



The Effectiveness of Group Mindfulness Training on Psychological Flexibility and Perceived Stress in Adolescents of Divorce

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Article Info

Article type:

Original Research

How to cite this article:

Abbasi, M., Bagheri, K., Jafari, Z., Jafari Moghadam, S., & Daemi Juybari, S. (2023). The Effectiveness of Group Mindfulness Training on Psychological Flexibility and Perceived Stress in Adolescents of Divorce. *Health Nexus*, 1(4), 99-106.

<https://doi.org/10.61838/kman.hn.1.4.12>



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ABSTRACT

This research aimed to determine the effectiveness of group mindfulness training on psychological flexibility and perceived stress in adolescents of divorce. The research method was quasi-experimental, employing a pre-test and post-test design with a control group. The population consisted of adolescents of divorce who had visited a counseling and psychological services clinic in Tehran in 2022. The sample included 28 adolescents of divorce selected through convenience sampling and randomly assigned to either the experimental or control group. Questionnaires were used to collect data on psychological flexibility and perceived stress. The adolescents in the experimental group received mindfulness training in eight 60-minute sessions. The findings indicated that there was a significant difference in the mean scores between the two groups for both psychological flexibility and perceived stress variables. Given the results, it can be said that group mindfulness training has an effect on psychological flexibility and perceived stress in adolescents of divorce.

Keywords: *Group mindfulness training, Psychological flexibility, Perceived stress, Adolescents of divorce.*

1. Introduction

The family is the first social and group unit children encounter; it plays a positive and constructive role in shaping a child's personality for future life and active participation in society. Therefore, disputes and instability within the family foundation have an irreparable impact on children, who are the primary victims of this disintegration.

One of the factors contributing to the weakening of family foundations and affecting the psychological and emotional state of children in these families is divorce, including psychological and behavioral issues such as low self-esteem, weak interpersonal relationships, academic decline, etc. (1).

Among the various life stages, adolescence is considered one of the most important and valuable periods of an individual's life. This transitional phase, moving from

childhood to adulthood, marks the beginning of physical, psychological, and social changes that influence their adult life and leads to the emergence of needs specific to this age group (2).

The stresses felt by children after their parents' divorce can cause significant changes in their social and psychological development. Experiencing divorce is seen as a threat to basic needs, leading to decreased performance and dysfunction among family members, especially more vulnerable adolescents (3). Various studies have shown that the increasing trend of divorce over the last half-century is a global phenomenon and is the result of economic, demographic, legal, moral, and cultural changes (1, 2, 4-8). The divorce of parents has many negative consequences for children, causing numerous developmental troubles throughout their lives. These outcomes are observable in the emotional, psychological, educational, social, and interpersonal responses of the children (7).

Psychological flexibility refers to an individual's openness to experience in the face of internal and external experiences and involves the ability to connect with the present moment and distinguish oneself from internal psychological thoughts and experiences (9). Psychological flexibility is about the ability of individuals to be fully present in the moment, open to experiences, and act according to their values in life. Kashdan and Rottenberg (2010) describe psychological flexibility as a concept recognized as a crucial part of goal-directed behavior, dynamically representing well-being and satisfaction in life (10). Psychological flexibility refers to the ability to persist or change behavior even in the face of challenging psychological events. It helps individuals face their current situations and conditions, providing the opportunity to evaluate circumstances and accordingly modify or maintain their behavior, ensuring effective action in those situations (11).

Stress is a common phenomenon in today's life. Urbanization, migration, industrialization, the complexities of societies, organizations, education, etc., have exposed people to numerous stresses. Evidence suggests that about eighty percent of today's problems are rooted in stress (12). Individuals differ in their perception, response, and ability to cope with stressful situations, making stress and its influencing factors a subject of research interest. Stress emphasizes an organism's perception and evaluation of potential harm from encountering environmental stimuli, and individuals feel stressed when they assess the demands of their surroundings as exceeding their coping resources

(13). Stress creation depends on how an individual perceives and understands situations and events, meaning that a situation might be perceived as dangerous by one person and harmless by another (14). Stress is the body's reaction to a change that requires a physical, mental, or emotional response or adjustment (Hinz et al., 2017). One type of stress is perceived stress. Perceived stress is a psychological state or process in which an individual perceives their physical and psychological well-being as threatened (15). In stress, environmental, biological, and psychological factors interact, and perceived stress reflects the overall assessment of the significance and difficulty of personal and environmental situations and challenges. The perception of stress can have a positive effect, increasing motivation and successful coping with difficult situations, but excessive stress can lead to fear, anger, frustration, and depression (16).

Mindfulness training, through meditation techniques and principles, helps individuals with psychological, emotional, and emotional problems experience greater flexibility and resilience. Mindfulness-based exercises allow individuals to respond adaptively and congruently to life's difficulties and challenges instead of maladaptive responses and reactions (Soleymani et al., 2020).

Mindfulness training and its application in life enable individuals to experience each moment of the present and realize that the process of thoughts, feelings, and emotions is constantly changing and lacks permanence. Mindfulness is a form of meditation that represents a specific type of attention, primarily focusing on conscious attention to thoughts, feelings, emotions, and behavior without judgment in the present moment. With mindfulness, assuming that the more aware a person is of situations and events, the more mindful they are, thus they can respond more effectively to life's events and stimuli (17). Through mindfulness training and exercises, individuals learn to incorporate practices into their daily lives. An important aspect of these practices is learning the principle of acceptance, a process gradually acquired. Individuals accept things as they are, being aware of their feelings, thoughts, and behaviors, and not futilely trying to prevent their emotions.

Therefore, this research seeks to answer whether group mindfulness training has an impact on the psychological flexibility and perceived stress of adolescents of divorce.

2. Methods and Materials

2.1. Study Design and Participants

The research method was a quasi-experimental design with pre-test and post-test with a control group. The population included adolescents of divorce who had visited a counseling and psychological services clinic in Tehran in 2022. The sample consisted of 28 adolescents of divorce selected through convenience sampling and randomly assigned to either the experimental or control group. Questionnaires were used to collect data on psychological flexibility and perceived stress.

2.2. Measures

2.2.1. Psychological Flexibility

In this study, the Acceptance and Action Questionnaire (AAQ-II) developed by Bond et al. (2011) was used to measure psychological flexibility, particularly in relation to experiential avoidance and the tendency to engage in action despite unwanted thoughts and feelings. This questionnaire consists of 7 questions assessing the reluctance to experience unwanted thoughts and feelings (e.g., "I am afraid of my feelings"), and the inability to be in the present moment and move towards internal values (e.g., "Painful memories prevent me from having a satisfying life"). The questionnaire items are scored on a 7-point Likert scale (never = 1, very seldom = 2, seldom = 3, sometimes = 4, most of the time = 5, almost always = 6, always = 7), with minimum and maximum scores of 7 and 49, respectively. The test-retest reliability of this questionnaire was reported by Bond et al. (2011) as 0.81, and its internal consistency as 0.84. The questionnaire was first translated by Imani (2016), and its validity was confirmed through factor analysis with TLI = 0.93, CFI = 0.95, RMSEA = 0.088, and Chi-square = 3.76, indicating appropriate validity. Reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.86, indicating acceptable reliability for this scale (12).

2.2.2. Perceived Stress

The Perceived Stress Scale by Cohen (1983) was used for perceived stress. This tool has several forms, and in this study, the 14-item form was used, which is scored on a five-point Likert scale from zero to four, with the score obtained by summing the item scores, thus the score range is between 0 and 56, with higher scores indicating greater perceived stress. The face, content, and construct validity of the tool were confirmed, and its reliability was reported using

Cronbach's alpha as 0.85. In Iran, the tool's reliability was calculated using Cronbach's alpha as 0.87 (18).

2.3. Intervention

The adolescents in the experimental group were provided with mindfulness training over eight 60-minute sessions (17, 19).

Session 1: Introduction to Mindfulness

The first session introduces the concept of mindfulness, its history, and its relevance to psychological health. Participants are educated on the benefits of mindfulness practice, particularly in the context of coping with stress and enhancing psychological flexibility. The session concludes with a basic mindfulness breathing exercise, teaching participants how to focus on their breath and recognize the present moment without judgment.

Session 2: Body Scan Meditation

This session focuses on body awareness through body scan meditation. Participants are guided to pay attention to different parts of their body, notice sensations without judgment, and practice being present. This exercise helps in developing a deeper awareness of the physical body, recognizing stress signals, and fostering a non-reactive stance towards discomfort.

Session 3: Mindful Movement

Participants are introduced to mindful movement exercises, incorporating simple yoga or stretching exercises performed with mindfulness. The session emphasizes the connection between mind and body, encouraging participants to observe their movements, align with their breath, and notice any arising thoughts or emotions without engagement.

Session 4: Dealing with Emotions Mindfully

This session aims to teach participants how to handle difficult emotions using mindfulness. Techniques such as noting and labeling emotions, exploring the physical sensations associated with emotions, and practicing non-attachment are introduced. Participants learn to observe their emotional responses without being overwhelmed by them.

Session 5: Mindfulness in Daily Activities

Participants are encouraged to incorporate mindfulness into everyday activities, such as eating, walking, or listening. The session covers practical exercises to engage fully with the present moment during routine tasks, enhancing the sense of presence and awareness in daily life.

Session 6: Cultivating Positive Emotions

The sixth session focuses on cultivating positive emotions through mindfulness. Practices such as gratitude exercises, loving-kindness meditation, and recognizing moments of joy and contentment in everyday life are introduced. These practices aim to balance the awareness of difficult emotions by fostering positive experiences and resilience.

Session 7: Mindful Communication

This session addresses mindful listening and speaking. Participants engage in exercises that emphasize the importance of being present during conversations, listening actively without judgment, and speaking mindfully with awareness of tone, intention, and the impact of words. This practice aims to improve interpersonal relationships and reduce conflict.

Session 8: Integration and Moving Forward

The final session reviews the concepts and practices covered throughout the program, discussing participants'

experiences, challenges, and successes. Strategies for maintaining a mindfulness practice and integrating mindfulness into daily life are discussed. Participants are encouraged to set personal goals for their mindfulness practice moving forward.

2.4. Data Analysis

The data were analyzed using analysis of covariance (ANCOVA) with SPSS-22.

3. Findings and Results

As shown in [Table 1](#), there is a difference in the mean scores of psychological flexibility and perceived stress between the pre-test and post-test stages for the experimental group participants.

Table 1

Mean and Standard Deviation of Psychological Flexibility and Perceived Stress among Participants in Both Groups at Different Assessment Stages

Research Variable	Group	N	Pre-test Mean / Standard Deviation	Post-test Mean / Standard Deviation
Psychological Flexibility	Experimental	14	36.86 / 5.68	43.21 / 6.73
	Control	14	37.25 / 5.45	35.86 / 5.58
Perceived Stress	Experimental	14	31.37 / 6.18	23.47 / 5.18
	Control	14	30.61 / 5.22	29.39 / 5.61

To examine the homogeneity of the variance-covariance matrix assumption, the Box's M test was used. The results of the Box's M test ($F = 3.351$ and $P = 0.311$) indicate that the condition of homogeneity of the variance-covariance matrix is met. Additionally, the results show the uniformity of the

regression line slope as an assumption for the analysis of covariance, indicating that the significance level of the effect is greater than 0.05. Therefore, the assumption of homogeneity of regression is accepted.

Table 2

Results of the Analysis of Covariance (ANCOVA) on Post-test Scores of Psychological Flexibility

Dependent Variable	Sum of Squares	df	F Statistic	Significance	Effect Size	Statistical Power
Psychological Flexibility	762.394	1	14.617	0.001	0.735	0.765

As evident in [Table 2](#), the difference in pre-test and post-test scores for both the experimental and control groups for the psychological flexibility variable is significant. Therefore, the first hypothesis of the research, concerning

the effectiveness of group mindfulness training on psychological flexibility in adolescents of divorce, is supported.

Table 3

Results of the Analysis of Covariance (ANCOVA) on Post-test Scores of Perceived Stress

Dependent Variable	Sum of Squares	df	F Statistic	Significance	Effect Size	Statistical Power
Perceived Stress	698.812	1	20.278	0.001	0.686	0.798

Referring to [Table 3](#), the difference in pre-test and post-test scores for both the experimental and control groups for the perceived stress variable is significant. Hence, the second hypothesis of the research, regarding the effectiveness of group mindfulness training on perceived stress in adolescents of divorce, is supported.

4. Discussion and Conclusion

The findings indicated that there is a significant difference in the average scores between the two groups in terms of psychological flexibility. Based on the results, it can be stated that group mindfulness training has an impact on the psychological flexibility of adolescents of divorce. This finding aligns with the results of several studies ([20-23](#)).

To explain, mindfulness training allows individuals to identify habitual thought patterns that hinder achieving a stable life and modify these patterns through the adoption of more adaptive emotional regulation strategies. Furthermore, mindfulness training enhances the adaptive processing of thoughts and emotions, which underlie the issues related to stress and anxiety. Mindfulness techniques, by providing opportunities for meditation, are effective in muscle relaxation, reducing worry, stress, and anxiety ([19](#)). Mindfulness exercises adjust the response to stress and enhance the ability for a flexible response, improving adaptability with oneself and others, strengthening the interaction of mind and empathy, and ultimately preventing the emergence of harmful thoughts such as suicide. Individuals learn to recognize their process of thoughts, feelings, and emotions and how to deal with them in a non-judgmental manner, along with understanding the concept of acceptance; this reduces harmful emotional responses.

Psychological inflexibility can be defined as a reaction to internal states (e.g., thoughts, emotions, and feelings) or external states in a reactive, habitual, or impulsive manner, often reliant on avoidance coping strategies. Conversely, psychological flexibility is defined as focusing on moment-to-moment awareness and actively choosing to act or not act based on personal values ([10](#)). Essentially, psychological flexibility is about saying yes to each moment, encompassing all six processes of ACT: self-as-context, acceptance, cognitive defusion, being present, values, and

committed action ([22](#)). Life asks us this question repeatedly and moment by moment. If our response at that moment is yes, psychological flexibility increases; if no, it decreases.

The results showed a significant difference in the average scores between the two groups regarding perceived stress. Thus, it can be stated that group mindfulness training impacts perceived stress in adolescents of divorce. This finding is consistent with the results of several studies ([24-26](#)).

To explain these findings, mindfulness changes individuals' assessments of various events and occurrences, enabling them to set aside negative and maladaptive judgments about themselves and effectively face people, events, and stressful environmental situations. Discarding negative and maladaptive judgments about oneself and effectively facing challenges while increasing self-control can reduce emotional dysregulation and its dimensions. Since mindfulness-based therapies pay attention to both psychological and physical dimensions, they have been effective across a wide spectrum of social and psychological issues, including emotional divorce and its symptoms like emotional dysregulation and its dimensions. This type of therapy, which includes stretching yoga, various meditations, introductory education on mood and dysfunctional emotions, and body scan exercises, demonstrates the relationship between thoughts, feelings, emotions, and bodily sensations, creating an opportunity for the individual to attentively engage with physical situations in the current moment and reduce automatic processes driven by dysfunctional emotions such as emotional dysregulation and its dimensions. Mindfulness, with its focus on three key components: intention, attention, and attitude (especially an accepting and non-judgmental attitude), fosters awareness through formal mindfulness practices (such as body scans, mindful breathing) and informal practices (such as extending awareness to every moment of life). Through curiosity, acceptance, and contentment with being in the present, individuals discover experiences including feelings, thoughts, and even physical pains. Through the process of exploring these experiences, individuals learn that there are ways to engage with the inseparable nature of suffering from life, adopting new

patterns in dealing with them. Thoughts that are automatic and often negative come to consciousness and are fully acknowledged and accepted with awareness. Through these exercises, a different attitude towards experiences occurs. Perceived stress is a psychological state or process in which an individual perceives their physical and psychological well-being as threatened. In fact, the creation of stress depends on how an individual perceives and understands situations and events. A situation might be perceived as harmless by one individual and as a threat by another.

5. Limitations and Suggestions

This study has several limitations that need to be acknowledged. First, the sample size was relatively small and limited to adolescents of divorce who visited a specific clinic in Tehran, which may affect the generalizability of the findings to other populations or contexts. Second, the study utilized self-report measures for assessing psychological flexibility and perceived stress, which could introduce bias and may not fully capture the complexity of these constructs. Additionally, the absence of a long-term follow-up limits our understanding of the sustainability of the intervention's effects over time. Lastly, the study did not control for potential confounding variables such as the presence of other psychological interventions or support systems that participants might have been receiving concurrently.

Future research could address the limitations of the current study by incorporating larger and more diverse samples to enhance the generalizability of the findings. It would be beneficial to include objective measures alongside self-report questionnaires to provide a more comprehensive assessment of psychological flexibility and perceived stress. Long-term follow-up studies are essential to evaluate the sustainability of the effects of mindfulness training on adolescents of divorce. Additionally, future studies could explore the impact of mindfulness training on other psychological outcomes, such as depression and anxiety, and examine the role of potential mediators and moderators in the relationship between mindfulness training and psychological well-being. Investigating the effectiveness of mindfulness training in different settings, such as schools or community centers, could also provide valuable insights.

The findings of this study have practical implications for psychologists, counselors, and other mental health professionals working with adolescents of divorce. Incorporating group mindfulness training into therapeutic interventions could enhance psychological flexibility and

reduce perceived stress, contributing to better psychological outcomes for this population. Schools and community centers should consider offering mindfulness programs as part of their support services for adolescents facing the challenges of parental divorce. Furthermore, training programs for mental health professionals could integrate mindfulness-based approaches to equip them with effective tools for supporting adolescents in distress. Policymakers and educators could also use these findings to advocate for the inclusion of mindfulness education in the curriculum to promote mental health and resilience among students, particularly those experiencing significant life transitions such as parental divorce.

Authors' Contributions

Mahdiah Abbasi was the lead researcher of this study. She designed the research study, developed the intervention protocol, and played a pivotal role in drafting and revising the manuscript. Her contributions also included data analysis and interpretation of the research findings.

Khadijeh Bagheri oversaw the entire research project, ensuring the integrity of the data collection process and the adherence to the study protocol. She contributed to the development of the research design and was instrumental in the manuscript revision process, providing critical feedback for intellectual content.

Zahra Jafari contributed significantly to the literature review and the theoretical framework of the study. Her involvement was critical in identifying the research gap and formulating the research questions. She also assisted in the interpretation of the results and contributed to the writing of the discussion section of the manuscript.

Somaye Jafari Moghadam played a key role in the data collection process, coordinating the recruitment of participants and administering the mindfulness training sessions. She was also involved in the preliminary data analysis and contributed to the methods section of the manuscript.

Sharifeh Daemi Juybari contributed to the design of the study's methodology and was involved in the statistical analysis of the data. Her expertise in quantitative research methods was invaluable in ensuring the accuracy of the results presented. She also contributed to the writing of the results section and provided significant input into the final draft of the manuscript.

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.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

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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