

Article history: Received 05 October 2023 Revised 11 December 2023 Accepted 18 December 2023 Published online 08 January 2024

Journal of Adolescent and Youth Psychological Studies



Volume 5, Issue 1, pp 117-123

Investigation of The Effectiveness of Treatment Based on Rhythmic Movements on The Level of Mistrust/Misbehavior Schema of Women with Depressive Symptoms

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Article Info

Article type:

Original Research

How to cite this article:

Arabzadeh, Z., Aghdasi, A. N., Rostami, H., & Ahangar, A. (2024). Investigation of The Effectiveness of Treatment Based on Rhythmic Movements on The Level of Mistrust/Misbehavior Schema of Women with Depressive Symptoms. *Journal of Adolescent and Youth Psychological Studies, 5*(1), 117-123.

http://doi.org/10.61838/kman.jayps.5.1.14



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ABSTRACT

Objective: The current research aimed to investigate the effect of rhythmic movement-based therapy on the mistrust/mistreatment schema in women aged 20-30 years with depression symptoms who attended counseling centers in Tehran.

Methods and Materials: This study is applied in terms of its objective and quasiexperimental in terms of its method, following a pre-test and post-test design. The population included all women aged 20-30 years with depression symptoms attending four counseling centers in Tehran, from which 30 eligible participants were purposively selected and randomly assigned into two groups (15 in the experimental group and 15 in the control group). Interventions based on the therapeutic protocol (rhythmic movement-based therapy) were conducted in 8 sessions for the experimental group, while the control group received no intervention. The Young Schema Questionnaire (1988) (short form with 90 items) was utilized for assessment. Descriptive and inferential statistical indices, including the covariance test, were employed for data analysis.

Findings: Results indicated that rhythmic movement-based therapy effectively reduces the mistrust/mistreatment schema in women aged 20-30 years with depression symptoms attending counseling centers in Tehran (p=0.013).

Conclusion: It can be concluded that rhythmic movement-based therapy, one of the creative art therapies or expressive emotion therapies, can positively influence schemas.

Keywords: Mistrust/Mistreatment Schema, Rhythmic Movement-Based Therapy, Depression.

1. Introduction

Maladaptive early schemas are self-destructive emotional and cognitive patterns that begin in the course of development and repeat throughout life. On the other hand, an individual's pathology can reflect their unhealthy schemas. Therefore, negative and maladaptive schemas, often emerging from adverse childhood experiences, can play a central role in personality disorders and many Axis I illnesses. Since schemas form the core of an individual's self-concept, if they contain maladaptive content, they render individuals vulnerable to a range of deficiencies and problems. Several studies in this field indicate that maladaptive early schemas contribute to the formation and expansion of many psychological issues such as personality disorders, chronic depression, and anxiety disorders (Young et al., 2006).

The primary component of a schema is based on the notion that every individual has an overarching schema that gets activated in specific situations (Amini et al., 2023). Schemas are rooted in childhood and adolescence and later become maladaptive as they hinder the fulfillment of emotional needs during those periods. Behaviorally, an individual engages themselves in self-destructive behavioral patterns, selecting and maintaining situations and relationships that perpetuate the desired schema, while avoiding those that could potentially repair it. Interpersonally, the individual interacts with others in a manner that elicits responses reinforcing their specific schema (Ay et al., 2019; Bidari & Haji Alizadeh, 2019).

When a maladaptive schema is activated, individuals typically experience high levels of emotions such as intense anger, anxiety, sadness, or guilt (Borges & Dell'Aglio, 2020). This intensity of emotion is usually unpleasant; therefore, individuals often develop automatic processes to avoid schema activation. Three processes include cognitive avoidance (automatic efforts to stop thoughts and mental images that might trigger schemas), emotional avoidance (automatic or voluntary efforts to block feelings triggered by schemas), and behavioral avoidance with a tendency to withdraw from real-life situations or conditions that might activate painful schemas (Kopf-Beck et al., 2020; Leahy & Kaplan, 2004).

Various approaches have been proposed to treat and resolve different individual issues. One such approach, relevant to the choice of treatment, is rhythmic movementbased therapy. Rhythmic movement-based therapy or movement therapy is a complementary medical method effective in treating various physical, psychological, and emotional stresses and illnesses. Rhythmic movements involve moving body parts along with music. Its artistic aspect distinguishes it from other physical activities. Rhythmic movements with music date back to the oldest innate nature of humans. Historically, rhythmic movements have been part of culture, beneficial for the body and mind, and enhancing visual, auditory, and vestibular senses. The rhythmic movements of each nation are unique ways of communicating with others. Rhythmically, movements metaphorically express human relationships. In collective rhythmic movements, a shared feeling and emotion emerge among those performing and the spectators (Mirzamani & Hadavandkhani, 2008). Rhythmic movement-based therapy, also known as movement therapy, utilizes movement as a process of integrating emotional, cognitive, physical, and social processes and is one of the main expressive arts, involving direct expression of emotions and mental states through physical movements. In this therapy, the body and mind, or body and psyche, interact, meaning each body movement is influenced by an internal and emotional state (Cohen & Walco, 1999; Dadomo et al., 2016; Silver, 2005). Alternative medicine experts believe that mental and emotional stresses and problems often manifest in the body as muscle tensions, making movement and dance highly effective in alleviating them. Today, it is used as a powerful tool in therapy and self-awareness. Rhythmic movementbased therapy serves as movement psychotherapy, inducing changes in emotions, cognition, physical functioning, behavior, and personal outlook, thereby reducing stress and psychological pressure. Based on study outcomes, it can be said that one of the most recent psychological interventions in recent years in treating behavioral and psychological disorders is the art therapy method of rhythmic movementbased therapy with rhythmic physical movements, which has proven effective in various studies, including aggression and depression, oppositional defiant disorder, self-concept, happiness, and interpersonal skills (Ebadinejad et al., 2018; Mirzamani & Hadavandkhani, 2008). However, no study has yet been conducted on the use of rhythmic movementbased therapy in improving the mental health of youth and adolescents; therefore, conducting research in the field of mental health and using beneficial and effective therapeutic methods like rhythmic movement-based therapy, which is essential in the externalization of emotions, expression of thoughts, and demonstration of feelings, is of great importance. Consequently, considering no study has yet addressed rhythmic movement-based therapy on the



mistrust/mistreatment schema, the researcher decided to investigate the effectiveness of rhythmic movement-based therapy on the mistrust/mistreatment schema in individuals aged 20-30 years attending counseling centers in Tehran, thereby raising the primary question: Is rhythmic movementbased therapy effective in reducing the mistrust/mistreatment schema in women aged 20-30 years with depression symptoms attending counseling centers in Tehran?

2. Methods and Materials

2.1. Study Design and Participants

The present study was a quasi-experimental research employing a pre-test and post-test design, focusing on the impact of the independent variable (rhythmic movementbased therapy) on the dependent variable (mistrust/mistreatment schema). This research was conducted with experimental and control groups using random replacement. The statistical population included all women aged 20 to 30 years with depression symptoms attending four counseling centers in Tehran. For sample selection, an announcement regarding session organization and initial registration conditions was disseminated to the attendees. Following registration, 30 eligible candidates were purposively selected through preliminary interviews and pre-tests. They were then randomly divided into two groups (15 in the experimental group and 15 in the control group), and interventions based on the therapeutic protocol (rhythmic movement-based therapy) were carried out in 8 sessions. Both groups were subjected to experimental measurements (pre-test and post-test) twice.

Inclusion criteria for the study were: age between 20 to 30 years, no receipt of other psychological treatments or a gap of more than one month from previous treatments, willingness to continue the plan after necessary explanations about time, place, and nature of sessions, no history of neurological or psychiatric illness, and no history of hospitalization due to neurological or psychiatric diseases. Continuous presence during therapeutic sessions, no experience of stressful events such as divorce, death of close relatives, job loss, accidents, etc., in the past six months were also required. Exclusion criteria included receiving other psychological treatments during the study, experiencing stressful events, irregular attendance in therapy sessions, unwillingness to continue the plan, or hospitalization in a psychiatric hospital. The study utilized the following questionnaires for assessment:

2.2. Measures

2.2.1. Mistrust Schema

The short version of Young's Schema Questionnaire (YSQ-SF) based on findings by Schmidt et al. (1995) consists of a subset of 75 items and fifteen early maladaptive schemas. In this scale, each item is rated on a six-point scale, where individuals indicate their agreement with each questionnaire item from (completely false) to (completely true). A higher score in a specific subscale suggests a greater likelihood of that maladaptive schema for the individual. The validity and reliability of this questionnaire have been confirmed in numerous studies.

2.3. Intervention

2.3.1. Rhythmic Movement-Based Therapy

Each session begins with an introduction and warm-up lasting 10-15 minutes. This phase includes a brief discussion about the participants' current mental and emotional states, followed by light physical warm-up activities such as gentle stretching and breathing exercises. The session's theme, which could range from self-trust to overcoming past trauma, is introduced during this time.

The main part of each session, lasting 30-40 minutes, involves rhythmic movement activities set to music. This could include structured dance, guided movements, or freeform expression, all designed to foster body awareness, emotional expression, and release. The complexity and intensity of the movements are gradually increased to match the group's energy and comfort level.

Following the movement activities, there's a 10-15 minute expressive/reflective phase. This includes activities allowing participants to express emotions or reflect on their experiences, such as drawing, writing, or group discussions. Participants are encouraged to connect their physical movements with their emotions and experiences.

Each session concludes with a 5-10 minute cool-down and closure period. This involves guiding participants through slower movements and deep breathing exercises, ending with a group circle for sharing experiences and feelings about the session. Closing remarks are provided, along with a preview of the next session's focus.

The therapy places a strong emphasis on several therapeutic focus areas. These include building trust through guided movements, facilitating emotional release to address pent-up feelings, emphasizing the mind-body connection for



holistic well-being, incorporating movements that symbolize overcoming trauma, and designing activities to boost self-esteem and empowerment.

In terms of evaluation, the protocol includes pre-test and post-test assessments using the Young Schema Questionnaire (YSQ-SF) to changes in gauge mistrust/mistreatment schemas. Therapists also take observational notes on participants' engagement and emotional responses during sessions. Brief feedback discussions at the end of each session are conducted to understand participants' experiences and gather insights for future sessions.

This protocol should be implemented by a trained therapist specialized in rhythmic movement-based therapy. The therapist's role is crucial in creating a safe, supportive, and confidential environment, adapting the therapy to individual needs and group dynamics as required (Cohen &

Table 1

Mean and Standard Deviation for Experimental and Control Groups

Walco, 1999; Ebadinejad et al., 2018; Golamzadeh et al., 2014; Silver, 2005).

2.4. Data analysis

For data analysis, descriptive and inferential statistical indices and covariance testing in SPSS-23 software were used.

3. Findings and Results

The mean age of the experimental group was 27.33, and the control group was 27.46. In the experimental group, most participants (80%) had a bachelor's degree, and the least (6.7%) had above a bachelor's degree. In the control group, most participants (53.3%) had a diploma, and the least (20%) had a bachelor's degree.

Mistrust/Mistreatment	Exp.	Exp.	Control	Control
	Mean	Standard Deviation	Mean	Standard Deviation
Pre-test	16.86	5.44	13.00	4.84
Post-test	15.33	4.67	13.01	3.92
Follow-up	15.11	4.51	13.08	3.90

As indicated in Table 1, the mistrust/mistreatment schema in the dance therapy group decreased in the post-test compared to the pre-test, but no significant difference was observed in the average mistrust/mistreatment schema between the pre-test and post-test in the control group.

The Kolmogorov-Smirnov test results indicated that mistrust/mistreatment follows a normal distribution (p < 0.05). Also, as the probability value obtained in the Box's M test is below the significance level of 0.01, the condition of

Table 2

Summary of Univariate Analysis of Variance

homogeneity of variance-covariance matrices is established at the 0.01 error level. One of the assumptions of variance analysis is the equality of error variances, which was assessed using the Levene's test. The results of the examination for equality of error variances, as reported in the above table, show that the probability values in the Levene's tests for the variables under study are more than 0.05, thus the assumption of homogeneity of error variances is achieved at the 0.05 significance level.

Group	Value	F	Hypothesis df	Error df	Significance Level	Eta Squared
Pillai's Trace	0.919	153.945	2.000	27.000	0.001	0.919
Wilks' Lambda	0.081	153.945	2.000	27.000	0.001	0.919
Hotelling's Trace	11.403	153.945	2.000	27.000	0.001	0.919
Largest Root Effect	11.403	153.945	2.000	27.000	0.001	0.919

Reviewing the results in Table 2, it is clear that all tests for mistrust/mistreatment scores are significant. Therefore, it can be stated that the relationship between the linear combination of dependent variables and the independent variable is significant. In other words, rhythmic movementbased therapy had an effect on the dependent variable.



Table 3

Group	Sum of Squares	df	Mean Square	F	Significance Level	Eta Squared
Corrected Model	522.82	2	261.410	123.723	0.000	0.902
Pre-test	14.844	1	14.844	7.025	0.013	0.206
Group*Pre-test	522.82	2	261.410	123.723	0.000	0.902
Error	57.047	27	2.113			
Total	6404.0	30				

The Result of Analysis of Covariance

The results related to between-group effects, as stated in Table 3, indicate that there is a significant difference between the scores of dependent variables in the experimental and control groups at pre-test and post-test times. In other words, there is a significant difference in the mistrust/mistreatment schema between participants in the control and experimental groups.

4. Discussion and Conclusion

This research aimed to investigate the impact of rhythmic movement-based therapy on the mistrust/mistreatment schema in women aged 20 to 30 with depression symptoms attending counseling centers in Tehran. The findings revealed a statistically significant difference in the mistrust/mistreatment schema between the rhythmic movement-based therapy group and the control group in both pre-test and post-test stages. This indicates that rhythmic movement-based therapy effectively reduces the mistrust/mistreatment schema in women with depression symptoms. These results are consistent with the findings of 2005; previous research (Amani, Balazade & Mohammadzadeh, 2014; Ebadinejad et al., 2018; Kiepe et al., 2012; Zeini et al., 2016).

Improving the quality of life and addressing habits that may later form maladaptive schemas due to contaminated childhood experiences are essential. Schemas represent emotional wounds from unmet childhood needs and are ways to cope with negative experiences from frequent family conflicts, rejection, hostility, and violence by parents, teachers, or peers, alongside insufficient parental care and support. Childhood trauma can have profound effects on an individual, with some studies indicating that the body can endure this pain and anxiety for years without support. Movement interventions and body awareness in rhythmic movement-based therapy can help trauma victims feel stronger in themselves and learn to relate differently to their physical symptoms (Eruyar & Vostanis, 2020).

The systematic study by Kiepe et al. (2012) demonstrated that rhythmic movements effectively combat depression in

patients with cancer, Parkinson's, diabetes, heart failure, and other physical and psychological issues. Kiepe also highlighted that rhythmic movements, besides their emotional and physical effects, have a cultural impact and engage all physical, emotional, and cognitive dimensions of patients (Kiepe et al., 2012). Cohen and Walco's (1999) study showed that rhythmic movements as a nonpharmaceutical method in children and adolescents with cancer help them cope better with the disease and address psychological issues arising from the diagnosis. Philipson stated in their study that rhythmic movements reduce the incidence of mental illnesses and other school-related problems in adolescent girls (Cohen & Walco, 1999).

Meekums et al.'s (2012) study also showed that rhythmic movements play a crucial role in revealing the social, cognitive, and emotional dimensions of individuals, serving as a form of art therapy to reduce depression (Meekums et al., 2012). Guzman-Garcia et al. (2013) also found in their review study "Dancing as a Psychosocial Intervention in Home Care" that rhythmic movements improve patients' interaction with others and adaptability to conditions, enhancing mood and reducing symptoms of depression and potentially increasing patients' lifespan (Guzmán-García et al., 2013).

5. Limitations & Suggestions

Like all research, this study faced limitations. Due to time constraints, it lacked a follow-up period, and independent evaluators, typically essential in educational and therapeutic studies, were absent due to resource and time limitations. Data were collected through self-report questionnaires from participants, which may be influenced by factors like the tendency to present a positive image, representing a limitation of the study. Based on the results, it is recommended to plan for educating factors that could influence depression and schemas, striving to reduce maladaptive schemas and depression. Furthermore, considering the effectiveness of rhythmic movement-based therapy in moderating the mistrust/mistreatment schema, it



is suggested that this therapeutic approach be used more in counseling clinics. Additionally, to improve mental health in society, it is recommended that organizations and treatment institutions welcome psychological educational programs like art therapy, collaborate fully with the implementers of these programs, and expedite the treatment process.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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

Transparency of Data

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

Funding

None.

Authors' Contributions

Zohreh Arabzadeh contributed to the conceptualization of the research, data collection, and the drafting and revision of the manuscript. Ali Naghi Aghdasi played a key role in designing the study, statistical analysis, and interpretation of the results. Hossein Rostami contributed to participant recruitment, data collection, and the literature review. Ahad Ahangar assisted in data analysis and interpretation. All authors reviewed and approved the final manuscript for publication.

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