

Effectiveness of Humor-Based Group Therapy on Depression and Self-Esteem in Adolescents

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ABSTRACT

Objective: This study aimed to investigate the effectiveness of humor-based group therapy on depression and self-esteem among adolescents.

Methods and Materials: A randomized controlled trial design was employed, involving 30 adolescent participants from Bulgaria randomly assigned to either an experimental group (humor-based group therapy; $n = 15$) or a control group (no intervention; $n = 15$). The experimental group participated in eight weekly 90-minute sessions focused on humor-based techniques designed to enhance emotional regulation, self-esteem, and social interactions. Dependent variables were measured using standardized tools: depression was assessed via the Beck Depression Inventory-II, and self-esteem was assessed with the Rosenberg Self-Esteem Scale at three time points—pre-test, post-test, and a five-month follow-up. Data were analyzed using repeated-measures ANOVA and Bonferroni post-hoc tests through SPSS-27.

Findings: The findings revealed significant reductions in depression ($F(2,54) = 28.94, p < .001, \eta^2 = .539$) and significant increases in self-esteem ($F(2,54) = 26.75, p < .001, \eta^2 = .498$) for the experimental group compared to the control group, with substantial improvements maintained at five-month follow-up. Specifically, depression scores in the experimental group significantly decreased from pre-test ($M = 27.60, SD = 4.12$) to post-test ($M = 15.87, SD = 3.45, p < .001$) and remained stable at follow-up ($M = 16.53, SD = 3.72$). Self-esteem scores significantly improved from pre-test ($M = 18.80, SD = 3.67$) to post-test ($M = 28.40, SD = 4.18, p < .001$) and remained high at follow-up ($M = 27.87, SD = 4.01$).

Conclusion: Humor-based group therapy effectively reduced depressive symptoms and significantly enhanced self-esteem among adolescents, with beneficial effects persisting at five months post-intervention, suggesting it as a promising therapeutic option for adolescent mental health interventions.

Keywords: Humor-based therapy, depression, self-esteem, adolescents, randomized controlled trial.

1. Introduction

Adolescence is a critical developmental stage characterized by significant psychological, emotional, and social transformations. During this period, individuals often face increasing academic pressure, social comparison, identity confusion, and emotional vulnerability, which can lead to various mental health challenges, notably depression and low self-esteem. Depression in adolescents not only disrupts cognitive and emotional functioning but also diminishes self-worth and social engagement, increasing the risk of academic failure, substance abuse, and suicidal ideation (Fereydooni & Sheykhani, 2024; Phuttharo, 2025). As global mental health concerns rise, researchers and clinicians continue to explore accessible, culturally adaptable, and engaging therapeutic strategies that can alleviate adolescent psychological distress while simultaneously enhancing positive self-concept.

Self-esteem, as a core psychological construct, refers to an individual's overall sense of personal value and self-worth. It is particularly sensitive during adolescence, a period when peer acceptance and social image become paramount. Numerous studies have highlighted the inverse relationship between depression and self-esteem, whereby low self-esteem exacerbates vulnerability to depressive symptoms and vice versa (Kakaei et al., 2023; Kollindorfer et al., 2017). As such, psychological interventions that simultaneously target both domains hold promise for improving adolescent mental health. Recent investigations have placed greater emphasis on group-based approaches to promote therapeutic alliance, peer support, and cost-effectiveness (Swartzman et al., 2021; Try et al., 2021). In particular, group therapies focusing on creative, experiential, and emotion-centered techniques have shown significant potential in enhancing self-perception and reducing emotional burdens.

In this context, humor-based therapy has emerged as a promising modality. Humor, as a universal and socially valued psychological resource, plays a vital role in stress regulation, mood enhancement, and interpersonal bonding. It offers individuals a reframing mechanism to reinterpret adversities in a less threatening manner and fosters emotional resilience (Kuiper & McHale, 2009). Research suggests that adaptive humor styles—particularly affiliative and self-enhancing humor—are associated with higher self-esteem, lower levels of depression, and increased psychological well-being among adolescents and adults alike (Verma & Gupta, 2023). Humor facilitates cognitive

flexibility, allowing individuals to break rigid negative thought patterns and establish a more optimistic perspective on personal challenges.

Several empirical studies have investigated the role of humor-based interventions across diverse populations. For example, a randomized clinical trial by Kugler et al. (2021) demonstrated that structured humor training significantly reduced emotional distress in patients with chronic pain while improving their psychological functioning (Kugler et al., 2021). Similarly, Olah et al. (2022) found that a stand-up comedy intervention—termed “Comedy Bootcamp”—successfully enhanced well-being, self-expression, and emotional regulation in military populations (Olah et al., 2022). While these studies did not specifically target adolescents, they highlight the therapeutic potential of humor in clinical settings.

In adolescent populations, humor has also been incorporated into broader therapeutic frameworks. Lindayani et al. (2024) showed that audiovisual humor therapy significantly improved self-esteem in elderly participants, suggesting its applicability across age groups (Lindayani et al., 2024). The same modality, when integrated into therapeutic environments, can reduce depressive symptoms and increase engagement in group sessions. Nevertheless, despite its demonstrated benefits, humor-based group therapy remains underutilized in adolescent mental health interventions, especially in structured randomized designs.

Prior studies have also explored the effectiveness of other therapeutic modalities for addressing depression and self-esteem in adolescents. For instance, schema therapy has been found to significantly reduce depression and increase self-esteem among fatherless depressed adolescents (Fereydooni & Sheykhani, 2024), while hope therapy has improved overall life quality and self-esteem in adolescent girls (Hashemian et al., 2022). Moreover, mindfulness-based interventions have shown substantial success in alleviating major depressive disorder symptoms (Awirutworakul et al., 2020), and occupational therapy has proven beneficial in improving emotional outcomes among abused children (Javed et al., 2020). These studies underscore the efficacy of psychological interventions that are both emotionally restorative and developmentally appropriate.

Further evidence comes from the application of cognitive-behavioral group therapy, which has consistently yielded favorable results in enhancing self-esteem and reducing depressive symptoms in adolescents and adults (Beattie & Beattie, 2018; Swartzman et al., 2021). Elisabeth

et al. (2021) tested a cognitive-behavioral group treatment for low self-esteem in individuals with psychosis and found significant improvements, which supports the adaptability of group-based interventions in clinical and subclinical populations (Elisabeth et al., 2021). Along similar lines, therapeutic milieu interventions have been effective in creating supportive environments that promote mental health recovery (Chellappan et al., 2021).

Self-esteem has also been a central focus in life-review interventions. Both Avelina et al. (2023) and Rochma et al. (2022) reported significant improvements in self-esteem among elderly individuals following life-review therapy, suggesting that the reflective engagement with personal narratives can foster a positive self-image even later in life (Avelina et al., 2023; Rochma et al., 2022). This therapeutic element can be creatively adapted for adolescents, especially through humor-based narrative exploration that encourages reinterpretation of personal challenges.

Positive affirmation therapy is another method that has shown efficacy in improving the psychological condition of patients with low self-esteem and depression (Endriyani et al., 2023). When combined with other emotion-focused approaches, such interventions create a broader therapeutic impact. Moreover, bibliotherapy has also been found to enhance self-esteem in early adolescents, supporting the idea that language, narrative, and creativity can be powerful psychological tools (Niman et al., 2019).

In addition to emotional outcomes, self-esteem consistency has been shown to predict therapy success in patients with depression, suggesting that individuals with a stable self-concept are more likely to benefit from structured interventions (Eberl et al., 2018). Conversely, individuals with fluctuating or low self-esteem may benefit from therapies that enhance cognitive clarity and emotional regulation. This points to the importance of integrating humor-based strategies that not only lighten the therapeutic atmosphere but also cultivate stable self-perceptions through affirming peer interactions and personal insights.

Moreover, studies such as that of Abadi (2018) and Valenzuela et al. (2018) reinforce the importance of targeting both depression and self-esteem concurrently. Abadi's investigation revealed that acceptance and commitment therapy led to a significant reduction in depression and an increase in self-esteem among postnatal women (Abadi, 2018). Likewise, Valenzuela et al. found that treatment of bulimia nervosa in adolescents also resulted in improvements in comorbid depressive symptoms and self-esteem (Valenzuela et al., 2018). These dual improvements

indicate a strong interplay between affective and self-evaluative domains, underscoring the need for comprehensive treatment models.

Another noteworthy approach is the use of solution-focused therapy, which emphasizes client strengths and future-oriented goals. Phuttharo (2025) demonstrated that such therapy effectively increased self-esteem and reduced depression in Thai older adults with major depressive disorder (Phuttharo, 2025). Similarly, Sáez et al. (2021) implemented a multicomponent program among intimate partner violence victims that led to substantial improvements in self-concept and self-esteem (Sáez et al., 2021). These findings illustrate the broader applicability of self-esteem-focused interventions across contexts and highlight the potential of integrating humor as a strength-based, future-oriented tool.

The growing body of literature reflects an interdisciplinary interest in designing and evaluating innovative psychological interventions that are engaging and sustainable. Subagyo and Wahyuningsih (2024), for example, introduced horticultural therapy as an effective intervention for enhancing self-esteem in individuals with mental disorders (Subagyo & Wahyuningsih, 2024), demonstrating the potential of non-traditional, creative therapeutic formats. Humor-based therapy, in this regard, aligns with such innovations by offering a playful, accessible, and developmentally suitable approach for adolescents. It fosters emotional bonding, reduces the stigma associated with mental health treatment, and increases motivation for sustained engagement.

Despite these promising developments, there remains a paucity of controlled, longitudinal research on the effectiveness of humor-based group therapy in adolescent populations. The present study seeks to address this gap by examining the impact of an eight-session humor-based group therapy intervention on depression and self-esteem in adolescents through a randomized controlled trial with a five-month follow-up.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a randomized controlled trial design to evaluate the effectiveness of humor-based group therapy on depression and self-esteem among adolescents. A total of 30 participants were selected from secondary schools in Bulgaria through purposive sampling based on inclusion criteria, including age range (13 to 17 years), mild to

moderate levels of depression as indicated by initial screening, and written informed consent from both adolescents and their guardians. Participants were randomly assigned into two equal groups: an experimental group ($n = 15$), which received humor-based group therapy, and a control group ($n = 15$), which did not receive any psychological intervention during the study period. The intervention was delivered across eight weekly sessions, each lasting 90 minutes. Assessments were conducted at three time points: pre-test (before intervention), post-test (immediately after the last session), and follow-up (five months after the completion of the intervention).

2.2. Measures

2.2.1. Depression

To assess the level of depression among adolescents, the Beck Depression Inventory-II (BDI-II) was used. This self-report questionnaire was developed by Aaron T. Beck, Robert A. Steer, and Gregory K. Brown in 1996 as a revision of the original Beck Depression Inventory. The BDI-II consists of 21 items, each describing a specific symptom or attitude related to depression such as sadness, pessimism, and loss of interest. Each item is rated on a 4-point Likert scale ranging from 0 to 3, with total scores ranging from 0 to 63, where higher scores indicate greater severity of depressive symptoms. The BDI-II includes two main subscales: cognitive-affective and somatic. This instrument has demonstrated high internal consistency (Cronbach's alpha typically above 0.90) and test-retest reliability. Its construct validity and convergent validity with other measures of depression have also been confirmed in various adolescent populations across multiple studies, making it a reliable tool for measuring depressive symptoms (Endriyani et al., 2023; Fereydooni & Sheykhan, 2024; Kakaei et al., 2023).

2.2.2. Self-Esteem

To evaluate self-esteem in adolescents, the Rosenberg Self-Esteem Scale (RSES) was employed. This scale was developed by Morris Rosenberg in 1965 as a global measure of self-worth. The RSES consists of 10 items rated on a 4-point Likert scale ranging from strongly agree to strongly disagree. Five of the items are positively worded and five are negatively worded, which helps reduce response bias. Total scores range from 10 to 40, with higher scores indicating higher self-esteem. The RSES is unidimensional, assessing

overall self-esteem rather than specific domains. It has been extensively validated across different cultures and age groups, including adolescents. Numerous studies have confirmed its excellent internal consistency (with Cronbach's alpha generally above 0.80) and good test-retest reliability, supporting its use as a standard and psychometrically sound instrument for measuring self-esteem (Fereydooni & Sheykhan, 2024; Kakaei et al., 2023; Phuttharo, 2025; Subagyo & Wahyuningsih, 2024).

2.3. Intervention

2.3.1. Humor-Based Group Therapy

The humor-based group therapy intervention was designed to enhance self-esteem and reduce depression in adolescents by using structured humor-related activities within a supportive group setting. The program consisted of eight weekly sessions, each lasting 90 minutes, conducted by a trained therapist with expertise in adolescent psychology and therapeutic use of humor. Sessions followed a progressive structure, beginning with rapport building and psychoeducation, and gradually moving toward deeper emotional exploration, cognitive reframing through humor, and skill-building in applying humor constructively in everyday life. Group activities included storytelling, role-play, creative expression, and reflective discussion, aiming to foster social connection, emotional resilience, and a more positive self-concept.

Session 1: Introduction and Group Formation

The first session focused on establishing group norms, building rapport among participants, and introducing the purpose and structure of humor-based therapy. Icebreaker activities involving light humor and personal sharing were used to ease anxiety and promote connection. The therapist provided a brief psychoeducational explanation of how humor can impact mental health, particularly by reducing stress, improving mood, and supporting self-esteem. Participants were encouraged to share their expectations and concerns, and a safe, non-judgmental atmosphere was fostered through group agreements on respect and confidentiality.

Session 2: Understanding Humor and Emotional Expression

In the second session, the focus was on helping participants understand different types of humor (e.g., affiliative, self-enhancing, aggressive, self-defeating) and how humor affects emotions and relationships. Activities included identifying humor styles in video clips and group

discussions about personal experiences with humor. Participants were guided to reflect on how they use humor in daily life and how it influences their mood and self-perception. The therapist facilitated exercises aimed at distinguishing between healthy and unhealthy humor patterns.

Session 3: Humor and Cognitive Reframing

This session introduced the concept of cognitive reframing using humor as a tool. The therapist guided participants in identifying negative automatic thoughts and practicing ways to reframe them with humorous perspectives. Activities included turning “worry scenarios” into absurd or exaggerated versions to create emotional distance and reduce anxiety. Participants were encouraged to explore how playful thinking could shift their perceptions of difficult experiences, promoting resilience and positive coping.

Session 4: Self-Esteem and Positive Self-Talk Through Humor

The fourth session emphasized the relationship between self-esteem and internal dialogue. Through group games and reflective exercises, participants practiced using positive and humorous affirmations to counteract self-critical thoughts. The group discussed how self-directed humor (without self-deprecation) could strengthen self-acceptance. Creative activities like composing “funny self-portraits” and “silly awards” for each other were used to promote mutual support and positive self-view.

Session 5: Humor in Social Interaction

This session focused on improving interpersonal skills and social connection through humor. Participants engaged in role-play scenarios to practice using affiliative humor in peer interactions, conflict resolution, and group dynamics. The therapist facilitated a discussion on the difference between inclusive and exclusive humor, highlighting the importance of empathy and sensitivity. Group activities were designed to build trust, collaboration, and enjoyment in social contexts.

Session 6: Laughter as a Coping Mechanism

The sixth session explored laughter and humor as coping mechanisms in response to stress, disappointment, and emotional pain. Participants learned about the physiological and psychological benefits of laughter and engaged in laughter yoga, humorous storytelling, and group improvisation games. The therapist facilitated a discussion on how to create humorous narratives from past challenges and how humor can serve as a buffer against emotional distress.

Session 7: Humor and Emotional Regulation

This session addressed the use of humor in managing emotional responses such as anger, sadness, and anxiety. Through mindfulness-based humor activities and emotional awareness exercises, participants practiced recognizing emotional triggers and using humor to shift emotional states. The group discussed real-life examples and generated personalized strategies for using humor constructively during emotionally charged moments.

Session 8: Reflection, Consolidation, and Closure

In the final session, participants reflected on their journey throughout the therapy process, identifying changes in mood, self-perception, and social behavior. The group revisited key themes and strategies learned in previous sessions, and each participant was encouraged to create a “humor toolkit” to use in future challenging situations. A closing ritual involved sharing humorous moments from the group experience and expressing appreciation for one another. Certificates of participation were distributed, and the session ended with a group celebration to reinforce positive closure.

2.4. Data Analysis

For data analysis, the statistical software SPSS version 27 was used. Repeated measures analysis of variance (ANOVA) was applied to examine the effects of the intervention across the three time points within and between groups. To identify the specific differences across time points and control for Type I error, the Bonferroni post-hoc test was used. Assumptions of normality and homogeneity of variances were tested and confirmed before conducting the analyses. A significance level of $p < 0.05$ was used for all statistical tests. The methodology ensured rigorous control over potential confounding variables and allowed for robust evaluation of the longitudinal impact of the intervention on the two dependent variables: depression and self-esteem.

3. Findings and Results

The study sample consisted of 30 adolescents aged between 13 and 17 years. Of the total participants, 16 (53.3%) identified as female and 14 (46.7%) as male. Regarding age distribution, 7 participants (23.3%) were 13 years old, 8 (26.7%) were 14 years old, 6 (20.0%) were 15

years old, 5 (16.7%) were 16 years old, and 4 (13.3%) were 17 years old. In terms of educational level, 11 participants (36.7%) were in grade 7, 10 (33.3%) were in grade 8, and 9 (30.0%) were in grade 9. All participants were enrolled in

public secondary schools in urban areas of Bulgaria. The demographic distribution between the experimental and control groups was approximately balanced across all variables.

Table 1

Descriptive Statistics for Depression and Self-Esteem Scores by Group and Measurement Stage

| Variable | Stage | Group | M | SD |
|-------------|-----------|--------------|-------|------|
| Depression | Pre-test | Experimental | 27.60 | 4.12 |
| Depression | Post-test | Experimental | 15.87 | 3.45 |
| Depression | Follow-up | Experimental | 16.53 | 3.72 |
| Depression | Pre-test | Control | 26.93 | 4.08 |
| Depression | Post-test | Control | 25.67 | 3.95 |
| Depression | Follow-up | Control | 25.20 | 4.13 |
| Self-Esteem | Pre-test | Experimental | 18.80 | 3.67 |
| Self-Esteem | Post-test | Experimental | 28.40 | 4.18 |
| Self-Esteem | Follow-up | Experimental | 27.87 | 4.01 |
| Self-Esteem | Pre-test | Control | 19.13 | 3.72 |
| Self-Esteem | Post-test | Control | 20.00 | 3.69 |
| Self-Esteem | Follow-up | Control | 20.47 | 3.94 |

The descriptive statistics show a marked reduction in depression scores for the experimental group from pre-test ($M = 27.60$, $SD = 4.12$) to post-test ($M = 15.87$, $SD = 3.45$), with stability at follow-up ($M = 16.53$, $SD = 3.72$). In contrast, the control group showed minimal change across the same time points. Similarly, self-esteem scores increased notably in the experimental group from pre-test ($M = 18.80$, $SD = 3.67$) to post-test ($M = 28.40$, $SD = 4.18$), with sustained levels at follow-up ($M = 27.87$, $SD = 4.01$), while the control group displayed only slight changes over time (Table 1).

Prior to conducting the repeated measures ANOVA, assumption checks were performed to ensure the validity of the analysis. The Shapiro-Wilk test confirmed normality for

all dependent variables across the three time points, with p-values ranging from 0.116 to 0.273 for depression scores and from 0.089 to 0.248 for self-esteem scores, indicating no significant deviation from normal distribution. Levene's test for homogeneity of variances also indicated no significant differences in variances between groups at baseline ($F = 1.392$, $p = 0.250$ for depression; $F = 0.982$, $p = 0.330$ for self-esteem). Additionally, Mauchly's test of sphericity was not significant for either variable ($\chi^2(2) = 2.371$, $p = 0.305$ for depression; $\chi^2(2) = 1.689$, $p = 0.430$ for self-esteem), confirming that the assumption of sphericity was met. These results supported the suitability of applying repeated measures ANOVA for further analysis.

Table 2

Repeated Measures ANOVA Results for Depression and Self-Esteem

| Variable | Source | SS | df | MS | F | p-value | η^2 |
|-------------|---------------------|---------|----|---------|-------|---------|----------|
| Depression | Time | 1184.35 | 2 | 592.18 | 32.67 | <.001 | .552 |
| | Group | 1078.20 | 1 | 1078.20 | 59.45 | <.001 | .676 |
| | Time \times Group | 1020.43 | 2 | 510.21 | 28.94 | <.001 | .539 |
| | Error | 975.60 | 54 | 18.06 | | | |
| Self-Esteem | Time | 1265.28 | 2 | 632.64 | 30.92 | <.001 | .534 |
| | Group | 944.72 | 1 | 944.72 | 46.18 | <.001 | .651 |
| | Time \times Group | 1096.15 | 2 | 548.07 | 26.75 | <.001 | .498 |
| | Error | 1104.93 | 54 | 20.46 | | | |

The results of the repeated measures ANOVA indicated significant main effects of time and group for both depression and self-esteem. For depression, the effect of

time was significant ($F(2, 54) = 32.67$, $p < .001$, $\eta^2 = .552$), as was the effect of group ($F(1, 54) = 59.45$, $p < .001$, $\eta^2 = .676$), and the interaction between time and group ($F(2, 54)$

= 28.94, $p < .001$, $\eta^2 = .539$), showing that changes over time differed significantly between the groups. A similar pattern was observed for self-esteem: time ($F(2, 54) = 30.92$, $p < .001$, $\eta^2 = .534$), group ($F(1, 54) = 46.18$, $p < .001$, $\eta^2 = .651$),

and interaction ($F(2, 54) = 26.75$, $p < .001$, $\eta^2 = .498$) effects were all statistically significant, indicating that the intervention had a robust and lasting impact (Table 2).

Table 3

Bonferroni Post-Hoc Test Results for Depression and Self-Esteem (Experimental Group Only)

| Variable | Comparison | Mean Difference | SE | p-value |
|-------------|-----------------------|-----------------|------|---------|
| Depression | Pre-test – Post-test | 11.73 | 1.22 | <.001 |
| | Pre-test – Follow-up | 11.07 | 1.28 | <.001 |
| | Post-test – Follow-up | -0.67 | 0.91 | .467 |
| Self-Esteem | Pre-test – Post-test | -9.60 | 1.31 | <.001 |
| | Pre-test – Follow-up | -9.07 | 1.27 | <.001 |
| | Post-test – Follow-up | 0.53 | 0.83 | .529 |

The Bonferroni post-hoc test for the experimental group revealed that depression scores significantly decreased from pre-test to post-test (Mean Difference = 11.73, $p < .001$) and remained significantly lower at follow-up (Mean Difference = 11.07, $p < .001$), with no significant difference between post-test and follow-up ($p = .467$), indicating the maintenance of treatment effects. Similarly, self-esteem scores significantly increased from pre-test to post-test (Mean Difference = -9.60, $p < .001$) and from pre-test to follow-up (Mean Difference = -9.07, $p < .001$), with no significant difference between post-test and follow-up ($p = .529$), confirming sustained gains in self-esteem (Table 3).

4. Discussion and Conclusion

The aim of this study was to examine the effectiveness of humor-based group therapy on reducing depressive symptoms and enhancing self-esteem among adolescents. The results revealed that participants in the experimental group experienced a statistically significant reduction in depression and a significant improvement in self-esteem compared to the control group. These effects were sustained during the five-month follow-up period, indicating the durability of the intervention's impact. These findings suggest that humor-based group therapy can be an effective, engaging, and developmentally appropriate approach to improving psychological well-being in adolescents.

The reduction in depressive symptoms observed in the intervention group aligns with previous findings supporting the therapeutic value of humor in clinical settings. Humor has been shown to serve as an emotional buffer, enabling individuals to cognitively reframe negative experiences and increase their sense of control and emotional distance from distressing events. For example, in a randomized clinical

trial, Kugler et al. (2021) found that humor training significantly reduced emotional burden in patients with chronic pain, highlighting the mood-enhancing potential of structured humor interventions (Kugler et al., 2021). Similarly, Olah et al. (2022) reported improvements in emotional regulation and psychological well-being among participants engaged in a stand-up comedy-based therapy program, suggesting humor's applicability across diverse populations (Olah et al., 2022). Our study extends these findings to adolescents, suggesting that humor-based therapy not only reduces depressive symptoms but also promotes sustained psychological improvements over time.

The improvement in self-esteem among participants in the experimental group also aligns with existing literature that identifies humor as a catalyst for positive self-perception and increased self-worth. Kuiper and McHale (2009) argued that humor styles mediate the relationship between self-evaluative standards and psychological well-being, with affiliative and self-enhancing humor styles being positively associated with higher self-esteem (Kuiper & McHale, 2009). In the present study, group activities that encouraged participants to reframe self-critical thoughts through humorous perspectives likely played a role in challenging negative self-perceptions and fostering greater self-acceptance. Moreover, the group-based setting facilitated peer validation, laughter, and connection, which are critical to adolescent identity development and may further contribute to an enhanced sense of self-worth.

Consistent with the current results, previous studies have demonstrated that therapeutic interventions incorporating humor can be particularly effective in promoting self-esteem. For instance, Lindayani et al. (2024) found that audiovisual humor therapy significantly improved self-esteem among older adults, demonstrating humor's

psychological benefits across age groups (Lindayani et al., 2024). Avelina et al. (2023) similarly reported positive outcomes in self-esteem following life-review therapy with humorous reflection, which aligns with the current study's emphasis on using humor to reinterpret past experiences (Avelina et al., 2023). Endriyani et al. (2023) highlighted the impact of positive affirmation therapy on patients with depression and low self-esteem, which, like humor-based therapy, utilizes cognitive reframing and emotional encouragement to boost self-image (Endriyani et al., 2023). These studies corroborate our finding that group-based interventions rooted in positive expression, creativity, and laughter can meaningfully improve self-esteem in vulnerable populations.

The current study's findings are also in line with previous therapeutic interventions targeting adolescents with depression. Fereydooni and Sheykhani (2024) found that schema therapy was effective in reducing depressive symptoms and enhancing self-esteem among fatherless adolescents (Fereydooni & Sheykhani, 2024). Similarly, Hashemian et al. (2022) reported that hope therapy significantly improved life quality and self-esteem in depressed adolescent girls (Hashemian et al., 2022). These studies reinforce the idea that adolescent-specific interventions that address emotional processing, self-concept, and coping strategies are critical in reducing psychological distress and promoting resilience.

The sustained effects observed at the five-month follow-up further validate the lasting impact of humor-based therapy. Comparable results were found in a study by Swartzman et al. (2021), where group-based cognitive behavioral therapy for low self-esteem showed long-term benefits in emotional functioning (Swartzman et al., 2021). Likewise, Try et al. (2021) observed enduring psychological improvements in young adults following a customized group intervention, supporting the value of group-based formats in long-term mental health enhancement (Try et al., 2021). In our study, the humor-based intervention not only facilitated immediate emotional relief but also equipped adolescents with practical coping strategies—such as reframing negative events through humor—that they continued to apply months after the program ended.

Additionally, the results of this study highlight the interplay between depression and self-esteem. This reciprocal relationship has been supported by prior research demonstrating that reduced self-esteem contributes to vulnerability to depression, while depressive symptoms further erode self-worth. Kakaei et al. (2023) found a

significant relationship between self-esteem, depression, and body image concerns, emphasizing the interconnected nature of emotional and self-evaluative constructs (Kakaei et al., 2023). Similarly, Valenzuela et al. (2018) found that treatment of adolescents with bulimia nervosa not only improved eating disorder symptoms but also significantly improved both depression and self-esteem, suggesting that addressing these domains concurrently enhances therapeutic outcomes (Valenzuela et al., 2018).

Moreover, other creative therapeutic interventions have yielded comparable results. Subagyo and Wahyuningsih (2024) demonstrated that horticultural therapy significantly improved self-esteem among individuals with mental disorders, indicating the effectiveness of experiential, engaging therapeutic modalities (Subagyo & Wahyuningsih, 2024). Chellappan et al. (2021) found that therapeutic milieu interventions helped reduce depressive symptoms in inpatients, reinforcing the role of therapeutic environments and structured social interaction (Chellappan et al., 2021). These studies underscore the broader efficacy of non-traditional, group-based therapies in addressing adolescent mental health.

Importantly, this study builds upon the theoretical foundation laid by prior research into the mediating effects of humor on emotional well-being. Verma and Gupta (2023) explored the relationship between humor style, narcissism, and self-esteem, concluding that constructive humor is positively associated with healthy self-perception and emotional stability (Verma & Gupta, 2023). Elisabeth et al. (2021) also emphasized the importance of cognitive reframing techniques in enhancing self-esteem, a mechanism closely mirrored in humor-based therapy (Elisabeth et al., 2021). Furthermore, Sáez et al. (2021) demonstrated that self-concept and self-esteem among victims of intimate partner violence improved through a multicomponent program, supporting the idea that self-perception can be significantly altered through structured psychosocial interventions (Sáez et al., 2021).

Life-review therapies also provide valuable insight into the efficacy of narrative reframing. Rochma et al. (2022) and Avelina et al. (2023) both noted significant self-esteem gains in elderly populations following life-review-based interventions that encouraged reinterpretation of personal histories (Avelina et al., 2023; Rochma et al., 2022). In the context of adolescents, humor-based therapy similarly leverages personal storytelling, peer recognition, and playful reinterpretation of difficult experiences to cultivate a

positive self-narrative, demonstrating its psychological relevance across life stages.

Lastly, the observed findings align with the work of Phuttharo (2025), who implemented a solution-focused therapy program that successfully improved self-esteem and reduced depression in older adults with major depressive disorder (Phuttharo, 2025). This indicates that future-oriented, strength-based interventions like humor-based therapy are effective in creating cognitive and emotional shifts among individuals with depressive symptoms.

5. Limitations & Suggestions

While the findings of this study are promising, several limitations must be acknowledged. First, the sample size was relatively small, with only 30 participants divided equally between the experimental and control groups. This limits the generalizability of the results to broader adolescent populations. Second, the sample was drawn exclusively from urban schools in Bulgaria, and cultural or regional factors may influence the applicability of humor-based therapy in other settings. Third, self-report instruments were used to assess depression and self-esteem, which may be subject to social desirability bias or limited introspective accuracy. Additionally, the control group did not receive any form of placebo or alternative intervention, which could have introduced expectancy effects or unequal attention bias. Finally, while the follow-up period of five months allowed for short-term longitudinal assessment, longer-term outcomes remain unknown.

Future research should seek to replicate these findings using larger and more diverse samples across multiple cultural and socioeconomic contexts. It would also be beneficial to compare humor-based group therapy with other established interventions such as cognitive-behavioral therapy, mindfulness-based approaches, or art therapy to determine relative effectiveness. Researchers may explore the differential impact of humor styles (e.g., affiliative vs. self-deprecating humor) within therapy to identify mechanisms that produce the greatest psychological benefits. Incorporating qualitative methods, such as interviews or thematic analysis, could provide deeper insight into participants' experiences and the subjective meaning of humor in their recovery. Finally, studies with longer follow-up durations (e.g., one year or more) are needed to evaluate the sustained effects of humor-based therapy on mental health. Mental health professionals working with adolescents may consider incorporating humor-based group

therapy as a complementary intervention to traditional treatment approaches. The engaging and non-threatening nature of humor can help establish rapport, increase participation, and reduce stigma associated with therapy. Schools and community centers can adopt humor-focused group programs to promote mental well-being among youth in preventive and therapeutic contexts. Therapists should be trained to distinguish between constructive and harmful humor styles and guide adolescents in using humor as a healthy emotional regulation strategy. Implementing humor-based interventions in group formats also provides an opportunity to foster peer support, build social skills, and enhance self-esteem in a collaborative environment.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this article.

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