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Effect of Positive Mindfulness and Emotion-Focused Cognitive-Behavioral Therapy in Fibromyalgia Patients' Response to Stress and Subjective Well-Being

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Abstract

Introduction: Fibromyalgia disease has a considerable effect on anxiety disorders such as subjective well-being. The present study aimed to investigate the effect of positive mindfulness therapy (PMT) and emotion-focused cognitive-behavioral therapy (EFCBT) in fibromyalgia patients' response to stress and subjective well-being.

Methods: The research method was quasi-experimental with a pre-test and post-test design, and a control group. The statistical population included 160 women with fibromyalgia, visiting Red Cross affiliated physiotherapy clinics in Tehran in 2020. The sample consisted of 60 patients with fibromyalgia selected by convenience sampling and randomly divided into two experimental groups (PMT and EFCBT) and a control group (n= 20 per group). Data were collected using the Self-Regulation Inventory (SRI) and the Subjective Well-Being Scale. The validity and reliability of the research instruments were confirmed. Data were analyzed at descriptive and inferential levels using SPSS software version 20.

Results: The results showed that the PMT produced significant improvements in subjective well-being and response to stress (P = 0.001) in patients with fibromyalgia. Furthermore, EFCBT was effective in improving subjective well-being and response to stress (P = 0.001) in the patients compared to the control group. The results did not imply a significant difference between the two treatment interventions.

Conclusions: PMT and EFCBT were effective in reducing response to stress and improving subjective well-being in patients with fibromyalgia. Based on the results, holding PMT and EFCBT workshops may exert beneficial effects on reducing response to stress and increasing subjective well-being in patients with fibromyalgia. According to the results, using positive mindfulness therapy and emotion-focused cognitive-behavioral therapy was effective in reducing response to stress and improving subjective well-being in patients with fibromyalgia.

INTRODUCTION

Fibromyalgia (FM) is a prevalent and debilitating syndrome associated with widespread and multisite musculoskeletal pain, multiple unstable trigger points, sleep disturbance, fatigue, and muscular inflexibility [1]. After arthritis, which is the most prevalent rheumatic disease, fibromyalgia is one of the top three prevalent diseases among adult patients in rheumatology clinics [2, 3]. These patients show symptoms of peripheral and autonomic nervous system disorders, lower cortisol response to stress, lower levels of serotonin metabolites in the cerebrospinal fluid (CSF), and higher levels of stress [4].

Fibromyalgia disease has a considerable effect on anxiety disorders such as subjective well-being (SWB) [5, 6]. One of the negative effects of anxiety is the reduction of subjective and psychological well-being. The emergence of the positive psychology movement inspired a group of psychologists to use the term "psychological well-being" instead of mental health since that term was believed to have a positive connotation [7]. There is a growing number of research regarding SWB and human capabilities on account of the development of positive psychology. SWB is a crucial structure in the research concerned with personality interpretation and is defined as a positive evaluation of life and the balance between positive and negative emotions [8, 9]. Life satisfaction is considered a cognitive aspect of SWB and positive and negative emotions, as well as a general dimension, which indicates individuals' daily emotional experiences [10].

Loge-Hagen et al. [11] argued that one of the consequences of fibromyalgia diseases is the prevalence of depression, especially stress. The feeling of stress in these people pertains to natural stressful events such as social and family relationships and communications [12]. Stress is a natural experience and has a crucial role in the continuance of human survival; however, acute or long-term stress can cause unpleasant and traumatic effects [13]. Accordingly, it is quite crucial to identify the feelings and emotions and adopt proper coping strategies [14].

Mindfulness is a treatment concerned with the reduction of stress and anxiety [15]. It is derived from cognitive-behavioral therapies and considered among the third wave therapies. A variety of studies demonstrated that mindfulness-based therapies affect various levels of life such as personal, family, and social at different age levels. It improves assertiveness and reduces anxiety, depression, and stress [16, 17]. Based on the positive psychotherapy paradigm, these treatment interventions are not rejecting or substitute for traditional treatments. In other words, instead of undergoing a paradigm change, they intend to focus on strengths and weaknesses [18]. Accordingly, combining mindfulness with other positive psychological structures improves its capacity. Similar to other mixed positive interventions, the positive mindfulness training model emphasizes the weaknesses and strengths in order to improve the positive variables and well-being and reduce the subjective distresses [19, 20]. Self-compassion is among the structures considered in the positive mindfulness plan to deal with self-criticism and rumination in depression [21, 22].

One of the therapies affecting the psychological symptoms is the emotion-focused cognitive behavioral therapy (ECBT), which emphasizes the skills for identifying and detecting the emotions of self and others (emotional awareness), the correct way of expressing emotions with respect to the social status (understanding emotion), reducing the intensity of negative emotions prior to evoking a response (emotional regulation), plus, emphasizing the behavioral and cognitive techniques affecting anxiety and other acute negative emotions [23, 24]. Kohrt et al. [25] showed the effectiveness of mental and spiritual factors in improving chronic pain. Kim et al. [26] showed the effectiveness of exercise (strength and flexibility exercises) and cognitive-behavioral interventions in attenuating chronic musculoskeletal conditions (fibromyalgia), improving performance, and changing secondary signs. Mohammadi Zeidi et al. [27] reported that training coping approaches, which are based on mental teachings, proved fruitful in enhancing health and easing clinical disorders.

Taking into consideration the importance of SWB in the psychological structure of human life, its promotion is the objective of most psychological treatments in clinical and non-clinical situations [10, 28]. Therefore, the present research employed and compared two psychological interventions to assist these patients to cope with their diseases in order to increase their SWB and response to stress, which can lead to improvement of some of the factors that these patients are suffering from. Accordingly, the present study aimed to compare the effect of positive mindfulness therapy and emotion-focused cognitive-behavioral therapy in improving response to stress and subjective well-being in patients with fibromyalgia.

METHODS

The research method was quasi-experimental with a pre-test and post-test design, and a control group. The statistical population included 160 women with fibromyalgia, visiting Red Cross affiliated physiotherapy clinics in Tehran in 2020. Sixty patients with fibromyalgia who were willing to participate in the research were selected as the sample of the study using convenience sampling. The inclusion criteria were fibromyalgia diagnosis, the age range of 30-50 years, not receiving any simultaneous psychological or

pharmaceutical treatment, lack of mental illness, and at least high-school education. Participants were randomly divided into two experimental groups (positive mindfulness therapy and emotion-focused cognitive-behavioral therapy) and a control group (n= 20 per group). After filling out the informed consent forms, the participants completed the Self-Regulation Inventory (SRI) and the Subjective Well-Being Scale in the pre-test phase. The participants were also ensured about the confidentiality of the results. After sampling, the intervention programs were performed separately for the experimental groups. During this period, the controls were not given any task to avoid probable interference with the results from the EFCBT and PMT groups. Harboring ethical considerations, a brochure containing intervention guidelines was provided to the controls after the post-test phase. After the implementation of the interventions to the experimental group, both the experimental and control groups underwent the post-test phase.

Research Tools

Self-Regulation Inventory (SRI): Koh in 2001 developed this inventory to study the emotional, physical, cognitive, and behavioral aspects of stress. This inventory is a self-report comprising 39 questions. The participants should complete the inventory on the basis of the 5-point Liker scale (ranging from zero= never to 4= totally), which specifies to what extent each participant is suffering from each of the symptoms of stress (6 phrases), aggression (4 phrases), physical (3 phrases), rage (6 phrases), depression (8 phrases), fatigue (5 phrases), and failure (7 phrases) [29]. Ashkezari et al. [30] reported alpha Cronbach coefficient of 0.87 for the scale. In the present study, the Cronbach's alpha coefficient was 0.82 for the scale.

Subjective Well-Being Scale: Molavi et al. [31] designed the Subjective Well-being Scale. This scale contains 39 items, which should be completed using the 5-point Likert scale (Completely True and Completely False). They evaluated well-being using questions such as: (Sometimes I change the way I act or think to be more like others; I feel good when I think about what I have done in the past and what I will do in the future). The following are four other subscales: 1. Vitality Subscales, 2. Grit Subscale, (the collection of these two subscales creates the subscale of positive emotions), 3. Neurotic Subscale, and 4. Stress-Depression Subscale (the collection of these two subscales creates the subscale of negative emotions). Molavi et al. [31] reported alpha Cronbach coefficient of 0.84 for the scale. In the present study, the Cronbach's alpha coefficient was 0.80 for the scale.

Intervention program

The first intervention program consisted of eight 90-minute sessions of positive mindfulness therapy [23]. (Table 1 presents summary of sessions). The second intervention program consisted of ten 90-minute sessions of emotion-focused cognitive-behavioral therapy [32]. Table 2 presents summary of sessions.

Statistical Analyses

Data were analyzed at descriptive and inferential levels using SPSS version 20. The mean and standard deviation were used at the descriptive level. The LSD post-hoc test and MANCOVA were used at the inferential level following investigating the presumptions of this analysis.

Table 1. A summary of Positive Mindfulness Training (PMT) Sessions

Session	Topic	Contents of Training Sessions	Homework
1	Self-awareness	Reviewing the structure and goals of the sessions and main rules; inviting the participant to introduce themselves; explaining depression and its psychological comorbidities; introducing mindfulness, self-consciousness, positive psychology, and meditation; acquainting members with a meditation that is focused on breathing, body, and emotion.	Keeping aware of thoughts and reactions throughout the day
2	Positive emotions	Discussing benefits of positive emotions and gratitude; implementing gratitude meditation focusing on who or what one appreciates	Expressing gratitude for positive situations
3	Self-compassion	Explaining the self-compassion concept, research review and methods to increase self-compassion; practicing loving kindness meditation focusing on self-compassion	Replacing internal criticism with statements of kindness
4	Self-efficacy	Introducing character strengths and self-efficacy including enhancement methods; Meditation focusing on a time when the participant was at his/her best and using character strengths	Completing the Values in Action (VIA) character strengths survey and using strengths
5	Autonomy	Introducing autonomy and its connection with well-being; practicing meditation on authentic self and action	Taking action in line with one's values and noticing external pressure on choices
6	Meaning	Discussing the meaning of life and wellbeing; completing writing exercise, entitled "The Best Possible Legacy Possible;" Meditation on the future vision of self, living one's best possible legacy	Taking action according to the best possible legacy and choosing meaningful activities
7	Positive relations with others	Discussing benefits of positive relations with others and methods for relationship enhancement; Loving-Kindness Meditation	Bringing feelings of loving kindness into interactions
8	Responsibility and Commitment	Commitment and enjoyment and their relationship with positive emotions; enjoyment-focused meditation	Enjoying engagement with experiences

Table 2. A summary of Emotion-Focused Cognitive-Behavioral Therapy (EFCBT) Sessions

Session	Topic	Educational Content
1	Introduction	Introducing the patient, implementing pre-test, determining treatment goals, presenting session rules, relationship therapy.
2	Relaxation	Introducing EFCBT, training relaxation technique, assigning a task.
3	Affective beliefs	Feedback from the previous session, taking note of negative and inefficient thoughts and beliefs, training relaxation technique, assigning a task.
4	Vertical Arrow Technique	Feedback from the previous session, training vertical downward arrow to identify central emotions and beliefs, training relaxation technique, assigning a task.
5	Affective beliefs	Feedback from the previous session, creating a complete list of emotional beliefs
6	Emotional judgments	Feedback from the previous session, test of clients' beliefs with objective analysis (judgment), training relaxation technique, assigning a task.
7	Evaluation of affective beliefs	Feedback from the previous session, using different cognitive analysis methods and encouraging clients to re-evaluate affective beliefs, training relaxation technique, assigning a task.
8	Affective thoughts	Feedback from the previous session, opposing autonomous affective thoughts, training relaxation technique, assigning a task.
9	Problem-solving	Feedback from the previous session, emphasizing identification of feelings; training problem-solving skills; describing various problem- and affection-centered coping styles, training relaxation technique, assigning a task.
10	Exercises	Feedback from the previous session, reviewing exercises throughout the sessions; implementing post-test; holding a closing session.

Before conducting the MANCOVA, Shapiro-Wilk and Levene's test were used to assess, respectively, data normality and homogeneity of variance; in addition, the equality of regression lines was investigated through examining the interaction between test and group membership.

RESULTS

Based on the demographic data of the participants in the mindfulness group, 30% of them had a diploma, 40% had a bachelor's degree, and 30% had a master's degree. In the cognitive-behavioral group, 40% had a diploma, 30% had a bachelor's degree, and 30% had a master's degree. In the control group, 40% of the participants had a diploma, 30% had a bachelor's degree, and 30% had a master's degree. Given marital status, 55% of the participants were married and 45% of them were single in the mindfulness group. In the cognitive-behavioral group, 65% were married and 35% were single. In the control group, 65% were married and 35% were single. The mean age of the participants in the mindfulness, cognitive-behavioral, and control groups were 43.3±6.72, 42.8±7.08, and 42.9±5.86 years old, respectively. The three groups were not significantly different in terms of age, education and marital status (P>0.05). Table 3 shows the descriptive indices of the research variables in these three groups.

Table 3. Mean and Standard Deviation of Dependent Variables in the Experimental and Control Groups in the Pre-Test and Post-Test

Variables / Phases	PMT	EFCBT	Control	P (between groups)
	M ± SD	M ± SD	M ± SD	
Response to stress				
Pre-test	110.66 ± 8.30	110.46 ± 7.66	111.26 ± 7.73	0.418
Post-test	103.33 ± 7.14	101.93 ± 7.46	111.20 ± 6.97	0.001
P (within groups)	0.001	0.001	0.998	-
Subjective well-being				
Pre-test	97.13 ± 19.88	100.33 ± 16.97	96.86 ± 15.76	0.114
Post-test	115.53 ± 20.73	120.00 ± 15.41	96.53 ± 14.63	0.001
P (within groups)	0.001	0.001	0.990	-

PMT: Positive Mindfulness Therapy; EFCBT: Emotion-Focused Cognitive-Behavioral Therapy; M ± SD: Mean ± Standard Deviation

Table 4. LSD Post-Hoc Test for Paired Comparison of the Variables in the Post-Test Phase

Variable / Groups	MD	SE	P
Response to stress			
PMT - Control	7.36	0.69	0.001
EFCBT - Control	8.57	0.68	0.001
PMT - EFCBT	1.18	0.66	0.082
Subjective well-being			
PMT - Control	19.25	1.77	0.001
EFCBT - Control	20.56	1.74	0.001
PMT - EFCBT	1.31	1.70	0.440

PMT: Positive Mindfulness Therapy; EFCBT: Emotion-Focused Cognitive-Behavioral Therapy; MD: Mean Difference; SE: Standard Error

The Shapiro–Wilk test was used to examine the assumed normality of data. According to the results, the distribution of dependent variables, including response to stress and subjective well-being, was normal in both the pre-test and post-test phases, confirming the assumed normality of dependent variables (P> 0.05).

The LSD post-hoc test was used to compare the effectiveness of PMT and EFCBT in response to stress and subjective well-being of fibromyalgia patients. Table

4 shows the LSD test results on the difference in mean scores of the groups in response to stress and subjective well-being in the post-test phase. According to Table 4, significant differences exist in the response to stress and subjective well-being scores between the PMT and EFCBT groups with the control group (P< 0.05). PMT significantly reduced response to stress among patients with fibromyalgia (P= 0.001). The results also indicate that the PMT and EFCBT significantly increased subjective well-being in patients with fibromyalgia (P< 0.05). There was not any significant difference in the effectiveness of PMT and EFCBT in improving response to stress and subjective well-being.

DISCUSSION

The present study aimed to investigate the effect of positive mindfulness therapy and emotion-focused cognitive-behavioral therapy in improving response to stress and subjective well-being in women with fibromyalgia. in Tehran. The results showed that PMT and EFCBT produced significant improvements in response to stress and subjective well-being in the patients compared to the control group. It can be concluded that these intervention methods affected dependent variables. This finding is consistent with the results of previous studies [10]. Cejudo et al. [10] indicated that training the presence of mind can help develop awareness regarding all emotional and cognitive events, especially in individuals experiencing the primary symptoms of depressive relapses. Therefore, training mindfulness can improve the initial recognition of the symptoms of a problem, and employing these skills could have a considerable effect on preventing stress. Lee [33] reported that the ability to observe without judgment facilitates recognition of the consequences of a behavior. This recognition can cause effective behavioral changes. This skill enables the individual to control their attention and is a beneficial skill for individuals who face problems due to distraction caused by anxiety, memories, or negative moods [34].

Positive emotions facilitate productivity, creative thinking, and patience. The studies pertinent to the concept of stress demonstrated that individuals with stress remember the negative events more precisely and are more sensitive to the information pertaining to risk-taking [32]. Moreover, happy people overestimate their skills and remember positive events more than negative ones, making better decisions when planning for life since they search for vital strategies such as obtaining information regarding health risk-taking. Thus, intervention-oriented therapies can be effective in this regard.

The results showed that there was no significant difference between PMT and EFCBT in improving subjective well-being and reducing stress response in patients with fibromyalgia. EFCBT is a neo-humanist and experimental therapy. In EFCBT, the therapist's emphasis is not only on being aware of the subjective content, which was denied or distorted by the patient, but also on creating a new sense caused by the physical experience of the patient[٥] . From the emotion-focused viewpoint, humans behave as a dynamic system, which integrates the numerous dialectical processes in various levels, i.e., from the level of a chemical neuron to the conceptual and awareness levels. This integration results in an inseparable bond of emotion and cognition [٢٤]. Therefore, individuals constantly mix and manage the supposedly opposite biological information and cultural learnings to live more efficiently.

Research limitations included the age range of 30-50 years, non-generalizability of the results to patients in other cities, and limited information of fibromyalgia patients.

CONCLUSION

According to the results, PMT and EFCBT are effective in reducing response to stress and improving subjective well-being in patients with fibromyalgia. Moreover, there is not any significant difference in the effectiveness of these two treatment interventions. It is then recommended to conduct this research on fibromyalgia patients. Future studies on different communities are proposed to consolidate and generalize the results. Moreover, future studies are recommended to have a follow-up stage. It is also recommended to hold PMT and EFCBT workshops to reduce stress response and improve well-being.

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CONFLICT OF INTEREST

The author declares that there is no interest of confident for this study.

AUTHORS' CONTRIBUTION

N J H: Study concept and design, acquisition of data, analysis and interpretation of data. P A: Administrative, technical, and material support, study supervision. F N. & A H: Critical revision of the manuscript for important intellectual content.

ETHICAL CONSIDERATION

The study was approved by the Ethical Committee of Islamic Azad University-Ahvaz Branch (code: IR.IAU.AHVAZ.REC.1400.031).

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REFERENCES

1. Maffei ME. Fibromyalgia: Recent Advances in Diagnosis, Classification, Pharmacotherapy and Alternative Remedies. Int J Mol Sci. 2020;21(21). **doi:** 10.3390/ijms21217877 **pmid:** 33114203
2. Bellato E, Marini E, Castoldi F, Barbasetti N, Mattei L, Bonasia DE, et al. Fibromyalgia syndrome: etiology, pathogenesis, diagnosis, and treatment. Pain Res Treat. 2012;2012:426130. **doi:** 10.1155/2012/426130 **pmid:** 23213512
3. Lami MJ, Martinez MP, Sanchez AI, Miro E, Diener FN, Prados G, et al. Gender Differences in Patients with Fibromyalgia Undergoing Cognitive-Behavioral Therapy for Insomnia: Preliminary Data. Pain Pract. 2016;16(2):E23-34. **doi:** 10.1111/papr.12411 **pmid:** 26841198
4. Tsang A, Von Korff M, Lee S, Alonso J, Karam E, Angermeyer MC, et al. Common chronic pain conditions in developed and developing countries: gender and age differences and comorbidity with depression-anxiety disorders. J Pain. 2008;9(10):883-91. **doi:** 10.1016/j.jpain.2008.05.005 **pmid:** 18602869
5. Galvez-Sanchez CM, Duschek S, Reyes Del Paso GA. Psychological impact of fibromyalgia: current perspectives. Psychol Res Behav Manag. 2019;12:117-27. **doi:** 10.2147/PRBM.S178240 **pmid:** 30858740
6. Bandelow B, Michaelis S. Epidemiology of anxiety disorders in the 21st century. Dialogues Clin Neurosci. 2015;17(3):327-35. **pmid:** 26487813
7. Nikmanesh Z, Khosravi Z. The Effect of Training Emotion Regulation Techniques on Resilience and Psychological Well-Being among Nurses in Zahedan. Advanc Nurs Midwife. 2020;29(2):1-6.
8. Terol Cantero MC, Buunk AP, Cabrera V, Bernabe M, Martin-Aragon Gelabert M. Profiles of Women With Fibromyalgia and Social Comparison Processes. Front Psychol. 2020;11:440. **doi:** 10.3389/fpsyg.2020.00440 **pmid:** 32231628
9. Klaus K, Fischer S, Doerr JM, Nater UM, Mewes R. Classifying Fibromyalgia Syndrome as a Mental Disorder?-An Ambulatory Assessment Study. Int J Behav Med. 2017;24(2):230-8. **doi:** 10.1007/s12529-016-9603-6 **pmid:** 27757841
10. Cejudo J, Garcia-Castillo FJ, Luna P, Rodrigo-Ruiz D, Feltrero R, Moreno-Gomez A. Using a Mindfulness-Based Intervention to Promote Subjective Well-Being, Trait Emotional Intelligence, Mental Health, and Resilience in Women With Fibromyalgia. Front Psychol. 2019;10:2541. **doi:** 10.3389/fpsyg.2019.02541 **pmid:** 31798502
11. Loge-Hagen JS, Saele A, Juhl C, Bech P, Stenager E, Mellentin AI. Prevalence of depressive disorder among patients with fibromyalgia: Systematic review and meta-analysis. J Affect Disord. 2019;245:1098-105. **doi:** 10.1016/j.jad.2018.12.001 **pmid:** 30699852
12. Furness PJ, Vogt K, Ashe S, Taylor S, Haywood-Small S, Lawson K. What causes fibromyalgia? An online survey of patient perspectives. Health Psychol Open. 2018;5(2):2055102918802683. **doi:** 10.1177/2055102918802683 **pmid:** 30275965
13. Kordi M, Banaei Heravan M. Prediction of Self-Efficacy of Women with Gestational Diabetes Based on Coping Styles with Stress. Advance Nurs Midwife. 2020;29(2):27-33.
14. Mahmoodi Z, Karimlou M, Sajjadi H, Dejman M, Vameghi M, Dolatian M. Stressful life events and Low birth Weight: according to social determinant of health approach. Advanc Nurs Midwife. 2016;25(90):17-26.
15. Janssen M, Heerkens Y, Kuijer W, van der Heijden B, Engels J. Effects of Mindfulness-Based Stress Reduction on employees' mental health: A systematic review. PLoS One. 2018;13(1):e0191332. **doi:** 10.1371/journal.pone.0191332 **pmid:** 29364935
16. Hofmann SG, Gomez AF. Mindfulness-Based Interventions for Anxiety and Depression. Psychiatr Clin North Am. 2017;40(4):739-49. **doi:** 10.1016/j.psc.2017.08.008 **pmid:** 29080597
17. Mohammadi F, Imanzad M, Mohammadkhani P, Dolatshahi B, Asghari M, Tavassoli E. The effectiveness of "Mindfulness based Cognitive Therapy" on psycho-social performance of chronic low back pain patients (CLBP). Advanc Nurs Midwife. 2014;23(82):46-54.
18. Phan HP, Ngu BH, Chen SC, Wu L, Shi SY, Lin RY, et al. Advancing the Study of Positive Psychology: The Use of a Multifaceted Structure of Mindfulness for Development. Front Psychol. 2020;11:1602. **doi:** 10.3389/fpsyg.2020.01602 **pmid:** 32765367
19. Guendelman S, Medeiros S, Rampes H. Mindfulness and Emotion Regulation: Insights from Neurobiological, Psychological, and Clinical Studies. Front Psychol. 2017;8:220. **doi:** 10.3389/fpsyg.2017.00220 **pmid:** 28321194
20. Zhang Q, Wang Z, Wang X, Liu L, Zhang J, Zhou R. The Effects of Different Stages of Mindfulness Meditation Training on Emotion Regulation. Front Hum Neurosci. 2019;13:208. **doi:** 10.3389/fnhum.2019.00208 **pmid:** 31316361
21. Al-Refae M, Al-Refae A, Munroe M, Sardella NA, Ferrari M. A Self-Compassion and Mindfulness-Based Cognitive Mobile Intervention (Serene) for Depression, Anxiety, and Stress: Promoting Adaptive Emotional Regulation and Wisdom. Front Psychol. 2021;12:648087. **doi:** 10.3389/fpsyg.2021.648087 **pmid:** 33828514
22. Suh H, Jeong J. Association of Self-Compassion With Suicidal Thoughts and Behaviors and Non-suicidal Self Injury: A Meta-Analysis. Front Psychol. 2021;12:633482. **doi:** 10.3389/fpsyg.2021.633482 **pmid:** 34122224
23. Suveg C, Jones A, Davis M, Jacob ML, Morelen D, Thomassin K, et al. Emotion-Focused Cognitive-Behavioral Therapy for Youth with Anxiety Disorders: A Randomized Trial. J Abnorm Child Psychol. 2018;46(3):569-80. **doi:** 10.1007/s10802-017-0319-0 **pmid:** 28580504
24. Torres S, Sales CMD, Guerra MP, Simoes MP, Pinto M, Vieira FM. Emotion-Focused Cognitive Behavioral Therapy in Comorbid Obesity With Binge Eating Disorder: A Pilot Study of Feasibility and Long-Term Outcomes. Front Psychol. 2020;11:343. **doi:** 10.3389/fpsyg.2020.00343 **pmid:** 32194485
25. Kohrt BA, Griffith JL, Patel V. Chronic pain and mental health: integrated solutions for global problems. Pain. 2018;159 Suppl 1:S85-S90. **doi:** 10.1097/j.pain.0000000000001296 **pmid:** 30113952
26. Kim SY, Busch AJ, Overend TJ, Schachter CL, van der Spuy I, Boden C. Flexibility exercise training for adults with fibromyalgia. Cochrane Database Syst Rev. 2019;9(9):CD013419-CD. **doi:** 10.1002/14651858.CD013419
27. Mohammadi Zeidi I, Seifpour T, Morshedi H, Alizadeh H. The Effectiveness of Coping Strategies training on Knowledge, Pain Specific Self-efficacy and Indicators of Migraine Headache. J Health Res Commun. 2020;6(2):11-26.
28. Borza L. Cognitive-behavioral therapy for generalized anxiety. Dialogues Clin Neurosci. 2017;19(2):203-8. **pmid:** 28867944
29. Marqués MaJ, Ibáñez M, Ruiperez MA, Moya J, Ortet G. The Self-Regulation Inventory (SRI): Psychometric properties of a health-related coping measure. Personal Individ Difference. 2005;39:1043-54. **doi:** 10.1016/j.paid.2005.02.030
30. Ashkezari MD, Besharat MA, Azizi L, Abdolmanafi A. Reliability, Validity, and Factorial Analysis of a Short Version of the Self-Regulation Inventory. Procedia Soc Behav Sci. 2011;30:252-5. **doi:** 10.1016/j.sbspro.2011.10.050

31. Molavi H, Torkan H, Soltani I, Palahang H. Structure Standardization, Validity and Reliability of Subjective Well-being Questionnaire. Iran J Psychiatr Clinic Psychol. 2010;16(3):231-8.
32. Ivtzan I, Lomas T. Mindfulness in positive psychology: The science of meditation and wellbeing. Routledge/Taylor & Francis Group.2016.
33. Lee JK, Orsillo SM, Roemer L, Allen LB. Distress and avoidance in generalized anxiety disorder: exploring the relationships with intolerance of uncertainty and worry. Cogn Behav Ther. 2010;39(2):126-36. **doi:** 10.1080/16506070902966918 **pmid:** 19714542
34. Adler-Neal AL, Zeidan F. Mindfulness Meditation for Fibromyalgia: Mechanistic and Clinical Considerations. Curr Rheumatol Rep. 2017;19(9):59. **doi:** 10.1007/s11926-017-0686-0 **pmid:** 28752493

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Comparing Meaning in Life, Cognitive Emotion Regulation and Body Image Concern among Women with and without Postpartum Depression

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Body Image Concern

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Abstract

Introduction: Postpartum depression causes negative changes in mothers' mood and family cohesion, undermines adjustment of mothers with their children, and prevents children from forming a healthy relationship with their mothers. The purpose of this study was to compare meaning in life, strategies of cognitive emotion regulation and body image concern in women with and without postpartum depression.

Methods: In this causal-comparative research, participants were selected by convenience sampling among women in the postpartum period in Tehran in 2021. Data was gathered using the Edinburgh Postpartum Depression Scale, Meaning in Life Questionnaire, Cognitive Emotion Regulation Questionnaire, and body image concern inventory. Then, 82 women with postpartum depression and 82 without postpartum were analyzed using ANOVA and MANOVA tests in SPSS-21.

Results: There is a meaningful difference between two groups (women with and without postpartum depression) in terms of presence subscale in meaning in life questionnaire, non-adaptive strategies of cognitive emotion regulation scale except for self-blame subscale and adaptive strategies of cognitive emotion regulation except for acceptance sub-scale, and body image concern ($p<0.05$). In fact, depressed women use more non-adaptive strategies and suffer more from body image concern. However, presence of meaning in life and use of adaptive strategies are less prevalent among these depressed women.

Conclusions: Taken together, the findings shed light on the importance of meaning in life, cognitive emotion regulation and body image concern in postpartum depression and highlight potential targets for developing interventions in order to prevention and treatment of postpartum depression.

INTRODUCTION

During the period immediately after childbirth, women might experience onset or deterioration of a certain mental disorder due to hormonal, physical and mood changes and stress caused by parenthood as a new duty added to previous responsibilities [1]. Postpartum Depression (PPD) is a common disorder prevalent among 15 percent of women who have recently given birth [2, 3]. Signs and Symptoms of PPD might include mood changes, sleeping and eating disorder, psychomotor disorders, exhaustion, lack of focus, guilty feeling, and lack of enjoyment from work and daily activities [4]. Depression in mothers during first weeks and months after childbirth might weaken these mothers' relation with their children, which could create deep problems for children in the future. PPD can have negative influence on children's natural growth and mothers' whole life [5, 6].

Having no meaning in life or losing it somehow is one of the landmark experiences of depressed people [7-9]. In 1984, Victor Frankl delivered the most popular definition of meaning in life. He postulated that when an individual is in relationship with others, watches artistic and literary works, takes sanctuary in the bosom of nature, and attends to their favorite activities in general, they feel the existence of meaning in themselves [10]. It is safe to assume that a person who finds life purposeful, special and understandable would also find meaning in life. Further, having meaning in life lowers the chance of suffering from mental disorders such as depression [7]. Among women, there is a negative and meaningful

correlation between having meaning in life and suffering from depression [9]. So it seems that lack of meaning in life could be a reasonable candidate as an underlying factor contributing to PPD. Meaning in life has some affinity with cognitive emotion regulation as an important psychological factor contributing to PPD [11, 12].

Emotion regulation strategies make up a distinct psychological aspect of mood disorders such as PPD [11, 13]. Emotion regulation is defined as "effort to control what emotions we have, when we have those emotions and how we experience or express them" [12]. Using non-adaptive and ineffective strategies for cognitive emotion regulation leads to depression and once again triggers the pattern of depressed thoughts [14, 15]. In other words, if an individual faces a problem or situation and considers it a horrible catastrophe, gives up in a passive mood and starts thought ruminations, they are probably using non-adaptive strategies which reinforce negative and depressed moods [16]. However, using adaptive strategies (adjusted) for cognitive emotion regulation is an effective way to prevent depressed moods or at least decrease their intensity and duration [17]. Research has shown that an intervention program based on cognitive emotion regulation can effectively reduce postpartum depression [18] because postpartum depression occurs directly and indirectly through emotion regulation problems [19]. The results of Pourkhaleghi et al. (2017) showed that adaptive cognitive emotion regulation strategies have a significant negative relationship with postpartum depression, and non-adaptive strategies have a significant positive relationship [20]. It seems that adaptive strategies for cognitive emotion regulation encourage individuals to have healthier and more proportionate reaction to various stimulating situations, and also to get involved with social environment by taking a more active stand. Using these adaptive strategies, individuals' emotional response would be less rigid and more resilient in order to prevent return of symptoms of depression [21].

In addition to internal and emotional factors contributing to postpartum depression, body image concern is probably another psychological factor which has an enormous effect on PPD. Very visible changes in body and appearance of women as common consequence of birth-giving might disturb some individuals. After the birth of their baby, women can become dissatisfied with changes to their body image, including retained weight, stretch marks, loose skin, reduced muscle tone, and changed breast shape [22]. Body image is an individual's internal perception about their appearance and body [23]. Body image concern consists of preoccupation with a kind of imperfection in appearance. That imperfection is usually imaginary, and if there is actually a minor anomaly, the individual's concern about it is exaggerated and agonizing [24]. Body dissatisfaction results from aforementioned discrepancy between perceived body and ideal body [25]. Strong concern about others' appraisals and negative judgments leads to serious feeling of dissatisfaction with body, and persistence of this situation damages self-esteem and deepens depression [26]. There is a relatively strong and meaningful negative relation between body image and depression in which a decrease in rate of satisfaction with body image increases chance of suffering from depression [27]. It should be also noted that body dissatisfaction poses a serious threat against women's emotional, mental, professional and social life and increases risk of depression among them [28] and poor body image and dissatisfaction with it in women with postpartum depression has a significant negative correlation and can predict postpartum depression [22, 29].

A glimpse at previous research would reveal that there is a shortage of information about differences between new mothers with and without PPD with regard to meaning in life, strategies of cognitive emotion regulation and body image concern. At the same time, PPD is on the rise and has unrecoverable consequences for mothers, children and other members of family. Recognizing factors contributing to PPD and understanding role of meaning in life, strategies of cognitive emotion regulation and body image concern in PPD could make possible new accomplishments in different realms of pathology, preventive actions and clinical interventions. Present research contributes to such effort by comparing woman with and without PPD in terms of meaning in life, strategies for cognitive emotion regulation and body image concern.

METHODS

Present study is a casual research, and its statistical population consists of women who have visited healthcare facilities of Tehran in 2020 and 2021. Participants in this study were selected by convenience sampling.

Participants

Participants were selected from among new mothers who had visited healthcare facilities. In the guideline for scoring provided by Edinburgh Postnatal Depression Scale (EPDS), the cut-off score of 12 is considered as the threshold of PPD [30]. Eighty two women among participants in a major research were diagnosed with PPD based on the cut-off score. The other eighty-two women who were selected were not diagnosed with PPD because they had not reached the cut-off score. These women were as old as women in the first group. Then, two groups with and without PPD were compared in terms of variables in this research. Inclusion criteria included giving consent to take part in the study, being of age between 20 and 45, having at least

a diploma, having given birth within last two weeks or last two months, having no prior condition with mental disorders diagnosed by specialists, and not abusing substance or medications which effect mood – based on self-report. And exclusion criteria included lack of wish to continue cooperation with researchers and damaged questionnaires.

Ethical Considerations

After receiving ethical code from committee of ethics in research in Royan Institute, and also after obtaining Iran University of Medical Sciences' license for obtaining samples from healthcare facilities under its direction in Tehran, the researchers visited these facilities with prior notice. Since statistical population was made of new mothers, and for the sake of keeping peace of mind of these women, process of completing questionnaires was carried out by female colleagues. Also, situation caused by Covid-19 in all parts of the country and particularly in healthcare facilities left no choice but to send questionnaires as Google Forms to participants. Questionnaires were distributed among people who were willing to participate in the research. As such, participants declared their consent to take part in the research. Then, introductory explanations about filling questionnaires were given to participants. Finally, participants were reminded that they could quit at their own will at any time.

Measurement and Data Collection

Tools used in this research include the following:

Biographic questionnaire: Biographic information and also inclusion and exclusion criteria was examined by this scale. Edinburgh Postpartum Depression Scal (EPDS): This scale, consist of ten items, was created by Edinburgh in 1987 to diagnose PPD. The scale of scores of EPDS range from 0 to 30, in which getting a score higher than 10 is considered as a sign of having PPD. Higher EPDS score would mean higher level of PPD, and vice versa. Peindl et al.'s study revealed that this questionnaire's reliability is 88 to 91 percent and its validity scores 76 percent [31]. In Iran, Behboudi's (2001) research has shown that EPDS's reliability is 88 percent, and its internal reliability is 90 percent based on Cronbach's alpha [32]. Also, Mazhari's (2007) reported that EPDS's reliability and availability stand at 95.3 percent and 87.9 percent, respectively [33].

Meaning in Life Questionnaire (MLQ): Steger et al. (2006) designed MLQ to evaluate meaning in life and also the effort to find it [34]. Researchers created ten items through factor analysis. MLQ consists of two sub-scales, namely presence of meaning in life (entries 1, 4, 5, 6, 9) and search for meaning (entries 2, 3, 7, 8, 10). Scoring system in this questionnaire is based on Likert scale from totally correct (1) to totally incorrect (7). Question number 9 is scored in reverse. The lowest and the highest scores are 10 and 70, respectively. High score shows presence of meaning in life. As Steger et al. have shown, reliability of presence of meaning in life and search for life sub-scales are 0.86 and 0.87, respectively [34]. And a research by Peimanfar et al. (2012) based on Cronbach's alpha revealed that reliability coefficient of MLQ stands at 0.89 [35].

Cognitive Emotion Regulation Questionnaire (CERQ): This questionnaire, which includes 18 items, evaluates strategies of cognitive emotion regulation in response to stressful and threatening situations in a score range from 1 (never) to 5 (always). There are nine sub-scales in this questionnaire which include self-blame, other-blame, thought rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance and refocus on planning. Minimum and the maximum scores in each sub-scale are 2 and 10, respectively, and a higher score reveals more usage of relevant cognitive strategy. Psychometric features of CERQ are approved in prior research [36-38]. For Iranian society, Yousefi has estimated reliability of CERQ by using Cronbach's alpha for participants with 15 to 25 years of age. The results for adaptive and non-adaptive strategies are 0.91 and 0.87, respectively. Furthermore, validity of this scale was calculated by using correlation between non-adaptive strategies and scores of scale of depression and anxiety in a 28-item questionnaire about general health, which resulted in 0.35 ($p = 0.001$) and 0.37 ($p = 0.001$), respectively.

Body Image Concern Inventory (BICI): This questionnaire, designed by Littleton, Axsom and Puri (2005), includes 19 items to which participants answer through five-choice questions (from never to always) [39]. Researchers reported that coefficient of Cronbach's alpha for BICI is 0.93. They have also positive and satisfactory assessment of reliability coefficient for BICI via Padua's obsessive compulsive scale (0.52) and eating disorder questionnaire (0.40) ($p < 0.001$). Furthermore, In Iran, a research by Basaknezhaad and Gaffaari about a sample made of students revealed that based on Cronbach's alpha method, reliability of BICI for girls, boys and all students is 0.93, 0.95 and 0.95, respectively. Fear of negative evaluation (FNE) of physical appearance scale was used to calculate validity coefficient [40, 41].

Data Analysis

After collecting questionnaires, data were analyzed using SPSS software. In addition to descriptive statistics, multiple analysis of variance (MANOVA) and analysis of variance (ANOVA) were used for statistical estimations.

RESULTS

The mean and standard deviation of variables related to the two groups of participants are shown in Table 1.

Table 1. Ethnographic Characteristics of Participants

Variable	Group with PPD, N= 82	Group without PPD, N = 82	P
Age			0.89
20-29	51 (62.2)	54 (65.9)	
30-39	31 (37.8)	26 (31.7)	
40-45	0	2 (2.4)	
Education			0.22
High school graduate	17 (20.7)	7 (8.5)	
Associate degree	12 (14.6)	17 (20.7)	
Bachelor's degree	32 (39.0)	32 (39.0)	
Master's degree	17 (20.7)	20 (24.4)	
Ph.D. degrees	4 (4.9)	6 (7.3)	
Occupation			0.10
Government sector	4 (4.9)	11 (13.4)	
Private sector	7 (8.5)	12 (14.6)	
Freelancers	12 (14.6)	15 (18.3)	
Homemaker	54 (65.9)	38 (46.3)	
University student	5 (6.1)	6 (7.3)	
Number of children			0.58
1	68 (82.9)	66 (80.5)	
2	14 (17.1)	15 (18.3)	
3	0	1 (1.2)	
Type of childbirth			0.50
Cesarian	47 (57.3)	48(58.5)	
Natural	35 (42.7)	34(41.5)	
PPD			0.000
Mean	16.69	4.29	
Standard deviation	3.74	1.7	

Table 2. Mean, standard deviation and results of analysis of variance for two groups in terms of meaning in life, adaptive and non-adaptive strategies for cognitive emotion regulation, and body image concern

Variable	Mean ± SD	F statistic	P value	Eta squared
Presence of meaning		40.27	0.000	0.61
With PPD	19.41 ± 7.23			
Without PPD	25.89 ± 5.75			
Search for meaning		2.33	0.12	2.33
With PPD	25.20 ± 5.32			
Without PPD	26.57 ± 6.08			
Self-blame		2.97	0.08	0.01
With PPD	23.78 ± 1.54			
Without PPD	3.35 ± 1.62			
Other-blame		33.42	0.000	0.17
With PPD	5.06 ± 1.94			
Without PPD	3.41 ± 1.69			
Thought rumination		14.03	0.000	0.07
With PPD	6.95 ± 1.82			
Without PPD	5.84 ± 1.96			
Catastrophizing		36.74	0.000	0.18
With PPD	6.40 ± 2.17			
Without PPD	4.50 ± 1.83			
Putting in perspective		9.23	0.003	0.05
With PPD	5.40 ± 2.07			
Without PPD	6.32 ± 1.82			
Positive refocusing		28.19	0.000	0.14
With PPD	3.37 ± 1.43			
Without PPD	4.87 ± 2.11			
Positive reappraisal		12.66	0.000	0.07
With PPD	6.02 ± 2.06			
Without PPD	7.18 ± 2.10			
Acceptance		0.005	0.942	0.000
With PPD	5.89 ± 2.12			
Without PPD	5.91 ± 2.15			
Refocus on planning		10.62	0.001	0.06
With PPD	6.23 ± 1.97			
Without PPD	7.23 ± 1.95			
Body image concern		38.71	0.000	0.19
With PPD	46.71 ± 14.89			
Without PPD	33.84 ± 11.37			

Table 2 presents the results of comparing two groups regarding meaning in life. This variable was assessed through analysis of variance (ANOVA), which from the perspective of the presence of purpose in life, yielded p > 0.01; F (1,162) = 0.17-1.88 with Levene's test and (-0.18-1.09) with Kolmogorov–Smirnov test, and from the perspective of a search for meaning, yielded p > 0.01; F(1,162) = 0.21-1.56 with Levene's test and (0.26-1) with Kolmogorov–Smirnov test. These numbers hint at the uniformity of variance and normality of variance distribution.

To compare two groups in terms of cognitive emotion regulation with non-adaptive strategies, multiple analysis of variance (MANOVA) was used since both variables belonged to a single construct and were correlated. Levene's test (F(1.162) = 0.74-0.1; P > 0,01) and Kolmogorov–Smirnov test (0.21-1.05) revealed uniformity of variance and normality of distribution of variables. Also, the M Box test (F = 1.6; P > 0.01) showed a uniform matrix for dependent variables' covariance and that multiple analysis of variance is available for use. On the other hand, the result of Wilks's lambda multivariate test (F(4.159) = 14.05; P < 0.05) was meaningful. So there is a significant difference between the two groups in terms of the scale of cognitive emotion regulation in non-adaptive strategies. But this meaningfulness does not reveal which sub-scales of cognitive emotion regulation in non-adaptive processes are different between the two groups. For this end, analysis of variance was employed. Further, multiple analysis of variance was used to compare two groups in terms of cognitive emotion regulation in non-adaptive strategies since they were correlated and belonged to a single construct. Results of Levene's test (F(1.162) = 0.63-0.22; P<0.01) and Kolmogorov–Smirnov test (0.18-1.09) point to uniformity of variance and normality of distribution of variables. Also, the M Box test (F = 1.62; P < 0.01) showed that the matrix of dependent variables' covariance in both groups is uniform and that multiple analyses of variance could be helpful. Wilks's lambda multivariate test (F(1.158) = 6.59; P < 0.000) yielded meaningful results. It showed which sub-scales of cognitive emotion regulation in adaptive strategies differed between the two groups. But this does not pinpoint which sub-scales in adaptive systems of cognitive emotion regulation are different from each other. As such, an analysis of variance was carried out. Table 2 shows the mean and standard deviation of cognitive emotion regulation with adaptive and non-adaptive strategies. F values of analysis of variance are also presented in the table.

Data in Table 2 show a meaningful difference between the two groups in terms of other-blame, thought rumination, and catastrophizing sub-scales as non-adaptive strategies. Data also reveal that the group's mean score with PPD is higher than that without PPD. However, in terms of self-blame sub-sale, no significant difference was detected. Furthermore, there is an influential difference between the two groups regarding positive refocusing, positive reappraisal, and refocusing on planning sub-scales as adaptive strategies. Also, the group's mean score with PPD was higher than that without PPD. However, there is no meaningful difference between the two groups regarding the acceptance sub-scale.

Finally, Table 2 shows the results of comparing two groups in terms of body image concern based on the analysis of variance with Levene's test (F(1,162) = 0.06-7.72; P > 0.01) and Kolmogorov–Smirnov test (0.07-1.67), which reveal a uniformity of variance and normality of distribution of variables.

DISCUSSION

Present study was aimed at comparing meaning in life, strategies of cognitive emotion regulation and body image concern between two groups of women with and without PPD. Results of the research showed that there is a meaningful difference between two groups in terms of presence of meaning in life. It can be discerned that women with PPD lack or lose meaning in life. In this regard, the results of Mohammadi Nia and Mashhadi's (2018) research on 260 students showed a two-way relationship between depression and the meaning of life. Just as lack of meaning in life is negatively and significantly related to depression, so depression is a result of various factors that lead to a decrease in the meaning of life [8]. The quasi-experimental study of Haji Yousefi and Alvandi (2017) showed that group meaning therapy reduces depressive symptoms and increases the meaning of life in women. Women in the experimental group (n = 12) and women in the control group (n = 12) after group semantic therapy interventions were significantly different in terms of depression and meaning of life [42]. The results of research by Volkert et al. (2019) in a sample group of 2104 adults showed that the risk of depression increases with decreasing meaning in life [43]. Hedayati and Khazaei (2014), in a study on the relationship between depression and the meaning of life and hope in adults conducted on 215 people, showed that depression has a significant negative correlation with the meaning of life in both presence and search [44]. It is important to note that a study on the meaning of life and postpartum depression was not found in the sample group of newborn women. In an attempt to explain this finding, it can be said that meaning in life is totally dependent on each individual's perspective and is somehow unique for each individual. Presence of meaning in life for new mothers increases motivation for realizing the goals, doing chores, feeling responsible and worthy, and dealing with stressful events and internal and external

pressures. Therefore, presence of meaning rescues new mothers' life from the feeling of nothingness and disorientation. On the other hand, losing meaning in life leads to lack of motivation for living fully, following values and trying to realize dreams. New mothers who lose meaning in life feel that they have become ineffective, and that their disoriented lives have come to a stalemate. As a result, these mothers find life a negative and painful experience. They give up easily during crisis and stressful events. All this would result in negative mood, and decreased levels of pleasure and motivation, and would eventually lead to postpartum depression.

Also, results of present research showed that the group with PPD has a meaningfully higher use of ineffective, non-adaptive strategies for cognitive emotion regulation in terms of putting in perspective, positive reappraisal, positive refocus and refocusing on planning sub-sales. In this regard, the study of Hyo Sin et al. (2021), performed on 17 new mothers in the experimental group and 21 new mothers in the control group, showed a significant difference in the experimental group after interventions based on emotion regulation management. There are cognitive emotion regulation strategies between the two groups, and an emotion regulation-based program can effectively reduce postpartum depression, anxiety, and stress in newborn mothers [18]. Research by Krzeczkowski et al. (2021) showed that maternal exposure to postpartum depression increases the child's risk of developing psychological and emotional regulation problems. Having postpartum depression can prevent psychological problems in the baby [45]. Research by Marques et al. (2018) on a sample of 450 newborn women showed that women with postpartum depression have more emotion regulation problems than non-postpartum women and that depression occurs directly and indirectly through emotion regulation problems [19]. Research by Pourkhaleghi et al. (2017) also showed that adaptive cognitive and emotional regulation strategies, including acceptance, positive refocus, and refocusing on planning, are negatively associated with postpartum depression. As well as non-adaptive cognitive and emotional regulation strategies, including self-blame, catastrophe, Ruminants and blaming others are positively associated with postpartum depression. According to this study, postpartum depression can be predicted through cognitive emotion regulation strategies [20]. It can be said that women can have a realistic, adaptive and more resilient response to new situations by using adaptive strategies for cognitive emotion regulation, such as putting in perspective, positive reappraisal, positive refocusing, and refocusing on planning [46]. This is done through adjustment and regulation of emotions and controlling them after childbirth experience, which is stressful, challenging and demanding. When levels of life satisfaction and positive emotions increase, negative emotions and depressed mood become less prevalent. New mothers who make use of non-adaptive strategies for cognitive emotion regulation, such as other-blaming, catastrophizing and thought rumination, find others responsible for creating stressful situations. They also imagine the current situation to be more intense and more horrible than what it reality is. This leads to thought rumination about a stressful and sad event which has happened to them. All in all, this kind of irritability produces continuous negative experiences, and the sensitivity that is created in regard to others might lead to isolation and depression.

Furthermore, findings reveal that women with PPD are more vulnerable than their counterparts in terms of body image concern. Hartley et al. (2021) showed that the two groups with and without postpartum depression significantly differ regarding body image. Women with postpartum depression have a weak and negative body image [29]. The results of most studies in Silveira et al. (2015) review showed that dissatisfaction with body image is significantly associated with the onset of prenatal and postpartum depression [47]. A study by Sweeney et al. (2013) on 46 women who gave birth showed that body dissatisfaction predicted the symptoms of postpartum depression [22]. In fact, in explaining these findings, it can be said that women who feel others have a negative opinion about their appearance and therefore do not participate in social activities are constantly seeking approval. And are the opinion of others and compare their appearance with the patterns of the day in the world. Satisfy, but in the long run, it intensifies dissatisfaction with the body. Intense body dissatisfaction may cause issues such as eating disorder, sleeping disorder, lack of energy, self-blame and having guilty feeling without reason, which are all symptoms of depression [48]. In other words, excessive body image concern causes serious social and occupational disabilities, decreases quality of life and self-esteem, creates negative self-image, and inspires isolation and depression [49].

Few studies have compared the cognitive regulation variables of emotion and body image concern in the sample groups with and without postpartum depression in newborn women. Moreover, no research has examined the meaning of life with postpartum depression, a remarkable innovation of the present study. Therefore, the study of this theoretical gap and the lack of studies in the variables field led to a more complete and comprehensive relationship between these variables and added to the richness of academic resources in the mental health field.

The present study and its results can provide valuable and up-to-date information about the causes of postpartum depression, especially to clinical therapists in the community. In the case of this disorder, therapists

should use their knowledge and experience and the results of this study to take the necessary measures.

CONCLUSION

Present research showed that women with PPD feel that they have less meaning in life or have lost meaning altogether. New mothers with PPD make more use of non-adaptive strategies, including self-blame, thought rumination and catastrophizing. They also have more concern about their body image. In contrast, women without PPD feel they have enough meaning in life. They make more use of adaptive-strategies, including putting in perspective, positive refocusing, positive reappraisal, and refocusing on planning. They also have less concern about their body image. Thus, increasing knowledge and awareness in this context could improve interventions and make treatment of new mothers more effective.

LIMITATIONS AND RECCOMANDATIONS

One of the limitations of the present study was the use of a self-report questionnaire that can be associated with misconduct in response. The limitation of the statistical sample to the city of Tehran and newborn women who gave birth for two weeks to two months was another limitation of this study. Another limitation is related to the type of sampling, which is due to the low generalizability of convenience sampling. Also, due to the study's cross-sectional nature, accurate causal explanations cannot be made. It is recommended that healthcare facilities which provide vaccination services to mothers can offer courses to raise pregnant women's awareness about psychological issues of childbirth. In these courses, guidelines to find and appreciate meaning in life can be presented along with practical skills for regulating emotions. Finally, the effect of individual and cultural factors and also media on body image concern among women should be part of the educational course to alleviate PPD.

CONFLICT OF INTEREST

Present researchers guarantee that there is no conflict of interest over this study.

ETHICAL CONSIDERATIONS

Present study is approved by committee on ethics in Royan Institute with the code of IR.ACER.ROYAN.REC.1398.232.

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AUTHORS CONTRIBUTION

Mohsen Kachooei developed the original idea and study supervision. Rana Shakib Haji Agha collected and analyzed data. Mohsen Kachooei and Rana Shakib Haji Agha written the manuscript.

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REFERENCES

1. Khodadadi N, Mahmoudi H, Mir HSN. Postpartum depression relationship with some psychosocial effects in mothers. J Ardabil Uni Med Sci. 2008;8(2):142-8.
2. Centers for Disease C, Prevention. Prevalence of self-reported postpartum depressive symptoms--17 states, 2004-2005. MMWR Morb Mortal Wkly Rep. 2008;57(14):361-6. **pmid:** 18401329
3. Segre LS, O'Hara MW, Arndt S, Stuart S. The prevalence of postpartum depression: the relative significance of three social status indices. Soc Psychiatry Psychiatr Epidemiol. 2007;42(4):316-21. **doi:** 10.1007/s00127-007-0168-1 **pmid:** 17370048
4. Williams JB, First M. Diagnostic and statistical manual of mental disorders. Encyclopedia of social work: American psychiatric association; 2013.
5. Henderson C, Macdonald S. Maye's Midwifery: A Textbook for Midwives: Bailliere Tindall Limited; 2004.
6. Rubertsson C, Wickberg B, Gustavsson P, Radestad I. Depressive symptoms in early pregnancy, two months and one year postpartum-prevalence and psychosocial risk factors in a national Swedish sample. Arch Womens Ment Health. 2005;8(2):97-104. **doi:** 10.1007/s00737-005-0078-8 **pmid:** 15883652
7. Feldman DB, Snyder CR. Hope and the meaningful life: Theoretical and empirical associations between goal–directed thinking and life meaning. J Soc Clin Psychol. 2005;24(3):401-21.
8. Mohammad Nia S, Mashhadi A. The effect of meaning of life on the relationship between attitude toward substance abuse and depression. Neurosci J Shefaye Khatam. 2018;6(3):43-51.
9. Nasiri H, Jokar B. Meaning in life, hope, life satisfaction and mental health in women. J Women Develop Politics. 2008;6(2):157-76.
10. Frankl VE. Man's search for meaning: An intro to logotherapy..(Part 2, Logotherapy in a nutshell). New York, NY: Simon and Schuster Inc; 1984.
11. Gross JJ, Thompson RA. Emotion regulation conceptual: Handbook of emotion regulation. New York:: Guilfors Publication; 2007.
12. Gross JJ. Antecedent-and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. J of Personal Soc Psychol. 1998;74(1):224.
13. Gross J, John O. Handbook of regulation emotion. New York: Guilford Press; 2007.
14. Segal ZV, Kennedy S, Gemar M, Hood K, Pedersen R, Buis T. Cognitive reactivity to sad mood provocation and the prediction of depressive relapse. Arch Gen Psychiatry. 2006;63(7):749-55. **doi:** 10.1001/archpsyc.63.7.749 **pmid:** 16818864
15. Waller MA. Resilience in ecosystemic context: evolution of the concept. Am J Orthopsychiatry. 2001;71(3):290-7. **doi:** 10.1037/0002-9432.71.3.290 **pmid:** 11495331
16. Salehi A. The role of cognitive emotion regulation strategies in the prediction of depression. Knowledge Res Appl Psychol. 2017;16(1):108-17.
17. Jarrett RB, Minhajuddin A, Borman PD, Dunlap L, Segal ZV, Kidner CL, et al. Cognitive reactivity, dysfunctional attitudes, and depressive relapse and recurrence in cognitive therapy responders. Behav Res Ther. 2012;50(5):280-6. **doi:** 10.1016/j.brat.2012.01.008 **pmid:** 22445946
18. Choi HS, Lee KE, Shin Y. Effects of an emotional regulation program on maladaptive cognitive emotion regulation, stress, anxiety, and postpartum depression among South Korean mothers of premature infants in the neonatal intensive care

unit. Child Health Nurs Res. 2021;27(1):24-33. **doi:** 10.4094/chnr.2021.27.1.24 **pmid:** 35004494
19. Marques R, Monteiro F, Canavarro MC, Fonseca A. The role of emotion regulation difficulties in the relationship between attachment representations and depressive and anxiety symptoms in the postpartum period. J Affect Disord. 2018;238:39-46. **doi:** 10.1016/j.jad.2018.05.013 **pmid:** 29859386
20. Pourkhaleghi N, Askarizadeh G, Fazilat-Pour M. The role of maternal emotional cognitive strategies and newborn gender satisfaction in the postpartum depression in the primiparous women. Preventive Care in Nursing Midwifery Journal. 2017;7(2):15-24.
21. Park CL, Folkman S. Meaning in the context of stress and coping. Rev Gen Psychol. 1997;1(2):115-44. **doi:** 10.1037/1089-2680.1.2.115
22. Sweeney AC, Fingerhut R. Examining relationships between body dissatisfaction, maladaptive perfectionism, and postpartum depression symptoms. J Obstet Gynecol Neonatal Nurs. 2013;42(5):551-61. **doi:** 10.1111/1552-6909.12236 **pmid:** 24004109
23. Sears LA, Rudd NA, Habash D, Buckworth J. Body Image and Behavior in NCAA Division III Female Athletes Involved in Team Sports: 2342: Board# 122: May 30 2: 00 PM-3: 30 PM. Med Sci Sport Exercise. 2008;40(5):S436.
24. Forman EM, Butryn ML, Hoffman KL, Herbert JD. An open trial of an acceptance-based behavioral intervention for weight loss. Cognitive Behavioral Practice. 2009;16(2):223-35. **doi:** 10.1016/j.cbpra.2008.09.005
25. Thompson J. Handbook of eating disorders and obesity: John Wiley & Sons, Inc.; 2004.
26. Pearson AN, Follette VM, Hayes SC. A pilot study of acceptance and commitment therapy as a workshop intervention for body dissatisfaction and disordered eating attitudes. Cognitive Behavioral Practice. 2012;19(1):181-97. **doi:** 10.1016/j.cbpra.2011.03.001
27. Chaiton M, Sabiston C, O'loughlin J, McGrath J, Maximova K, Lambert M. A structural equation model relating adiposity, psychosocial indicators of body image and depressive symptoms among adolescents. Int J Obesity. 2009;33(5):588-96.
28. Brytek-Matera A. Body image among obese women: consequences and degree of body dissatisfaction, relationship with low self-esteem and coping strategies. Psychiatria Polska. 2010;44(2):267-75.
29. Hartley E, Fuller-Tyszkiewicz M, Skouteris H, Hill B. A qualitative insight into the relationship between postpartum depression and body image. J Reproduc Infant Psychol. 2021;39(3):288-300.
30. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry. 1987;150(6):782-6. **doi:** 10.1192/bjp.150.6.782 **pmid:** 3651732
31. Peindl KS, Wisner KL, Hanusa BH. Identifying depression in the first postpartum year: guidelines for office-based screening and referral. J Affect Disord. 2004;80(1):37-44. **doi:** 10.1016/S0165-0327(03)00052-1 **pmid:** 15094256
32. Behbodi M. The prevalence of postpartum depression and the effective factors of referred women to Beheshti Health center. Tehran: Beheshti University; 2001.
33. Mazhari S, Nakhaee N. Validation of the Edinburgh Postnatal Depression Scale in an Iranian sample. Arch Womens Ment Health. 2007;10(6):293-7. **doi:** 10.1007/s00737-007-0204-x **pmid:** 18058062
34. Steger MF, Frazier P, Oishi S, Kaler M. The meaning in life questionnaire: assessing the presence of and search for meaning in life. J Counsel Psychol. 2006;53(1):80.
35. Peymanfar E, Aliakbari Dehkordi M, Mohtashami T. A comparison between the feeling of loneliness and feeling of meaningfulness of the life of the old at the different level of religious attitudes. Ravanshenasi Va Din. 2012;5(4):41-52.
36. Garnefski N, Baan N, Kraaij V. Psychological distress and cognitive emotion regulation strategies among farmers who fell victim to the foot-and-mouth crisis. Personality Individual Differences. 2005;38(6):1317-27. **doi:** 10.1016/j.paid.2004.08.014
37. Garnefski N, Kraaij V, Spinhoven P. Negative life events, cognitive emotion regulation and emotional problems. Personality Individual Differences. 2001;30(8):1311-27. **doi:** 10.1016/S0191-8869(00)00113-6
38. Besharat M. Psychometri properties of the Cognitive Emotion Regulation Questionnaire in a sample of Iranian population. Journal of Nursing and Midwifery Quarterly. 2014;24(84):61-70.
39. Littleton HL, Axsom D, Pury CL. Development of the body image concern inventory. Behav Res Ther. 2005;43(2):229-41. **doi:** 10.1016/j.brat.2003.12.006 **pmid:** 15629752
40. Basaknejad S, Ghafari M. The relationship between fear of physical deformity and psychological disorders in students. Journal of Behavioral Sciences. 2008;1(2):17-8.
41. Lundgren JD, Anderson DA, Thompson JK. Fear of negative appearance evaluation: development and evaluation of a new construct for risk factor work in the field of eating disorders. Eat Behav. 2004;5(1):75-84. **doi:** 10.1016/S1471-0153(03)00055-2 **pmid:** 15000956
42. Haji Yousefi E, Alivandi Vafa M. Effectiveness of Logo Group Therapy in Depression and the Meaning in Life among Divorced women in Tabriz City. Journal of Modern Psychological Researches. 2017;12(45):19-38.
43. Volkert J, Harter M, Dehoust MC, Ausin B, Canuto A, Da Ronch C, et al. The role of meaning in life in community-dwelling older adults with depression and relationship to other risk factors. Aging Ment Health. 2019;23(1):100-6. **doi:** 10.1080/13607863.2017.1396576 **pmid:** 29115865
44. Hedayati MM, Khazaei MM. An investigation of the relationship between depression, meaning in life and adult hope. Procedia-Social Behavioral Sciences. 2014;114:598-601.
45. Krzeczkowski JE, Schmidt LA, Van Lieshout RJ. Changes in infant emotion regulation following maternal cognitive behavioral therapy for postpartum depression. Depress Anxiety. 2021;38(4):412-21. **doi:** 10.1002/da.23130 **pmid:** 33464686
46. Rudolph SG, Flett GL, Hewitt PL. Perfectionism and deficits in cognitive emotion regulation. Journal of Rational-Emotive Cognitive-Behavior Therapy. 2007;25(4):343-57.
47. Silveira ML, Ertel KA, Dole N, Chasan-Taber L. The role of body image in prenatal and postpartum depression: a critical review of the literature. Arch Womens Ment Health. 2015;18(3):409-21. **doi:** 10.1007/s00737-015-0525-0 **pmid:** 25895137
48. Richardson LP, Garrison MM, Drangsholt M, Mancl L, LeResche L. Associations between depressive symptoms and obesity during puberty. Gen Hosp Psychiatry. 2006;28(4):313-20. **doi:** 10.1016/j.genhosppsych.2006.03.007 **pmid:** 16814630
49. Sheivandi K, Naeimi E, Farshad MR. The Structural Model of Self-Compassion and Psychological Well-Being, Self-Esteem And Body Image Among Female Students of Shiraz University With Mediator. Clin Psyhol Stud. 2016;6(24):115-32.

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Quality Gap in Child Care under One Year Using the Servqual Model in Sanandaj Comprehensive Health Centers

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Abstract

Introduction: Childhood has a significant impact on human growth and development. So that children who receive inappropriate care during the first years of life have lower intelligence and less compelling power, become sicker and prolong their illness. To this end, the provision, maintenance and promotion of the health of children under one year is a special status as a vulnerable group in health services. The aim of this study was to determine the quality of care for children under one year using the SERVQUAL model in Sanandaj comprehensive health centers in 2018.

Methods: In this descriptive-analytical study, 384 children under one year old who referred to Sanandaj comprehensive health centers were selected by stratified random sampling. Data collection was done using SERVQUAL questionnaire (service quality). Data were analyzed by SPSS-23 software using descriptive statistics, t-test and ANOVA.

Results: The results of this study showed that in all aspects of service quality there was a negative gap, then the responsiveness dimension had the highest quality gap and then the assurance dimension had the least quality gap and in all dimensions the average customer expectations were higher than their average perceptions.

Conclusions: Given the negative gap in the five dimensions of service quality and high expectations of perception in all dimensions, the needs and expectations of service recipients need to be taken into account in order to reduce the service quality gap.

INTRODUCTION

Childhood and adolescence is an unrepeatable, affective and sensitive period in human development and any failure in this period will cause irreparable damage to the child [1]. Children's health is one of the key issues in any country's health system because they are more sensitive and vulnerable than adults and need special attention and any developmental and nutritional and health disorders will make them suffering, ill and disabled. Children who are deprived of proper care and adequate nutrition in their first years of life, the IQs are lower and have less learning ability and competition, they become more ill, and their disease progresses longer. These conditions will not be reversible in later years despite adequate nutrition or care, improved living conditions and education [2]. Providing, maintaining and promoting the health level of children under one year of age as a vulnerable group in health care has a special place [3]. Children with good care are ahead of other children in education and other social services And they are more powerful so future spending on education, health and social spending will be reduced [4].

One of the concerns of health system managers is the difference in the quality and quantity of services provided, especially to vulnerable groups. This can be a challenging issue given the fact that most people tend to use higher-level services directly [5]. Quality of service is considered as the degree of compliance with defined standards [6]. The main goal of the health care system is

also to achieve full physical, mental and social health and to improve the quality of society [7]. Lower-than-expected services always make service users less trustworthy than service providers [8]. What is considered as quality care today is the provision of services according to the wishes of clients, which is provided by health care providers for individuals, regardless of their characteristics and features [9].

Without a valid evaluation method, it is impossible to determine and implement the strategies necessary for quality service management [10]. One of the most well-known and widely used tools is the SERVQUAL questionnaire designed and presented for the first time by Parasurman et al [11]. This model assesses the quality of service provided through the five dimensions of tangibility, reliability, responsibility, assurance, and empathy. In this questionnaire, quality means the difference between the expectations and perceptions of service recipients. Expectations mean the services that clients are willing to provide and perceptions of the care that is provided to them [12].

In the last few decades, research based on the SERVQUAL model has been used to measure service quality. For example, Mohammadi and Shoghli Studies in Zanjan, showed that the reliability dimension constitutes the most serious problem facing district health centers. It is recommended that responsible employees and physicians should provide the promised services on time accurately and keep the records of services provided to clients without mistake. It further confirmed that the SERVQUAL elements can help health centers for defining the important areas of services and improving them. We can also mention the studies of Gholami et al. [13] in urmia, Anderson et al. [14] in Texas and Padma et al. [15] in India. In a study conducted by Kazemnezhad et al to "the quality of maternal and child health care services with SERVQUAL mode" in Qom, the quality of expectation score was higher than perceptions in all dimensions and the quality gap score was negative and the largest gap in the tangible dimension and the smallest gap in the assurance dimension. [16].

Correct assessment of care is as important to the success of health care organizations as it is to achieve the right process for delivering services [9] this is done by knowing the perceptions of service providers and their expectations to identify better service quality gaps. Considering that the most important period of a child's physical and brain development is in the first two years of life, which has an important role on physical and mental performance in the following years. The aim of this study was to determine the quality gap of child care under one year by using SERVQUAL model in Sanandaj comprehensive health centers in 2018.

METHODS

In this descriptive-analytical study, the quality of services provided to children under one year in Sanandaj comprehensive health centers was evaluated. Inclusion criteria for mothers were having a child under one year of service, living in Sanandaj, and willingness to participate in the study and the exclusion criteria were non-completion of all sections of the questionnaire. Sample size was estimated to be 384 with study of similar studies, considering about 50% negative quality, 95% confidence and 5% accuracy. Sampling method was stratified and random. Three centers were randomly selected from each of the north, south, east and west centers. The study data were collected using standard SERVQUAL questionnaire. In this study, the researcher distributed a questionnaire in the health service centers among the clients who referred for care and met the inclusion criteria. If the participants were literate, they would fill in the questionnaire. Otherwise, the questionnaire was read by the researcher and the participants' answers were recorded.

The questionnaire consisted of 22 questions, tangibilty, assurance and responsiveness dimensions each yielded 4 questions and two dimensions of reliability and empathy each yielded 5 questions. Questionnaire questions were based on a 5-point scale and each answer was assigned a score of 1 to 5. Service quality gap was obtained by subtracting the level of perception level and expected level of service. A positive quality score indicates that the service provided is above expectations and a negative quality score indicates that a quality gap exists and if the result is zero represents the expected level of service provided to clients. The validity and reliability of the SERVQUAL questionnaire has been confirmed in many studies in Iran and abroad. Reliability of this questionnaire was 90% in Lin et al study [17] and 89% in Tarrahi et al study [18]. The validity of the questionnaire was re-validated despite being standard. Its content validity was confirmed by experts. Observing the rights, respecting and obtaining permission of the respondents were the ethical considerations of this study. The code of ethics of the present study is (IR.MUK.REC.1396.325). Data were analyzed using SPSS-23 software, descriptive statistics, t-test, and analysis of variance.

RESULTS

The results of the present study showed that the majority of the studied samples were 155 people (40.4%) in the age group of 21-30 years. The highest number of participants in the study was 144 people (37.5%) with a diploma and in terms of occupational

status 296 people (77.1%) were homemaker. Also, 204 people (53.1%) of the units of research had 2-4 children. The results of paired t-test showed that there was a statistically significant relationship between patients' expectations and perceptions of the quality of services provided (p = 0.001). Also, in measuring the servqual dimensions of the gap, all dimensions were negative. Responsiveness with gap rate (-1.76) had the highest service quality gap and then assurance gap (-1.69) had the lowest service quality gap (Table 1).

In the present study, the empathy dimension had the lowest perception and the tangibility dimension had the highest perception score. The highest score of expectations was observed in the tangibility dimension and the lowest in the reliability dimension (Table 2). The results also showed no significant relationship between quality gap and age (P = 0.058), education level (P = 0.281), job (P = 0.164) and number of children (P = 0.443).

Table 1. Mean Scores of Perception, Expectation, and Gap in the Five Dimensions of Quality in Child Care under One Year Services

Dimensions	Perceptions	Expectations	Gap	P-Value
Tangibility	5.16	6.89	-1.72	0.001
Reliability	5.03	6.76	-1.73	0.001
Responsibility	5.05	6.81	-1.76	0.001
Assurance	5.14	6.84	-1.69	0.001
Empathy	5.00	6.74	-1.74	0.001
Overall Quality	5.07	6.80	-1.73	0.001

Table 2. The Mean Scores of Perception, Expectation, and Quality Gaps in Each Aspect of the Quality of Services

The Quality Items	Perception	Expectation	Gap
Tangibility			
Modern and updated equipment	5.37	6.91	-1.53
Fascinating and attractive physical equipment	5.07	6.88	-1.80
Well-dressed staffs	5.25	6.89	-1.64
Appropriateness of the physical environment and services	4.95	6.88	-1.92
Reliability			
Provision of services at the time promised by the staff	5.02	6.86	-1.84
Interested in solving client problems	5.02	6.83	-1.80
Reliability of the center	5.17	6.83	-1.65
Provision of services in conformity with the obligations given	5.04	6.67	-1.63
Maintaining and registering the documents of clients	4.88	6.59	-1.71
Responsibility			
Announcement of the exact time of serving the clients	5.02	6.80	-1.77
Fast and uninterrupted serving	5.09	6.79	-1.69
The willingness of employees to help clients	5.13	6.83	-1.70
Availability of staff when needed	4.97	6.85	-1.88
Assurance			
Creating a sense of confidence in clients	5.07	6.81	-1.74
The feeling of safety and relaxation in dealing with staffs	5.18	6.82	-1.64
The polite and friendly behavior of the staff	5.30	6.82	-1.52
The staff support by the center in carrying out their job	5.02	6.89	-1.86
Empathy			
Specific and individual attention to each one of the clients	5.11	6.68	-1.57
The interest of the staffs towards the clients	5.11	6.73	-1.61
Understanding the special needs of clients by staffs	4.98	6.78	-1.80
Considering the best interests for the clients	4.95	6.77	-1.82
The suitability of the working time and the time of referral to the center	4.84	6.75	-1.90

DISCUSSION

The results showed that the quality gap in all five dimensions of service quality was negative. This means that there was a gap between the expectations of the clients and their perceptions of the services and in all dimensions the average expectations were higher than the perceptions. Similar to the results of this study in the study of Baker et al [19] in Turkey, Jebraeily et al [20] in Urmia, Huseyin et al [21] in Cyprus and Aghamollaie et al [12] in Bandar Abbas there were differences between expectations and perceptions.

In the present study, the highest quality gap was observed in the dimension of responsibility. In terms of responsibility, it is the willingness to cooperate and help the recipients of services Employee availability when needed was the biggest gap. In the study of Haghshenas et al [22] in Tehran, Razmjoee et al [23] in Shiraz, as in the present study, had the highest quality gap in the dimension of responsibility. This means that service recipients are not satisfied with the sensitivity and responsiveness of service providers to their requests and questions, as well as expressing a lack of responsiveness and reluctance on the part of staff. Lack of responsiveness and reluctance on the part of health

care staff can lead to wasted time, resources and energy for service recipients and may lead to physical, mental and psychological distress and ultimately unsatisfaction [24]. In the study of Mohebbifar et al [25] in Qazvin, Bahmei et al [26] in Shiraz, the lowest quality gap was observed in the dimension of responsibility. The results of these studies are inconsistent with the present study. The reason for the inconsistency may be in the way staff collaborate in answering questions and paying attention to clients who have been relatively successful in the two studies mentioned above.

In this study, the lowest quality gap was observed in the assurance dimension. The purpose of the assurance is knowledge and competence of employees and their ability to instilling the trust. In the study of Abolghasem Gorji et al [27] in Tehran, Hekmat Pou et al [28] in Arak, Oliaee and et al [29] in Isfahan and Ameryoun et al [30] in Tehran, as in the present study, the lowest quality gap was observed in the assurance dimension. This means that service providers with their skills, knowledge and abilities were able to create a relative sense of trust and confidence in service recipients.

The assurance dimension includes all the rules and activities necessary to maintain and enhance the quality. Centers should employ capable people who have the knowledge and expertise needed to provide services [31]. In Shafiq et al [32] study in Pakistan and Karami Matin et al [33] in Kermanshah, unlike the present study, the highest quality gap was observed in the assurance dimension. This indicates that service providers were not sufficiently skilled in creating a sense of security and comfort and that customer expectations were not met.

In the study of Moghadam et al [34] in Tehran, Ghobadi et al [35] in Ardebil, Alijanzadeh and et al [36] in Qazvin, the highest quality gap was found in empathy dimension. In the present study, empathy was ranked second in the quality gap. Empathy means dealing with each client according to their moods. In the study of Safi et al [37] in Tehran and Gholami et al [38] in Neyshabour, the lowest quality gap was observed in the empathy dimension. The results of these studies are not in line with the present study. The reason for the inconsistency can be due to the attention and understanding of the clients by the staff. In other words, the proper treatment of client and understanding and supporting them will improve the quality of service.

In Mohammadi and Shoghli study [39] in Zanjan and Tabatabaei et al [40] in Zahedan the highest quality gap was found in reliability dimension. Reliability means the ability to deliver the services promised truly and reliably, in other words, the employees did not fulfill their obligations at the time promised. In Tarrahi study et al [18] in Khoram Abad and Jena Abadi et al in Zahedan [41] the lowest quality gap was observed in reliability dimension. The results of these studies are not in line with the present study. This reflects the efforts of staff to create a sense of trust and confidence in clients. Because the timely delivery of services, the commitment of the staff and the willingness to provide the services have created the least gap in this dimension.

In the study of Kazemnezhad et al [16] in Qom, Gholami et al [38] in Neyshabour and Zarei et al [42] in Tehran, the highest quality gap was observed in the tangibility dimension. The concept of tangibility dimension is the environment, facilities, equipment, and appearance of the staff. The more negative gap in this dimension indicates that the physical environment and equipment can be effective in providing staff service and satisfying more clients. In the study of Jebraeily et al [20] in Uromia, Sharifi Rad et al [43] in Isfahan and Roohi et al [44] in Gorgan, the lowest quality gap was found in the tangibility dimension. The results of these studies are not in line with the present study. In other words, the reason of the difference results is the modern equipment and facilities and the proper appearance of the staff. Up-to-date facilities, regular service delivery and staff training reduce the quality gap in the tangibility dimension.

Findings of this study showed that there was a negative gap in all dimensions of service quality and in all dimensions the average expectations were higher than perceptions. Since the purpose of such research is to exploit their results to improve quality, reduce costs and solve problems. Concerning the results of this study, the authorities can plan to reduce this gap, as quality improvement is definitely beneficial for the health of the community.

It is recommended that managers and authorities pay attention to the wishes and needs of clients and strive to beautify the views and modernize the equipment, training courses to update staff knowledge and skills, service providers to be polite and friendly to clients and be available when needed, understand the emotions and values of clients, and provide services in the shortest possible time.

One of the limitations of this study is the lack of cooperation of a number of clients, the lack of research on the quality of child services and possibly the incorrect answer to some of the questionnaire questions.

CONCLUSION

The results of this study showed that there was a quality gap in the five dimensions of quality of service provided. This gap was higher in some dimensions and lower in others and the level of customer expectations was higher

in all aspects of their perceptions. Therefore, addressing the needs and expectations of service providers can be a guide to reducing existing gaps, enhancing productivity and proper planning, making strategic decisions and correcting disruptions.

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ETHICAL CONSIDERATIONS

This study was approved by the Ethics of Kurdistan University of Medical Sciences.

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AUTHORES CONTRIBUTIONS

All authors contributed equally in preparing all parts of the research.

CONFLICTS OF INTEREST

The authors declared no conflict of interest.

REFERENCES

1. Kosaryan M, Vahidshahi K, Shafaat B, Abaskhanian A, Azizi S, Shahrokh S. Screening of Developmental Problem, Day care Centers, Sari, 2006. [Persian]. J Mazandaran Univ Med Sci. 2007;17(59):69-75.
2. Sharaki A, Mardani M, Arab M, Firoozkoohi Z. Infant under 1-59 month mortality causes in Zabol. [Persian]. IJNR. 2010;5(17):6-13.
3. Homaierad E, Samadi A, Bayazidi Y, Hayati R. Comparing the Socioeconomic Determinants of Infant Mortality Rate in Iran and MENA Countries. [Persian]. J Economic Modeling Res. 2013;12(3):135-51.
4. Hajinabi K, Riahi L, Tavakoli F. Relationship between integrated well child care plan implementation and child indicators at Noor city of health network. [Persian]. J toloo-e-behdasht. 2013;12(2):183-92.
5. NasrollahpourShirvani RP, Motlagh ME. Evaluation of the Performance of Referral System in Family Physician Program in Iran University of Medical Sciences: 2009. [Persian]. Hakim Res J. 2010;13:19-25.
6. Lee M, Hwan I. Relationships among Service quality, customer satisfaction and profitability in the Taiwanese banking industry. Int J Manag. 2005;22:635-6.
7. Soheili S. Handbook of public health; primary health care and health care. Tehran: Arjmand [Persian]. 2006:76-87.
8. Motlagh ME, Nasrollahpour Shirvani SD, Maleki MR. Performance evaluation in vice-chancellery of universities/faculties of medical sciences of Iran based on Iranian national productivity and excellence award & EFQM excellence model, 2010. [Persian]. Hakim Res J. 2013;16(2):80-8.
9. Jamali R. Provide A Model For Improving The Quality Of Education In Higher Education Institutions SERVQUAL And QFD Approach To Fuzzy Graduate Students At Yazd University. Master's Thesis executive Management 2011. Yazd University. (Persian).
10. Nori H. Deployment of service quality model (SERVQUAL) in Hazrat Rasoul Akram Hospital. Master of science thesis: Iran University of Medical Sciences [Persian]. 2006.
11. Parasuraman A, Zeithaml VA, Berry LL. Servqual: A multiple-item scale for measuring consumer perc. J Retail. 1988;64:12-22.
12. Aghamollaie T, Zare S, Kebriyaie A, Podat A. Quality of primary healthcare from the perspective of women referred to health centers in Bandar Abbas. [Persian]. Payesh Health Monitor. 2008;7(2):121-7.
13. Gholami A, Salari Lak Sh, Gharaaghaji Asl R. Quality gap in primary health care in urmia health centers ; 2009 [Persian]. J Urmia Univ Med Sci. 2010;21:347-53.
14. Anderson EA, Zwelling LA. Measuring service quality at the University of Texas M.D. Anderson Cancer Center. Int J Health Care Qual Assur. 1996;9(7):9-22. **doi:** 10.1108/09526869610150200 **pmid:** 10162922
15. Padma P, Rajendran C, Lokachari PS. Service quality and its impact on customer satisfaction in Indian hospitals: Perspectives of patients and their attendants. Benchmark Int J. 2010;17(6):807-41. **doi:** 10.1108/14635771011089746
16. Kazemnezhad L, Ghasemzadeh MJ, Mohebi S. The quality of maternal and child health care services with servqual model. [Persian]. J Health Care. 2016;18(2):111-19.
17. Lin DJ, Li YH, Pai JY, Sheu IC, Glen R, Chou MJ, et al. Chronic kidney-disease screening service quality: questionnaire survey research evidence from Taichung City. BMC Health Serv Res. 2009;9:239. **doi:** 10.1186/1472-6963-9-239 **pmid:** 20021684
18. Tarrahi M, Hamouzadeh P, Bijanvand M, Lashgarara B. The quality of health care services provided in health care centers of Khorramabad using SERVQUAL model in 2010. [Persian]. Yafteh. 2012;14(1):13-21.
19. Bakar C, Akgun HS, Al Assaf AF. The role of expectations in patients' hospital assessments: a Turkish university hospital example. Int J Health Care Qual Assur. 2008;21(5):503-16. **doi:** 10.1108/09526860810890477 **pmid:** 18785349
20. Jebraeily M, Rahmani B, Khodayari R, Golifarhoodi G, Mohammadi A. Assessment of inpatient satisfaction from services quality in medical and educational centers of Uromia University of Medical Science by SERVQUAL model. [Persian]. Quarter Sci Res J Iran Health Inform Manage Associat (IHMA). 2013;7(2):19-24.
21. Arasli H, Ekiz EH, Katircioglu ST. Gearing service quality into public and private hospitals in small islands: empirical evidence from Cyprus. Int J Health Care Qual Assur. 2008;21(1):8-23. **doi:** 10.1108/09526860810841129 **pmid:** 18437935
22. Haghshenas E, Arab M, Rahimi Foroshani A, Movahed E. Assessing The Quality Of Services Provided At Outpatient Clinics Among Hospitals Affiliated To Tehran University Of Medical Sciences Based On SERVQUAL Model In 2015. [Persian]. J Hospital. 2017;16(2):9-17.
23. Razmjoee M, Yadollahi M, Shamsedini N. Patients' Satisfaction with Service Quality of a Public Hospital: An Evaluation Study (SERVQUAL Model). J Health Sci Surveillance Sys. 2017;5(2):66-71.
24. Andaleeb SS. Public and private hospitals in Bangladesh: service quality and predictors of hospital choice. Health Policy Plan. 2000;15(1):95-102. **doi:** 10.1093/heapol/15.1.95 **pmid:** 10731240
25. Mohebbifar R, Barikani A, Hasani H. Measuring hospital service quality gap from the viewpoint of inpatients in

educational hospitals of qazvin university of medical sciences (2012-13). [Persian]. J Hospital. 2015;14(52):97-104.
26. Bahmei J, Rahimi H, Rahgoshay I, Kavosi Z. Quality Evaluation Of Emergency De-partment Services Of Nemazee Hospital From The Patients' Viewpoint. [Persian]. J Depict Health. 2016;7(1):18-26.
27. Abolghasem Gorji H, Tabatabaei SM, Akbari A, Sarkhosh S, Khorasani S. Using the Service Quality Gap's Model (SERVQUAL) in Imam Khomeini Teaching Hospital: 2012. [Persian]. JHA. 2013;16(51):7-18.
28. Hekmatpou D, Sorani M, Farazi AA, Fallahi Z, Lashgarara B. A survey on the quality of medical services in teaching hospitals of Arak University of Medical Sciences with SERVQUL model in Arak, 2010. [Persian]. J Arak Uni Med Sci. 2012;15(7):1-9.
29. Oliaee Z, Jabbari A, Ehsanpour S. An investigation on the quality of midwifery services from the viewpoint of the clients in Isfahan through SERVQUAL model. Iran J Nurs Midwifery Res. 2016;21(3):291-6. **doi:** 10.4103/1735-9066.180377 **pmid:** 27186207
30. Ameryoun A, Dopeykar N, Nasiri T, Meskarpour Amiri M, Et Al. Assessment The Gap Between Patients'Expectations And The Services Provided To Them In Selected Hos-pitals Of Tehran In 2012. [Persian]. J Police Med. 2013;2(1):1-10.
31. Mohammadi A, Eftekhar Ardebffi H, Akbari Haghighi F, Mahmoudi M, Poorreza A. Evaluation of Services Quality Based on the Patientts' Expectations and Perceptions in zanjan Hospitals. [Persian]. J School Pub Health Institute Pub Health Res. 2004;2(2):71-84.
32. Shafiq M, Naeem MA, Munawar Z, Fatima I. Service Quality Assessment of Hospitals in Asian Context: An Empirical Evidence From Pakistan. Inquiry. 2017;54:46958017714664. **doi:** 10.1177/0046958017714664 **pmid:** 28660771
33. Karami Matin B, Rezaei S, Moradinazar M, Mahboubi M, Ataee M. Measurement Of Quality Of Primary Health Services By Servqual Model: Evidence From Urban Health Centers In West Of Iran. Res J Med Sci. 2016;10(5):475-80.
34. Adhami Moghadam F, Sahebalzamani M, Rouhafza M. Gap Analysis of Service Quality from Bedridden Patient's Point of view at Hospitals of Tehran Medical Sciences Islamic Azad University. [Persian]. Health Manage J. 2017;8(2):21-32.
35. Ghobadi H, Mehrnoush N, Hamidkholgh G, Amani F. Measuring the quality of services pro-vided for outpatients in Kowsar Clinic in Ardebil City based on the SERVQUAL Model. [Persian]. J Ardabil Univ Med Sci. 2014;14(4):387-79.
36. Alijanzadeh M, Asefzadeh S, Khoshtarkib H, Ghamari F, Alijanzadeh M. The Perceptions And Expectations Survey Of The People About Quality Health Services In Qazvin Province. [Persian]. J Health Inform Manage. 2015;12(5):636-46.
37. Safi MH, Fereydounfar AA, Arshi SH. Quality Of Primary Health Services In The Clinics Of Shomal Health Center Of Tehran. [Persian]. J Commun Health. 2014;1(1):54-61.
38. Gholami A, Nori A, Khojastehpour M, Askari M, Sajjadi H. Quality Gap In Primary Health Care In Neyshabour Health Care Centers. [Persian]. J Daneshvar Med. 2011;18(92):5-14.
39. Mohammadi A, Shoghli AR. Survey on Quality of Primary Health Care in Zanjan District Health Centers. [Persian]. J Zanjan Univ Med Sci. 2008;65:89-100.
40. Tabatabaei SM, Behmanesh Pour F, Share Mollashahi S, Sargazi Moakhar Z, Zaboli M. The Quality Gap In The Services Provided By Rural Maternity Units In Southeast Of Iran. J Health Scope. 2015;4(4):12-9. **doi:** 10.17795/jhealthscope-25344
41. Jena-Abadi H. Distance between patients' perceptions and expectations of service quality using SERVQUAL model health centers in Zahedan. [Persian]. Payesh Health Monitor. 2011;10(4):449-55.
42. Zarei E, Ghazi Tabatabai SM, Rahimi Forushani A, Rashidiyan A, Arab M. Hospital Services Quality From Patients' Point Of View: A Cross-Sectional Study In Tehran Private Hospitals. [Persian]. Payavard. 2012;5(4):66-76.
43. Sharifirad GR, Shamsi M, Pirzadeh A, Daneshvar Farzanegan P. Quality gap in primary health care services in Esfahan women's perspective. [Persian]. J Health Syst Res. 2010;6(1):95-105.
44. Roohi G, Nasiri H, Hesam M, Mirkarimi F, Asaiesh H. Quality of primary health services in Gorgan health care services centers. J Res Dev Nurs Midwife. 2009;6(2):9-17.

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Predicting Moral Distress Through the Dimensions of Psychological Empowerment in Nurses

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Abstract

Introduction: Moral distress is an important challenge among critical care nurses. psychological empowerment can pave the ground for proper moral performance and prevention of moral distress among nurses. This study aimed to predicting moral distress through the dimensions of psychological empowerment in nurses.

Methods: This descriptive cross-sectional and analytical study carried out in 2018. For this purpose, 190 nurses were selected by convenience sampling from the critical care units in Southern Khorasan Province, Iran. Data were collected using Corli's Moral Distress Questionnaire and Spreitzer's Psychological Empowerment Questionnaire. Data were analyzed in IBM SPSS ver. 16 using descriptive and inferential statistics.

Results: Finding showed that moral distress intensity was (4.8±0.51) and negatively correlated whit psychological empowerment (P=0.03, r=-0.5). Moral distress frequency was (5.2± 0.56). The psychological empowerment was (4.1± 0.44). The results of the multiple regression indicated that 2 % variation of moral distress intensity explained by psychological empowerment (ADJ.R2:0.238). Among these dimensions, three dimensions meaning, competence and self-determination significantly predict the intensity of moral distress (R2=0.25, P< 0.05). Moral distress correlated with age, working experience, and type of the ward (P<0.05).

Conclusions: Nurses with a greater psychological empowerment showed less intensified symptoms of distress where they were able to perform morally proper action.

INTRODUCTION

Moral distress is defined as a physical and psychological unrest occurring at times when people are unable to perform correct moral action although they are aware of correct performance [1]. In other words, mental and practical limitations act as impeding factors, limiting the fulfillment of moral goals for individuals [2].

When an individual encounters moral distress circumstances, s/he will experience different physical and psychological symptoms [3]. The individual will first feel unhappy and anxious because of failure to perform correct action [4] which may later lead to nightmares, insomnia, and nervous pains [5, 6]. In case moral distress is not relieved of and the individual does not get adapted to it, his/her working quality would be extensively affected [7], where nurses would be unable to provide acceptable care to patients [8]. This can in turn lead to increased hospitalization time and lack of recovery [9].

Nurses who are working in Critical Care Units experience high level of moral distress [7, 10]. Critical Care Units (Intensive Care Unit, Cardiac Care Unit, Neonatal Intensive care Unit, Hemodialysis unit, and Oncology care unit) holds patients in critical conditions [11]. The critical conditions of the patients in these

wards present moral challenges for keeping and caring of them [12]. A prevalent moral problem is moral distress in these wards.

Lazzarin et al. (2012) and Elprin et al. (2005) studied moral distress in intensive care units and reported high moral distress among nurses. They stated that the conditions caused by moral distress made nurses disinclined to perform their care duties [10, 13]. In a study conducted to assess moral distress in special care units in 2012, moral distress was introduced as a multi-faceted and complex phenomenon with unclear consequences [14]. Joolaee et al. (2012) found moral distress among nurses at medium level and stated that distress can have important effects on nurses [15].

Various issues can bring about moral distress among critical care nurses. Futile care, end-of-life care [16], interaction with the physician or other care team members [11], unnecessary care [17], lack of moral courage [18], and etc. can all contribute to moral distress in nurses.

Among factors contributing to moral distress is psychological disability to perform moral duties [19]. Psychological empowerment is a cognitive state characterized by an individual's perception of the extent to which s/he can control, efficiently manage, and internalize workplace objectives [20-23]. Psychological empowerment can lead to an individual's increased liability, sense of self-efficacy, a change in attitude and judgment concerning personal and organizational issues, and in all has different consequences for nurses [22].

Empowerment on the part of nurses can strengthen their mental power to cope with stressful situations, and help control several stressful factors in the workplace [23]. Empowerment can be an effective factor in quality performance and efficiency of nurses. Increased empowerment can positively affect nurses' recovery and organizational outcomes [21]. Among its significant outcomes are increased motivation and job satisfaction as well as innovative behaviors among nurses which lead to efficiency of their activities [10, 24].

Browning et al (2013) investigated the relationship between moral distress and psychological empowerment among nurses working in the Intensive Care Unit. They reported the empowerment level of nurses as high [19]. Knol and van (2009) also considered psychological and structural empowerment among nurses as medium and introduced empowerment as a predicting factor of innovative behavior among nurses [25].

Evidence reveals that the phenomenon of moral distress is important in nurses and the Psychological inability of nurses in doing moral actions can provide the context for moral distress [20]. Psychologically unable nurses cannot have proper performance, and may undergo moral distress [19].

So, considering the significant effects of distress on nurses and the care provided by them, it may be possible to empower them psychologically with this aim to infuse them with the attitude and power required to deal with distress-producing factors. This is hoped to contribute preventing and reducing distress and its effects in nurses and in turn in patients and health-care systems. Regarding the importance of these in nurses' performance and the quality of care, and the fact that no study has directly considered the relationship between moral distress and psychological empowerment among nurses, the study aimed to examine these phenomena among intensive care units nurses.

The conceptual framework in this study is based on the concepts of moral distress and psychological empowerment. As an ethical challenge, moral distress occurs when an individual has the knowledge and awareness of the right moral performance but is unable to do the right action for some reason including actual or mental limitations [26]. Of these limitations are mental and psychological barriers [26]. Psychological limitations can play an important part in the occurrence of moral distress among people [27]. An individual who is psychologically unable does not have the right ability to do the right action and would undergo moral distress [28].

Since disempowerment of individuals, especially psychologically, is the key concept in the occurrence of moral distress, psychological empowerment may overcome their mental limitations [21]. Psychologically empowered persons acquire the vision to perform the right moral action [19]. Thus, an empowered person with such a vision and belief can manage to encounter moral challenges properly with feeling moral distress [23].

METHODS

The aim of this study was predicting moral distress through the dimensions of psychological empowerment in nurses.

Study Design

This cross-sectional, descriptive and analytical study performed in 2018 in educational and governmental hospitals in Southern Khorasan, Iran.

Study Population and Sampling

The sample size was calculated according to the formula of communication studies $n=\left(\frac{Z_{1-\frac{\alpha}{2}}+Z_{1-\beta}}{\frac{1}{2}\ln\frac{1+r}{1-r}}\right)^2+3$ and based on the following indexes($Z_{1-\beta}$=0/84; $Z_{1-\alpha/2}$=1/96; α=0.05; $\frac{1}{2}\ln\frac{1+r}{1-r}$=0.199; β=0.20; r=0.196). Using convenience sampling, 220 nurses working in critical care units were invited and 190 nurses accept to

participate in the study. There was 5 educational and governmental hospital in Southern Khorasan, Iran. Intensive care unit (ICU), Cardiac care unit (CCU), neonatal intensive care unit (NICU), Hemodialysis, and Oncology wards were considered for selecting samples. Including criteria: having at least one year's working experience in clinical wards, holding a minimum degree of bachelor's in nursing, working full-time in study environment, and willing to participate in this study. Excluding criteria: those of nurses don't have including criteria.

Questionnaires

Demographic and Professional Questionnaire

Data on gender, age, marital status, working experiences as critical care nurse, status of employment, working unit were gathered by specially designed form.

Moral Distress Questionnaire

Moral Distress questionnaire (MDS) consists of 38 items designed by Corley in 1995 and measures moral distress intensity, the level at which the nurse experiences painful feelings related to a given situation (none to great extent), and moral distress frequency, i.e., how often the nurse experiences the painful feeling associated with the distressful situation (never to very frequently) on a Likert type scale from none (1) to great extent (7). The MDS uses 3 subscales to measure moral distress: 1) individual's responsibility (refers to the nurse participating in care not agreed with or ignoring actions one should take), 2) not in patient's best interest (refers to participation in care that the nurse considers inappropriate because of futility for the patient), and 3) deception (refers to the nurse not addressing issues honestly, related to impending death of a patient). The original English tool, which was returned by Back ward-Forward into the Persian version, and was valid and reliable. The validity was calculated using Content Validity Index method (CVI) and reported to be 0.89. The reliability was calculated using internal consistency method (Cronbach's alpha) and reported to be 0.93 [29].

Psychological Empowerment Questionnaire

Psychological Empowerment questionnaire (PEI) consists of 16 items designed by Spreitzer in 1995 [20]. The PEI used 4 domains or subscales, previously defined, to measure psychological empowerment: 1) meaning, 2) competence, 3) self-determination, and 4) impact. Each domain addressed 4 items measuring empowerment. Items were scored on a Likert type scale from very strongly disagree (1) to very strongly agree (7). The original English tool, which was returned by Back ward- Forward into the Persian version, and was valid and reliable. The validity was calculated using Content Validity Index method (CVI) and reported to be 0.87. The reliability was calculated using internal consistency method (Cronbach's alpha) and reported to be 0.79.

Data Collection and Analysis

After obtaining written legal permissions and ethical codes from affiliated hospitals, the self-report questionnaires were given to the nurses and later collected by the researcher after completion. This process took 36 days (From October to November 2018) There were a total number of 220 nurses of whom only 190 agreed to participate; the other 30 nurses refused to participate. Data obtained from the questionnaires were analyzed in IBM SPSS ver.16 using descriptive statistics (Mean, Standard deviation, Frequency, Frequency percentage) and inferential statistics (Pearson's correlation, independent T test, one-way ANOVA, Multiple regression). The statistical significant was ($p < 0.05$).

RESULTS

Demographic and Professional Characteristics

From 220 nurses, 190 completed questionnaires were analyzed. Demographic characteristics of the study units included Age, Gender, years of critical care experience, Status of employment and Working unit. The age of participating nurses ranged from 23 to 47 years, and their mean age was 33 (SD=5.66) years. The highest number of years of critical care experience was 24 years, while the lowest was 1 year, with the mean of 6.54 years (SD=5.44). Table 4 shows the demographic and professional characteristics of the participants.

Moral distress and Psychological Empowerment

The results reveal moral distress intensity was 4.8 (SD=0.51) and mean moral distress frequency was 5.2 (SD=0.56). The mean subscale moral distress intensity and frequency are provided in Table 2 (where total intensity and frequency ranged from 1 to 7). The mean psychological empowerment was 4.1 (SD=0.44). The mean subscale psychological empowerment is shown in Table 1 (Total intensity and frequency ranged from 1 to 7).

There was a negative significant correlation between moral distress intensity and psychological empowerment (P=0.03, r=-0.5). No significant correlation was found between moral distress frequency and psychological empowerment (P>0.05). Correlation between subscale moral distress and subscale psychological empowerment is shown in Table 2.

The results of the regression analysis indicated that the four dimensions of psychological empowerment were significant predictors of moral distress intensity. The results of the regression indicated that 2 % variation of moral distress intensity explained by psychological empowerment (ADJ.R^2:0.238). Among these dimensions, three dimensions meaning, competence and self-determination significantly predict the intensity

of moral distress. By increasing one standard deviation unit in the score of meaning, the intensity of moral distress will increase by 0.19 standard deviations. Increase one standard deviation unit in score competence, 0.12 standard score will increase the intensity of moral distress. Also, an increase of one standard deviation unit in the self-determination score will add 0.24 units to the standard deviation score of ethical distress intensity (Table 3).

Table 1. Mean and standard deviation of dimensions of moral distress and psychological empowerment in nurses (n=190)

Variable	Mean(SD)
Psychological empowerment	
Meaning	3.12(±0.4)
Competence	5.1(±0.74)
Self-determination	4.2(±0.56)
Impact	4.1(±0.6)
Total	4.1(±0.44)
Moral distress intensity	
Not in patient's best interest	4.8(±0.7)
Individual responsibility	5.5(±0.43)
Deception	4.2(±0.5)
Total moral distress intensity	4.8(±0.51)
Moral distress frequency	
Not in patient's best interest	5.8(±0.6)
Individual responsibility	5.2(±0.44)
Deception	4.66(±0.51)
Total moral distress frequency	5.2(±0.56)

Table 2. Relationship between dimensions of moral distress and psychological empowerment in nurses(n=190)

	Psychological Empowerment				
	Meaning	**Competence**	**Impact**	**Self-Determination**	**Total Empowerment**
Moral distress intensity					
Not in patient's best interest	r:-0.33* P:0.03	r:-0.43 P: 0.03	r:-0.04 P:0.04	r:-0.51 P:0.01	r:-0.35 P:0.01
Individual responsibility	r:-0.5 P:0.04	r:-0.3 P:0.02	r:-0.13 P:0.03	r:-0.4 P:0.05	r:-0.4 P:0.04
Deception	r:-0.53 P:0.01	r:-0.33 P:0.04	r:-0.11 P:0.04	r:-0.45 P:0.03	r:-0.5 P:0.02
Total moral distress intensity	r:-0.4 P:0.03	r:-0.35 P:0.01	r:-0.16 P:0.01	r:-0.25 P:0.01	r:-0.5 P:0.03
Moral distress frequency					
Not in patient's best interest	r:-0.12 P:0.13	r:0.13 P:0.112	r:0.34 P:0.06	r:0.12 P:0.62	r:0.1 P:0.3
Individual responsibility	r:-0.24 P:0.13	r:-0.43 P:0.14	r:0.36 P:0.53	r:0.29 P:0.37	r:0.28 P:0.5
Deception	r:0.48 P:0.23	r:0.13 P:0.27	r:0.5 P:0.16	r:0.03 P:0.33	r: 0.42 P:0.13
Total moral distress frequency	r:0.3 P:0.13	r:-0.6 P:0.52	r:0.03 P:0.23	r:0.35 P:0.34	r:0.43 P:0.1

*: Pearson correlation coefficient

Table 3. Predicting moral distress through dimensions of psychological empowerment

Predictor Variables	B	SE	Beta	T	P
Constant	8.093	2.019	-	2.73	0.05
Meaning	2.654	0.334	0.19	1.07	0.027
Competence	0.043	0.356	0.12	3.114	0.031
Self-determination	1.567	0.24	0.24	1.178	0.033
Impact	0.97	0.507	0.017	0.54	0.067
	R:-0.5	**R^2:**0.25	**ADJ.R^2:**0.238		

Table 4. Mean and standard deviation of moral distress and psychological empowerment according to demographic variables (n=190).

Variables	Frequency (percent)	Moral Distress (M±SD)	Psychological empowerment (M±SD)
Gender			
Female	150(78.8)	5/7±1/1	6/1± 0/5
Male	40(21.2)	4/98± 0/97	4/78± 0/66
Pv		P=0.08 t=1/324*	P=0.12 t=2/004*
Status of employment			
Formal	121(64.1)	3/88±0/56	5/13± 0/7
Informal	69(35.9)	5/11±0/93	4/88± 0/57
Pv		P=0.1 t=1/024*	P=0.09 t=1/134*
Working unit			
ICU	101(53.5)	6/2±0/88	4/11± 0/68
CCU	38(20)	4±0/76	5/9± 0/65
NICU	12(5.9)	3/8±0/7	5/2± 0/47
Oncology	13(6.5)	5/2±0/91	3/8± 1/11
Hemodialysis	26(14.1)	3/4± 0/95	4/7± 0/8
Pv		P=0.04 F=3/931**	P=0.1 F=2/211**

*: T test
**: ANOVA

Moral distress, Psychological empowerment and Demographic characteristics

There was a negative significant correlation between the total score of moral distress and age (P=0.04, r=-0.3) and working experiences as critical care nurse (P=0.03, r=-0.3). There was a significant correlation between the total score of moral distress and type of ward (P=0.04). The highest score of moral distress was observed in the ICU ward and the lowest score was observed in the dialysis ward. No significant correlation was observed between the total score of moral distress and sex and work status (P>0.05), neither was found any significant correlation between psychological empowerment and demographic characteristics (P>0.05). (Table 4)

DISCUSSION

The aim of current study was to investigate the relationships between moral distresses, psychological empowerment of critical care nurses. Results of this study indicate that the nurses with a higher psychological empowerment had a lesser intensity of moral distress. As well as psychological empowerment is a predictor for the intensity of moral distress. The results also confirmed the conceptual framework this study that empowering nurses can to remove one of the obstacles created distress among nurses and the nurses who felt psychological empowerment has characteristics such as competence, self-determination and meaning that it can act as a deterrent to moral distress.

According to Browning (2013), psychological empowerment is a preventive factor from forthcoming moral distress where the distress reduces upon fewer encounter of nurses by this phenomenon [19]. Wagner et al. (2010) studied psychological and structural empowerment mentioning that empowerment of nurses in different domains can play a significant role in gaining job satisfaction and preventing from their stress and moral challenges (24). Knol and Van (2009) also considers structural and psychological empowerment of nurses as important, discussing that when nurses feel empowered, they develop creative behaviors and can achieve their objectives more easily [25].

Also our result indicate that the high psychological empowerment had not coloration whit frequency of moral distress. Browning (2013) in her study the premise that is a significant relationship between psychological empowerment and moral distress and empowering nurses less often with encountered distress [19]. In this context we can say that although the increase in nurses' psychological empowerment, decreases in the intensity of moral distress but cannot prevent the occurrence of moral distress and its effect on patients. This capability can only reduce the severity of nurses compared to ethical challenges. In other words, psychological empowerment as a psychological protection factor between moral condition and nurses.

Moral distress was at an average level in terms of severity and frequency. In most studies, the level of moral distress was medium to high [3, 11, 12]. In previous studies researchers reported that the highest moral distress resulted from items not in the patient's best interest (futile care). These studies showed moral distress an important phenomenon which may have different effects on nurses and patients. Similarly, studies conducted in Iran report it to occur at an average frequency [12, 15, 30].

To investigate moral distress, 38 questions were posed, of which question number 12 [I find myself caring for the emotional needs of patients] was the most relevant and attracted the highest mean intensity and frequency of moral distress in nurses. It was related to concern for patient's feelings and emotions. In the opinion of the study units, emotional involvement with patient's problems and his relatives is an important source of stress. The lowest mean score for distress in terms of intensity and frequency related to question 4 [I have experienced conflicts with supervisors and/or administrators at work]. Previous studies also considered patient's emotional problems and his relatives and conflicts with supervisors and management as important factors in moral distress [28]. The effectiveness of these factors in creating distress depends on the type of workplace and characteristics of individuals.

Nurses' psychological empowerment was at an average level in the present study which is similar to findings of Knol's study [25]. Among the different dimensions of psychological empowerment, competence had the highest average. Browning (2013) reports nurses' psychological empowerment as high in his study, and competence is higher than the other dimensions of psychological empowerment [19]. Mohammadi et al. (2014) in their study reported the average amount of psychological empowerment of nurses in Iran. Also in this study competence is higher than the other dimensions of psychological empowerment [31].

Examining the relationship between moral distress and the parameters of age and working experience as critical care nurse revealed a significant and inverse relationship. These results indicated that as age and the number of service years increase, moral distress decreases. Rice (2008) did not find a significant correlation between moral distress and age, but considered that the intensity of moral distress significantly correlated with work experience [32] Sirilla et al (2017) stated that increasing service years caused increased work experience, and adjusted the person with distressing factors, and hence, the person was less affected by distressing conditions [11]. In another

study, the relationship between moral distress, age and number of service years was found significant. It was stated that moral distress reduced as age and work experience increased [3-5, 11, 30].

In assessing the relationship between moral distress and type of ward, the highest level of distress was in the ICU [3, 11, 12]. Studies generally consider critical care units as having the highest level of distress for nurses [3, 10, 16, 19]. The height of distress in this ward is due particularly to acute conditions in these treatment settings that in turn are associated with higher challenges in moral terms.

CONCLUSION

The results of this study showed that three dimensions meaning, competence and self-determination significantly predict the intensity of moral distress. The results also confirmed the conceptual framework this study that empowering nurses can to remove one of the obstacles created distress among nurses. Psychological empowerment can increase feel of competency, autonomy and self-worthy among nurses and protect of them against impact severity of moral distress. So, with attention to this relation is recommended by clinical manager create strategies such as self-worthy and autonomy and periodic assessment of moral distress for nurse's psychological empowerment and protect of them.

Our finding has application in nursing education, nursing research, nursing practice, and nursing management. Finding of this study provide evidence for nurse educators and basis for future research. Researcher can use different research approach and design for future study according to this finding. Nursing managers can use finding of this study for planning and implantation interventions to empower nurses psychologically.

LIMITATION

This study has some limitations that should be noted. This study was conducted in a specific region and on nurses of educational and governmental hospitals in Iran. In order to reveal more aspects of this phenomenon, other studies should be conducted in other regions as well as in non-governmental hospital. Sample size and sampling method were the other limitation of the current study which affected the validity of the mentioned results. Using self-reported questionnaire for data gathering is the other limitation.

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CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

AUTHOR'S CONTRIBUTIONS

The first author: study design, data collection and drafting the manuscript. The second author: study design and advisor. Corresponding author: did supervision, Study design, drafting, data analysis, revising the manuscript, and responding to the reviewers.

ETHICAL CONSIDERATIONS

The study was approved by the Medical Ethics and Law Research Center of Shahid Beheshti University of Medical Sciences (Ethical Code: 96:145) and legal permissions were obtained prior to collection of the data. All participants well informed about aim of study, completing questionnaire. Participants were completely free to participate in or refuse from participation in the study. Oral and written informed consent were obtained and they were reassured that their personal information would be confidential and results would be reported anonymously. The participants were allowed to leave the study at any time. No time limit was imposed to complete the questionnaires. It took approximately 10 minutes to complete the questionnaire.

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REFERENCES

1. Grace PJ, Robinson EM, Jurchak M, Zollfrank AA, Lee SM. Clinical ethics residency for nurses: an education model to decrease moral distress and strengthen nurse retention in acute care. J Nurs Adm. 2014;44(12):640-6. **doi:** 10.1097/NNA.0000000000000141 **pmid:** 25393140
2. Johnstone MJ, Hutchinson A. 'Moral distress'--time to abandon a flawed nursing construct? Nurs Ethics. 2015;22(1):5-14. **doi:** 10.1177/0969733013505312 **pmid:** 24311238
3. Brandon D, Ryan D, Sloane R, Docherty SL. Impact of a pediatric quality of life program on providers' moral distress. MCN Am J Matern Child Nurs. 2014;39(3):189-97. **doi:** 10.1097/NMC.0000000000000025 **pmid:** 24759312
4. Woods M. Beyond moral distress: preserving the ethical integrity of nurses. Nurs Ethics. 2014;21(2):127-8. **doi:** 10.1177/0969733013512741 **pmid:** 24622728
5. Bernhofer EI, Sorrell JM. Nurses Managing Patients' Pain May Experience Moral Distress. Clin Nurs Res. 2015;24(4):401-14. **doi:** 10.1177/1054773814533124 **pmid:** 24836821
6. Sunderland N, Harris P, Johnstone K, Del Fabbro L, Kendall E. Exploring health promotion practitioners' experiences of moral distress in Canada and Australia. Glob Health Promot. 2015;22(1):32-45. **doi:** 10.1177/1757975914532505 **pmid:** 24853825
7. Elpern EH, Covert B, Kleinpell R. Moral distress of staff nurses in a medical intensive care unit. Am J Crit Care. 2005;14(6):523-30. **pmid:** 16249589
8. Tajabadi A, Ahmadi F, Sadooghi Asl A, Vaismoradi M. Unsafe nursing documentation: A qualitative content analysis. Nurs Ethics. 2020;27(5):1213-24. **doi:** 10.1177/0969733019871682 **pmid:** 31476968
9. Kennedy MS. Mitigating the Effects of Moral Distress. AJN America J Nurs. 2017;117(2):7. **doi:** 10.1097/01.NAJ.0000521948.22577.6d
10. Lazzarin M, Biondi A, Di Mauro S. Moral distress in nurses in oncology and haematology units. Nurs Ethics. 2012;19(2):183-95. **doi:** 10.1177/0969733011416840 **pmid:** 22457383

11. Sirilla J, Thompson K, Yamokoski T, Risser MD, Chipps E. Moral Distress in Nurses Providing Direct Patient Care at an Academic Medical Center. Worldviews Evid Based Nurs. 2017;14(2):128-35. **doi:** 10.1111/wvn.12213 **pmid:** 28253430
12. Borhani F, Mohammadi S, Roshanzadeh M. Moral distress and perception of futile care in intensive care nurses. J Med Ethic Hist Med. 2015;8(2).
13. Sweeney CD. A DAISY Nurse: Moral Distress and End-of-Life Decisions in the Pediatric Setting. J Nurs Adm. 2017;47(2):82-4. **doi:** 10.1097/NNA.0000000000000443 **pmid:** 28106679
14. Coombs MA. Concerns about care and communication are key causes of moral distress in intensive care staff. Aust Crit Care. 2017;30(2):107-8. **doi:** 10.1016/j.aucc.2017.01.007 **pmid:** 28292414
15. Roshanzadeh M, Vanaki Z, Sadooghiasl A. Sensitivity in ethical decision-making: The experiences of nurse managers. Nurs Ethics. 2020;27(5):1174-86. **doi:** 10.1177/0969733019864146 **pmid:** 31462175
16. Sannino P, Gianni ML, Re LG, Lusignani M. Moral distress in the neonatal intensive care unit: an Italian study. J Perinatol. 2015;35(3):214-7. **doi:** 10.1038/jp.2014.182 **pmid:** 25297004
17. Atabay G, Cangarli BG, Penbek S. Impact of ethical climate on moral distress revisited: multidimensional view. Nurs Ethics. 2015;22(1):103-16. **doi:** 10.1177/0969733014542674 **pmid:** 25106456
18. Sadooghiasl A, Parvizy S, Ebadi A. Concept analysis of moral courage in nursing: A hybrid model. Nurs Ethics. 2018;25(1):6-19. **doi:** 10.1177/0969733016638146 **pmid:** 27098415
19. Browning AM. CNE article: moral distress and psychological empowerment in critical care nurses caring for adults at end of life. Am J Crit Care. 2013;22(2):143-51. **doi:** 10.4037/ajcc2013437 **pmid:** 23455864
20. Spreitzer GM. Psychological empowerment in the workplace: Dimensions, measurement, and validation. Academ Manage J. 1995;38(5):1442-65. **doi:** 10.2307/256865
21. Faulkner J, Laschinger H. The effects of structural and psychological empowerment on perceived respect in acute care nurses. J Nurs Manag. 2008;16(2):214-21. **doi:** 10.1111/j.1365-2834.2007.00781.x **pmid:** 18269553
22. Laschinger HK, Purdy N, Almost J. The impact of leader-member exchange quality, empowerment, and core self-evaluation on nurse manager's job satisfaction. J Nurs Adm. 2007;37(5):221-9. **doi:** 10.1097/01.NNA.0000269746.63007.08 **pmid:** 17479040
23. Laschinger HK, Finegan J, Wilk P. Context matters: the impact of unit leadership and empowerment on nurses' organizational commitment. J Nurs Adm. 2009;39(5):228-35. **doi:** 10.1097/NNA.0b013e3181a23d2b **pmid:** 19423988
24. Wagner JI, Cummings G, Smith DL, Olson J, Anderson L, Warren S. The relationship between structural empowerment and psychological empowerment for nurses: a systematic review. J Nurs Manag. 2010;18(4):448-62. **doi:** 10.1111/j.1365-2834.2010.01088.x **pmid:** 20609049
25. Knol J, van Linge R. Innovative behaviour: the effect of structural and psychological empowerment on nurses. J Adv Nurs. 2009;65(2):359-70. **doi:** 10.1111/j.1365-2648.2008.04876.x **pmid:** 19191936
26. McCarthy J, Gastmans C. Moral distress: a review of the argument-based nursing ethics literature. Nurs Ethics. 2015;22(1):131-52. **doi:** 10.1177/0969733014557139 **pmid:** 25505098
27. Thomas TA, McCullough LB. A philosophical taxonomy of ethically significant moral distress. J Med Philos. 2015;40(1):102-20. **doi:** 10.1093/jmp/jhu048 **pmid:** 25503608
28. Bruce CR, Miller SM, Zimmerman JL. A qualitative study exploring moral distress in the ICU team: the importance of unit functionality and intrateam dynamics. Crit Care Med. 2015;43(4):823-31. **doi:** 10.1097/CCM.0000000000000822 **pmid:** 25525754
29. Corley MC, Elswick RK, Gorman M, Clor T. Development and evaluation of a moral distress scale. J Adv Nurs. 2001;33(2):250-6. **doi:** 10.1046/j.1365-2648.2001.01658.x **pmid:** 11168709
30. Borhani F, Abbaszadeh A, Nakhaee N, Roshanzadeh M. The relationship between moral distress, professional stress, and intent to stay in the nursing profession. J Med Ethic History Med. 2014;7.
31. Mohammadi S, Roshanzadeh M. The relationship between psychological empowerment and psychological strain among clinical nurses in educational hospitals. J Nurs Manage. 2014;3(3).
32. Rice EM, Rady MY, Hamrick A, Verheijde JL, Pendergast DK. Determinants of moral distress in medical and surgical nurses at an adult acute tertiary care hospital. J Nurs Manag. 2008;16(3):360-73. **doi:** 10.1111/j.1365-2834.2007.00798.x **pmid:** 18324996

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Effectiveness of Acceptance and Commitment Therapy on Marital Boredom and Self-Compassion in Emotionally Divorced Women: A Quasi-Experimental Study

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Abstract

Introduction: Marital boredom and emotional divorce cause a gradual reduction in the emotional attachment of couples which is associated with feelings of alienation, apathy, and indifference between couples and replacement of positive emotions with negative ones. The present study aimed to investigate the effectiveness of acceptance and commitment therapy (ACT) on marital boredom and self-compassion in emotionally divorced women.

Methods: This quasi-experimental study was conducted using a pretest-posttest control group design. Forty women were selected using convenience sampling and were randomly divided into intervention (n=20) and control (n=20) groups. The participants filled the Emotional Divorce Questionnaire, the Marital Boredom Scale, and the Self-Compassion Scale in the pre-test and post-test. The intervention group received eight 90-minute sessions of ACT. Data were analyzed using a one-way analysis of covariance.

Results: Results suggested that ACT improved marital boredom (F=372.714 and P<0.001) and self-compassion (F=353.178 and P<0.001) in the post-test. The mean ±SD post-test scores of marital boredom and self-compassion in the experimental group were 43.30±4.45 and 42.95±4.75, respectively, which improved compared to the post-test of the control group.

Conclusions: Based on the results, holding ACT workshops may exert beneficial effects on reducing marital conflicts.

INTRODUCTION

Marriage meets many personal and social needs of men and women in their social and physical relations and other social customs. In other words, a healthy and constructive family with warm relationships and intimate interpersonal relations accelerates family members' development and progress. On the contrary, marital conflicts are mainly rooted in couples' mindset about each other and their relationship [1]. In the family system, members are connected to each other through strong, enduring, and emotional reciprocity and attachments. The intensity of their interests and attachments may diminish over time, but survive throughout life. Marriage is a social institution where the function and effect of intimacy and developed social relations are manifested. It aims to meet couples' needs; in case of failing to do so through a positive solution, they may experience stress, failure, frustration, anger, and eventually mental problems [2]. This is how emotional divorce seeps into marriage. Statistics in Iran suggest that the national divorce rate has risen sharply and one in three marriages end in divorce. There is a stage before legal divorce called emotional divorce when

couples live together with little or no verbal and emotional connection between them [3, 4].

Divorce may root in marital boredom. Marital boredom and emotional divorce cause a gradual reduction in emotional attachment of couples which is associated with feelings of alienation, apathy and indifference between couples and replacement of positive emotions with negative ones [5]. In a disappointed marriage, one or both couples experience detachment from their spouse along with reduced interest and mutual relationship and they have significant concerns about the growing deterioration of their relationship and the progression to separation and divorce. Marital boredom is a gradual decrease in emotional attachment which includes reduced attention to the spouse, emotional alienation, and increased feeling of apathy and indifference towards the spouse [6].

Self-compassion reduces emotional divorce in women. Studies have reported self-compassion to be a strong predictor of mental health. It is negatively correlated with self-criticism, depression, anxiety, rumination, and thought suppression [7]. In addition, it is positively correlated with life satisfaction and social skills [8]. Self-compassion is a human trait consisting of kindness, fair judgment and connected emotions. It helps people find hope and meaning in life in the face of problems. It also refers to simply directing kindness toward oneself, openness to experience, and empathy for others' suffering [9, 10].

The growing trend of marital conflicts and emotional divorce and their negative impact on the mental health of couples, their children and the society encouraged researchers to seek strategies to strengthen marital relations and the foundation of the family [11]. A major strategy in this regard is acceptance and commitment [12]. ACT helps individuals to create a rich and meaningful life and to accept their suffering in life [13]. It is a behavioral therapy aiming to practice empirical avoidance and trying to control disturbing experiences. While being open to older clinical traditions and emphasizing patients' behavioral performance rather than the causation and psychological resilience, ACT has shown why it is detrimental to fuse empirical and cognitive avoidance [14, 15]. Glassman et al. [16] believed that ACT trains clients to accept their thoughts and emotions, choose new paths in life, and take committed action. Six core processes, defined as the major ingredients of ACT, are expansion and acceptance, cognitive defusion, the observing self, contact and connection with the present moment, values clarification, and committed action [17]. Various studies have investigated the effectiveness of ACT in marital boredom and self-compassion in women [18-21].

Many couples never refer to a therapist or counseling centers in courts while suffering from various degrees of marital dissatisfaction and experiencing some sort of emotional divorce [4]. The impacts of marital dissatisfaction are more lasting than divorce, and extend to people who are close to couples as well as their acquaintances, especially children. Accordingly, this study aimed to effectiveness of acceptance and commitment therapy on marital boredom and self-compassion in emotionally divorced women.

METHODS

This quasi-experimental study was conducted using a pretest-posttest control group design. Statistical population consisted of all women experiencing emotional divorce visiting counseling centers of Ahvaz in 2021. A sample of 40 women (20 per group) were selected using convenience sampling from among those who met the inclusion criteria and then, they were randomly divided into intervention and control groups. In the present study 20 students included in each group by use of G-power software with an effect size of 1.81, a test power of 0.90, and α=0.05 [22]. Inclusion criteria were giving informed consent to participate in the study, minimum junior high school education, age between 20 and 45, scoring above the mean score in emotional divorce and marital boredom scales and having a score lower than the mean score in self-compassion scale, not being divorced, absence of drug abuse, not participating in other therapy sessions and not receiving individual therapy or medication. Exclusion criteria were receiving concomitant psychological therapies, using psychiatric drugs, unwillingness to cooperate and continue the study, facing a severe stressful event and missing more than two therapeutic sessions. The study was approved by the Ethical Committee of Islamic Azad University-Ahvaz Branch (code: 950517294). For ethical considerations, the researchers received written consent from the participants for participation in the research.

Instrument

Emotional Divorce Questionnaire: The Emotional Divorce Questionnaire was developed by Razeghi. It is a 22-item survey scored on a 5-point scale (Always=4, Often=3, Sometimes=2, Rarely=1, and Never=0). The lowest and highest scores are 0 and 88. Those who score 40 and higher experience a more severe emotional divorce. To validate the emotional divorce questionnaire, Rashid and Moradi [23] used the content validity and factor validity. To examine the content validity, several faculty members of Psychology and Sociology Department of Bu-Ali Sina University reviewed the questionnaire to see whether the questions measure emotional divorce. Data proved that the questionnaire can measure emotional divorce. Factor

analysis of data suggested that the Emotional Divorce Questionnaire measures three main factors, namely the desire to separate, feeling of loneliness, and disgust. The authors reported the reliability of this tool as 0.98 [24]. In the present study, Cronbach's alpha coefficient was 0.91 for the questionnaire.

Marital Boredom Scale: The 20-item Marital Boredom Scale was developed by Paynes. This scale measures the level of frustration or lack of emotion towards the spouse as well as physical exhaustion (fatigue, lethargy and sleep disorder), emotional exhaustion (depression, hopelessness and feeling trapped), and mental exhaustion (worthlessness, frustration and anger towards spouse). It is scored on a 7-point Likert scale from Never=1 to Always=7. The participants score the frequency of each item in their marital life. Four items are inversely scored. The marital boredom scores range from 20 to 140, with scores higher than 60 indicating higher boredom. Rakhshany et al. [25] reported the reliability of this scale equal to 0.81 based on Cronbach's alpha coefficient. In the present study, Cronbach's alpha coefficient was 0.86 for the scale.

Self-Compassion Scale: The Self-Compassion Scale was developed by Raes. It is a 12-item survey scored on a 5-point Likert scale from 1 to 5 (1=Strongly Disagree to 5=Strongly Agree). Scores range from 12 to 60 and the higher the score, the higher the self-compassion. In a study by Shahazi et al. [26] in Iran, first, the scale was translated into Persian and its validity and reliability were examined. The total reliability of the scale was 0.91 using Cronbach's alpha coefficient and its validity was significant at 0.001. In the present study, Cronbach's alpha coefficient was 0.87 for the scale.

Intervention program

The content of eight 90-minute ACT sessions according to Hayes et al. [27] is shown in Table 1. Following therapy sessions, the intervention and control groups completed the post-test under the same conditions. Then, a summary of therapy sessions was provided to the control group.

Table 1. The Content of Acceptance and Commitment Therapy Sessions [27]

Sessions	Content
1	Communicating and building good relations, concluding a medical contract and therapeutic alliance with clients, stating the rules, goals and number of treatment sessions, and conducting a pre-test in the first session.
2	Calling and discovering, trying to promote re-reading of couples' experiences consciously, encouraging clients to abandon ineffective strategies. Measuring and giving feedback.
3	Demonstrating conflict-inducing and distressing issues and focusing on resolving them, listening to and discovering clients' narratives of extant problems, collecting information about the history of original attachment style and their current relationship and controlling them.
4	Increasing knowledge about underlying emotions, and desire positions, identifying negative interaction cycles and painful aspects of participants' experiences, observing emotional processing style, and identifying intrapersonal and interpersonal issues. The walking metaphor, the mindful bus metaphor, and reviewing defusion construction.
5	Reviewing previous assignments, weakening conceptualized self-reliance, distinguishing the conceptualized self from the observing self, creating awareness about the observing self.
6	Reviewing assignments, facilitating the wants and needs for reconstruction, interacting new perceptions and creating new essential solutions.
7	Expressing the concept of values, objective and dreams.
8	Summarizing and concluding with the help of clients, performing post-test.

Statistical Analyses

In order to find the significant difference between the two groups, univariate analysis of covariance was used. Assumptions of ANCOVA were measured before analysis. Kolmogorov-Smirnov test and Levene's test were used to indicate the normal distribution of data. Data were analyzed in SPSS version 27. All statistical analyses were performed at the 0.05 level of significance.

RESULTS

In this study, 38% of participants were between 20 and 31 and 62% were between 32 and 45 years old. The mean ages of intervention and control groups were 32.77 and 33.19 respectively. Indicators of central tendency and dispersion and results of Kolmogorov-Smirnov test for marital boredom and self-compassion are provided. Table 2 presents the mean ±SD of research variables in the experimental and control groups in the pre-test and post-test.

In order to find the significant difference between the two groups, a one-way analysis of covariance was used. Assumptions of ANCOVA were measured before analysis. Results of the Kolmogorov-Smirnov test indicate the normal distribution of data in the pre-test and post-test for marital boredom and self-compassion (P>0.05) and data were normally distributed when conducting the analysis of covariance.

In addition, to examine the homogeneity of variances (equality of variances in the intervention and control groups), the Levene's test was used which was F=1.40 and P=0.254 for marital boredom and F=1.37 and P=0.262 for self-compassion. The homogeneity of regression slopes assumption was met for marital boredom (F=2.47, P=0.072) and self-compassion (F=2.05, P=0.118). Analysis of covariance is applicable according to the results. The one-way analysis of

covariance after controlling the effect of pre-test was used to compare the intervention and control groups using post-test scores and to determine the effect of ACT on marital boredom and self-compassion in women experiencing emotional divorce visiting counseling centers in Ahvaz. Results are presented in Table 3.

As shown in Table 3, given the effect size estimate, 93% of marital boredom and 86% of self-compassion variables from the total variances of the intervention and control groups were due to the effect of the independent variable (ACT). The power of the test was 1, which indicates the adequacy of the sample size. There was a significant difference in the pre-test and post-test scores of participants in marital boredom when the influence of the pre-test results was eliminated (P<0.001). Therefore, the ACT proved effective in improving marital boredom. There was a significant difference in the pre-test and post-test scores of self-compassion when the influence of the pre-test results was eliminated (P<0.001). Therefore, the ACT proved effective in improving self-compassion.

Table 2. The Results of the Descriptive Statistics for the Research Variables in the Pre-test, and Post-test

Variables / Phases	ACT	Kolmogorov-Smirnov test		Control	Kolmogorov-Smirnov test		P (between Groups)
	Mean ± SD	Z	P	Mean ± SD	Z	P	
Marital boredom							
Pre-test	69.75 ± 2.02	0.145	0.093	70.60 ± 1.35	0.229	0.079	0.614
Post-test	43.30 ± 4.28	0.135	0.200	70.45 ± 2.80	0.172	0.123	0.001
P (within groups)	0.001	-	-	0.999	-	-	-
Self-compassion							
Pre-test	22.40 ± 2.85	0.212	0.078	23.20 ±2.93	0.177	0.100	0.713
Post-test	42.95 ±4.57	0.146	0.114	23.25 ± 2.61	0.148	0.200	0.001
P (within groups)	0.001	-	-	0.999	-	-	-

P (between and within groups): t-test; P: z-test

Table 3. The Results of one-way analysis of covariance (ANCOVA) for Assessing the Group Differences in Terms of the Research Variables,

Variables	SS	df	MS	F	P	η2	Power
Marital boredom	8733.37	2	4366.68	372.71	0.001	0.93	1.00
Self-compassion	5559.25	2	2779.62	173.36	0.001	0.86	1.00

SS: Sum of squares; MS: Mean squares

DISCUSSION

The present study aimed to investigate the effectiveness of ACT on marital boredom and self-compassion in emotionally divorced women. Results suggested that ACT proves effective in improving marital boredom and self-compassion. The first result indicated that ACT proves effective in improving marital boredom in women experiencing emotional divorce. This finding is consistent with the results of previous studies [20, 28]. Mahmoudpour et al. [20] reported that there was a significant reduction in the loneliness of divorced women who received the ACT intervention. Ghorbani Amir et al. [28] showed that ACT led to an increase in positive cognitive regulation, resilient, self-controlling, and a decrease in negative cognitive regulation in divorced women.

To explain this, marital boredom is the result of a set of unrealistic expectations of a spouse and marriage combined with the stresses, realities, and ups and downs in life. Boredom arises when one spouse does not value the relationship as much as the other and the most important needs of one of the parties are ignored. Here, emotional-marital satisfaction and intimacy fade and they do not want each other. Healthy relationships promote couples' health in marital life. On the other hand, ACT encourages women to connect with and be attracted to the real values of their lives. It helps women to imagine a more rewarding life despite unpleasant thoughts and feelings; this mindset leads to a reduction in marital problems such as marital boredom [11].

The ACT helps women detach themselves from their thoughts and emotions in order to modify negative cognitions such as depression and reduce marital boredom. In this therapy, experiential avoidance creates a traumatic process that contributes to the development and spread of marital and family conflicts. When a spouse experiences marital boredom, he/she makes continuous and fruitless efforts to get rid of the situation. ACT targets these avoidances to create a fundamental reopening to make individuals experience rather than control or change the negative assessments of marital boredom in their lives [13]. Therefore, in ACT, women not only have a full experience of thoughts and emotions, but also allow their spouse to have such an experience in order to reduce their marital burnout and boredom. In addition, through acceptance and defusion practices, women learn to accept their spouse the way he is without judging, humiliating, insulting or comparing him.

In addition, teaching a new concept of curiosity used in ACT make spouses' relationships take on a new form; therefore, the treatment is effective in improving marital relations and reducing marital boredom. Through this mechanism of change, when values are defined for participants, they become important and personal to them [20]. Thus, the participants resolve conflicts and

avoid marital boredom in a more adaptive way, and consequently they better understand the importance of the relationship with their spouse in life.

Results indicated that the ACT improved self-compassion in women experiencing emotional divorce. This finding is consistent with the results of Roohi et al. [18]. To explain this, it is claimed that through awareness-based exercises, ACT creates the grounds for creative helplessness towards solutions used by the person in relation to their unpleasant thoughts and feelings. By ACT, researchers aim not to create the feeling of helplessness or belief in helplessness, rather to give up one's previous strategies used to control these thoughts and feelings. These situations pave the way for introducing acceptance as an alternative solution, and through acceptance, an opportunity is provided to the individual to pay attention to the important and valuable matters in life [21]. Results indicated that when women try to avoid or get rid of unwanted thoughts and feelings, they not only fail, but also suffer a lot due to experiencing marital conflicts. This helped clients to feel unpleasant thoughts and feelings instead of trying to control them, and doing so made those experiences seem less threatening. Expressing pure and impure suffering helped women blame themselves less and be kinder to themselves.

Women who receive ACT can improve their hope and resilience by promoting their problem-solving skills and self-awareness, increasing their meaning of life, and improving their level of adjustment, which will result in fewer marital conflicts [29]. On the other hand, studies suggest that people who experience positive emotions exhibit unusual, flexible, and creative patterns of thinking. Positive emotions increase the desire to have multiple choices in life and they create multiple behavioral choices for individuals. In addition, positive emotions build a flexible and extensive cognitive structure in individuals and improves their ability to integrate broad topics. Furthermore, using this practice, women realized that many sufferings occur because individuals see people through their own thoughts and feelings and consider those thoughts true [30]. Through acceptance, the individual tends to move in the direction of his/her values; instead of focusing on unsuccessful solutions, they turn to solution-based behaviors. The negative thought and judgments cycle is broken, which in turn improves their performance. Maintaining value-based behavior significantly increases self-compassion in these women.

Every study has limitations. This study was conducted on women experiencing emotional divorce visiting counseling centers in Ahvaz and therefore, caution should be exercised when attempting to generalize its results to other centers and cities. Self-report was another limitation in this study.

CONCLUSION

By providing optimistic concepts of life to emotionally divorced women, the therapeutic and educational ACT raises hope and resilience in women in the face of marital conflicts. It reduces their marital boredom and boosts their self-compassion. It is therefore recommended to provide this intervention along with other psychological interventions in order to reduce the psychological and physical burden of caring for women with marital conflict.

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AUTHOR CONTRIBUTION

All authors contributed equally in preparing all parts of the research.

CONFLICT OF INTERESTS

All the authors declare that they have no conflict of interest

ETHICAL CONSIDERATION

The written consent has been obtained from all research units. Also, the authors affirm their observance of ethical rules when processing the results of the studies.

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REFERENCES

1. Robles TF. Marital quality and health: Implications for marriage in the 21(st) century. Curr Dir Psychol Sci. 2014;23(6):427-32. **doi:** 10.1177/0963721414549043 **pmid:** 25544806
2. Taban M, Dolatshahi B, Eftekhar M, Pourshabaz A. The relationship between marital satisfaction with demographics characteristics in the population of Tehran. Adv Nurs Midwifery [Internet]. 2016;26(94):37-5.
3. Metts SM, Schrodt P, Braithwaite DO. Stepchildren's Communicative and Emotional Journey from Divorce to Remarriage: Predictors of Stepfamily Satisfaction. J Divorce Remarriage. 2017;58(1):29-43. **doi:** 10.1080/10502556.2016.1257904
4. Eslami M, Yazdanpanah M, Andalib P, Rahimi A, Safizadeh M, Dadvar A, et al. Marital satisfaction and emotional divorce among Iranian married individuals: A survey of hospital visitors of nine provinces. J Educ Health Promot. 2020;9:83. **doi:** 10.4103/jehp.jehp_570_19 **pmid:** 32509891
5. Kanter JB, Proulx CM, Monk JK. Accounting for Divorce in Marital Research: An Application to Growth Mixture Modeling. J Marriage Famil. 2019;81(2):520-30. **doi:** 10.1111/jomf.12547
6. Sbarra DA. Divorce and health: current trends and future directions. Psychosom Med. 2015;77(3):227-36. **doi:** 10.1097/PSY.0000000000000168 **pmid:** 25829240

7. Voon SP, Lau PL, Leong KE, Jaafar JLS. Self-Compassion and Psychological Well-Being Among Malaysian Counselors: The Mediating Role of Resilience. Asia Pacific Educat Res. 2021. **doi:** 10.1007/s40299-021-00590-w
8. Salavera C, Usan P. Relationship between Social Skills and Happiness: Differences by Gender. Int J Environ Res Public Health. 2021;18(15). **doi:** 10.3390/ijerph18157929 **pmid:** 34360220
9. Rahmani S, Mansoobifar M, Sirifi M, Ashayeri H, Bermas H. Effectiveness of Family Empowerment Therapy Based on Self-Compassion on Self-Care and Glycosylated Hemoglobin in Female Patients with Type 2 Diabetes Mellitus: A Randomized Controlled Clinical Trial. Women's Health Bullet. 2020;7(2):33-42. **doi:** 10.30476/whb.2020.85543.1043
10. Choo PY, Marszalek JM. Self-Compassion: A Potential Shield Against Extreme Self-Reliance? J Happiness Stud. 2019;20(3):971-94. **doi:** 10.1007/s10902-018-9978-y
11. Yildiz E, Aylaz R. How Counseling Based on Acceptance and Commitment Therapy and Supported With Motivational Interviewing Affects the Perceptions of Treatment Motivation in Patients Diagnosed With Schizophrenia: A Qualitative Study. J Am Psychiatr Nurses Assoc. 2021;27(5):390-404. **doi:** 10.1177/1078390320945380 **pmid:** 32727253
12. Khaledinia A, Makvandi B, Asgari P, Pasha R. Comparison of Group Psychotherapy Effectiveness based on Acceptance and Commitment Therapy Matrix with Group Behavioral Activation Therapy on Quality of Life and Alexithymia in Depress Mood Females. Women's Health Bullet. 2021;8(1):26-36. **doi:** 10.30476/whb.2021.87951.1082
13. Vowles KE, Sowden G, Hickman J, Ashworth J. An analysis of within-treatment change trajectories in valued activity in relation to treatment outcomes following interdisciplinary Acceptance and Commitment Therapy for adults with chronic pain. Behav Res Ther. 2019;115:46-54. **doi:** 10.1016/j.brat.2018.10.012 **pmid:** 30409392
14. Norton AR, Abbott MJ, Norberg MM, Hunt C. A systematic review of mindfulness and acceptance-based treatments for social anxiety disorder. J Clin Psychol. 2015;71(4):283-301. **doi:** 10.1002/jclp.22144 **pmid:** 25529254
15. Hacker T, Stone P, MacBeth A. Acceptance and commitment therapy - Do we know enough? Cumulative and sequential meta-analyses of randomized controlled trials. J Affect Disord. 2016;190:551-65. **doi:** 10.1016/j.jad.2015.10.053 **pmid:** 26571105
16. Glassman LH, Forman EM, Herbert JD, Bradley LE, Foster EE, Izzetoglu M, et al. The Effects of a Brief Acceptance-Based Behavioral Treatment Versus Traditional Cognitive-Behavioral Treatment for Public Speaking Anxiety: An Exploratory Trial Examining Differential Effects on Performance and Neurophysiology. Behav Modif. 2016;40(5):748-76. **doi:** 10.1177/0145445516629939 **pmid:** 26872958
17. Villatte JL, Vilardaga R, Villatte M, Plumb Vilardaga JC, Atkins DC, Hayes SC. Acceptance and Commitment Therapy modules: Differential impact on treatment processes and outcomes. Behav Res Ther. 2016;77:52-61. **doi:** 10.1016/j.brat.2015.12.001 **pmid:** 26716932
18. Roohi R, Soltani AA, Zinedine Meimand Z, Razavi Nematollahi V. The Effect of Acceptance and Commitment Therapy (ACT) on Increasing the Self-Compassion, Distress Tolerance, and Emotion Regulation in Students with Social Anxiety Disorder. J Child Ment Health. 2019;6(3):173-87. **doi:** 10.29252/jcmh.6.3.16
19. Enjezab B, Rejaezadeh M, Bokaie M, Salimi H. The Effectiveness of Acceptance and Commitment Therapy (ACT) on Sexual Self-Efficacy and Sexual Quality of Life in Reproductive-Age Women: A Randomized Controlled Trial. J Sex Marital Ther. 2021;47(8):764-72. **doi:** 10.1080/0092623X.2021.1944938 **pmid:** 34296979
20. Mahmoudpour A, Rayesh N, Ghanbarian E, Rezaee M. Effectiveness of acceptance and commitment therapy (ACT) on emotional regulation and loneliness of divorced women in Iran. J Marital Fam Ther. 2021;47(4):831-42. **doi:** 10.1111/jmft.12492 **pmid:** 33675048
21. Sabouri H, Zarei E, Samavi A, Amir Fakhraei A. Comparison the Effectiveness of Acceptance and Commitment Therapy and Compassion Focused Therapy on the Quality of Life and Tendency to Betray in Married Students with Tendency to Infidelity. Iran Evolut Educat Psychol. 2020;2(3):184-99. **doi:** 10.29252/ieepj.2.3.184
22. Khoshvaght N, Naderi F, Safarzadeh S, Alizadeh M. The Effects of Compassion-focused Therapy on Anxiety and Depression in the Mothers of Children With Cerebral Palsy. Arch Hygiene Sci. 2021;10(3):225-34. **doi:** 10.52547/ArchHygSci.10.3.225
23. Rashid K, Moradi A. Determining the Role of Communication Variables in Predicting Emotional Divorce. Two Quarter J Contempor Soc Res. 2017;6(10):133-51. **doi:** 10.22084/csr.2017.12700.1253
24. Razeghi N, Ghobari Bonab B, Mazaheri M. Day Care and Children's Attachment Styles: A Study on Families in Tehran. Advance Cognitive Sci. 2006;8(1):38-46.
25. Rakhshany P, Shahabizadeh F, Alizadeh H. A Model of Couple Burnout in Relation with the Multi-Dimensional Pattern of Connection with God and Though and Language Controls. Stud Islam Psychol. 2016;10(19):7-30. **doi:** 10.30471/psy.2016.1081
26. Shahbazi M, Rajabi G, Maghami E, Jelodari A. Confirmatory Factor Analysis of the Persian Version of the Self-Compassion Rating Scale-Revised. Psychol Method Model. 2015;6(19):31-46.
27. Hayes SC, Levin ME, Plumb-Vilardaga J, Villatte JL, Pistorello J. Acceptance and commitment therapy and contextual behavioral science: examining the progress of a distinctive model of behavioral and cognitive therapy. Behav Ther. 2013;44(2):180-98. **doi:** 10.1016/j.beth.2009.08.002 **pmid:** 23611068
28. Ghorbani Amir HA, Moradi O, Arefi M, Ahmadian H. The Effectiveness of Acceptance and Commitment Therapy on Cognitive-Emotional Regulation, Resilience, and Self-control Strategies in Divorced Women. Avicenna J Neuro Psycho Physiol. 2019;6(4):195-202. **doi:** 10.32598/ajnpp.6.4.5
29. Ghorbani V, Zanjani Z, Omidi A, Sarvizadeh M. Efficacy of acceptance and commitment therapy (ACT) on depression, pain acceptance, and psychological flexibility in married women with breast cancer: a pre- and post-test clinical trial. Trends Psychiatry Psychother. 2021;43(2):126-33. **doi:** 10.47626/2237-6089-2020-0022 **pmid:** 34392667
30. Ivanova E, Jensen D, Cassoff J, Gu F, Knauper B. Acceptance and commitment therapy improves exercise tolerance in sedentary women. Med Sci Sports Exerc. 2015;47(6):1251-8. **doi:** 10.1249/MSS.0000000000000536 **pmid:** 25290743

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Providing a Causal Model of Children's Behavioral Disorders Based on Spiritual health Family Functioning: The Mediating Role of Life Satisfaction in Hyperactive Children's Mothers in Tehran

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Abstract

Introduction: Hyperactive children can have far-reaching effects on their relationships with their family members and general atmosphere in the family by showing some behaviors such as hyperactivity, restlessness, inattention, and repulsive behaviors. This study aimed to provide a causal model of children's behavioral disorders based on family functioning and spiritual health with the mediating role of life satisfaction in hyperactive children's mothers.

Methods: This is a descriptive correlational study in terms of the method where the relationships among the proposed variables were analyzed using structural equation modeling (SEM). The statistical population included all mothers of hyperactive children who had visited psychiatric clinics in Tehran in 2020. Two hundred fifty mothers were selected from the population using purposive sampling. The tools used in this research were: Questionnaire of children's behavior disorder, Family Functioning Questionnaire, Spiritual health Questionnaire (SWBQ), and Questionnaire of Satisfaction with Life. The data were analyzed using Pearson's correlation coefficient and structural equations model.

Results: The results showed that life satisfaction has a positive and significant relationship with family functioning and spiritual health. The results also showed that family functioning and spiritual health have a reverse and significant relationship with children's behavioral disorders. Furthermore, the results showed that the general path of spiritual health has a greater effect on hyperactive child's behavioral disorders.

Conclusions: The causal model of children's behavioral disorders based on family functioning and spiritual health with the mediating role of life satisfaction has a desirable fit to decrease hyperactive behavior disorders.

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is one of the neurodevelopmental disorders appearing in the early years of children's development which has some major characteristics including attention deficit, hyperactivity, and impulsiveness that about 7% of children suffer from [1]. This disorder creates

considerable problems in children's everyday life, and also some problems in educational affairs, interpersonal and social relationships, as well as the main problems including hyperactivity, repulsiveness, and attention deficit, that often persists up to adulthood, [2]. Behavioral disorders are one of the major challenges facing hyperactive children's parents and caregivers that may threaten their health status both currently and, in the future, and impact all personal and social life aspects of these children while creating some problems for their families, disrupting their healthy growth and overshadowing the quality of the care given to them [3]. The investigations into the factors effective in the creation and persistence of such problems showed that family factors were one of the strong predictors of children's behavior problems, and the children showing fewer behavior problems had parents who applied more effective parenting behaviors [4]. Behavioral disorders in hyperactive children last longer and are more severe compared to their normal peers [5]. The neuropsychological problems delay children's growth and may impact some other aspects of their growth like their behavioral functioning. Behavioral disorders are various excessive, chronic, and deviant behaviors ranging from aggressive actions or sudden arousal to depressive and seclusive actions [6]. Children's behavior disorders include Hyperactivity, aggression, anxiety, depression, social maladjustment, fear, conduct disorder that require early diagnosis and intervention [7].

The environmental and family conditions are two effective and important factors affecting the constructive interaction between family members. Unfortunately, maladjustment and incorrect performance on the part of families may lead to some disorders including hyperactivity. Family functioning is an important factor involved in protecting and providing balanced conditions for children. Lack of proper education affects pupils' minds and thoughts thereby preventing their proper growth and making them deviate from the right path [8]. Studies have shown that children with attention deficit hyperactivity disorder (ADHD) have problems with their parents. Moreover, it is assumed that the relationship problems between parents and children are connected with the intensification and persistence of attention deficit hyperactivity disorder (ADHD) symptoms [9]. In addition, Savel et al. [10] showed in their studies that the negative parent-child interaction, poor family functioning, and experiences of discrimination in childhood aggravated behavioral disorders in adulthood. Oh et al. [11] showed in another study that the positive mother-child interaction, mothers' social support, and highly constructive performance on the part of the family were effective in preventing children's behavior problems and child abuse. Therefore, when the family patterns prove helpful in reaching the goal, the family will be efficient in terms of functioning. However, if these patterns are not helpful, and the interaction is accompanied by stress and morbid behaviors, the family assumes an inefficient role [12]. Some factors such as poor parent-child relationships, fathers having mood swings, workaholic parents, parent psychopathology, and problems in parents' relationships were found to be effective in the symptoms of attention deficit hyperactivity disorder (ADHD) [13]. In another research, the functioning of children with attention deficit hyperactivity disorder (ADHD) was investigated, and it was observed that their parents showed more negative reactions dealing with their children, and adopted fewer positive methods [14]. In another study, it was observed that mothers of children with attention deficit hyperactivity disorder (ADHD) assumed controlling and more criticizing roles, and adopted less mutual social relationships with their children, and responded less to their children [15].

Spiritual health is another variable that can reduce many problems of mothers of children with attention deficit hyperactivity disorder (ADHD) thereby reducing children's behavioral disorders. Spiritual health is defined as an inner and satisfying feeling along with constructive relationships with oneself, others, and a supreme entity in a particular cultural framework of each society leading to the meaningfulness of life and death [16]. Spiritual health consists of two components, namely spirituality, and health, and it has two aspects, namely religious well-being and existential well-being [17]. Religious well-being expresses the relationship with a supreme power i.e., God. Existential well-being is a psychosocial element expressing an individual's feelings on who they are, what they do, why they do, and where they belong to. Both religious well-being and existential well-being include transcendence and a movement beyond oneself [18]. The spiritual health in mothers improves family functioning followed by a decrease in behavior disorders. What happens in a family, and family functioning can be a key factor in creating flexibility and decreasing current and future risks connected with undesirable events and inappropriate conditions [19]. Shiraliniya, Izadi, and Aslani [20] investigated the mediating role of parenting stress, quality of the mother-child relationship, and mothers' mental health in the mother-child relationship. Therefore, mindful parenting education and improvement in mothers' mental health can be used by child and family consultants to prevent or reduce children's behavior problems. In another study, Leo et al [8] showed that parents' mental health, life satisfaction, and emotion regulation had a direct and significant relationship with behavioral disorders in Spanish adolescents. Lee & Jirask [21] also investigated the relationship between spiritual health and life satisfaction

in parents of adolescents with behavior problems. The findings showed that spiritual health had a significant relationship with life satisfaction in parents of adolescents with behavior problems. Ruden & Ikas [22] showed in their study that mothers' mental health and social relationships predicted behavioral disorders in children with autism. The more mothers' mental health and social relationships suffer from disorders, the more severe the behavioral disorders in children with autism will be. Sung et al. [23] ascertained in their study on male and female elementary school pupils that parents' mental health affected their children's levels of life satisfaction making their children show fewer behavior disorders and struggles at school.

It seems that there are some intermediary factors through which mothers' spiritual health and family functioning affect children's behavior disorders. One of these intermediary factors is satisfaction with life. Life satisfaction reflects the balance between an individual's wishes and their current conditions, and it is considered as a cognitive component of mental well-being [24]. Some studies showed that mental well-being did not decline despite the decrease in the cognitive, social, and physical abilities of some people [25]. If life satisfaction is not at a desirable level, it will lead to some mental problems such as depression, being pessimistic about life, having no hope for the future, lack of purpose, meaninglessness in life, indifference, and family problems [26]. It is necessary to empower parents, in particular mothers of children with attention deficit hyperactivity disorder (ADHD) to help them to cope with taking care of their children. There are also other aspects to empowering mothers of children with attention deficit hyperactivity disorder (ADHD), that is, empowering them to achieve the awareness that is appropriate to their children's needs (like children's maturation, recognition of drugs, recognition of comorbid disorders, appropriate behaviors, etc.). Some of these mothers are also heads of the household where they will certainly face more problems, or they have to deal with their hyperactive child together with their husbands. Hence, their mental health is disrupted where even the number of emotional divorces may increase in parents with hyperactive children. Considering the above-mentioned points, the importance and necessity of the current study are more noticeable than before. Thus, this study aimed to find the answer to the question: If the causal model of children's behavior disorders has a good fit based on the family functioning and spiritual health with the mediating role of life satisfaction in mothers of hyperactive children in Tehran.

METHOD

Study Plan

This is a descriptive correlational study where the relationships between proposed variables were analyzed using structure equation modeling. The statistical population included all mothers with hyperactive children who had visited psychiatric clinics in Tehran in 2020. Two hundred fifty mothers were selected from the population using purposive sampling. Thus, pupils' mothers visiting clinics who met the inclusion criteria (age range of 21-57, holding at least a middle school degree, and not suffering any mental disorders) were selected, and those who met exclusion criteria (not answering all questions, unwillingness to cooperate) were not selected.

Research Tools

Children's behavior disorders questionnaire: Children's behavior disorders questionnaire was developed by Michael Rutter (1967) to assess children's behavior problems. This questionnaire was turned into a 30-item questionnaire by including six new items and converting four items into two items because of similarity. The questionnaire was scored from zero to two based on a three-point Likert scale. The total score of the questionnaire ranged from 0 to 60. This questionnaire had an acceptable agreement validity. In the first study conducted by Rutter (1967) on 91 children, the percentage of agreement between questionnaire and the psychiatric diagnosis was reported to be significant at 0.001 level. The questionnaire validity was reported at 0.01 and 0.05 levels through psychiatric diagnosis agreement and Rutter's questionnaire. Rutter (1967) reported the reliability of pretest and posttest with a two-month interval 0.89. The results of a study showed that the alpha coefficients of syndrome scales based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders was at a satisfactory level and it ranged from 0.62 to 0.92 [27].

Spiritual health Questionnaire (SWBQ): This questionnaire was designed by Palutzian & Ellison (1982) and includes 20 items and two subscales addressing religious well-being indicating well-being resulting from the relationship with supreme power, and the existential health indicating a psychosocial element that expresses the individual's feelings about who they are, what they do, why they do it, and where they belong to. The odd-numbered questions in the test were on religious well-being assessing the extent of an individual's experience of a satisfactory relationship with God, and the even-numbered questions were on existential well-being subscales assessing the feeling of purposefulness and satisfaction with life. The scale used to answer the questions was the six-point Likert scale ranging from completely agree to completely disagree. As for the positive questions, six indicated *completely agree*, and one indicated *completely disagree*. The negative questions were reverse scored (questions 1-2-5-6-9-12-13-16-18 were negative). The total score of

spiritual health was obtained by summing up the scores of all questions. Palutzian & Ellison (1982) reported Cronbach's alpha for religious well-being and existential well-being, the whole scale was 0.91, 0.91, and 0.93 respectively. Dehshiri et al. [28] investigated the psychometric properties of this scale on students studying at Tehran University. Reliability coefficients of the retest of the whole scale, religious well-being, existential well-being was reported as 0.85, 0.78, and 0.80 respectively [28] Furthermore, Cronbach's alpha was reported as 0.90 for the whole scale of spiritual health, and it was reported as 0.82 and 0.87 for subscales of religious well-being and existential well-being respectively. In the current study, the reliability of this tool was measured and reported using Cronbach's alpha.

Family functioning questionnaire: This questionnaire has 53 items designed to assess family functioning according to the McMaster model. This tool was designed by Epstein, Bishop, and Levin in 1983. The subjects rated how well each statement described their family by selecting from among four alternative responses: strongly agree, agree, disagree, and strongly disagree., on a four-point Likert scale. The minimum score was 53 and the maximum score was 212. This questionnaire had seven subscales titled, communication, affective involvement, roles, overall functioning, problem solving, affective responsiveness, and behavior control. The designers mentioned the validity of the questionnaire through the Cronbach's alpha of seven questionnaires as Problem solving: 0.61, communication: 0.58, roles: 0.72, affective responsiveness: 0.64, affective involvement:0.65, behavior control: 0.61, and total functioning: 0.81. These values indicated that the subscales had relatively good homogeneity. Ardalan & Ardalan [29] reported the reliability of the questionnaire as 0.85. In the current study, the reliability of this tool was measured and reported using Cronbach's alpha.

Life satisfaction questionnaire: This questionnaire was designed by Diner et al. (1985). The scale has five items and each item has seven options that are scored from one (completely agree) to seven (completely disagree). The scores of this scale range from five to 35. Diner et al. (2003) reported the retest correlation coefficient of the scale as 0.87 and 0.82. Bayati, Mohammadkoochaki & Goudarzi [30] reported the validity of this scale through retest as 0.69.

Statistical Analysis

After selecting mothers for sampling and obtaining their informed written consents to participate in the test, and complying with all ethical principles, the questionnaires were given out to them and they were provided with enough time to complete the questionnaires and turn in them to the researcher. Then, the data obtained from the questionnaires were entered into SPSS 22, and AMOS24. The descriptive data were analyzed using standard deviation and means. The inferential data were analyzed using correlation coefficients and path analysis.

RESULT

The findings showed that the average age of mothers with hyperactive children was 36.55±3.35. The KS (Kolmogorov-Smirnov) values for the variables of behavioral disorder, family functioning, spiritual health, and life satisfaction were higher than 0.05 indicating that the study variables were normally distributed. Other descriptive findings on research variables were presented in Table 1.

Table 1. Descriptive findings on research variables for all subjects

Variables	Mean	Standard deviation	Number
Children's behavioral disorders	34.72	11.31	250
Family functioning	130.66	28.31	250
Spiritual health	91.16	13.17	250
Satisfaction with life	21.69	5.06	250

Table 2. Correlation coefficients among research variables in all subjects

Variables	Behavioral disorder	Family functioning	Spiritual health	Life satisfaction
Behavioral disorder	1	-	-	-
Family functioning	r=-0.275**	1	-	-
Spiritual health	r=-0.309**	r=-0.213**	1	
Satisfaction with life	r=-0.482**	r=-0.396**	r=-0.327**	1

** means P > 0.01

Table 3. Goodness of fit Indices of Initial Model

Goodness of Fit Index	x^2	df	$\frac{x^2}{df}$	IFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-	0.001	-	0.001	0.001	0.338

As presented in Table 2, correlation coefficients are significant for all correlation coefficients at P < 0.01.

The Structural equation modeling was used to assess the model proposed in this study using AMOS through maximum likelihood. The initially proposed model was obtained to explain children's behavior disorders according to the interaction among family functioning, spiritual health, and life satisfaction that have been presented in the following diagrams.

Considering the data presented in Table 3, Root Mean Square Error of Approximation (RMSEA=0.338) showed that the initial model requires to be modified. In the initial model, since the model was saturated i.e., all possible paths were drawn, it was not possible to calculate chi-squared and other indices in this model, and after the removal of the path (family functioning concerning children's behavior disorders), the model was unsaturated and it was possible to calculate chi-squared and other indices for the software. In the final model, the Root Mean Square Error of Approximation (RMSEA=0.001) showed a good fit of the model. The modified model has been presented below.

Considering the data presented in Table 4, all fit indices such as the values of chi-squared (x2), a normalized index of chi-squared (x2/df) normalized fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) indicate acceptable fit of the final model with the data.

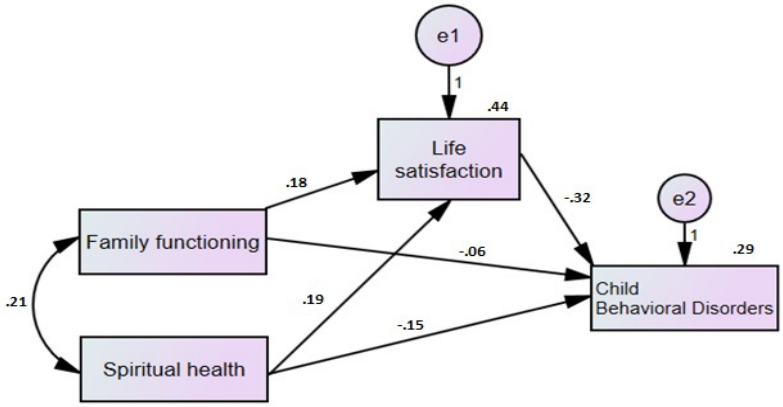

Figure 1. Initial Model in Standard Mode

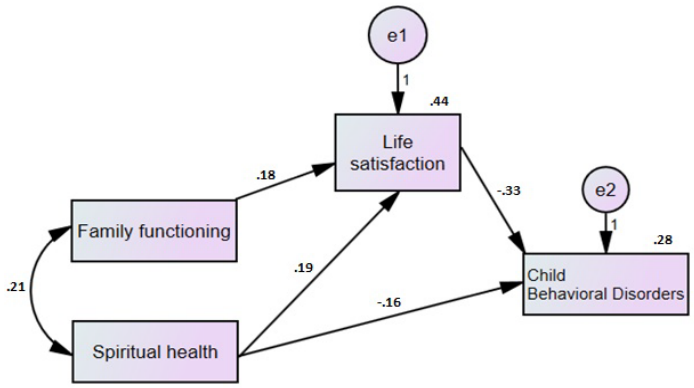

Figure 2. Final Standard Model

Table 4. Goodness of Fit Indices of Final Model

Goodness of fit index	x^2	df	$\frac{x^2}{df}$	IFI	TLI	RFI	CFI	NFI	RMSEA
Final model	1.587	2	0.452	0.99	1.006	0.97	0.001	0.99	0.001

Table 5. Coefficients of the direct and indirect effects path among research variables in the final standard model

Paths	Direct	P	Indirect	P	Total
Family functioning-children's behavioral disorders	-0.056	0.298	-0.059	0.032	-0.11
Spiritual health- children's behavioral disorders	-0.148	0.004	-0.062	0.010	-.210
Family functioning-satisfaction with life	0.181	0.001	-	-	0.181
Spiritual health-satisfaction with life	0.193	0.001	-	-	0.193
Satisfaction with life-children's behavioral disorders	-0.324	0.001	-	-	-0.324

As presented in Table 5, family functioning had a total effect of -0.11 through the indirect path on hyperactive children's behavior disorders while no direct effect was observed in the model. As for the spiritual health variable, the total effect was -0.210 indicating that spiritual health had a considerable role in hyperactive children's behavioral disorders. Moreover, the total effect of family functioning on life satisfaction was 0.181. The total effect of spiritual health on mothers' life satisfaction was 0.193, and the total effect of life satisfaction on children's behavioral disorders was -0.324. Overall, the two variables including family

functioning and spiritual health scored 0.28, accounted for the changes in the variance of hyperactive children's behavioral disorders.

DISCUSSION

The current study aimed to determine a causal model of the children's behavior disorders based on family functioning and spiritual health with the mediating role of life satisfaction in hyperactive children's mothers. For this purpose, the results indicated the indirect role of family functioning and the direct effect of spiritual health with the mediating role of life satisfaction in hyperactive children's behavioral disorders. That is, family functioning in the standard model with the mediating role of life satisfaction affects hyperactive children's behavioral disorders that are consistent with researches (10, 11, 12, 13, 14, 15). To explain these findings, it should be mentioned that family has been always a pillar of strength to solve many of one's spiritual and mental problems, and played a considerable role in creating emotional peace and strength in relationships. A family as a social institution can make children the agents of building the future of the society immune to cultural and social damages, and teach them indirectly the life skills they require. On the other hand, any disruption to family functioning makes it more difficult for the family to achieve these goals [31]. Studies show that problem solving (family's ability to solve its problems), communication (effectiveness, clarity, and accuracy of information transmission in the family), roles (description of self-efficacy based on the duties assigned to the family), emotional involvement (family's ability members to respond to appropriate feelings), emotional responsiveness (quality of family members' interests, concerns, and investments in each other), and behavior control (description of behavior standards) are the important aspects of family functioning [32], and in this study, the good performance of the family with hyperactive children has decreased the behavioral disorders to some extent in their children. In addition, family is considered an important sociocultural center affecting children's mental aspects. It is axiomatic that healthier children will be raised by increasing the relationship and integrity in the family. Family functioning has completely direct effects on children. Furthermore, different methods of parenting, in case of failing to provide proper education, will have undesirable impacts on children which sometimes could be irreparable. Moreover, these impacts in turn may create some further problems that may persist for many years in some cases. Family functioning provides family members with physical and mental well-being. The family can guarantee the physical and spiritual health of its members, and on the other hand, it can endanger these both directly and indirectly, and create serious problems for children [4].

As for the role of spiritual health in behavioral disorders with the mediating role of life satisfaction in this study, it should be acknowledged that parents' acceptance has a stronger effect on hyperactive children's behavioral disorders which is consistent with the results of the researches (20, 21, 22, 23 and 24). To justify these findings, we should mention that spiritual health relies on an individual's real faith, religious beliefs, and motivation, and this component is naturally in connection with humans' excellence and perfection, especially their psychological well-being. Furthermore, it seems that spirituality is connected with humans' feelings of meaningfulness, purposefulness, perfection, power, and dominance. In fact, religion and spirituality give meaning to life and prevent humans from believing in nihilism. It is in such an atmosphere where an individual is disentangled from self-centeredness and whims and achieves psychological health. This opens up the opportunity for personal growth and leads people towards perfection so that they dominate over the surrounding environments, especially challenging environments like living with difficult people [33]. According to the stress theory, the personal beliefs about oneself and the world are the resources that affect an individual's responses and attitudes towards difficult conditions and situations in life. The beliefs in God, destiny, fatalism, and other beliefs about the natural law and order controlling the world, are the beliefs enabling individuals to create meaning out of the difficult reality of life (having hyperactive children), and keep up hope. These beliefs as huge and powerful resources, can decrease negative emotional responses when facing stressful situations [34]. In the following, it can be said that spiritual health modifies and changes people's recognitions to improve hope in life through a metaphysical approach, and leads to a positive effect on the interpretation and attaching meaning to the destructive events, failures, and difficulties. Hyperactive children's mothers may be more prone to depression and their motivation may decrease if their expectations about having healthy children, feeling sinful, wrong, and distressing judgments of others are not fulfilled. Therefore, enhancing spiritual health makes these mothers to modify their beliefs and find meaning in their lives so that they will feel less emotional problems, and move towards transcendental goals by the new motivation and power they gain [35]. Some pieces of evidence have shown that spiritual beliefs and contrasts in stressful situations help many people. This is the case because spirituality allows people to concentrate on transcendental ideas and beliefs, and thus decrease their concentration on everyday mental pressures [36]. Developing moral beliefs along with coping behaviors like the relationship with oneself, others and God enhances hope and decreases anxiety in difficult and distressing situations, and improves healthy behaviors [37]. Furthermore, spirituality clarifies one's life goals,

and provides them with peace of mind in painful and intimidating conditions, and enables them to accept unchangeable events. According to this viewpoint, the relationship with a supreme power makes it possible to access higher values and goals, leading to better functioning. Still, another result of spirituality is feeling greater power and inner peace that enable an individual to accept the undesirable situations in critical and difficult situations and enhanced mothers' satisfaction of life in this study [38]. With regard to the results of this study, hyperactive children's mothers enjoyed proper spiritual health and had in fact somehow accepted their children's problems, and the acceptance and nondenial of their children's problems made them put in most of their energy to forge a proper relationship with their hyperactive children. Therefore, the relative satisfaction that mothers draw from the acceptance of this issue originates from their spiritual health, and the acceptance enables them to seek treatment and proper relationships with their hyperactive children rather than denying or rejecting them.

CONCLUSION

Both family functioning and spiritual health can decrease hyperactive children's behavioral disorders through life satisfaction. Therefore, the positive family functioning in positive interactions and proper attention to hyperactive children can enhance understanding about acceptance of this issue. Additionally, the parents enjoying spiritual health can create a warm and intimate environment in the family and help increase the self-confidence, self-esteem, and self-control in children.

This study includes some limitations like any other study. This study was conducted only on mothers of hyperactive children in Tehran. Thus, care should be taken when generalizing these results to other mothers and educational settings. Another limitation of this study is that it cannot be generalized to fathers. It is recommended that this study be conducted on fathers of hyperactive children so as to be able to generalize it more confidently. In addition, using this model with parents' social support as the mediating variable is recommended.

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CONFLICT OF INTEREST

There is no conflict of interests among the authors

ETHICAL CONSIDERATIONS

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AUTHOR CONTRIBUTION

Data introduction, collection, and analysis were carried out by all the authors.

REFERENCES

1. Sadock BN, Sadock J, Kaplan VA. Downloaded from attention deficit/hyperactivity disorder: new findings suggest partial specificity of effects. J America Academ Child Adolescent Psychiatr. 2015;48(2):146-54. **doi:** 10.1097/CHI.0b013e31819176d0 **pmid:** 19065110
2. Johnston C, Mash EJ, Miller N, Ninowski JE. Parenting in adults with attention-deficit/hyperactivity disorder (ADHD). Clin Psychol Rev. 2012;32(4):215-28. **doi:** 10.1016/j.cpr.2012.01.007 **pmid:** 22459785
3. Jafari A, Samadi Javaheri M, Hesampour F. The comparison of quality of mother-child relationship and anger self-regulation skill between mothers of normal and with ADHD students. [Persian]. Quarter J Soc Work. 2016;5(4):13-24.
4. Chang LY, Wu CC, Lin LN, Yen LL, Chang HY. The Effects of Sleep Problems on the Trajectory of Antisocial Behavior from Adolescence through Early Adulthood in Taiwan: Family Functioning as a Moderator. Sleep. 2016;39(7):1441-9. **doi:** 10.5665/sleep.5980 **pmid:** 27166239
5. Hansen BH, Skirbekk B, Oerbeck B, Wentzel-Larsen T, Kristensen H. Associations between sleep problems and attentional and behavioral functioning in children with anxiety disorders and ADHD. Behav Sleep Med. 2014;12(1):53-68. **doi:** 10.1080/15402002.2013.764525 **pmid:** 23461477
6. Garwood JD, McKenna JW, Roberts GJ, Ciullo S, Shin M. Social Studies Content Knowledge Interventions for Students With Emotional and Behavioral Disorders: A Meta-Analysis. Behav Modif. 2021;45(1):147-76. **doi:** 10.1177/0145445519834622 **pmid:** 30854879
7. Kuizenga-Wessel S, Di Lorenzo C, Nicholson LM, Butter EM, Ratliff-Schaub KL, Benninga MA, et al. Screening for autism identifies behavioral disorders in children functional defecation disorders. Eur J Pediatr. 2016;175(10):1371-8. **doi:** 10.1007/s00431-016-2775-x **pmid:** 27624626
8. Leon-Del-Barco B, Mendo-Lazaro S, Polo-Del-Rio MI, Lopez-Ramos VM. Parental Psychological Control and Emotional and Behavioral Disorders among Spanish Adolescents. Int J Environ Res Public Health. 2019;16(3). **doi:** 10.3390/ijerph16030507 **pmid:** 30759723
9. Shariat A, Shariat A, Abedi A, Tamrin SBM. Physical activity as a prescription for the children with cerebral palsy. 3. 2014;1:1-8. **doi:** 10.15275/rusomj.2014.0108
10. Savell SM, Womack SR, Wilson MN, Shaw DS, Dishion TJ. Considering the role of early discrimination experiences and the parent-child relationship in the development of disruptive behaviors in adolescence. Infant Ment Health J. 2019;40(1):98-112. **doi:** 10.1002/imhj.21752 **pmid:** 30586478
11. Oh A, Han M, Choi Y, Lau S, Shum MS. Exploring relationship among child maltreatment experience in childhood and behavior problems as young adults: Role of social support among college students in Hong Kong. Int Soc Work. 2019;62(2):1011-24. **doi:** 10.1177/0020872818762718
12. Smalley SL, McGough JJ, Del'Homme M, NewDelman J, Gordon E, Kim T, et al. Familial clustering of symptoms and disruptive behaviors in multiplex families with attention-deficit/hyperactivity disorder. J Am Acad Child Adolesc

Psychiatry. 2000;39(9):1135-43. **doi:** 10.1097/00004583-200009000-00013 **pmid:** 10986810
13. Zayer M. The Effects of Equilibrium Exercise on the Extent of the Attention Children of the 8-12-Year-Old Girl in Semnan. Quarter J Psychol Educat Sci. 2017;2(3):93-101.
14. Ghoreishi FS, Heidarzadeh-Arani M, Maravedi SA, Sharif RS. The association between attention deficiency and hyperactivity among the asthmatic children in Kashan. [Persian]. Feyz. 2016;20(4):391-6.
15. Kordestani D. The effect of behavioral parent training on improving the mental health of mothers with attention deficit hyperactivity disorder children and decreasing their children\'s externalizing behavior. [Persian]. Int J Behav Sci. 2014;8(3):279.
16. Juškienė V. Spiritual health as an integral component of human wellbeing. Appl Res Health Soc Sci Interface Int. 2016;13(1):3-13. **doi:** 10.1515/arhss-2016-0002
17. Siddall PJ, McIndoe L, Austin P, Wrigley PJ. The impact of pain on spiritual well-being in people with a spinal cord injury. Spinal Cord. 2017;55(1):105-11. **doi:** 10.1038/sc.2016.75 **pmid:** 27241444
18. Unterrainer HF, Lewis AJ, Fink A. Religious/Spiritual Well-being, personality and mental health: a review of results and conceptual issues. J Relig Health. 2014;53(2):382-92. **doi:** 10.1007/s10943-012-9642-5 **pmid:** 22965652
19. Matthews JS, Marulis LM, Williford AP. Gender processes in school functioning and the mediating role of cognitive self-regulation. J Appl Develop Psychol. 2014;35(3):128-37. **doi:** 10.1016/j.appdev.2014.02.003
20. Shiralinia ST, Izadi M, Aslani KH. The mediating role of parenting stress, mother-child relationship quality and maternal mental health in the relationship between mindful parenting and children's behavioral problems. Culture Counsel Psychother. 2019;10(38):135-46.
21. Lee S, Jirasek I. Associations between Screen-Based Activity, Spiritual Well-Being, and Life Satisfaction among Adolescents. J Relig Health. 2019;58(3):795-804. **doi:** 10.1007/s10943-017-0429-6 **pmid:** 28660472
22. Pruitt MM, Rhoden M, Ekas NV. Relationship between the broad autism phenotype, social relationships and mental health for mothers of children with autism spectrum disorder. Autism. 2018;22(2):171-80. **doi:** 10.1177/1362361316669621 **pmid:** 29490487
23. Song J, Ma C, Gu C, Zuo B. What Matters Most to the Left-Behind Children's Life Satisfaction and School Engagement: Parent or Grandparent? J Child Famil Stud. 2018;27(8):2481-90. **doi:** 10.1007/s10826-018-1086-4
24. Gorry A, Gorry D, Slavov SN. Does retirement improve health and life satisfaction? Health Econ. 2018;27(12):2067-86. **doi:** 10.1002/hec.3821 **pmid:** 30141568
25. Samaha M, Hawi NS. Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. Comput Human Behav. 2016;57(4):321-5. **doi:** 10.1016/j.chb.2015.12.045
26. Fardinejad Z, Ahadi H. The relationship between public health and perceived social support with life satisfaction in the elderly. Behav Sci. 2014;5(15):100-87.
27. Yousefi F. Rutter scale normalization in order to investigate the behavioral and emotional problems of male and female elementary school students in Shiraz. [In Persian]. J Human Soc Sci. 1999;13(1):172-92.
28. Dehshiri GH, Najafi M, Sohrabi F, Tarqi M. Development and validation of a Spiritual Welfare Questionnaire among students. [In Persian]. J Psychol Stud. 2010;9(4):73-85.
29. Ardalan M, Ardalan F. Investigating the relationship between family functioning and mental health among the staff of Kurdistan University of Medical Sciences. [In Persian]. J Kurdistan School Nurs Midwife Paramed Sci. 2015;2(2):12-21.
30. Bayani A, Mohammad Koucheky A, Goodarzi H. The reliability and validity of the satisfaction with life scale. [In Persian]. J Iran Psychol. 2007;3(11):259-65.
31. Rahro l, Babapour J. The Role of Family Function in Predicting Behavioral Disorders in Children, 2nd National Congress of Child and Adolescent Psychology, Shahid Beheshti University2013.
32. Abedini M, Mir Shamsi F. Correlation between Resilience and Mental Health with Lifestyle and Parenting Styles of Veterans' Spouses A Case Study of Ardakan City. [In Persian]. Iran J War Pub Health. 2019;11(3):161-67. **doi:** 10.29252/ijwph.11.3.161
33. Camry S, Fathabadi J. Investigating the role of religious orientation and life expectancy in life satisfaction. New Psychol Res. 2012;1(28):159-78.
34. Rasooli R, Soltani S. Comparison and study of the relationship between religious orientation and practice of religious beliefs with marital adjustment in students [In Persian]. J Famil Stud. 2011;8(32):427-39.
35. Shaygan M, Shayegan L. Understanding the Relationship Between Spiritual Well-Being and Depression in Chronic Pain Patients: The Mediating Role of Pain Catastrophizing. Pain Manag Nurs. 2019;20(4):358-64. **doi:** 10.1016/j.pmn.2018.12.001 **pmid:** 31103504
36. Nemati Sh, Mehdipour F. Structural modeling of God-attachment styles, resilience and mental health in parents with children with developmental and mental disabilities [In Persian]. J Except People. 2016;6(22):26-40. **doi:** 10.12968/cypn.2016.22.26
37. Askari M, Nowruz M, Radmehr H, Mohammadi H. Evaluation of the effectiveness of spiritual health education on hope and coping strategies in patients with multiple sclerosis [In Persian]. J Res Relig Health. 2016;3(3):5-17.
38. Heydari P, Dabirian M, Parvaneh A, Naderi Q, Karimi P. The relationship between quality of life, spirituality and resilience with suicidal ideation in students. [In Persian]. J Islam Health. 2015;2(2):23-9.