mood swings, making the occurrence of sad or fluctuating moods more prevalent in adolescence than in childhood (4). However, traditional developmental psychology often viewed these fluctuations merely as natural corollaries of puberty; conversely, contemporary perspectives argue that emotional responses during adolescence are reconstructed and exacerbated within the context of major developmental challenges, such as identity formation, increased independence from parents, a rise in risky behaviors, and an acute need for social acceptance (5, 6). With profound biological, psychological, and social changes occurring at this developmental stage, interpersonal structures are dramatically altered as adolescents strive for autonomy from their families while simultaneously deepening their connections with peers (7). This transitional process, particularly regarding emotional experiences, functions as a double-edged sword, concurrently presenting serious challenges and opportunities for psychological adjustment (8).

One of the most challenging intrapersonal dimensions during this period is emotional reactivity, a construct describing the intensity, duration, and speed of an individual's response to environmental emotional stimuli (9). Research literature typically defines this concept as the extent to which emotions are experienced and how rapidly they are aroused (10). Although prominent individual differences exist regarding the threshold, intensity, and duration of recovery from these emotions (11), a methodological and theoretical limitation in previous studies has been an overemphasis on negative emotional reactivity to the neglect of its positive dimensions, whereas this construct inherently encompasses both domains of

stimuli (12). Furthermore, contemporary scientific debates suggest that what perpetuates maladaptive emotional reactivity is not the emotion itself, but rather the adolescent's experiential avoidance efforts to escape intense emotional experiences in distressing situations; this operates as a reciprocal process that fuels and maintains heightened reactivity (13).

This deficit in emotion regulation is rooted in a neurodevelopmental conundrum, wherein adolescents—due to the incomplete maturation of neural circuits responsible for emotion regulation—lack the capacity to accurately perceive and behaviorally manage their emotions when facing physiological activation (14). A critical evaluation of the adolescent brain architecture reveals a "temporary imbalance" between the brain systems responsible for emotion processing and those governing regulation (15). In this developmental pattern, subcortical limbic regions (responsible for processing emotions) mature significantly earlier than prefrontal cortical areas (responsible for emotion regulation and impulse control) (16). This asymmetrical development creates a neurobiological vulnerability that fuels exacerbated emotional reactivity (17). The direct consequence of this regulatory limitation extends beyond the intrapersonal realm, culminating in poorer decision-making, impulsive reactions to provocations, heightened vulnerability to risky behaviors, and deep interpersonal crises (18).

Consequently, interpersonal problems, defined as maladaptive relational patterns, emerge as another central challenge of this era (19). Although classical literature stresses the role of social interactions (with family, friends, and teachers) in forming an integrated and coherent identity (20, 21), interpersonal conflicts are exacerbated when an adolescent's goals interfere with the expectations of others, generating negative emotions that disrupt relational harmony (22). A systematic review of the consequences of this construct indicates that frequent interpersonal problems, particularly for adolescents with strong peer attachments, carry a high potential to morph into destructive behaviors and even suicidal ideation (23, 24). Furthermore, evidence suggests that without timely interventions, these adolescents become trapped in a vicious cycle of aggressive strategies or victimization in future interactions (25, 26). Therefore, mitigating

heightened pathological emotional reactivity and resolving interpersonal problems concurrently necessitates targeted intervention approaches that foster both emotional stability and social skills (27), as structured developmental programs have demonstrated effectiveness in improving mental health (28).

An intervention holding robust theoretical potential to address this dual need is Emotion-Focused Group Therapy (EFGT), an approach derived from the principles of Emotion-Focused Therapy originally introduced by Greenberg, Elliott, and colleagues, which positions emotion as the primary agent of clinical change (29, 30). This intervention is grounded in the principles of affective neuroscience and humanistic approaches (31), helping individuals identify, experience, express, and regulate their emotions, thereby transforming maladaptive emotional reactivity (32). Crucially, the theoretical rationale and exact mechanism explaining why this approach concurrently impacts intrapersonal reactivity and interpersonal problems lies in its group format. The group setting creates a social microcosm where peers validate each other's emotional experiences, thereby reducing feelings of isolation (33). This context provides a unique opportunity for observational learning and practicing new emotional skills within a simulated social environment that directly addresses developmental adolescent challenges such as autonomy and peer relationships (34). Despite technical variations, group emotion-focused interventions share core components such as emotional psychoeducation, mindfulness exercises, and emotion monitoring (35), emphasizing the generalization of these skills through structured homework assignments (36).

Empirical evidence tentatively confirms that this therapy reduces dysfunctional reactivity (37) and enhances interpersonal functioning (38). The pivotal mechanism of change in this model is the strengthening of emotion differentiation, the ability to describe and label one's emotional experiences in a nuanced, specific manner, which is directly linked to enhanced emotion recognition in others and empathetic responses (39, 40). This reciprocal relationship between understanding one's own emotions and recognizing the emotional states of

others is precisely the loop through which emotional reactivity is regulated and interpersonal functioning is corrected (39).

Despite these theoretical foundations, a conspicuous research gap exists in the literature: most studies have evaluated emotion-focused interventions in individual settings or within Western societies. The structured effectiveness of its group format on male adolescents, particularly in specific cultural contexts where emotional expression may be accompanied by cultural challenges or stigmas, has rarely been coherently evaluated. Moreover, relational behaviors and emotional reactivity are heavily influenced by gender norms and the cultural fabric of society (41, 19). Iranian adolescent boys encounter unique cultural expectations during their development that complicate the balance between seeking autonomy and maintaining relationships (42). The neglect of these indigenous characteristics in prior intervention programs underscores the necessity of a study that localizes and objectively evaluates this therapy within this target population.

Accordingly, the present study was designed to address this research gap by investigating the effectiveness of Emotion-Focused Group Therapy on emotional reactivity and interpersonal problems among male high school students in Harsin, a city in Kermanshah Province, Iran. This study seeks to determine whether this intervention can serve as an efficient tool to produce meaningful changes in the emotional and relational architecture of adolescents.

## Methods

This study employed a quasi-experimental pretest-posttest design including an intervention group and a non-intervention control group. Because of institutional constraints within the educational system, conducting a fully randomized controlled trial (RCT) across the broader population was not feasible. This limitation reduces the strength of causal inference and restricts the generalizability of the findings beyond the target population of male adolescents in the study region. To reduce potential selection bias, a rigorous multistage random sampling procedure and strict screening criteria were applied.

The target population consisted of all male students

enrolled in the second level of high school in Harsin County, Kermanshah Province, Iran, during the 2024-2025 academic year. First, several secondary schools were randomly selected from the district. A total of 68 students from these schools who showed preliminary signs of emotional and interpersonal difficulties were screened. Among those who met the predefined eligibility criteria, 30 participants were randomly selected and assigned to two equal groups: an experimental group ( $n = 15$ ) and a control group ( $n = 15$ ). Although the relatively small sample size may be considered a limitation for multivariate analysis of covariance (MANCOVA), the assumptions of normality and homogeneity of variance were tested and statistically confirmed before the analysis. To formally address the statistical risks and sample size adequacy, a post-hoc power analysis was conducted using G\*Power software (version 3.1.9.7). Given the substantial treatment effects observed in this study, the statistical power was calculated for the subsequent univariate analysis of covariance (ANCOVA) models based on the partial eta squared ( $\eta_p^2$ ) values. For the first dependent variable ( $\eta_p^2 = 0.36$ , representing a large effect size), the observed statistical power was high at  $1 - \beta > 0.95$ . For the second dependent variable  $\eta_p^2 = 0.20$ , a large effect size), the statistical power was  $1 - \beta = 0.85$ . Both values strictly exceeded the standard psychometric threshold of 0.80, confirming that the random sample provided sufficient statistical power to detect meaningful intervention effects and significantly minimized the risk of a Type II error.

Participant retention remained completely stable throughout the study. All 30 students who met the inclusion criteria were assigned to their respective groups and completed the posttest assessment, resulting in an attrition rate of 0%. The inclusion criteria were as follows: (a) age between 14 and 18 years; (b) a score at least one standard deviation above the normative mean on both the Emotional Reactivity Scale (ERS) and the Inventory of Interpersonal Problems (IIP-32); (c) provision of written informed consent by the participant along with parental consent; and (d) absence of severe comorbid psychological disorders or concurrent participation in psychotherapeutic treatment. The exclusion criteria included absence from more than two intervention

sessions or an explicit request to withdraw from the study. Because the study concluded immediately after the posttest due to administrative scheduling constraints within the school system, no follow-up assessment was conducted. Consequently, the long-term stability of the treatment effects could not be evaluated.

## Materials

### Emotional Reactivity Scale (ERS)

The ERS, developed by Nock et al. (43), is a 21-item self-report instrument assessing emotional sensitivity, intensity, and persistence. Items are scored on a 5-point Likert scale from 0 ("Not at all like me") to 4 ("Completely like me"), with higher scores reflecting heightened emotional reactivity. Nock et al. (43) demonstrated excellent psychometric properties, with an overall Cronbach's alpha of 0.95. In Iran, the Persian adaptation validated by Moghbeli Hanzaei et al. (44) confirmed a robust four-factor structure via confirmatory factor analysis ( $\chi^2/df = 1.79$ , CFI = 0.95, GFI = 0.93, RMSEA = 0.05), ensuring its construct validity for Iranian adolescents. They reported a total internal consistency of 0.92. In the present sample, the local reliability of the Persian ERS was established with a Cronbach's alpha of 0.87, confirming high internal consistency. Additionally, the face and content validity of the scale for the current sample were qualitatively evaluated and confirmed by a panel of expert faculty members in educational psychology to ensure its contextual and cultural appropriateness for Iranian male adolescents.

### Inventory of Interpersonal Problems (IIP-32)

To assess relational difficulties, the shortened 32-item Inventory of Interpersonal Problems (IIP-32) by Barkham et al. (45) was used. It evaluates eight interpersonal subscales on a 5-point Likert scale ranging from 0 ("Not at all") to 4 ("Extremely"). Barkham et al. (45) reported an overall Cronbach's alpha of 0.86. The cross-cultural validity of the Persian version in Iran was established by Fath et al. (46), demonstrating acceptable convergent validity through significant correlations with the Toronto Alexithymia Scale ( $P < 0.01$ ). Fath et al. reported internal consistencies ranging from 0.60 to 0.83 for subscales and 0.82 for the total scale. For the current sample, the instrument's localized reliability yielded a Cronbach's

alpha of 0.84, proving it highly reliable for this demographic. Furthermore, to verify its relevance in the present study, the tool's qualitative face and content validity were rigorously reviewed and endorsed by the same expert panel, ensuring that the items accurately reflected interpersonal frictions within the school environment.

## Intervention

### Emotion-Focused Group Therapy

Following formal approval from the Department of Education in Harsin County, the random selection and screening process were initiated. The experimental group underwent eight 90-minute sessions of Greenberg's standard Emotion-Focused Group Therapy (EFGT) (47), delivered twice weekly, while

the control group remained on a waiting list without any psychological training.

To ensure treatment fidelity and reproducibility, the sessions were conducted strictly according to Greenberg's manualized therapeutic principles, tailored contextually for adolescent boys. The therapist was a PhD student in Educational Psychology who had completed advanced certified training in emotion-focused interventions. To maintain adherence to the protocol, 20% of the recorded session transcripts were randomly audited by an independent senior supervisor (an educational psychology faculty member), yielding a fidelity compliance rate of 94%. Ethical protocols were stringently maintained, ensuring anonymity, voluntary participation, and the right to unconditional withdrawal.

**Table 1.** Greenberg's Emotion-Focused Group Therapy Package (2010)

| Sessions | Objective                                                             | Core Content & Techniques                                                                                                                                                                       | Home Assignment                                                                                               |
|----------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| First    | Establish a safe therapeutic environment and introduce the EFT model. | Group contract formulation; defining the role of emotions as adaptive signals; identification of dysfunctional interpersonal cycles and secondary emotional reactions.                          | "Emotion Tracking Diary" noting physical sensations associated with sudden mood shifts.                       |
| Second   | Enhance emotion differentiation and overcome emotional avoidance.     | Body-focused focusing techniques; identifying core primary emotions versus maladaptive secondary anger; validating vulnerability within a peer group context.                                   | Labeling three distinct negative emotions during interpersonal friction without suppressing them.             |
| Third    | Accessing and shifting core painful emotional states.                 | Introduction of the "Empty Chair" technique adjusted for group dynamics; expressing unvoiced grief or shame; accessing primary adaptive anger to counter submissive interpersonal patterns.     | Writing an unsent letter to an individual associated with a major interpersonal conflict.                     |
| Fourth   | Identifying and restructuring internal interruptions of emotion.      | Two-chair dialogue for self-critical splits; identifying how internalized cultural expectations ("boys don't cry") block adaptive emotional reactivity and exacerbate interpersonal aggression. | Identifying the "internal critic's voice" during moments of heightened sensitivity.                           |
| Fifth    | Transforming emotional pain into proactive behavioral needs.          | Identifying unmet core needs (e.g., validation, safety, autonomy) underlying interpersonal problems; connecting personal values to daily relational choices.                                    | Assertively communicating a basic emotional need to a peer or family member using "I-statements."             |
| Sixth    | Fostering adaptive internal regulation to lower emotional reactivity. | Compassionate imagery exercises; training in somatic self-soothing behaviors; processing group feedback to re-frame past relational victimization.                                              | Practicing a 10-minute somatic self-soothing exercise during periods of high academic or social stress.       |
| Seventh  | Resolving lingering interpersonal conflicts through emotional shift.  | Facilitating emotional forgiveness toward significant others, restructuring maladaptive relational schemas, and reinforcing peer-to-peer validation within the group microcosm.                 | Creating a "Relational Growth Plan" documenting specific adaptive behaviors for upcoming social interactions. |
| Eighth   | Consolidating gains and preparing for termination.                    | Reviewing internalized emotional skills; managing termination anxiety; closing group rituals; administration of post-test measures (ERS and IIP-32).                                            | Continued utilization of the emotion regulation toolkit in everyday school environments.                      |

## Data Analysis

Data were analyzed using multivariate analysis of covariance (MANCOVA) to evaluate the effectiveness of the intervention while controlling for pretest scores. Descriptive statistics, including means and standard deviations, were computed for each variable. Prior to conducting the main analysis, the assumptions of normality, homogeneity of variance, homogeneity of variance-covariance matrices, and homogeneity of regression slopes were examined. Effect size was determined using eta squared. All analyses were performed using SPSS software, version 24.

## Results

The demographic findings indicated that the students participating in the study were between 14 and 18 years of age. The mean age of the experimental group was  $16.31 \pm 1.65$  years, while that of the control group was  $16.86 \pm 1.18$  years. In addition, the students were enrolled in the tenth, eleventh, and twelfth grades. The highest frequency in the experimental group was observed in the eleventh grade (69.26%), whereas in the control group, it was observed in the twelfth grade (40.07%). The descriptive statistics for the study variables are presented in Table 2.

The results presented in Table 2 indicate that Emotion-Focused Group Therapy was associated with changes in the mean scores of emotional reactivity and interpersonal problems among secondary school students in the second period at the post-test stage. Prior to conducting the main inferential analyses, the statistical assumptions underlying multivariate and univariate analyses of covariance (MANCOVA and ANCOVA) were thoroughly examined to ensure the validity and robustness of the generalized linear models.

First, the assumption of univariate normality was assessed using the Shapiro-Wilk test, which is highly recommended for sample sizes under 50 ( $N = 30$ ). The results revealed that the distribution of scores for both emotional reactivity ( $W = 0.94$ ,  $p > 0.05$ ) and interpersonal problems ( $W = 0.96$ ,  $p > 0.05$ ) did not significantly deviate from a normal distribution.

Second, homogeneity of variance-covariance matrices was evaluated using Box's M test. The test statistic

was non-significant (Box's  $M = 4.12$ ,  $F = 1.28$ ,  $p > 0.05$ ), confirming that the covariance matrices were equal across the experimental and control groups. Additionally, Levene's test was performed to verify the homogeneity of variances for each dependent variable. The results indicated that the error variances were homogeneous for both emotional reactivity ( $F_{(1,28)} = 1.04$ ,  $p > 0.05$ ) and interpersonal problems ( $F_{(1,28)} = 0.89$ ,  $p > 0.05$ ).

Third, the homogeneity of regression slopes was tested by evaluating the interaction effects between the independent variable (group) and the covariates (pretests). The interaction was non-significant for both emotional reactivity ( $F_{(1,26)} = 1.15$ ,  $p > 0.05$ ) and interpersonal problems ( $F_{(1,26)} = 0.76$ ,  $p > 0.05$ ), demonstrating that the relationship between the covariates and the dependent variables was consistent across groups.

Finally, the independence of errors was assessed using the Durbin-Watson statistic. The obtained values for both models fell within the acceptable range of 1.50 to 2.50 ( $DW = 1.92$  and  $1.87$ , respectively), indicating the absence of autocorrelation among the residuals. Collectively, these findings confirmed that all statistical assumptions were satisfactorily met, thereby justifying the use of MANCOVA. To examine changes in emotional reactivity and interpersonal problems, multivariate analysis of covariance (MANCOVA) was conducted, and the results are presented in Table 3.

As seen in Table 3, given the significance of the multivariate analysis of covariance, it can be concluded that a significant difference must exist between the experimental and control groups in at least one of the variables, emotional reactivity or interpersonal problems due to the emotion-focused group therapy. To determine in which variable this observed significance lies, univariate analysis of covariance was used, and its results are presented in Table 4.

As observed in Table 4, to control for Type I error inflation due to multiple testing, a Bonferroni correction was applied, adjusting the alpha level for the subsequent univariate tests to  $\alpha = 0.025$ . Controlling for the pre-test effect on emotional reactivity, there's a significant difference between the experimental and control groups ( $F_{(1,26)} = 87.440$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.36$ , 95%CI [-11.24, -7.30]).

**Table 2.** Descriptive findings of dependent variables before and after intervention

| Variable               | Group        |           | Mean  | Standard Deviation |
|------------------------|--------------|-----------|-------|--------------------|
| Emotional Reactivity   | Experimental | Pre-test  | 52.07 | 7.79               |
|                        |              | Post-test | 42.13 | 1.92               |
|                        | Control      | Pre-test  | 50.33 | 8.04               |
|                        |              | Post-test | 51.80 | 7.12               |
| Interpersonal Problems | Experimental | Pre-test  | 82.33 | 4.51               |
|                        |              | Post-test | 74.93 | 1.79               |
|                        | Control      | Pre-test  | 81.60 | 6.25               |
|                        |              | Post-test | 78.33 | 7.36               |

**Table 3.** Results of multivariate analysis of covariance of post-test scores of research variables

| Effect | Test Name          | Value | F      | Hypothesis df | Error df | Significance Level |
|--------|--------------------|-------|--------|---------------|----------|--------------------|
| Group  | Pillai's Trace     | 0.772 | 42.329 | 2             | 25       | 0.001              |
|        | Wilks' Lambda      | 0.228 | 42.329 | 2             | 25       | 0.001              |
|        | Hotelling's Trace  | 3.386 | 42.329 | 2             | 25       | 0.001              |
|        | Roy's Largest Root | 3.386 | 42.329 | 2             | 25       | 0.001              |

**Table 4.** Results of Univariate Analysis of Covariance for Comparing Post-test Scores

| Source of Variance | Dependent Variable     | Sum of Squares | Degrees of Freedom | Mean Square | F      | Significance Level | Eta Squared |
|--------------------|------------------------|----------------|--------------------|-------------|--------|--------------------|-------------|
| Pre-test           | Emotional Reactivity   | 22.40          | 1                  | 22.40       | 2.08   | 0.16               | 0.07        |
|                    | Interpersonal Problems | 107.225        | 1                  | 107.225     | 8.310  | 0.008              | 0.11        |
| Group              | Emotional Reactivity   | 940.051        | 1                  | 940.051     | 87.440 | 0.001              | 0.36        |
|                    | Interpersonal Problems | 579.898        | 1                  | 579.898     | 44.941 | 0.001              | 0.20        |
| Error              | Emotional Reactivity   | 279.521        | 26                 | 10.751      |        |                    |             |
|                    | Interpersonal Problems | 335.493        | 26                 | 12.904      |        |                    |             |

The effect size indicates that group membership (Emotion-Focused Group Therapy) explains 36% of the variance in students' post-test emotional reactivity scores, representing a large effect size. Therefore, 36% of the difference between the mean emotional reactivity scores in the experimental group at the pre-test ( $M = 52.07 \pm 6.12$ ) and post-test ( $M = 42.13 \pm 4.34$ , 95%CI [39.85, 44.41]) levels is attributable to emotion-focused group therapy.

Similarly, controlling for the pre-test effect on interpersonal problems, a significant difference exists between the experimental and control groups ( $F_{(1,26)} = 44.941$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.20$ , 95%CI [-8.21, -4.47]). The effect size reveals that group membership (Emotion-Focused Group Therapy) accounts for 20% of the variance in students' interpersonal problem scores, which is also considered a large effect size. Consequently, 20% of the difference between the

mean interpersonal problem scores in the experimental group at the pre-test ( $M = 82.33 \pm 8.45$ ) and post-test ( $M = 74.93 \pm 5.62$ , 95%CI [71.48, 78.38]) levels is due to emotion-focused group therapy, whereas the control group remained statistically unchanged from baseline ( $M = 81.93$ ) to post-test ( $M = 81.27$ ).

## Discussion

This study aimed to evaluate the effectiveness of Emotion-Focused Group Therapy (EFGT) on emotional reactivity and interpersonal problems among male high school students. The statistical analyses provided preliminary evidence that the intervention reduced both outcome measures in the experimental group at the post-test stage. These findings are consistent with certain aspects of previous research, including studies by Amini *et al.* (30), Mousavi *et al.*

(29), Minaei (48), Moore et al. (35), Shahar (49), and Benu et al. (50).

However, a critical comparison reveals important context-specific differences. Whereas previous studies have primarily examined emotion-focused interventions in individual, clinical, or adult female populations, the present study implemented a manualized group format designed for non-clinical male adolescents within an educational setting. This conceptual distinction is important, as EFGT in adult clinical samples is typically aimed at modifying more deeply entrenched emotional and personality patterns, whereas in the present adolescent sample, it appears to have functioned more as a short-term stabilizing mechanism in response to immediate school-related and developmental stressors.

To explain why this single intervention simultaneously affected both emotional reactivity and interpersonal problems, it is necessary to consider the unified mechanism of change proposed in Greenberg's emotion theory. Emotional reactivity, as an intrapersonal vulnerability, and interpersonal problems, as an interpersonal difficulty, are not independent phenomena; rather, they are functionally interconnected.

From the perspective of EFGT, maladaptive interpersonal behavior often represents a secondary behavioral expression of unregulated primary emotional distress.

By transforming internal emotional processing and moving participants from experiential avoidance and cognitive rumination (51) toward emotional awareness and acceptance (52), the intervention may reduce the core intrapersonal reactivity. As adolescents become less threatened by intense internal emotional experiences, their reliance on maladaptive interpersonal defenses, such as aggressive acting out or passive withdrawal, is also likely to decrease.

Furthermore, the group context itself functioned as an interactive microcosm. Experiencing primary vulnerabilities within a safe and nonjudgmental peer environment allowed participants to receive immediate interpersonal feedback (53). This dual-action mechanism suggests that as internal emotional reactivity becomes more regulated, it may facilitate the development of empathy and clearer emotional differentiation in relation to others, which form the

basis of adaptive and compassionate interpersonal functioning (54).

Despite these positive trends, critical reflection on the intervention nomenclature reveals certain terminological ambiguities in the literature. Some previous researchers have loosely classified any affect-regulation program as "emotion-focused," thereby obscuring the distinct therapeutic boundaries of Greenberg's process-experiential model. In the present study, the intervention strictly adhered to a manualized emotion-transformation approach, in which emotion is changed through emotion, and thus differed fundamentally from cognitive-behavioral approaches to affect management. Therefore, the successful outcomes of the present study should not be generalized to broader "emotional training" packages, as the experiential mechanisms involved in processing primary emotions are specific to this protocol.

### Limitations and Future Directions

Several methodological limitations circumscribe the generalizability of the current findings and must be addressed:

- **Design and Sample Constraints:** Although a randomized selection and screening process was utilized, the study's generalizability is constrained by its quasi-experimental architecture (e.g., lack of random allocation at the institutional level) and the relatively small sample size ( $N = 30$ ) drawn exclusively from male adolescents in Harsin County. This limits broader geographical and gender-based generalizability.
- **Assessment Reliance:** Outcomes were measured strictly through self-report instruments (ERS and IIP-32). While psychometrically validated, these tools are inherently susceptible to social desirability biases, subjective response tendencies, and varying degrees of adolescent emotional insight.
- **Lack of Longitudinal Follow-up:** The evaluation was confined to pre-test and post-test assessments. Without a multi-month (e.g., 6-month or 1-year) follow-up period, the temporal durability and maintenance of the therapeutic effects remain unknown.

- **Implementation and Fidelity Biases:** Although a high fidelity compliance rate (94%) was achieved through independent auditing, the execution of therapy by a single doctoral student introduces potential therapist-effect biases and implementation variances that could challenge protocol standardization across different educational settings.

Future research should deploy randomized controlled trials (RCTs) with larger, cross-regional, and gender diversified samples. Incorporating multi-method assessments (e.g., combining peer or teacher behavioral ratings with self-reports) and establishing rigorous longitudinal follow-up intervals are highly recommended to track the persistence of changes and determine the necessity of booster sessions.

## Conclusion

In summary, the findings of the present study provide preliminary evidence that Emotion-Focused Group Therapy may be effective in reducing acute emotional reactivity and self-reported interpersonal difficulties among male high school students at the post-test stage. However, given the limitations of the quasi-experimental design, the relatively small sample size ( $N = 30$ ), and the absence of long-term follow-up, these findings should not be overinterpreted as evidence of a definitive or enduring improvement in overall emotional stability or long-term interpersonal functioning.

Although the observed reductions highlight the short-term utility of EFGT in the school setting, broader generalizations regarding adolescent personality restructuring require cautious interpretation and further longitudinal investigation.

## Acknowledgment

We hereby thank all individuals for participating and cooperating with us in this study.

## Ethics Approval

The study protocol was conducted in full accordance with the ethical principles of the Declaration of Helsinki, which outlines guidelines for medical and

psychological research involving human participants. Prior to obtaining access to the schools, administrative permission and ethical approval for data collection were secured from the Department of Education in Harsin County.

Because the study involved minors below the legal age of consent, a two-stage consent procedure was implemented. First, written informed consent was obtained from the parents or legal guardians of all participating students, with clear information provided regarding the nature and educational scope of the intervention. Second, the adolescents provided written informed assent after receiving a comprehensive and developmentally appropriate explanation of the study objectives, session structure, and the interactive nature of the intervention.

Confidentiality and anonymity were maintained throughout the study. All data were de-identified through numerical coding to protect participants' identities, and digital records were stored on secure, password-protected servers accessible only to the principal investigator.

Participation was entirely voluntary, and the adolescents were clearly informed of their right to withdraw from the study at any time without penalty, academic consequences, or any effect on their school standing. In addition, to ensure psychological safety, an independent certified school counselor was present on site during all intervention sessions to provide immediate support and clinical stabilization if experiential emotional processing evoked acute distress or secondary trauma in any participant.

## Author's Contributions

All authors significantly contributed to this study.

## Data Availability

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

## Conflict of Interest

The authors declare that they have no conflict of interest.

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