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Research Article

The Effectiveness of Psychodrama Group Therapy on the Cognitive and Behavioral Aspects of Social Anxiety in Adolescents

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Abstract

Aim: This study aimed to examine the effectiveness of psychodrama group therapy on the cognitive and behavioral aspects of social anxiety among female adolescents.

Methods: We employed a quasi-experimental pre-test, post-test, and 2-month follow-up control-group design. The statistical population comprised all ninth-grade female students in Sirjan City during the 2022–2023 academic year. Using convenience sampling, we screened 250 students referred to comprehensive health service centers using the Social Anxiety Scale for Adolescents (SAS-A) and a DSM-5-based structured clinical interview. Of those meeting the clinical cutoff, we selected 28 eligible participants and randomly assigned them to either an experimental group (n=14) or a control group (n=14). The experimental group received psychodrama group therapy, whereas the control group received no intervention. Ultimately, 12 participants in each group completed all phases of the study (N=24). We analyzed the data using a mixed-design repeated-measures ANOVA in SPSS (Version 24).

Results: The mixed-design repeated-measures ANOVA revealed a statistically significant Group × Time interaction for both apprehension and fear of negative evaluation (AFNE) ($F(1.50, 33.01)=114.95$, $p<.001$, $\eta_p^2=.83$) and tension and inhibition in social contact (TISC) ($F(2, 39.65) = 143.98$, $p < .001$, $\eta_p^2= .86$). Pairwise comparisons confirmed that the significant reductions in symptom scores achieved at the post-test were robustly maintained at the 2-month follow-up in the experimental group ($p<.001$), while the control group remained stable.

Conclusion: Psychodrama group therapy, emphasizing active enactment and emotional processing, serves as a highly effective and enduring intervention for mitigating both cognitive and behavioral dimensions of social anxiety in adolescent females.

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1. Introduction

Social Anxiety Disorder (SAD) represents a highly prevalent, debilitating, and chronic psychiatric condition that characteristically emerges during early-to-mid adolescence, with empirical data confirming that its clinical onset typically occurs before age 18(Stein et al., 2017). Notably, adolescent females exhibit a pronounced developmental vulnerability to interpersonal distress, peer rejection sensitivity, and social evaluation, culminating in significantly higher prevalence rates and symptom severity compared to their male counterparts(Chiu et al., 2021). When left untreated, SAD rarely remits spontaneously; instead, it runs an unremitting course marked by pervasive functional impairments across academic, interpersonal, and psychological domains. The adverse long-term sequelae encompass chronic academic underachievement, severe social alienation, elevated rates of comorbid major depressive disorder, and an intensified risk for suicidal ideation and suicidal behaviors(Chiu et al., 2021; Vilaplana-Pérez et al., 2021) .

In accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and influential cognitive conceptualizations, an excessive and pervasive fear of negative evaluation constitutes the cardinal cognitive engine sustaining SAD (Bjornsson et al., 2020; Leigh & Clark, 2018). Affected adolescents harbor persistent, distorted beliefs regarding their behavioral inadequacy, coupled with an intense dread of exhibiting observable autonomic arousal symptoms—such as blushing, trembling, sweating, or voice tremor—which they catastrophize will lead to irrevocable humiliation and social ostracism (Bjornsson et al., 2020). Consequently, this heightened threat appraisal engenders self-focused attention and prompts maladaptive safety-seeking behaviors (e.g., behavioral inhibition, avoidance of eye contact, social withdrawal). As cognitive-behavioral maintenance models outline, these safety-seeking strategies prevent the individual from processing disconfirming corrective social feedback, perpetuating a pernicious cycle of subjective tension, behavioral inhibition in social contact, and entrenched experiential avoidance (Leigh & Clark, 2018). Crucially, recent investigations confirm that this pervasive fear of negative evaluation fundamentally maintains social anxiety symptoms (Emam Zamani, 2021) and severely undermines adolescents' interpersonal functioning, exacerbating social avoidance and relational distress (Fatemi et al., 2024).

Although Cognitive Behavioral Therapy (CBT) is the contemporary empirical gold standard for adolescent SAD, randomized clinical trials consistently show that response and full remission rates hover around 50% (Evans et al., 2021). A substantial proportion of treated youth continue to experience residual, functionally impairing cognitive and behavioral symptomatology. A fundamental limitation of conventional talk-based CBT protocols pertains to their heavy reliance on abstract verbal rationalization and intellectual cognitive disputation. For many adolescents, these abstract dialogue methods often fail to adequately deconstruct visceral, real-time autonomic fears or alleviate deep-seated behavioral inhibition during live peer interactions. Hence, there is a clear and pressing clinical need to investigate active, experiential, and ecologically valid therapeutic alternatives capable of concurrently targeting the cognitive, affective, and somatic-behavioral facets of social anxiety(Evans et al., 2021; Leigh & Clark, 2018).

To address these therapeutic challenges, psychodrama, originally conceptualized by Jacob Levy Moreno (Moreno, 1972), provides an experiential, dynamic, and action-oriented psychotherapeutic modality. Rather than merely discussing intrapsychic conflicts and interpersonal dilemmas, participants actively externalize, concretize, and reenact feared social

interactions within a structured, psychologically safe dramatic space. The core operational mechanisms of classical psychodrama—mirroring, role reversal, and doubling—serve as powerful corrective experiential vehicles. Specifically, mirroring enables protagonists to observe their somatic, nonverbal, and communicative manifestations from an objective, external vantage point, directly challenging their distorted, negatively biased mental representation of the social self (Leigh & Clark, 2018) . Concurrently, role reversal compels participants to step out of their hyper-evaluative internal state and inhabit the observer's perspective, fostering empathic perspective-taking, decathecting imagined evaluative threats, and generating immediate experiential disconfirmation of catastrophic appraisals. Furthermore, doubling provides emotional containment by verbalizing unexpressed, underlying affective states, directly relieving the acute interactional tension that typically paralyzes these adolescents (7).

A robust and growing body of empirical literature substantiates the efficacy of expressive and action-oriented group interventions in ameliorating social anxiety, interpersonal distress, and peer-related apprehension in youth (Bakaeian et al., 2022; Kooraki et al., 2023a; Kooraki et al., 2024; Rudokaite & Indriuniene, 2019; Şimşek et al., 2020; Uneri et al., 2016). More specifically, recent randomized controlled trials examining cognitive-behavioral psychodrama have demonstrated marked therapeutic reductions in self-focused attention, social avoidance, and evaluative threat appraisals among adolescents(Kooraki et al., 2023a). Kooraki et al (9) verified that integrating psychodramatic techniques directly attenuates both negative and positive social evaluative fears. Furthermore, systematic progression through Moreno's classical phases—warm-up, action, and sharing—provides structured behavioral rehearsals that substantially reduce relational inhibition and enhance interpersonal mastery (Hamidi & Hasanpour, 2022; Kooraki et al., 2023a; Pourrezaian, 2016).

Despite these promising empirical advancements, notable gaps persist in the extant literature. Most previous investigations have evaluated psychodrama as an omnibus intervention or concentrated on general distress and broad anxiety scores, rarely delineating its concurrent, simultaneous impact on specific cognitive maintenance mechanisms versus behavioral manifestations within a unified conceptual framework. In particular, empirical scrutiny examining whether group psychodrama can systematically alleviate the primary cognitive hallmark of SAD—specifically, apprehension and fear of negative evaluation (AFNE)—while concurrently resolving its cardinal behavioral expression—tension and inhibition in social contact (TISC) remains scarce. Moreover, methodologically rigorous, longitudinally tracked controlled trials on clinically characterized adolescent female cohorts to determine whether therapeutic gains are robustly sustained post-intervention remain scarce.

2. Objective

To address these gaps, this study used a quasi-experimental design with pre-test, post-test, and 2-month follow-up, plus a control group, to examine the efficacy of group psychodrama on cognitive (AFNE) and behavioral (TISC) components in adolescent girls with SAD.

3. Methods

3.1. Sample and Procedure

This investigation utilized a quasi-experimental design incorporating a pretest-posttest control group structure, a waitlist control condition, and a 2-month follow-up assessment. To ensure

methodological transparency and rigor, the research design and reporting framework strictly adhered to the TREND (Transparent Reporting of Evaluations with Nonrandomized Designs) statement for nonrandomized behavioral interventions (16).

The target population comprised ninth-grade female adolescents in Sirjan who presented to comprehensive health service centers and counseling clinics during the 2022–2023 academic year. Diagnostic eligibility screening relied on a structured clinical interview anchored to DSM-5 criteria for Social Anxiety Disorder (SAD). Concurrently, cutoff-based psychometric screening corroborated clinical symptom severity, requiring a cognitive score of 58 or higher and a behavioral score of 32 or above. Inclusion criteria specified voluntary participation, adherence to group norms, female gender, and enrollment in girls' secondary schools. Conversely, exclusion criteria entailed concurrent psychological or pharmacological regimens, comorbid severe major depressive disorder, active suicidal ideation, academic withdrawal during the intervention phase, and accumulating more than two unexcused absences.

We targeted a priori sample size estimation to detect meaningful effects on the primary cognitive dimension of fear of negative evaluation. Based on the standard formula for comparing two independent means with a two-sided significance level (α of 0.05 and a statistical power of 80% (β=0.20), and anticipating a standardized effect size (Cohen's d) ranging from 0.75 to 0.80 derived from prior psychodrama trials, the required baseline sample size was calculated. To accommodate a conservative attrition margin of approximately 15% to 20%, 28 participants were enrolled and non-randomly allocated to the experimental or waitlist control conditions (14 participants per group). During the intervention course, four participants withdrew (two from the experimental group due to excessive unexcused absences, and two from the waitlist control group due to loss of contact at follow-up). Consequently, the final complete-case analytical sample comprised 24 participants (n = 12 per group) who completed all assessment waves.

Because of practical and institutional constraints in school- and clinic-based behavioral settings, we assigned participants to either the psychodrama intervention arm or the waitlist control arm based on institutional availability and natural grouping. To mitigate potential selection bias and control for baseline confounding from the quasi-experimental allocation, we rigorously compared baseline demographic and clinical metrics between groups. We statistically adjusted for any baseline disparities using mixed repeated-measures analysis of variance (Mixed RM-ANOVA).The experimental cohort engaged in nine structured group psychodrama sessions administered twice weekly (*twice weekly*), with each session lasting 120 minutes. A certified psychodramatist, assisted by a trained co-therapist, guided all clinical sessions. The therapeutic protocol integrated action-oriented techniques—principally role reversal, doubling, and mirroring—to reconstruct dysfunctional interpersonal schemas and attenuate social inhibition. In contrast, the waitlist control cohort received no active intervention throughout the experimental timeline. To meet ethical obligations, we delivered an equivalent psychoeducational program to the control group after the final 2-month follow-up assessment.

We prospectively defined and evaluated outcome measures across three waves: baseline (pretest), post-intervention (posttest), and 2-month follow-up.

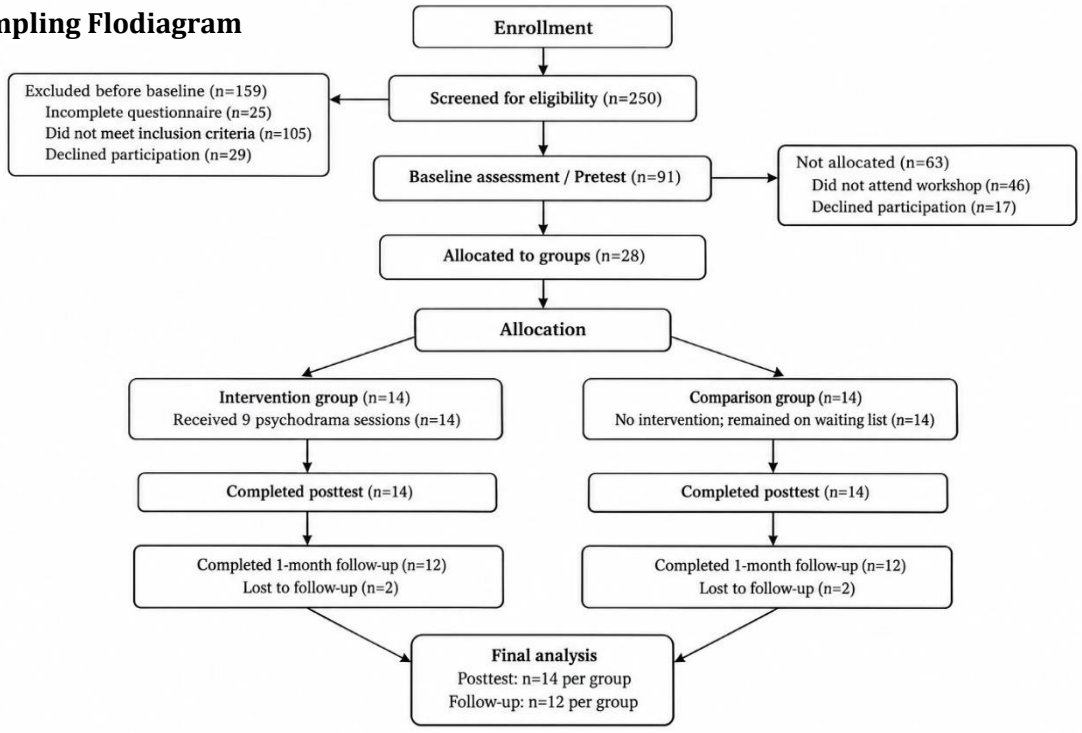
- **Co-Primary Outcomes:** Reflecting the multidimensional architecture of adolescent social anxiety, the trial targeted two co-primary dimensions: (1) *Cognitive Dimension*, evaluated through the fear of negative evaluation (FNE) indexing catastrophic social appraisals; and (2) *Behavioral Dimension*, evaluated as social tension and behavioral inhibition (TISC) capturing observable avoidance patterns and interpersonal reticence.
- **Secondary Outcomes:** Global social functioning and supplementary clinical trajectories.

To minimize detection and appraisal biases, we administered all psychometric instruments in person under supervised, standardized conditions using de-identified numeric codes. Independent outcome assessors and biostatisticians remained strictly blinded to group allocation throughout the trial.

We tested hypotheses on the complete-case dataset (n=24) using two-tailed tests at an α level of 0.05. We evaluated between-group differences in primary outcomes at post-treatment and 2-month follow-up using ANCOVA models, with baseline scores entered as primary covariates. We also modeled treatment-by-time interaction trajectories using mixed repeated-measures analysis of variance (Mixed RM-ANOVA) across the three assessment phases. We evaluated sphericity using Mauchly's test and applied Greenhouse-Geisser corrections when appropriate. Effect magnitudes were quantified using partial eta squared (η_p^2), alongside adjusted mean differences accompanied by 95% confidence intervals. All computational analyses were executed using IBM SPSS Statistics (version 24).

The Ethics Committee of Shahid Chamran University of Ahvaz formally approved the research protocol. We obtained written informed consent from all participants and their legal guardians before enrollment. Confidentiality safeguards were strictly enforced, and participation remained entirely voluntary, maintaining an unconditional right to withdraw at any stage. Research staff used a dedicated, secure communication group on the Eitaa platform exclusively for logistical coordination; no clinical, psychometric, or outcome data were ever transmitted through this medium.

Sampling Flodiagram



3.2. Research Tools

3.2.1. Adolescent Social Anxiety Scale (SAS-A)

Social anxiety was assessed using the 28-item Adolescent Social Anxiety Scale (SAS-A), originally developed by Puklek (1997) and Puklek and Vidmar (2000). The instrument is structured into two core dimensions evaluated on a five-point Likert-type scale ranging from 1 (very little) to 5 (very much):

1. Apprehension and Fear of Negative Evaluation (AFNE; cognitive dimension), comprising 15 items (items 2, 4, 5, 7, 8, 10, 12, 14, 15, 16, 18, 21, 25, 26, and 27); and
2. Tension and Inhibition in Social Contact (TISC; behavioral dimension), comprising 13 items (items 1, 3, 6, 9, 11, 13, 17, 19, 20, 22, 23, 24, and 28). Higher scores reflect elevated severity of social anxiety.

Khodaei et al. (2011) comprehensively validated the structural validity and psychometric robustness of the Persian version of the SAS-A among Iranian adolescents. In their validation study (N=500), Confirmatory Factor Analysis (CFA) decisively substantiated the superiority of the hypothesized two-factor model over a unidimensional solution, demonstrating excellent goodness-of-fit indices ($\chi 2/df=1.92$و, CFI=0.95, GFI=0.94, AGFI=0.91, and RMSEA=0.059). Furthermore, the scale demonstrated sound construct and convergent validity through significant correlations with interpersonal difficulties, depression, and neuroticism, alongside acceptable two-week test–retest stability (r = 0.77 for AFNE, r = 0.71 for TISC). In the present study, we evaluated internal consistency using Cronbach's alpha, yielding values of 0.81 for the cognitive subscale (AFNE) and 0.79 for the behavioral subscale (TISC), confirming satisfactory reliability for both dimensions.

3.2.2. Study Protocol

Intervention Protocol and Content Validity

While psychodrama is traditionally characterized by spontaneous, action-oriented encounters rather than rigid manualized structures, clinical interventions targeting specific adolescent psychopathologies necessitate a standardized thematic framework (Hamidi et al., 2020; Leveton, 2001). Accordingly, an 8-session psychodrama intervention protocol was specifically operationalized to target the cognitive (fear of negative evaluation) and behavioral (social avoidance and tension) dimensions of adolescent social anxiety disorder, drawing upon established classical techniques described by Leveton (2001) and Moreno (1972).

Prior to implementation, the content validity of the preliminary protocol was rigorously evaluated using both qualitative and quantitative approaches:

1. Qualitative Content Validity: A panel of seven independent experts—comprising clinical psychologists (n=4), psychodramatists (n=2), and a psychometrician specializing in adolescent mental health (n=1)—evaluated the developmental appropriateness, thematic progression, clarity, and safety of each session's procedures. The team incorporated minor structural adjustments and sequencing modifications based on their narrative feedback.

2. Quantitative Content Validity: The revised protocol was subsequently subjected to formal quantitative indexing. Item-level and scale-level Content Validity Ratios (CVR); (Lawshe, 1975)and Content Validity Indices (CVI); (Waltz & Bausell, 1981)) were calculated. Across all structural components, the CVR values ranged from 0.85 to 1.00, well exceeding Lawshe's critical threshold for seven experts (0. 75). The overall scale-level Content Validity Index (S-

CVI/Ave) was 0.94, confirming exceptional expert agreement, clinical relevance, and content integrity.

Structurally, each session followed a tripartite architecture: warm-up (action sociometry and tension reduction), enactment/action phase (core techniques including role reversal, doubling, and the mirror technique), and sharing/processing, concluding with behavioral integration into real-life contexts. Table 1 presents a detailed overview of the validated protocol.

Table 1. Content structure of psychodrama sessions

Sessions	Proceedings
First	The pre-test was conducted using the Adolescent Social Anxiety Scale as well as the clinical interview for social anxiety disorder based on DSM-5 in order to screen.
Second	The introduction was done to familiarize the members with each other and the director (therapist). The group rules and how to work together were also explained to create a safe, intimate atmosphere. Warm-up techniques such as passing an imaginary ball and walking with closed eyes were used to introduce participants.
Third	The elements of psychodrama (protagonist, supporting selves, audience, and stage), the stages of psychodrama (warming up, performance, and participation), and the techniques used in each stage were taught and practiced in the group.
Forth	In this session, after participants became familiar with and mastered the treatment's dimensions and framework, they practiced starting a conversation in the presence of others, along with eye contact. In this stage, participants used techniques like walking with closed eyes and handshakes to warm up. The implementation phase also used the mirror technique, reverse, and double roles.
Fifth	the topic of this session was expressing feelings about the fear of being evaluated by others in public. The warm-up used the emotion rating technique, and the performance used the double technique and role reversal. Then, group members shared common experiences with the protagonist, and the therapist (director) helped summarize the session.
Sixth	The topic of this meeting was self-expression and reducing anxiety about speaking in front of others. Warming up in this stage used the magic shop technique, and the performance stage techniques included mirror, role reversal, and problem-solving. After playing the protagonist role, the members shared their experiences, received feedback from the audience, and got suggestions to overcome their fear of self-expression. Finally, the audience helped conclude..
Seventh	In this session, the group learned opening conflicts to reduce avoidance in interpersonal relationships and fear of criticism. The warm-up included the handshake technique and a monologue and performance with mirror, role reversal, problem-solving, and double techniques. After playing the protagonist role, group members analyzed and summarized their experiences in this field while presenting them, with guidance from the therapist (director).
Eighth	The topic of this meeting was seeking help from others to overcome shame and embarrassment. The warm-up used the magic shop technique, and the performance used the mirror, helper, double, and problem-solving techniques. The protagonist acted out a real situation on stage and received feedback from others and the therapist.
Ninth	The purpose of this meeting was to evaluate the assignments, summarize the previous meetings, encourage participants to apply what they learned to real-life situations, and administer the post-test.

3.3. Ethical Considerations

The protocol was formally reviewed and approved by the Research Ethics Committee of Shahid Chamran University of Ahvaz (Ethical Approval Code: EE/1401.2.24.172133/SCU.AC.IR). Prior

to enrollment, written informed consent was acquired from the participants' legal guardians, along with written informed assent from the adolescent participants. Confidentiality and anonymity of personal data were strictly preserved, and participants were explicitly informed of their right to withdraw from the intervention at any stage without prejudice.

3.4. Data Analysis

All statistical computations were performed using IBM SPSS Statistics (Version 24.0). Descriptive statistics were summarized as means (MMM) and standard deviations (SDSDSD). To evaluate intervention efficacy across time while addressing the repeated-measures structure, mixed-design repeated-measures analyses of variance (RM-ANOVA; 2 Groups × 3 Measurement Occasions) were conducted separately for the cognitive (AFNE) and behavioral (TISC) subscale .(version 24).

4. Results

4.1. Data Screening, Missing Data, and Statistical Assumptions

Before conducting inferential analyses, we thoroughly screened the data for missing values, univariate and multivariate outliers, and statistical assumptions. First, inspection of the dataset revealed no missing data, as all 24 participants completed all three assessment sessions (pretest, posttest, and 2-month follow-up); therefore, no imputation methods were needed. Second, univariate outliers were evaluated by converting raw scores into standardized z-scores (±3.29criterion), and multivariate outliers were assessed using the Mahalanobis distance test ($p<.001$). We identified no univariate or multivariate outliers in the dataset.

Third, we inspected univariate normality for the outcome variables—AFNE and TISC—using the Shapiro–Wilk test. Minor baseline deviations in selected cells were deemed non-critical, given that we selected a mixed-design repeated-measures ANOVA as the optimal statistical approach to account for the data's longitudinal nature, control for within-subject correlations across time points, and maximize statistical power.

4.2. Preliminary Analyses and Descriptive Statistics

Before conducting inferential analyses, we evaluated statistical assumptions to ensure data integrity. Univariate normality for the outcome variables—AFNE and TISC—was inspected using the Shapiro–Wilk test; minor baseline deviations observed in selected cells were deemed non-critical given that repeated-measures ANOVA is robust to moderate departures from normality, particularly with balanced cell sizes (n=12 per arm). Levene's test of equality of error variances confirmed homogeneity across all measurement points: pretest, $F(1,22)=2.79$, $p=.109$; posttest, $F(1,22)=0.26$, $p=.613$; and follow-up, $F(1,22)= 0.73$, $p=.403$. Homogeneity of variance-covariance matrices was verified with Box's M test, which was non-significant, $M=6.75$, $F(6,3506.7)=1.51$, $p=.170$.

We evaluated sphericity using Mauchly's test. Because the assumption of sphericity was violated, $W=0.667$, $\chi2(2)=8.50$, $p=.014$, Greenhouse–Geisser corrections ($\varepsilon=0.750$\varepsilon = 0.750$\varepsilon=0.750$) were applied to within-subjects degrees of freedom. Baseline equivalence testing between the experimental and control groups indicated no statistically significant difference at pretest, $t(22) = 1.69$, $p=.106$. Descriptive statistics—means (M) and standard deviations (SD)—across the three assessment points are detailed in Table 2.

Table 2. Descriptive statistics for AFNE and TISC.

Variables	Group	Pretest	Posttest	Follow-up
		M (SD)	M (SD)	M (SD)
AFNE	Experimental group (n=12)	62.50(2.91)	56.17 (3.07)	51.67 (2.84)
	Control group(n=12)	60.83(1.80)	61.58 (1.71)	61.00 (1.95)
	Total sample (N=24)	61.67(2.51)	58.88 (3.65)	56.33 (5.26)
TISC	Experimental group (n=12)	34.83(1.89)	28.41(2.87)	24(2.44)
	Control group(n=12)	35.66(1.37)	36.16(1.74)	37(2.29)
	Total sample (N=24)	35.25(1.67)	32.29(4.59)	30(7.03)

Note. N=24. M = mean; SD = standard deviation.

3.3. Mixed-Design Repeated-Measures ANOVA

We conducted a 2×3 mixed-design repeated-measures ANOVA to examine the effects of Group (experimental vs. control; between-subjects) and Time (pretest, posttest, 2-month follow-up; within-subjects), as well as their interaction.

For AFNE, the main effect of Group was statistically significant, F(1,22)= 25.06, <.001, ηp2=.53. With the Greenhouse–Geisser adjustment applied, the main effect of Time was also significant, F(1.50,33.01)=105.26, p<.001, η_p^2=.82. Crucially, the Group ×\times× Time interaction proved statistically significant, F(1.50,33.01)=114.95, p<.001, η_p^2=.83. Polynomial trend analysis for the interaction demonstrated a prominent linear trend, F(1,22)= 212.02, p<.001, η_p^2=.91, accompanied by a modest quadratic component, F(1,22)=6. 54, p=.018, η_p^2=.23.

For TISC, significant main effects were demonstrated for Group, F(1,22)=85. 17, p<.001, ηp2=.79, and Time, F(1.80,39.65)=88.99, p<.001, ηp2=.80. Furthermore, the Group × Time interaction was significant, F(2,39.65)=143.98, p<.001, η_p^2=.86. As shown by the mean trajectories in Table 1, participants receiving the intervention exhibited marked, continuous decreases in symptom scores across Time, whereas control group scores remained stable. The complete mixed-design RM-ANOVA statistics are summarized in Table 3.

Table 3: Summary of Mixed-Design Repeated-Measures Analysis of Variance for AFNE and TISC.

Variables	Source of Variation	SS	df	MS	F	*P*	η_p^2
AFNE	**Between subjects**						
	Group	342.35	1	342.35	25.06	<.001	0.53
	Error	300.52	22	13.66			
	Within subjects						
	Time	341.58	1.5	227.62	105.26	<.001	0.82
	Time × Group	373.02	1.5	248.57	114.95	<.001	0.83
	Error (Time)	71.38	33.01	2.16			
TISC	**Between subjects**						
	Group	931.68	1	931.68	85.17	<.001	0.79
	Error	240.63	22	10.93			
	Within subjects						
	Time	276.19	1.80	153.23	88.99	<.001	0.80
	Time × Group	446.86	1.80	248.25	143.98	<.001	0.86
	Error (Time)	68.27	39.65	1.72			

Note. SS = sum of squares; df = degrees of freedom; MS = mean square; η_p^2= partial eta squared.

3.4. Pairwise Comparisons

To examine temporal changes across assessment points, we conducted Bonferroni-adjusted post-hoc pairwise comparisons on estimated marginal means.

For AFNE, all pairwise contrasts were statistically significant (p<.001). Significant reductions emerged from pretest to posttest (Mdiff=2.79, 95% CI [1.64, 3.95] and follow-up (Mdiff=5.33, 95% CI [4.36, 6.31], with further significant improvement from posttest to follow-up (Mdiff=2.54, 95% CI [1.89, 3.20].

For TISC, all contrasts were similarly significant (p<.001). Symptom scores decreased significantly from pretest to posttest (Mdiff=2.96, 95% CI [2.19, 3.72] Mdiff=2.96, 95% CI [2.19, 3.72]) and follow-up (Mdiff=4.75, 95% CI [3.73, 5.77], continuing to progress from posttest to follow-up (Mdiff=1.79, 95% CI [0.81, 2.78]. Table 3 presents complete pairwise comparison metrics.

Table4. Bonferroni-Adjusted Pairwise Comparisons of Estimated Marginal Means Across the Three Measurement Occasions

Outcome	Time contrast	M diff (I – J)	SE	*p*	95% CI [LL, UL]
AFNE	Pretest-posttest	2.79	0.45	< .001	[1.64, 3.95]
	Pretest-follow up	5.33	0.39	< .001	[4.36,3.95]
	Posttest-follow up	2.54	0.38	< .001	[1.89, 3.20]
TISC	Pretest-posttest	2.95	0.29	< .001	[2.19, 3.72]
	Pretest-follow up	4.75	0.39	< .001	[3.73, 5.77]
	Posttest-follow up	1.79	0.38	< .001	[0.81,2.78]

Note. Based on estimated marginal means. Adjustment for multiple comparisons: Bonferroni.∗p<.05.

5. Discussion

The present study aimed to investigate the clinical efficacy of group psychodrama in ameliorating cognitive components—specifically, apprehension and fear of negative evaluation (AFNE)—and behavioral components—namely, tension and inhibition in social contact (TISC)—of social anxiety among adolescent girls diagnosed with Social Anxiety Disorder (SAD). As articulated in the theoretical foundations of the study, social anxiety disorder is characterized by a chronic, debilitating condition accompanied by pervasive interpersonal avoidance and severe functional impairment. Nevertheless, standard verbal cognitive-behavioral approaches often fail to achieve complete response rates (with efficacy fluctuating around 50%); this clinical shortcoming accentuates the imperative of employing experiential, dynamic, and action-oriented modalities (1, 2, 6). The statistical analyses using mixed-design repeated-measures ANOVA revealed significant Group × Time interaction effects, indicating very large effect sizes for both AFNE (η_p^2=0.83) and TISC (η_p^2 =0.86). Furthermore, Bonferroni post-hoc tests demonstrated that the significant reduction in symptoms achieved at post-intervention was stably maintained across the two-month follow-up period, whereas the control group exhibited no significant changes in symptom trajectories over the same timeframe.

The obtained findings are consistent with prior research regarding the role of action-oriented and dramaturgic interventions in alleviating interpersonal distress among youth (Bakaeian et al., 2022; Kooraki, Hashemi, Mehrabizadeh Honarmand, & Peymannia, 2023b;

Rudokaite & Indriuniene, 2019; Şimşek et al., 2020; Uneri et al., 2016). In elucidating the cognitive domain, the marked and durable attenuation of the AFNE component reflects the core psychopathological nucleus of SAD—a premise highlighted in the DSM-5 and cognitive maintenance models (Bjornsson et al., 2020; Leigh & Clark, 2018). According to these perspectives, social phobia is perpetuated through hypervigilance toward peripheral threat cues, catastrophic misinterpretations of everyday interactions, and distorted self-referential schemas. In traditional therapeutic protocols, adolescents frequently encounter severe obstacles when challenged by these rigid cognitive structures solely through rational debate. In contrast, the psychodramatic matrix provides a structured setting wherein internal catastrophic beliefs and appraised threats can be externalized onto an objective dramatic stage (Moreno, 1972). By employing the technique of role reversal, the individual is temporarily liberated from a self-focused and over-evaluated state, stepping directly into the observer's subjective world. This perspective-taking decenters the patient's self-structure, empirically refutes catastrophic apprehensions concerning social humiliation, and dismantles self-focused attentional biases. Concurrently, the mirroring technique enables adolescents to observe their nonverbal behavior and communicative presentation from an external vantage point. This process minimizes the discrepancy between the individual's distorted, catastrophic mental image of the "social self" and their objective performance (Leigh & Clark, 2018), thereby fostering profound cognitive restructuring through experiential insight.

From a behavioral perspective, the pronounced reduction in the TISC index testifies to psychodrama's structural capacity to dismantle interpersonal inhibition, social avoidance, and autonomic tension. Consistent with behavioral avoidance models, excessive fear of peer evaluation prompts maladaptive safety-seeking behaviors (such as gaze avoidance and interpersonal withdrawal), which in turn preclude the acquisition of corrective feedback (Leigh & Clark, 2018). Psychodrama operates as a secure social laboratory, facilitating in vivo behavioral exposure. Within this process, the technique of doubling serves as an auxiliary ego; by verbalizing repressed emotions and somatic vulnerabilities, the double establishes a psychological sanctuary that mitigates the autonomic anxiety elicited by interpersonal scrutiny. Furthermore, systematic progression through Moreno's classical tripartite cycle—comprising warm-up, action, and sharing—establishes a safe platform for structured behavioral rehearsals (Hamidi & Hasanpour, 2022; Kooraki et al., 2023a; Pourrezaian, 2016). Within this milieu, adolescents have the opportunity to experiment with assertive and spontaneous interaction patterns devoid of real-world rejection fears. Such experiential mastery enhances communicative self-efficacy, modulates physiological arousal, and alleviates the behavioral avoidance characteristic of socially anxious adolescents.

From a translational perspective, the findings of this research indicate the extent to which integrating action-oriented and experiential techniques can enrich conventional treatment paradigms for adolescent SAD. Given that verbal disputations frequently encounter resistance or cognitive fatigue in younger age groups, psychodramatic interventions represent an efficient option for implementation in school counseling, psychiatric clinics, and mental health centers. By bridging cognitive restructuring with tangible behavioral exposure, psychodrama bypasses verbal resistance, accelerates emotional processing, and targets residual symptoms persisting after traditional treatments (Evans et al., 2021).

6. Limitation and Recommendation

Despite the theoretical and clinical implications, several methodological limitations warrant consideration. First, although the statistical power was robust (Power=1.00) due to large observed effect sizes, the relatively modest sample size (N=24, n=12 per group) warrants caution regarding broad generalizability. Second, the sample was selected via convenience sampling and comprised exclusively female adolescents; given sex-differentiated presentations of social anxiety during adolescence, replication in balanced, mixed-gender cohorts is essential. Third, clinical outcomes relied solely on standardized self-report inventories. Although psychometrically sound, self-reports remain vulnerable to shared method variance and social desirability; future studies should incorporate multi-informant assessments (e.g., parent and teacher ratings) and objective, standardized behavioral role-play tasks. Fourth, while the 2-month follow-up confirmed medium-term maintenance, evaluating long-term durability across developmental transitions warrants follow-up intervals of 6 to 12 months. Finally, the inclusion of an inactive control group leaves open the possibility that non-specific group factors (e.g., peer contact, therapist attention) contributed to outcomes; prospective randomized clinical trials should incorporate an active comparator, such as manualized cognitive-behavioral therapy or supportive group psychotherapy, while conducting formal mediation analyses to isolate the specific mechanistic pathways of dramatic action techniques.

7. Conclusion

The present study demonstrates that group psychodrama is a highly viable and efficacious experiential intervention for adolescent girls struggling with social anxiety disorder. By simultaneously targeting core cognitive distortions—specifically apprehension and fear of negative evaluation—and observable behavioral manifestations, including social tension and behavioral inhibition, the intervention facilitated significant and clinically meaningful symptom alleviation. The experiential architecture of psychodrama, characterized by action-oriented role experimentation, perspective-taking, and peer validation within an emotionally contained group setting, addresses key maintenance factors that conventional verbal therapies often fail to resolve. Importantly, the observed therapeutic gains demonstrated longitudinal stability over a two-month follow-up period. Collectively, these findings underscore the clinical utility of incorporating active, drama-based modalities into youth mental health frameworks, school counseling services, and community psychiatric settings to foster resilient interpersonal functioning and sustainable social engagement among adolescents.

8. Author Contributions

Design, conceptualization, project administration, data collection, data analysis, writing the original draft, and editing: Maryam Kooraki; Design, conceptualization and review: Seyed Esmaeil Hashemi and Mahnaz Mehrabizadeh Honarmand; Supervision and review: Seyed Esmaeil Hashemi, & Mahnaz Mehrabizadeh Honarmand; Design and implementation of the intervention: All authors.

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10. Conflicts of Interest

There are no conflicts of interest.

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