



Effectiveness of Unified Transdiagnostic Treatment on Behavioral Problems in Children with Internalizing Behavioral Problems

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ABSTRACT

This study aimed to investigate the effectiveness of unified transdiagnostic treatment on behavioral problems in children with internalizing behavioral problems. This quasi-experimental study utilized a pre-test, post-test design with a control group and a two-month follow-up. The statistical population included 8- to 10-year-old children with internalizing behavioral problems in Najafabad during the first half of 2022. Thirty children were selected based on inclusion criteria using convenience sampling and were randomly assigned to two groups of 15 (experimental and control). The experimental group received the unified transdiagnostic treatment (child version) for 15 weekly sessions of 120 minutes each, while the control group received no intervention. The Child Behavior Checklist (Achenbach & Rescorla, 2001) was used as the research instrument. The obtained data were analyzed using repeated measures analysis of variance. The results showed that the unified transdiagnostic treatment had a significant impact on behavioral problems and their components, with the effects of the intervention being sustained over time. Based on the findings, it can be concluded that this therapeutic intervention can reduce behavioral problems in children with internalizing behavioral problems.

Keywords: Unified transdiagnostic treatment, behavioral problems, internalizing behavioral problems.

1. Introduction

Behavioral problems are among the most critical research and therapeutic areas in children's mental and emotional health, with numerous etiological studies focusing on them. As children develop, psychological and behavioral problems during childhood transition to adolescence and

adulthood, making the treatment of emotional and psychological issues increasingly challenging over time (1). Studies indicate that between 2% to 10% of school-aged children and adolescents have serious and persistent behavioral problems (2-4). Behavioral problems are common and debilitating, causing significant issues for families, teachers, and the children themselves, and are

associated with high rates of social problems (5, 6). Children with behavioral problems generally have a short attention span, suffer from low self-esteem, have difficulties in relationships with family members, peers, and others, and are easily frustrated. Additionally, impulsivity, restlessness, hyperactivity, self-harm, harm to others, environmental destruction, disobedience, stereotypical movements and speech, withdrawal, aggression, lying, and feelings of low self-efficacy and incompetence are other characteristics of children with behavioral problems (7).

Various classifications for children's behavioral problems have been proposed. One of the most well-known, extensive, and widely used dimensional approaches is the Achenbach and Rescorla (2001) classification. This classification divides children's behavioral problems into two broad categories: internalizing and externalizing disorders (8). Internalizing behavioral problems are intrapersonal by nature and manifest as withdrawal from social interactions, inhibition, anxiety, and depression, diagnosed clinically as symptoms of anxiety and depression (9). The core of these problems is mood or emotional disorder, which primarily causes personal distress to the child rather than affecting others (10). Internalizing problems are associated with numerous issues, such as low self-esteem, peer and teacher relationship problems, academic difficulties, and harmful outcomes in adulthood (11). Research indicates that children with internalizing problems are more frequently referred to clinics for treatment (12). The prevalence of these disorders in clinic-referred populations is reported to be over 50% (13), and a significant portion of internalizing behavioral problems persist throughout development into adulthood, bringing detrimental consequences for the individual (6).

Research in child and adolescent psychology has led to new understandings of therapeutic interventions for children with behavioral problems, providing researchers with a deeper insight into internalizing behavioral problems (14). One of these new therapeutic interventions, developed to treat psychological harms and emotional and behavioral problems, is unified transdiagnostic treatment. This treatment has roots in cognitive-behavioral therapy but emphasizes emotions and maladaptive emotion regulation strategies. Emotional experience and response to emotions are the main foundations of the transdiagnostic approach (14). This approach emphasizes the functional connection of

transdiagnostic elements (such as thoughts, behaviors, emotions, and physiology) (15). Among transdiagnostic approaches, the final version of the transdiagnostic treatment by Barlow et al. (2010), with a theoretical emphasis, significantly enhanced the effectiveness of transdiagnostic treatments (16). This approach integrated theoretical evidence (about common factors in emotional disorders) and practical techniques, increasing the effectiveness of transdiagnostic treatments and providing more scientific evidence (17-19). Recently, this forward movement has extended to childhood and adolescence disorders. Since Barlow et al.'s treatment protocol has addressed some weaknesses of other transdiagnostic treatments and, with the most research backing, has become evidence-based for treating emotional disorders in adulthood (16, 20), it became the basis for Ehrenreich-May and Bilek's (21) work to adapt transdiagnostic treatment for children's emotional disorders. Ehrenreich-May and colleagues (2012) developed two unified transdiagnostic protocols for treating anxiety and depression in adolescents (Unified Protocol for the Treatment of Emotional Disorders in Adolescents; UP-A) and children (Unified Protocol for the Treatment of Emotional Disorders in Children; UP-C) based on Barlow et al.'s (2011) protocol (16). The group-based transdiagnostic protocol for children, also known as "Emotion Detectives" (UP-C), aligns both in content and structure with Barlow et al.'s original protocol (21). However, the adult and adolescent protocols are designed for individual implementation, whereas the children's protocol is designed for group implementation (22-24). The unique feature of the children's transdiagnostic protocol, compared to other existing protocols, is that it accepts participants from a wide age range, maturity levels, and racial backgrounds, as well as those with a broad range of disorders and emotional symptoms. Additionally, this protocol has two important features to consider in comparison to other treatments: first, the transdiagnostic protocol by Ehrenreich-May and Bilek (2012) is designed for group implementation, and second, a separate group is simultaneously formed for parental education alongside the children's group therapy. In other words, children and parents are trained simultaneously but in separate groups (21).

Initial data show that both child and adolescent protocols are effective in reducing the severity of emotional disorders

(21). Ehrenreich-May and colleagues (2012) confirmed the efficacy of the group-based transdiagnostic protocol for children in treating internalizing behavioral problems in 22 children aged 8 to 11 in an initial clinical trial. More recent studies also confirm the efficacy of the children's transdiagnostic protocol in reducing a range of emotional disorders and problems in children (5, 16, 23), improving psychological, emotional, and relational components (15, 18, 22, 25), and treating anxiety and depression disorders (18, 24, 26, 27). Overall, considering the psychological harms in children with internalizing behavioral problems and the necessity of using timely and appropriate intervention methods, as well as the observed efficacy of unified transdiagnostic treatment in improving behavioral, psychological, and emotional disorders in various statistical populations, and the lack of such research within the country, this study aims to examine the effectiveness of unified transdiagnostic treatment on behavioral problems in children with internalizing behavioral problems.

2. Methods and Materials

2.1. Study Design and Participants

The statistical population of the present study included 8- to 10-year-old children with internalizing behavioral problems in Najafabad, Isfahan, who had visited child and adolescent clinics, psychiatrists, and psychologists for therapeutic interventions during the first half of 2022. The sample size was estimated to be 36, based on previous studies that reported 12 participants per group to evaluate the efficacy of unified transdiagnostic treatment, considering the probability of dropout. Participants were selected voluntarily and conveniently based on inclusion and exclusion criteria and were randomly assigned to two groups of 15 (experimental and control). Initially, all parents completed the Child Behavior Checklist (Achenbach & Rescorla, 2001) as a pre-test. The experimental group received the unified transdiagnostic treatment for 15 weekly sessions of 120 minutes each, while the control group was on a waitlist and received no intervention during the study. After the intervention, both groups completed the research questionnaire as a post-test, and to assess the sustainability of the therapeutic effects over time, the experimental group completed the questionnaire again two months later.

Inclusion criteria were informed consent, interest and willingness to participate, having internalizing behavioral problems based on DSM-5 diagnostic criteria, age range of 8 to 10 years, and not receiving simultaneous psychotherapy or psychiatric medication. Exclusion criteria included more than two absences, having disorders other than internalizing behavioral problems based on DSM-5 criteria and clinical interviews, prior psychological or group therapy before the study, and not completing the questionnaire at any stage. Ethical principles were observed, keeping participants' information confidential. After the study, control group members were invited to receive the intervention voluntarily and free of charge, with eight mothers and children attending the sessions. Data were analyzed using repeated measures analysis of variance, multivariate (MANCOVA), and univariate (ANCOVA) covariance analyses. Statistical analyses were conducted using SPSS-22 software.

2.2. Measures

2.2.1. Behavioral Problems

This questionnaire, developed by Achenbach and Rescorla in 2001, assesses emotional-behavioral problems and the academic and social competencies of children aged 6-18 from the parents' perspective. The form consists of three parts: a) demographic information, b) competency and adaptation scales, and c) empirically based scales and the American Psychiatric Association's Diagnostic and Statistical Manual. It evaluates children's and adolescents' problems in eight factors: anxiety/depression, withdrawal/depression, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior. Rule-breaking behavior and aggressive behavior constitute the second-order factor of externalizing problems. Additionally, this scale provides three broad-band scores: internalizing problems, externalizing problems, and total problems. Items are rated on a 3-point Likert scale from (0) to (2), with (0) indicating the behavior is never observed, (1) indicating the behavior is sometimes observed, and (2) indicating the behavior is often or always observed. Achenbach and Rescorla (2001) reported a Cronbach's alpha of 0.97 for the total questionnaire and a test-retest reliability of 0.94. The alpha coefficients for the competency and adaptive

functioning scales ranged from 0.65 to 0.91, and for the DSM-oriented scales, they were satisfactory, ranging from 0.62 to 0.92 (8, 9, 28). They also reported significant correlations between the subscales and the total CBCL score, indicating adequate concurrent and convergent validity. In Iran, Yazdkhasti and Oreyzi (2011) found that the CBCL effectively categorized children into three groups (normal, borderline, and clinical) for eight emotional behavior problems based on parent/teacher/child reports, making it a valuable tool alongside clinical interviews for unbiased diagnosis. Cronbach's alpha coefficients for internalizing problems (0.72), externalizing problems (0.79), and total problems (0.77) showed satisfactory reliability. In the present study, subscale reliabilities ranged from 0.69 to 0.74, with an overall reliability of 0.84 (29).

2.3. Intervention

2.3.1. Unified Transdiagnostic Treatment

The therapeutic intervention used in this study was based on the unified transdiagnostic treatment protocol for children's emotional disorders by Ehrenreich-May and Bilek (21). This protocol was implemented in 15 two-hour (120-minute) weekly sessions for children and their parents (mothers).

Session 1: Introduction and Emotional Awareness

Children's Group: The first session introduces the structure and model of the treatment, identifies primary problems and treatment goals, and establishes rapport between group members and the therapist. Children learn about the purpose of emotions and begin developing emotional awareness.

Parents' Group: Parents are introduced to the treatment structure and the skills they will learn, such as recognizing cues and the three-part model of emotion. The session includes a discussion on the emotional behavior cycle.

Session 2: Identifying and Normalizing Emotions

Children's Group: Children learn to identify and rate the intensity of various emotions, continue normalizing emotional experiences, and become familiar with the three parts of emotional experience and the avoidance cycle. They also identify rewards for new behaviors.

Parents' Group: Parents learn about tracking emotions before, during, and after they occur. They discuss emotional

parenting behaviors and the contrasting behavior of positive reinforcement instead of blame.

Session 3: Opposite Action and Scientific Experimentation

Children's Group: The session introduces the concept of opposite action, encouraging children to use scientific experiments to help form opposite actions to emotional behaviors. They learn about the connection between activity and emotion and how to track emotional levels and activities as part of an experiment.

Parents' Group: Parents are introduced to scientific experiments and discuss how they can support their children in conducting these experiments. The session also covers methods for reinforcing children.

Session 4: Physical Cues and Body Scanning

Children's Group: Children learn to describe physical cues and their connection to strong emotions, identify bodily cues for different emotions, and practice body scanning skills to increase awareness. They practice experiencing physical cues without using avoidance or distraction.

Parents' Group: Parents learn about the concept of physical cues, body scanning techniques, and sensory exposure. The session includes practicing empathy expression.

Session 5: Flexible Thinking and Cognitive Traps

Children's Group: The session introduces flexible thinking and teaches children to recognize common cognitive traps.

Parents' Group: Parents learn about cognitive flexibility and four common cognitive traps. They discuss emotional parenting behaviors, instability, and the contrasting behavior of consistent reinforcement and rule-setting.

Session 6: Detective Thinking

Children's Group: Children are introduced to detective thinking and its application.

Parents' Group: Parents practice detective thinking and discuss emotional parenting behaviors such as overcontrol and overprotection, and the contrasting behavior of fostering independence.

Session 7: Problem-Solving

Children's Group: The session focuses on teaching and applying problem-solving skills.

Parents' Group: Parents learn problem-solving techniques, discuss using them for interpersonal conflicts, and address reassurance-seeking and adaptability.

Session 8: Experiencing Emotions

Children's Group: Children learn the skill of experiencing emotions, becoming aware of the present moment, and understanding non-judgmental awareness.

Parents' Group: Parents discuss the importance of learning to experience emotions rather than avoiding them. They practice present-moment awareness and non-judgmental awareness, and begin completing the emotional behavior form.

Session 9: Emotional Detective Skills and Exposure

Children's Group: The session reviews emotional detective skills learned so far, discusses emotional behaviors and opposite actions, and prepares for a new type of scientific experiment called exposure. The children engage in an exposure task using a toy or object and finalize emotional behavior forms with their parents.

Parents' Group: Parents learn about situational emotional exposure, the role of parents in practicing exposure at home, and emotional parenting behaviors such as extreme modeling of intense emotions and avoidance. They continue expanding the emotional behavior form in preparation for upcoming exposure exercises.

Session 10: Facing Strong Emotions

Children's Group: Children review the concept of using scientific experiments to face strong emotions, learn about safety behaviors and subtle avoidance strategies like distraction, and practice a group experiment to confront strong emotions. They plan future experiments to address these emotions.

Parents' Group: Parents review situational emotional exposure and its application to different symptoms, learn about safety behaviors, and discuss how to use contrasting parenting behaviors to support their child's exposure practice. They learn about the emotion ladder for exposure and help finalize the emotional behavior form.

Sessions 11 to 14: Planning and Conducting Exposures

Children's Group: In the eleventh session, children plan and conduct initial exposure to situational emotions. In the twelfth, thirteenth, and fourteenth sessions, they plan and carry out additional exposure activities.

Parents' Group: Parents plan and conduct initial exposure to situational emotions in the eleventh session. In the twelfth, thirteenth, and fourteenth sessions, they plan and conduct further exposure activities.

Session 15: Review and Future Planning

Children's Group: Children review the emotional detective skills learned throughout the treatment, plan for facing strong emotions in the future, and celebrate the progress made during the treatment program.

Parents' Group: Parents review emotional detective skills and contrasting parenting behaviors, discuss each child's progress, and express gratitude. They plan for maintaining and furthering progress after the treatment ends and help parents identify warning signs of relapse.

2.4. Data Analysis

The questionnaires, after being collected, were analyzed with SPSS 20 software at two levels: descriptive and inferential. At the descriptive level, statistical indices such as mean, standard deviation, minimum, and maximum of the research variables were calculated, and at the inferential level, the hypotheses were tested using the t-test.

3. Findings and Results

The mean and standard deviation of the age of the children in the experimental group were 9.07 and 0.80 years, respectively, and in the control group were 9.13 and 0.83 years, respectively. The mean and standard deviation of the age of the mothers in the experimental group were 35.80 and 3.38 years, respectively, and in the control group were 35.93 and 3.10 years, respectively. The educational levels of the mothers in the experimental group included 4 with a high school diploma, 2 with an associate degree, 6 with a bachelor's degree, and 3 with a master's degree or higher. In the control group, the educational levels included 6 with a high school diploma, 2 with an associate degree, 5 with a bachelor's degree, and 2 with a master's degree or higher. [Table 1](#) presents the means, standard deviations, and Shapiro-Wilk statistics of the components (depression/withdrawal, somatic complaints, social problems, rule-breaking behavior, and aggressive behavior) and the total behavioral problems score for the two groups at three stages: pre-test, post-test, and follow-up.

Table 1

Means, Standard Deviations, and Shapiro-Wilk Statistics for Components and Total Behavioral Problems Scores at Three Stages: Pre-Test, Post-Test, and Follow-Up

Variable	Group	Pre-Test M ± SD	Post-Test M ± SD	Follow-Up M ± SD
Depression/Withdrawal	Experimental	10.33 ± 2.38	6.53 ± 1.55	6.20 ± 1.57
	Control	9.87 ± 2.23	10.20 ± 1.93	9.47 ± 4.59
Somatic Complaints	Experimental	6.00 ± 2.42	3.27 ± 1.79	3.07 ± 1.48
	Control	6.20 ± 2.11	5.87 ± 2.42	6.40 ± 1.84
Social Problems	Experimental	11.13 ± 3.02	5.53 ± 1.68	6.00 ± 1.73
	Control	11.27 ± 2.71	10.20 ± 2.01	10.93 ± 2.31
Rule-Breaking Behavior	Experimental	11.33 ± 2.85	5.93 ± 1.67	6.40 ± 1.88
	Control	11.07 ± 2.76	10.28 ± 2.86	10.60 ± 2.20
Aggressive Behavior	Experimental	16.20 ± 2.68	9.27 ± 2.76	9.00 ± 2.78
	Control	16.83 ± 2.39	16.30 ± 3.57	15.60 ± 2.47
Total Score	Experimental	55.07 ± 8.01	30.45 ± 6.36	30.66 ± 6.70
	Control	55.26 ± 9.60	52.80 ± 7.83	53.00 ± 9.12
Depression/Withdrawal	Experimental	0.954 (0.594)	0.932 (0.295)	0.935 (0.329)
	Control	0.977 (0.943)	0.959 (0.680)	0.948 (0.494)
Somatic Complaints	Experimental	0.900 (0.096)	0.933 (0.304)	0.867 (0.031)
	Control	0.947 (0.481)	0.914 (0.153)	0.917 (0.173)
Social Problems	Experimental	0.966 (0.787)	0.892 (0.071)	0.955 (0.601)
	Control	0.901 (0.099)	0.918 (0.181)	0.975 (0.927)
Rule-Breaking Behavior	Experimental	0.932 (0.293)	0.909 (0.130)	0.919 (0.185)
	Control	0.891 (0.070)	0.927 (0.242)	0.940 (0.378)
Aggressive Behavior	Experimental	0.953 (0.565)	0.917 (0.176)	0.935 (0.324)
	Control	0.892 (0.072)	0.884 (0.054)	0.958 (0.655)
Total Score	Experimental	0.959 (0.668)	0.965 (0.771)	0.968 (0.820)
	Control	0.963 (0.743)	0.974 (0.918)	0.978 (0.955)

Table 1 shows that the mean scores of behavioral problems components in the experimental group decreased in the post-test and follow-up stages compared to the control group. No similar changes were observed in the control group during these stages. Table 1 indicates that the Shapiro-Wilk value for the somatic complaints component in the experimental group at the follow-up stage ($p = 0.031$) is significant, suggesting that the assumption of normal distribution for that component in the group and stages is not met. However, the significance level indicates that the deviation from the assumption is not severe and can be ignored. The assumption of homogeneity of error variances was tested using Levene's test.

The results of Levene's test indicate that the error variances for none of the components and the total behavioral problems score are significantly different across the groups and research stages. This finding suggests that the assumption of homogeneity of error variances is met for the

research variables. The assumptions of homogeneity of covariance matrices for the dependent variables were tested using Box's M test, and the assumption of sphericity or equality of error covariance matrices was tested using Mauchly's test.

The results show that the Box's M statistic for none of the components and the total behavioral problems score is significant. This indicates that the assumption of homogeneity of covariance matrices for the dependent variables is met. Moreover, Mauchly's test showed that the chi-square value for the social problems ($p = 0.011$) and rule-breaking behavior ($p = 0.024$) components is significant. This finding indicates that the assumption of sphericity is not met for these components, and therefore, the degrees of freedom for these components were adjusted using the Greenhouse-Geisser correction method.

After evaluating the assumptions and ensuring they were met, the data were analyzed using repeated measures

ANOVA. Table 2 presents the results of the multivariate analysis for assessing the effect of the unified

transdiagnostic treatment on the components of behavioral problems.

Table 2

Results of Repeated Measures ANOVA Explaining the Effect of Independent Variables on Behavioral Problems

Variable	Effect	SS	Error SS	F	p	η^2
Depression/Withdrawal	Group	104.54	132.89	22.03	0.001	0.440
	Time	77.07	121.67	17.74	0.001	0.388
	Group \times Time	77.96	222.44	9.81	0.001	0.260
Somatic Complaints	Group	94.04	136.36	19.31	0.001	0.408
	Time	28.02	94.67	8.29	0.008	0.228
	Group \times Time	40.29	313.24	5.29	0.009	0.159
Social Problems	Group	236.84	219.64	30.19	0.001	0.520
	Time	112.07	171.53	18.29	0.001	0.395
	Group \times Time	109.16	224.09	13.64	0.001	0.328
Rule-Breaking Behavior	Group	170.84	244.09	19.60	0.001	0.412
	Time	109.35	88.33	34.66	0.001	0.553
	Group \times Time	102.92	247.24	11.64	0.001	0.294
Aggressive Behavior	Group	504.10	359.56	39.27	0.001	0.584
	Time	273.07	150.93	50.66	0.001	0.644
	Group \times Time	192.80	300.58	17.96	0.001	0.391
Total Score	Group	5032.54	2364.44	59.60	0.001	0.680
	Time	2666.67	1628.27	45.86	0.001	0.621
	Group \times Time	2449.42	3032.89	22.61	0.001	0.447

The effect of the independent variable on the components of depression/withdrawal (Wilks' $\lambda = 0.624$, $\eta^2 = 0.376$, $p = 0.002$, $F = 8.12$), somatic complaints (Wilks' $\lambda = 0.720$, $\eta^2 = 0.280$, $p = 0.012$, $F = 5.25$), social problems (Wilks' $\lambda = 0.528$, $\eta^2 = 0.472$, $p = 0.001$, $F = 12.06$), rule-breaking behavior (Wilks' $\lambda = 0.531$, $\eta^2 = 0.459$, $p = 0.001$, $F = 11.46$), aggressive behavior (Wilks' $\lambda = 0.494$, $\eta^2 = 0.506$, $p = 0.001$, $F = 13.85$), and total score (Wilks' $\lambda = 0.405$, $\eta^2 = 0.595$, $p = 0.001$, $F = 19.86$) were significant. Table 6 presents the results of the repeated measures ANOVA explaining the effect of the unified transdiagnostic treatment on the components of behavioral problems.

Table 2 shows that the group \times time interaction effect is significant for the components of depression/withdrawal ($\eta^2 = 0.260$, $p = 0.001$, $F = 9.81$), somatic complaints ($\eta^2 = 0.159$, $p = 0.009$, $F = 5.29$), social problems ($\eta^2 = 0.328$, $p = 0.001$, $F = 13.64$), rule-breaking behavior ($\eta^2 = 0.294$, $p = 0.001$, $F = 11.64$), aggressive behavior ($\eta^2 = 0.391$, $p = 0.001$, $F = 17.96$), and total score ($\eta^2 = 0.447$, $p = 0.001$, $F = 22.61$). These findings indicate that the implementation of the unified transdiagnostic treatment significantly influenced the components of behavioral problems. Table 7 presents the results of the Bonferroni follow-up test for the scores of behavioral problems components in the two groups at the three stages of implementation.

Table 3

Results of Bonferroni Follow-Up Test for Behavioral Problems

Dependent Variable	Comparison 1	Comparison 2	Mean Difference	SE	p
Depression/Withdrawal	Pre-Test	Post-Test	1.73	0.53	0.009
	Pre-Test	Follow-Up	2.27	0.54	0.001
	Post-Test	Follow-Up	0.53	0.47	0.793
Somatic Complaints	Pre-Test	Post-Test	1.53	0.57	0.036
	Pre-Test	Follow-Up	1.37	0.48	0.023
	Post-Test	Follow-Up	0.17	0.46	1.000
Social Problems	Pre-Test	Post-Test	3.33	0.45	0.001
	Pre-Test	Follow-Up	2.73	0.64	0.001
	Post-Test	Follow-Up	-0.60	0.43	0.527

Rule-Breaking Behavior	Pre-Test	Post-Test	3.10	0.66	0.001
	Pre-Test	Follow-Up	2.70	0.46	0.001
	Post-Test	Follow-Up	-0.40	0.48	1.000
Aggressive Behavior	Pre-Test	Post-Test	3.80	0.67	0.001
	Pre-Test	Follow-Up	4.27	0.60	0.001
	Post-Test	Follow-Up	0.47	0.52	1.000
Total Score	Pre-Test	Post-Test	13.53	1.92	0.001
	Pre-Test	Follow-Up	13.33	1.97	0.001
	Post-Test	Follow-Up	-0.20	1.80	1.000
Depression/Withdrawal	Experimental	Control	-2.16	0.46	0.001
Somatic Complaints	Experimental	Control	-2.04	0.47	0.001
Social Problems	Experimental	Control	-3.24	0.59	0.001
Rule-Breaking Behavior	Experimental	Control	-2.76	0.62	0.001
Aggressive Behavior	Experimental	Control	-4.73	0.76	0.001
Total Score	Experimental	Control	-14.96	1.94	0.001

The results of the Bonferroni follow-up test for the time effect in Table 3 indicate that the mean difference in the scores of behavioral problems components is statistically significant between the pre-test and post-test stages, and between the pre-test and follow-up stages, but not significant between the post-test and follow-up stages. Additionally, the Bonferroni follow-up test results for the group effects in Table 3 indicate that the mean difference in the behavioral problems components between the experimental and control groups is statistically significant. The implementation of the unified transdiagnostic treatment resulted in a significant reduction in the mean scores of the behavioral problems components in the post-test and follow-up stages compared to the pre-test stage.

4. Discussion and Conclusion

This study aimed to investigate the effectiveness of unified transdiagnostic treatment on behavioral problems in children with internalizing behavioral problems in Najafabad. The results showed that the effect of unified transdiagnostic treatment on the components of children's behavioral problems is significant. This educational intervention reduced the dimensions of behavioral problems in children with internalizing behavioral problems, and the effect of this intervention remained stable over time. Regarding the effectiveness of unified transdiagnostic treatment on children's behavioral problems, this finding is consistent with the prior research (5, 21-23, 27, 30, 31).

To explain this finding, it can be stated that transdiagnostic approaches mainly emphasize cognitive and behavioral processes, considering emotional experience and response to emotions as the main foundation of this model.

According to this approach, emotional experiences play a primary role in the creation and maintenance of emotional and behavioral disorders (25). Allen et al. (2008) argue that the strategies taught in unified transdiagnostic treatment significantly help children face inappropriate emotions and respond more adaptively to emotions (32). This method attempts to reduce the intensity and occurrence of emotional habits by regulating emotional regulation habits, thus reducing harm and increasing efficiency (25). If these strategies are correctly taught to the participants, they can significantly reduce children's behavioral and emotional problems.

The primary goal of this therapeutic intervention is to reduce the intensity and occurrence of maladaptive emotional experiences that lead to behavioral problems. Therefore, by learning the taught skills, there is considerable hope for improving clients' psychological and behavioral status and functioning (33). Additionally, this treatment does not aim to eliminate unpleasant emotions but emphasizes bringing emotions to a functional level so that unpleasant emotions are adaptive and helpful. This treatment is effective in better understanding the interaction of thoughts, feelings, and behaviors in creating clients' internal emotional experiences (5). Children and adolescents participating in this treatment model gain better awareness of their emotional experiences and an objective view of their emotions rather than engaging in their emotional responses. Since many behavioral problems stem from defective thoughts and negative feelings, this therapeutic intervention can be highly effective in reducing children's behavioral problems.

Moreover, in this type of treatment, clients are taught to recognize their fundamental emotions, record their frequent

and predominant emotions, and identify the cycle of emotion impact on cognition and behavior. Grossman and Ehrenreich-May (2020) showed in their study that participating in this therapeutic intervention helps clients identify and correct their unhealthy cognitions. This awareness leads to better understanding of the three factors of cognition, behavior, and emotion, resulting in the correction of unhealthy automatic emotions and rumination, ultimately leading to the correction of behavioral problems (22). Additionally, one of the main skills of transdiagnostic treatment includes challenging negative and worrying evaluations related to internal and external threats, such as feelings and physical emotions, and increasing cognitive flexibility (25).

In the sessions of this therapeutic intervention, children with behavioral problems are encouraged to use reevaluation strategies not only before emotional situations but also during and after these situations (22). Furthermore, identifying and correcting maladaptive behavior tendencies or emotion-driven behaviors is another goal of this therapeutic approach, which focuses primarily on exercises during exposure, i.e., preventing emotion-related behavioral tendencies and facilitating alternative behaviors (21). Thus, this treatment helps children show more cognitive flexibility in the face of emotions, reevaluate strategies, and behave adaptively in situations instead of eliminating or suppressing negative thoughts, which are the main causes of internalizing behavior problems in children. Over time, this leads to a reduction in their behavioral problems.

Given the effectiveness of unified transdiagnostic treatment on behavioral problems in children with internalizing behavioral problems, this treatment can improve children's behavioral problems, including withdrawal from social interactions, inhibition, anxiety, and depression manifested as symptoms of depression and anxiety, mood disorders, and emotional disorders. Therefore, unified transdiagnostic treatment can help children with behavioral disorders improve self-esteem, peer relationship problems, and academic problems, which can have consequences that persist into adulthood.

The limitations of this study include the accessibility of the sample members, lack of control over economic and social status, and age restriction, which should be considered when generalizing the results to children with other

behavioral problems and other age groups. Future studies on similar topics are recommended for other age groups and children with other behavioral and psychological problems. Additionally, it is suggested that the therapeutic method used be evaluated longitudinally and its effects over a more extended period be assessed.

Regarding practical suggestions, given the significant impact of this therapeutic intervention in reducing the dimensions of behavioral problems in children with internalizing behavioral problems, this intervention can be considered as an intervention program to reduce children's behavioral and emotional harms, especially by psychologists and therapists working in this field. Moreover, using this therapeutic approach as a complement to pharmacological treatments in medical centers and child psychiatric clinics is another recommendation of this study. Finally, given the results, this intervention can be implemented by health centers in each city as a comprehensive program so that families can benefit from this therapeutic program to address their children's problems.

Authors' Contributions

M.S.H.K. conceptualized the study, designed the research methodology, and supervised the overall project implementation. S.R., the corresponding author, conducted the data analysis using repeated measures analysis of variance, interpreted the results, and led the drafting and revising of the manuscript. P.J. assisted with the recruitment of participants, facilitated the administration of the unified transdiagnostic treatment sessions, and contributed to the literature review. All authors participated in discussing the findings, critically reviewed the manuscript for important intellectual content, and approved the final version for publication.

Declaration

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

Transparency Statement

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

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

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