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Comparison of the Effectiveness of Cognitive-Behavioral Therapy and Schema Therapy on Mental Health and Social Adjustment in Individuals with Gender Dysphoria

Elham. Bahadori[1], Kazem. Khorram Del[2*], Zahra. Ehsaei[3]

[1] Department of Psychology, Arc.C., Islamic Azad University, Arsanjan , Iran
[2] Department of psychology, Fatemiyeh Institute of Higher Education, Shiraz, Iran
[3] Legal Medicine Research Center, Legal Medicine Organization, Tehran, Iran

*** Corresponding author email address**: K.khorramdel@fatemiyehshiraz.ac.ir

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A B S T R A C T

The present study aims to compare the effectiveness of cognitive-behavioral therapy (CBT) and schema therapy on mental health and social adjustment in individuals with gender dysphoria. This applied research utilized a quasi-experimental design with pretest-posttest control group and a three-month follow-up. The statistical population included all individuals with varying degrees of gender dysphoria who had referred to treatment centers and clinics across Shiraz between 2021 and 2023. The research sample was selected using convenience sampling from individuals with gender dysphoria who had visited therapeutic clinics in Shiraz. Initially, individuals aged 18 to 40 who self-identified with gender dysphoria and had sought help at three psychiatric centers were invited to attend one of the city's counseling and psychotherapy centers. A clinical interview was conducted by a psychiatrist and a clinical psychologist to confirm the diagnosis of gender dysphoria. From those who met the inclusion criteria, 60 individuals were selected using convenience sampling and randomly assigned to three groups: experimental group 1 (CBT, 20 participants), experimental group 2 (schema therapy, 20 participants), and a control group (20 participants). The experimental groups received intervention programs, while the control group received no interventions and was placed on a waitlist. The results of the study indicated that cognitive-behavioral therapy was more effective than schema therapy in improving mental health and social adjustment in individuals with gender dysphoria. Based on the findings of the present study, the use of cognitive-behavioral therapy, in comparison to schema therapy, is emphasized for supporting individuals with gender dysphoria in enhancing mental health and social adjustment.

Keywords: *Social adjustment, mental health, cognitive-behavioral therapy, schema therapy, gender dysphoria.*

1. Introduction

Biological sex is determined based on an individual's reproductive organs, whereas gender identity refers to one's internal sense of being male or female (Kausar et al., 2024). It is generally assumed that individuals born biologically female will perceive themselves as "women" in the future, and those born biologically male will perceive themselves as "men" and will dress accordingly. However, gender and gender identity exist on a continuum, and where individuals locate themselves on this spectrum depends on various factors such as developmental level, personal experiences, current environment, past experiences, and the nature of their relationships with others and with themselves (Shelemy et al., 2024). Gender dysphoria is defined as the incongruence between biological sex and gender identity, often accompanied by significant distress and a period of dissatisfaction. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the term "gender dysphoria" replaced "gender identity disorder" (Arvind et al., 2022; Paz-Otero et al., 2021).

Individuals with gender dysphoria experience challenges in both psychological functioning and life satisfaction, often displaying poor health outcomes in these domains. Specifically, a significant proportion of this population suffers from mental health problems (Bretherton et al., 2021; Butler et al., 2019). Psychological well-being is a multidimensional construct encompassing effective aspects of the human experience (Savafi et al., 2024). A study in this area reported that among Axis I disorders, mood disorders had the highest prevalence rate at 42.1%, followed by anxiety disorders at 26.8%, and substance use/misuse disorders at 14.7% (de Freitas et al., 2020).

Social adjustment is one of the most important indicators of mental health and has garnered increasing attention in recent years (Campbell et al., 2022; Qazvini, 2018). In clinical definitions, the concept of social role is also emphasized in the conceptualization of gender dysphoria. This is evident in the diagnostic criteria for gender dysphoria in DSM-5. For instance, among the diagnostic criteria for children, it is noted that they often express a strong desire to play roles opposite to their assigned gender, which is reflected in their games or fantasies; adults may prefer to behave in roles opposite to their physiological sex (Berke et al., 2022). Recent research emphasizes that the distress experienced by these individuals is not solely due to internal dissatisfaction with their gender, but also stems from societal labeling and stigmatization (Arvind et al., 2022). Thus, enhancing social adjustment in individuals with gender dysphoria—understood as adapting oneself to the environment or modifying the environment to meet personal needs (Salaam & Mounts, 2016)—can be beneficial and may lead to increased satisfaction, success, and mental health (El Khoury, 2024; Lampis et al., 2023; Park & Choi, 2014).

According to the Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People, 7th edition, one of the primary responsibilities of health professionals working with individuals with gender dysphoria is the assessment of comorbid psychiatric disorders and support for mental health (Savafi et al., 2024). Accordingly, various studies have examined the effectiveness of different psychotherapeutic approaches on the mental health and social adjustment of individuals with gender dysphoria (Heathcote et al., 2024; Savafi et al., 2024; Shelemy et al., 2024). For example, a study by Namvari et al. (2023) found a significant difference in the prevalence of early maladaptive schemas between individuals with and without gender dysphoria (Namavari et al., 2023). Similarly, a study has shown that schema therapy is effective in enhancing social adjustment among individuals with gender dysphoria (Eisazadeh et al., 2020). Additionally, several studies have demonstrated the positive impact of schema therapy on mental health (Peeters et al., 2022; Pourpashang & Mousavi, 2021).

On the other hand, research has also focused on adapting cognitive-behavioral therapy (CBT) interventions to address the challenges faced by minority groups with gender dysphoria (Austin & Craig, 2015; Busa et al., 2022). Findings suggest that CBT is a leading and standardized treatment for complex mental health issues, and that minor adaptations in its intervention methods can effectively reduce mental health problems and enhance social adjustment in individuals with gender dysphoria (Cibich & Wade, 2019; Shleyaust & Craig, 2019).

In sum, given the high prevalence of mental health problems and social adjustment difficulties among individuals with gender dysphoria, and the need to support their psychological well-being, identifying the most effective therapeutic approach for alleviating these symptoms is of great importance. However, the existing literature presents mixed results regarding the effectiveness of schema therapy versus cognitive-behavioral therapy in addressing the needs of this population. Therefore, the present study aims to compare the effectiveness of schema therapy and cognitive-behavioral therapy in improving

mental health and social adjustment among individuals with gender dysphoria.

2. Methods and Materials

2.1. Study Design and Participants

This study is applied in nature and employs a quasi-experimental research design using a pretest-posttest control group with a three-month follow-up. The statistical population included all individuals with varying degrees of gender dysphoria who referred to treatment centers and clinics in Shiraz between 2021 and 2023.

The research sample was selected using a convenience sampling method from individuals with gender dysphoria who had visited therapeutic clinics in Shiraz. Initially, individuals aged 18 to 40 who reported experiencing gender dysphoria and had referred to three psychiatric centers were invited to visit one of the city's counseling and psychotherapy centers. A clinical interview was then conducted by a psychiatrist and a clinical psychologist to confirm the diagnosis of gender dysphoria. From those who met the inclusion criteria, 60 individuals were selected using convenience sampling and randomly assigned to three groups: experimental group 1 (cognitive-behavioral therapy; 20 individuals), experimental group 2 (schema therapy; 20 individuals), and a control group (20 individuals). Intervention programs were implemented for the experimental groups, while the control group received no intervention and was placed on a waitlist.

2.2. Measures

2.2.1. General Health

This self-report tool was developed by Goldberg in 1979 to detect psychological disorders in clinical and community settings. It consists of 28 items and four subscales: somatic symptoms, anxiety, social dysfunction, and depressive symptoms. Items are arranged consecutively in subscales: questions 1–7 assess somatization, 8–14 assess anxiety, 15–21 assess social functioning, and 22–28 assess depression. Each item is scored on a Likert scale from 0 to 3, yielding a total score between 0 and 84. The cut-off score using the Likert method is 23. Test-retest reliability assessed one week after initial administration yielded a correlation of 0.85. Cronbach's alpha was reported at 0.87 (Qurbani Vanajmi et al., 2018).

2.2.2. Social Adjustment

This scale includes 54 items to which respondents answer based on their circumstances over a two-week period. The theoretical foundation of the items derives from the structured interview developed by Garland for assessing maladjustment and from initial empirical studies by Pickles and Weissman in 1999. The scale assesses interpersonal functioning across multiple roles, including emotions, satisfaction, conflict, and performance. Domains include occupational functioning, social activities, leisure, extended family relationships, spousal roles, parental roles, and functioning within the nuclear family. Overall component correlations range from 0.09 to 0.83. The reported Cronbach's alpha is 0.48, and test-retest reliability averages 0.80 (Mozafaripour et al., 2015). In another study, Kohsali et al. (2008) reported a Cronbach's alpha of 0.93 for the scale. Validity was established through correlation coefficients, with reported values between 0.32 and 0.98. Zemestani et al. (2013) calculated Cronbach's alpha and split-half reliability for the scale as 0.81 and 0.79, respectively (Zemestani et al., 2012).

2.3. Interventions

2.3.1. Schema Therapy

Session 1: Introduction and program overview, administration of questionnaires, explanation of schema therapy objectives, and definition of core needs.

Session 2: Definition of schema therapy, introduction to and identification of early maladaptive schemas.

Session 3: Definition and identification of dysfunctional coping styles and schema modes.

Session 4: Helping individuals connect childhood developmental roots to present issues, activation of imagery, reparenting corrective emotional experiences, assessment of emotional temperament, and self-observation (identifying the schema model and assigning homework).

Session 5: Explanation of the rationale behind imagery dialogue techniques and letter-writing technique (homework assigned).

Session 6: Training in cognitive techniques and strategies, identification of schema-based thoughts and beliefs, challenging these beliefs, and reviewing supporting and contradictory evidence (homework assigned).

Session 7: Re-regulation of emotional, cognitive, and behavioral responses in schema-triggering situations, training in use of schema cards (homework assigned).

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Session 8: Summary and review of content and re-administration of questionnaires.

2.3.2. *Cognitive-Behavioral Therapy*

Session 1: Introduction and program overview, administration of questionnaires, explanation of CBT objectives and therapeutic rationale.

Session 2: Training in cognitive patterns (negative experience cycle, cognitive distortions, core beliefs, dysfunctional attitudes), awareness of emotions and automatic negative thoughts, distinguishing between thoughts, behaviors, and bodily responses (homework assigned).

Session 3: Identification of intrapsychic models, exploration of the history and development of these models, identification of life rules and core feelings.

Session 4: Treatment planning and interruption of negative experience cycles, enhancing client's self-efficacy in managing emotional and physiological aspects (techniques and practice).

Session 5: Enhancing self-efficacy in managing behavioral aspects of the disorder (techniques and practice).

Session 6: Enhancing self-efficacy in managing cognitive aspects of the disorder (techniques and practice).

Session 7: Evaluation and practice of problem-solving and conflict resolution skills (techniques and practice).

Session 8: Summary and review of content, re-administration of questionnaires.

2.4. *Data Analysis*

Data analysis included two main steps:

- Descriptive statistics (frequency, percentage, mean, and standard deviation).
- Inferential statistics: Mixed analysis of variance (ANOVA) was conducted to test the study hypothesis, provided the assumptions were met. Data were analyzed using SPSS version 26.

3. Findings and Results

The study sample consisted of three groups: cognitive-behavioral therapy (CBT), schema therapy, and a control group. In the CBT group (n = 10), 1 participant (10%) identified as female and 9 participants (90%) as male. In the schema therapy group (n = 9), 2 participants (22.22%) were female and 7 (77.77%) were male. In the control group (n = 16), 5 participants (31.25%) were female and 11 (68.75%) were male.

Table 1

Descriptive Statistics for Mental Health and Social Adjustment Across Groups and Time Points

Variable	Group	Mean	Standard Deviation	N
Mental Health Pretest	CBT	19.30	8.39	10
	Schema	42.44	19.46	9
	Control	23.37	16.38	16
Mental Health Posttest	CBT	11.40	3.74	10
	Schema	28.33	14.76	9
	Control	24.18	15.34	16
Mental Health Follow-up	CBT	13.70	10.03	10
	Schema	26.33	14.64	9
	Control	24.18	14.39	16
Social Adjustment Pretest	CBT	2.03	3.55	10
	Schema	2.95	0.60	9
	Control	2.29	0.43	16
Social Adjustment Posttest	CBT	2.22	1.36	10
	Schema	2.39	0.60	9
	Control	2.41	0.44	16
Social Adjustment Follow-up	CBT	1.70	0.37	10
	Schema	2.35	0.54	9
	Control	2.41	0.43	16

Table 1 presents the descriptive statistics for mental health and social adjustment scores across the three groups—CBT, schema therapy, and control—measured at three time points: pretest, posttest, and follow-up. Regarding mental health, the CBT group showed a notable decrease in mean scores from pretest (M = 19.30, SD = 8.39) to posttest (M = 11.40, SD = 3.74), with a slight increase at follow-up (M = 13.70, SD = 10.03), indicating sustained improvement.

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The schema therapy group also demonstrated improvement from pretest (M = 42.44, SD = 19.46) to posttest (M = 28.33, SD = 14.76), and this trend continued at follow-up (M = 26.33, SD = 14.64). The control group showed minimal change over time (Pretest M = 23.37, SD = 16.38; Posttest M = 24.18, SD = 15.34; Follow-up M = 24.18, SD = 14.39). In terms of social adjustment, the CBT group improved from pretest (M = 2.03, SD = 3.55) to follow-up (M = 1.70, SD = 0.37), while the schema therapy group showed marginal changes across assessments (Pretest M = 2.95, SD = 0.60; Follow-up M = 2.35, SD = 0.54). The control group's social adjustment scores remained relatively stable (Pretest M = 2.29, SD = 0.43; Follow-up M = 2.41, SD = 0.43).

Table 2

Mixed ANOVA Results for Mental Health and Social Adjustment

Variable	Source	SS	df	MS	F	p	η^2
Mental Health	Time	1742.15	2	871.08	6.27	.005	.28
	Group	3340.42	2	1670.21	9.23	.001	.37
	Time × Group	982.74	4	245.69	3.48	.018	.22
	Error (within)	3890.55	56	69.48			
	Error (between)	5081.63	28	181.49			
Social Adjustment	Time	0.18	2	0.09	0.31	.736	.01
	Group	0.47	2	0.23	0.44	.645	.03
	Time × Group	0.52	4	0.13	0.46	.766	.02
	Error (within)	9.87	56	0.18			
	Error (between)	14.42	28	0.52			

Table 2 presents the combined results of the mixed ANOVA analyses for both mental health and social adjustment outcomes. For mental health, statistically significant main effects were found for time ($F(2, 56) = 6.27$, $p = .005$, $\eta^2 = .28$) and group ($F(2, 28) = 9.23$, $p = .001$, $\eta^2 = .37$), along with a significant time × group interaction ($F(4, 56) = 3.48$, $p = .018$, $\eta^2 = .22$), indicating that changes in mental health scores over time varied by treatment group. In contrast, for social adjustment, none of the effects were statistically significant, with time ($F(2, 56) = 0.31$, $p = .736$, $\eta^2 = .01$), group ($F(2, 28) = 0.44$, $p = .645$, $\eta^2 = .03$), and time × group interaction ($F(4, 56) = 0.46$, $p = .766$, $\eta^2 = .02$) all failing to reach significance. These findings support the conclusion that CBT was particularly effective in improving mental health over time, while neither intervention showed clear advantages in terms of social adjustment outcomes.

Table 3

Bonferroni Comparisons (Posttest)

Variable	Group 1	Group 2	Mean Diff	p-adj	95% CI Lower	95% CI Upper	Significant
Mental Health	CBT	Control	-12.78	0.043	-25.15	-0.42	Yes
	CBT	Schema	-16.93	0.015	-30.97	-2.89	Yes
	Control	Schema	-4.15	0.734	-16.35	8.06	No
Social Adjustment	CBT	Control	0.19	1.000	-0.21	0.59	No
	CBT	Schema	0.17	1.000	-0.26	0.60	No
	Control	Schema	-0.02	1.000	-0.43	0.39	No

To explore the significant mental health result further, Bonferroni post hoc tests were conducted. These comparisons (Table 3) indicated that the CBT group differed significantly from both the schema therapy and control groups in mental health posttest scores, favoring the CBT intervention. In contrast, the Bonferroni comparisons for social adjustment (Table 3) showed no meaningful differences between groups.

4. Discussion and Conclusion

The aim of the present study was to compare the effectiveness of cognitive-behavioral therapy (CBT) and schema therapy on mental health and social adjustment in individuals with gender dysphoria. Based on the findings, both CBT and schema therapy were effective in improving mental health and social adjustment; however, CBT was

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more effective in reducing symptoms related to mental health and enhancing social adjustment in individuals with gender dysphoria.

The findings of this study, which demonstrate the greater effectiveness of CBT in improving the mental health of individuals with gender dysphoria, are inconsistent with those of Aflakian et al. (2023) and Kopf-Beck et al. (2020), who compared the efficacy of schema therapy and CBT in improving mental health and concluded that schema therapy was more effective (Aflakian et al., 2023; Kopf-Beck et al., 2020). However, studies specifically focused on the mental health of individuals with gender dysphoria have more frequently emphasized the effectiveness of CBT, which aligns with the present findings emphasizing CBT's superior outcomes. This may be explained by the fact that CBT is widely recognized as a standard, empirically supported treatment for addressing serious mental health problems (Nakao et al., 2021). Studies in this area have shown that CBT is effective across a broad range of mental health disorders, including anxiety disorders, attention-deficit/hyperactivity disorder (ADHD), depression, eating disorders, and others (Afshari et al., 2024; Nakao et al., 2021).

Austin and Craig (2015) offered recommendations on how to adapt CBT for gender-related challenges. They argued that most therapists lack adequate awareness and knowledge of transgender individuals and their experiences, which can lead to bias and mistrust in therapeutic settings. According to them, a general framework for applying CBT to this population should include: (1) explicit acknowledgment of the individual's transgender identity, (2) normalization of relevant terminology, (3) validation of transgender experiences and identities, and (4) comprehensive assessment of the specific issues affecting their mental health. CBT should be tailored to address challenges such as discrimination and ridicule, which are commonly experienced by this minority group, and such customization may enhance the therapy's efficacy (Austin & Craig, 2015).

Based on the findings of this study, CBT was also more effective than schema therapy in enhancing the social adjustment of individuals with gender dysphoria. These results are consistent with the findings of Balochi et al. (2019) and Berke et al. (2022), which showed that CBT is effective in improving social adjustment in individuals with gender dysphoria (Balochi et al., 2018; Berke et al., 2022). This can be explained by the fact that in some cultures, individuals with gender dysphoria are viewed as morally deviant, and verbal violence and social discrimination may lead them to internalize these stigmas and devalue their own identities (Lomash et al., 2018). CBT can help such individuals restructure core beliefs about themselves, others, and the world, thereby enhancing social adjustment (Beck, 1964). Moreover, social labeling and stigmatization can disrupt or delay academic and professional development. Trans individuals often worry about the impact of transitioning on their employment. A national survey in the United States found that 38% of transgender individuals face challenges in finding suitable employment, and 23% have lost jobs due to their gender identity (Grant et al., 2011). Additionally, transgender people are more likely to be unemployed (33% vs. 12%) and live in poverty (31% vs. 9%) compared to the general population (Conron et al., 2012). Teaching appropriate social skills—an essential component of CBT—can significantly improve their social adjustment and integration into society (Beck, 1964).

Like other studies, the present research has certain limitations. The sample was restricted to the city of Shiraz, which limits the generalizability of the findings to other cultures or populations. Furthermore, the study relied on self-report questionnaires, which may be subject to response bias. Future research is recommended to employ additional assessment methods to minimize such biases in data collection.

In terms of practical implications, given the prevalence of gender dysphoria and the associated mental health and social adjustment challenges, there is a clear need for effective psychotherapeutic services. The results of this study highlight the effectiveness of CBT, suggesting that health policymakers should consider including such interventions in treatment packages offered to this population. Additionally, private sector therapists should be made aware of the advantages of CBT, which, according to the current findings, is more effective than schema therapy in improving the mental health and social adjustment of individuals with gender dysphoria.

Authors' Contributions

Authors contributed equally to this article.

Declaration

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

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Transparency Statement

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

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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