



Evaluation of the effectiveness of self-healing training on self-compassion, body image concern, and recovery process in patients with skin cancer

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ARTICLE INFO

Keywords:

Self-healing training
Self-compassion
Body image concerns
Skin cancer

ABSTRACT

Background and purpose: The present study aimed to investigate the effect of self-healing training on self-compassion, body image concern, and recovery process in patients with skin cancer.

Materials and methods: The sample consisted of 34 volunteers who were purposefully selected and then randomly divided into experimental (n = 16) and control (n = 18) groups. The research instrument included the Self-Compassion Scale and Body Image Concern Inventory. The self-healing training intervention was then performed on the experimental group for twelve 90-min sessions. Finally, both groups underwent the post-test. Follow-up was performed two and four months after the post-test.

Results: Self-healing training significantly increased self-compassion, including self-kindness, self-judgment, and sense of common humanity ($p < 0.01$), and decreased the level of body image concern, isolation, and over-identification ($p < 0.05$).

Conclusion: The self-healing is an appropriate intervention method to increase self-compassion and reduce body image concern and thus accelerate the process of skin cancer recovery.

1. Introduction

Cancer is a growing disease [1,2] that changes the patients' natural process of life and creates a sense of concern and anxiety in them [3]. Skin cancer is the third leading cause of death, accounting for 20 to 40% of all cancers [4–7]. Cancer is a very unpleasant and unbelievable experience for anyone and can be a deep crisis in daily life; it threatens the patients' work, socio-economic and family life, and future in general [8,9]. Cancer and its treatment can have a profound impact on the patients' appearance [10], and it is annoying for most patients whose appearance changes [11]. Some researchers believe that patients with a better feeling about themselves have stronger beliefs against the disease and its treatment [12,13]. Patients' appearance changes and body image concern are issues mostly affected by skin cancer; since skin cancer damages the patients' appearance, it makes them worry about communication with others. The disorder caused by this disease in the mental image is one of these consequences. Body image has been defined as a multidimensional construct consisting of cognitive, emotional, and behavioral elements [11].

Self-image decreases health and quality of life in some patients [14]. Given the body image concern in skin cancer patients, it appears that

self-compassion is an essential factor. The compassion is a healthy way of self-communication and requires three main components, namely self-kindness against the self-judgment, common humanity against the isolation, and mindfulness against the over-identification of painful thoughts and feelings. Self-compassion is accepting self-suffering rather than disconnecting or avoiding. In contrast with self-criticism, this method causes the tendency to heal and improve. Self-compassion is a combination of mental awareness of painful emotions, consideration of personal events as a part of larger human experiences, and kindness to oneself in the experience of failure. The self-compassion remains stable regardless of positive or negative circumstances in the individual life [15]. Many studies have achieved satisfactory results from the mindfulness intervention based on the self-compassion for the cancer treatment, indicating the improvement of patients [16]. A higher level of self-compassion is useful for cancer patients [17]. Self-compassion plays a key role in the psychological and physical healing state of cancer [18]; it empirically has a positive association with life satisfaction [15], happiness and positive affect [19], psychological well-being [20], and social communication [21]. People with higher self-compassion also have higher mental health and better mental performance [22]. Therefore, self-compassion enhances tolerance and patience in women with

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<https://doi.org/10.1016/j.ctcp.2020.101180>

Received 25 February 2020; Received in revised form 13 April 2020; Accepted 16 April 2020

Available online 22 April 2020

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breast cancer by increasing positive emotions [23]. In a study, the mindfulness intervention has shown to have a short-term effect on reducing stress and behavioral symptoms in young breast cancer survivors [24].

Self-healing is a new approach formally introduced by Loyd & Johnson [25] as healing codes. It includes self-help and self-soothing skills, along with healing codes for balancing the cellular energy, reducing physiological stress, and increasing comfort. Two different questions are answered in this approach: Human is the only creature given the power of thinking and reasoning; 1- why does not he act wisely? 2- Why have physical diseases become greater and debilitating despite medical advances? Loyd & Johnson [25] believe that 95% of all physical and non-physical problems originate from physiological stress caused by destructive cell memories. Chan and colleagues [26] report that self-healing exercise improves psychophysical health status among nursing and midwifery students. Charlson and colleagues [27] also report that the 20-week contemplative self-healing intervention results in a clinically important improvement in the functional assessment of cancer therapy-general (FACT-G).

Stress occurs when the autonomic nervous system is out of balance. There is, indeed, no balance between the state of fight-escape with normal state or relaxation. This type of stress causes diseases, which are not based on the individuals' external conditions that can be changed, but they are based on profound stress actually inside and completely independent of the current status of individuals. Indeed, changing the current status and alleviating the stressful issues, which have so far been considered by psychologists, may have little effect on the physiological stress [25]. Loyd & Johnson [25] argues that the cause of stress in the body is a "destructive memory (cellular memory)." Destructive cellular memory is a memory stored in all cells of the body that reduces cellular energy and causes stress. Lipton [28] considers the unhealthy patterns of cellular energy, unnecessary concern, false images, and beliefs stored in body and mind as causes of physiological stress [28]. These beliefs and misconceptions in cellular memory make people misunderstand their current situation as a threat, while there is no threat in reality. This misinterpretation of the current situation causes the unhealthy activation of the "war or scape" system; the stress continuation weakens the immune system [29]. Lipton [30] believes that the feeling of revenge and malice due to destructive cellular memories in cancer diseases causes an involuntary imbalance in the autonomic nervous system, weakening the immune system against diseases. Therefore, this pressure can lead to various diseases, such as skin cancer [30]. Loyd & Johnson [29] believes that all problems and devastating memories people face in their lives are related to one or more groups, including malice; harmful measures; false beliefs and negative emotions; selfishness vs. love; sadness and distress vs. happiness; anxiety and concern vs. comfort; anger, hopelessness, and intolerance vs. tolerance; exclusion and violence vs. kindness; being not good enough vs. self-esteem; controlling and restricting vs. trust; unhealthy pride, arrogance, and a deterrent image vs. humility; loss of control vs. restraint.

This therapeutic approach focuses on the individual effort to treat destructive memories and find the causes of physiological stress in personality traits in addition to environmental conditions. This treatment emphasizes spiritual excellence, having a healthy lifestyle, modifying internal conversations, correcting unhealthy concern and beliefs, meditating, praying, and practicing special practices of healing codes [31,32]. In Iran, the self-healing training intervention was localized by Latifi & Marvi [31]. Given the cases mentioned above, the researcher's main question was whether it is possible to increase self-compassion, reduce body image concern, and speed up recovery in skin cancer patients by self-healing training?

2. Method

The research method was quasi-experimental, and the research design was pre- and post-test with a control group. The study population

consisted of 230 women with skin cancer who visited Shahid Rahimi Educational and Medical Center in Khorramabad city in 2018–2019. The present research had a purposive and convenience sampling method so that a total of 34 women with skin cancer who had files in Shahid Rahimi medical center of Khorramabad were selected. The inclusion criteria were female gender, married, age range of 40–60, having at least a child, undergoing chemotherapy, at least two years with skin cancer, consent to participate in this project; the exclusion criteria were severe psychiatric disorder, using psychiatric drugs, absence in therapy for three sessions, not-undertaking assignments, and non-collaboration. Then, the samples were randomly classified into experimental (n = 16) and control (n = 18) groups. The experimental group underwent the self-healing training in twelve 90-min sessions, but the control group received no intervention. The intervention training program was conducted by a trained clinical psychologist in the hospital conference room. After the training sessions, a post-test was performed on experimental and control groups. Follow-up was performed two and four months after the intervention program. Table 1 presents the summary of the sessions.

2.1. Research instruments

Checklist of physiological symptoms: Clinical symptoms of the process of skin cancer included 16 signs: skin changes, unreasonable weight loss, bloating, change in the chest, abnormal bleeding, trouble with swallowing, blood in the stool, abdominal pain, depression, mouth infections, persistent and unspecified pain, changes in lymph nodes, fever, fatigue, persistent cough, and indigestion. Three scales (severe, partial, and never) were used to assess the symptoms, and patients reported changes and a lack of changes in their status.

Self-compassion scale (SCS): The scale designed by Neff [33] includes 26 questions that evaluate the self-compassion from different dimensions as a right self-tactic, which needs three basic elements, including the self-kindness vs. self-judgment, common humanity vs. isolation, and mindfulness vs. over-identification towards painful

Table 1
Self-healing session protocol [31].

Sessions	Content of sessions
First	Introducing the situational stress and explaining the immune system
Second	Explaining the physiological and hidden stress or destructive cellular memories and false memory
Third	Training how to diagnose the true or false problem; training the management of situational stress; finding memory according to the failure, conflict, and confusion
Fourth	Finding the causes of destructive cellular memories in the group; filtering and dimming three codes (malice- harmful actions - false beliefs, and negative triangular emotions)
Fifth	Implementing the glass lift technique; finding memory or memory access about traumas and very effective events in all periods of life, shocks, and post-traumatic stress disorder (PTSD) according to the individual attitude
Sixth	Explaining the puzzles of positive and negative emotions and teaching techniques of forgiveness
Seventh	Explaining the group of harmful behaviors, misconceptions, and habits; teaching willpower methods (decision-making- care- evaluation- punishment and reward), problem-solving learning, and environmental change
Eighth	Introducing the first to fourth healing codes, including love- happiness- comfort and patience
Ninth	Introducing fifth to ninth healing codes, including kindness- goodness- trust-humility and restraint; teaching the reverse memory training
Tenth	Explaining the role of true request from the heart, effects of prayer, and continuation of the focus on life's desires; explaining the scientific evidence of prayer in self-healing
Eleventh	Teaching the moderate lifestyle; improving the lifestyle by recognizing bad habits and harmful practices; modifying sleep and nutrition, ways of eating, drinking, recreation, travel, exercise, hygiene, and health
Twelfth	Improving the quality of life concerning health and hygiene- intimacy and communication (parents- spouse- relatives, friends, and others)- scientific growth- financial growth; improving the house, neighborhood, and society- useful social activities

thoughts and feelings. The questionnaire is scored on a 5-point Likert scale (strongly disagree = 1; disagree = 2; neither agree nor disagree = 3; agree = 4; strongly agree = 5). This questionnaire has three components (self-kindness vs. self-judgment, common humanity vs. isolation, and mindfulness vs. over-identification) and six subscales (self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification) [33]. The findings of Shahbazi and colleagues in Iran show that the reliability of this questionnaire is 0.91 using Cronbach's alpha coefficient [34]. Cronbach's alpha of the present study is 81%, and compassion dimensions have coefficients as self-kindness: 73%, self-judgment: 67%, common humanity: 71%, isolation: 59%, mindfulness: 63%, and over-identification: 60%.

Body Image Concern Inventory (BICI): The test formulated by Littleton and colleagues [35] has 19 items and is self-report. The respondent should answer questions on a 5-point Likert scale (never = 1 to always = 5). Scores range from 19 to 95; the higher a person's score, the greater the body image concern. In this work, the correlation coefficient of each question with a total score ranges from 32% to 73%, and the mean correlation is 62%. The questionnaire has good reliability and validity [35]. In Jafarzadeh Dashbolagh's research [36], the reliability of the questionnaire is 0.93, using Cronbach's alpha for the whole questionnaire. Cronbach's alpha is 76% in the present study.

2.2. Statistical analyses

After collecting data in the present study, descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (repeated measures ANOVA and Kruskal-Wallis test) are utilized to analyze the data.

3. Results

The participants included 34 women with skin cancer, aged between 40 and 60 years old. The demographic variables of the participants are shown in Table 2.

According to Table 3, all patients in both experimental and control groups had severe clinical symptoms in the pre-test.

The mean total score of pre-test, post-test, and follow-up of body image concern were 50.68 ± 13.36, 32.12 ± 7.77, and 34.18 ± 8.32 in the experimental group and 49.06 ± 12.60, 48.68 ± 12.24, and 49.43 ± 12.82 in the control group, respectively. Furthermore, the mean score of pre-test, post-test, and follow-up of self-compassion were 2.41 ± 0.46, 3.13 ± 0.39, and 3.08 ± 0.34 in the experimental group and 2.50, 2.54, and 2.52 in the control group, respectively (Table 4).

The repeated measures ANOVA was used to evaluate the effectiveness, and the Kruskal-Wallis test was used to investigate the effects on

Table 3

Frequency distribution of samples according to the disease recovery process in experimental and control groups.

Groups	Experimental			Control		
	Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
Severe clinical symptoms	16	0	0	18	0	0

the recovery process of patients with skin cancer. The statistical power and effect size (η_p^2) were significant, according to Table 5.

The effectiveness of self-healing training on self-compassion and body image concern was confirmed; however, it was not confirmed for the recovery process of skin cancer patients (Table 5). According to Table 6, there was no significant difference between experimental and control groups in terms of symptoms at the pre-test stage, and both groups had the same symptoms. The recovery process was seen in

Table 4

Descriptive findings of body image concern and self-compassion in experimental and control groups.

Scales	Phase	Experimental group	Control group
		M ± SD	M ± SD
Body image concern	Pre-test	50.68 ± 13.36	49.06 ± 12.60
	Post-test	32.12 ± 7.77	48.68 ± 12.24
	Follow-up	34.18 ± 8.32	49.43 ± 12.82
Self-compassion	Pre-test	2.41 ± 0.46	2.50 ± 0.42
	Post-test	3.13 ± 0.39	2.54 ± 0.41
	Follow-up	3.08 ± 0.34	2.52 ± 0.40
Self-kindness	Pre-test	2.53 ± 1.06	2.60 ± 0.99
	Post-test	3.48 ± 0.96	2.62 ± 0.92
	Follow-up	3.43 ± 0.87	2.60 ± 0.87
Self-judgment	Pre-test	2.28 ± 0.30	2.41 ± 0.39
	Post-test	2.80 ± 0.37	2.46 ± 0.37
	Follow-up	2.80 ± 0.46	2.47 ± 0.37
Common humanity	Pre-test	2.71 ± 0.44	2.81 ± 0.44
	Post-test	3.28 ± 0.45	2.82 ± 0.46
	Follow-up	3.18 ± 0.50	2.84 ± 0.54
Isolation	Pre-test	2.00 ± 0.57	2.15 ± 0.52
	Post-test	2.82 ± 0.55	2.17 ± 0.49
	Follow-up	2.75 ± 0.66	2.10 ± 0.54
Mindfulness	Pre-test	3.21 ± 0.61	3.23 ± 0.52
	Post-test	3.40 ± 0.55	3.26 ± 0.49
	Follow-up	3.28 ± 0.57	3.26 ± 0.50
Over-identification	Pre-test	1.85 ± 0.41	1.98 ± 0.62
	Post-test	2.92 ± 0.75	2.07 ± 0.63
	Follow-up	2.93 ± 0.69	2.00 ± 0.58

Table 2

Demographic characteristics of the participants.

Age	Experimental group		Control group		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
40-45 years old	4	11.76	5	14.71	9	26.47
46-50 years old	3	8.82	4	11.76	7	20.59
51-55 years old	3	8.82	5	14.71	8	23.553
56-60 years old	6	17.65	4	11.76	10	29.41
Total	16	47.06	18	52.94	34	100.00
Number of children						
One child	2	5.88	3	8.82	5	14.71
Two children	5	14.71	7	20.59	12	35.29
Three children	3	8.82	2	5.88	5	14.71
Four children	4	11.76	5	14.71	9	26.47
Five children	2	5.88	1	2.94	3	8.82
Total	16	47.06	18	52.94	34	100.00
Education						
High school	3	8.82	1	2.94	4	11.76
Middle school	13	38.24	17	50.00	30	88.24
Total	16	47.06	18	52.94	34	100.00

Table 5

The inter- and intra-participant analysis of variance with measurement of pre-test, post-test and follow-up of body image concern and self-compassion.

Scales	Within and between subjects' effects	Source	SS	df	MS	F	p	η_p^2
Body image concern	Within-subjects	Phase	2.90	1.27	2.27	47.46	0.01	0.61
		Group × Phase	2.36	1.27	1.85	38.65	0.01	0.56
		Error	1.83	38.30	0.04			
	Between-subjects	Group	3.02	1	3.02	6.78	0.02	0.18
		Error	13.37	30	0.44			
Self-compassion	Within-subjects	Phase	1670.81	1.40	1185.50	61.79	0.01	0.67
		Group × Phase	1646.06	1.40	1167.94	60.88	0.01	0.67
		Error	811.12	42.28	19.18			
	Between-subjects	Group	2430.09	1	2430.09	6.67	0.02	0.18
		Error	10914.81	30	363.82			

patients in the experimental group at both post-test and follow-up stages; however, it was also observed in the control group. Given the chi-square (χ^2) test values and significant levels of post-test and follow-up, there was no significant difference between patients' recovery.

A situation analysis on the data of three patients was used for trending analysis of the self-healing effectiveness on the recovery process of patients with skin cancer in the pre-test, intervention, and follow-up stages. The results showed that the self-healing intervention program was effective in the recovery process in patients with skin cancer.

The repeated measures ANOVA was used to investigate the effectiveness of self-healing training on promoting the self-compassion.

There was a significant difference between three measurements of pre-test, post-test, and follow-up for self-compassion, self-kindness, self-judgment, common humanity, isolation, and over-identification at a level of $p < 0.01$. There was a significant difference between experimental and control groups in terms of over-identification and isolation variables at a level of $p < 0.05$; however, no significant difference was seen for the other dimensions (Table 7).

4. Discussion

The present study aimed to investigate the effect of self-healing training on body image concern, self-compassion, and recovery process of skin cancer patients. The results indicated the effectiveness of self-healing training on self-compassion and body image concern in patients with skin cancer in Khorramabad; however, no significant effect was seen on their recovery process.

Loyd & Johnson [25] reported the effectiveness of self-healing training on accelerating the recovery of skin cancer patients. Self-healing intervention was reported to be effective in reducing anxiety, sadness, and disability in women treated for breast cancer and female diseases [37]. The tests for measuring the heart rate before and after healing code training indicated its physiological effects on the autonomic nervous system balance. Heart Math Institute and the UCLA medical center confirmed the effectiveness of this approach [30]. Meditation exercises had positive effects on the mental health and quality of life in cancer patients [38,39]. Meditation reduced stress and strengthened hereditary genes in families with cancer members [40]. In other studies, relaxation training reduced anxiety and depression in patients with both breast and prostate cancer [41,42]. Deep breathing training reduced fatigue and anxiety levels in female cancer patients under medical treatment [43]. Relaxation training strengthened the

Table 6

Kruskal-Wallis test of the effectiveness of self-healing training on the recovery process of patients.

Phase	Mean Rank		χ^2	df	p
	Experimental group	Control group			
Pre-test	16.50	16.50	0.00	1	1.00
Post-test	17.50	15.50	1.51	1	0.47
Follow-up	18.00	15.00	1.59	1	0.20

quality of life in patients with prostate cancer [44].

Given the effectiveness explanation of self-healing in increasing the self-compassion, reducing the body image concern, and accelerating the recovery of skin cancer, it can be argued that this technique is useful due to its principles that are based on the soul excellence, meditation, continuous healing code exercises, sincere prayer, seeking healing from God, and creating and strengthening virtues, such as peace, joy, restraint, trust, and lifestyle modification. The self-healing approach expresses the view that genes, hormones, and neurotransmitters do not control body and mind, but beliefs do; thus, people can have more and better analysis of destructive cell memories and thoughts. On the other hand, positive thoughts can have a profound effect on behavior and the nervous system only when they are in coordination with hidden memory programs. Therefore, this approach creates physical exercises in addition to the subjective ones and gives the patients the attitude to control their negative and positive biological beliefs, thereby striving to create a healthy and happy life.

In explaining the effectiveness of self-healing training on increasing self-compassion in particular, it can be argued that since modifying the internal conversations and increasing tolerance for unhealthy and false concern and beliefs are among the training techniques, treating destructive memories and images, recognizing hidden concern, such as self-judgment concern, self-acceptance, and increasing self-esteem and tolerance code exercises can decrease negative conversations and physiological stress.

In explaining the effectiveness of self-healing training on body image concern, it can be concluded that since body image has a wide range of psychological and physical effects on individuals, the fear of rejection and non-attraction by spouse and important people in life are major concerns of skin cancer patients with body image problems. They compare themselves with the pre-disease time, resulting in frustration, depression, and anxiety. Many skin cancer patients have false beliefs that cause stress in the body and change cells to defensive states; this, in turn, causes the autonomic nervous system to be in the situation of fight and escape. Indeed, false beliefs, such as I am not lovely, my appearance is unacceptable to others, I am disappointed, worse accidents will happen, people do not consider me as an ordinary person, and I am a bad person, are like tumors in cellular memories that spread the disease throughout life. Due to these negative thoughts, patients forget their ability and become self-critical and pessimistic about their appearance, resulting in the lack of hope, body image concern in front of others, impatience, poor performance, and feeling of inefficiency.

The self-healing training, treating destructive cellular memories of self-judgment, enhancing self-esteem, and performing the code of love and happiness all make patients more tolerant against problems and resilient to concern about appearance. In explaining the ineffectiveness of self-healing training on the process of skin cancer recovery, a longer time may be spent to affect the clinical symptoms, and the researcher continues to investigate it as the treatment process progresses.

Table 7

The inter- and intra-participant analysis of variance with measurement of pre-test, post-test and follow-up of self-compassion dimensions.

Scales	Within and between subjects' effects	Source	SS	df	MS	F	p	η_p^2
Self-kindness	Within-subjects	Phase	4.71	1.46	3.21	23.78	0.01	0.44
		Group \times Phase	4.44	1.46	3.03	22.44	0.01	0.42
		Error	5.94	43.92	0.13			
Self-judgment	Between-subjects	Group	7.15	1	7.15	2.83	0.10	0.08
		Error	75.72	30	2.52			
		Phase	1.72	1.30	1.32	17.39	0.01	0.36
Common humanity	Within-subjects	Group \times Phase	1.11	1.30	0.85	11.19	0.01	0.27
		Error	2.97	39.10	0.07			
		Group	0.77	1	0.77	2.22	0.14	0.70
Isolation	Between-subjects	Error	10.38	30	0.34			
		Phase	1.57	1.61	0.97	7.21	0.01	0.19
		Group \times Phase	1.34	1.61	0.83	6.14	0.01	0.17
Mindfulness	Within-subjects	Error	6.54	48.31	0.13			
		Group	1.31	1	1.31	2.82	0.10	0.08
		Error	13.99	30	0.46			
Over-identification	Within-subjects	Phase	3.27	1.37	2.38	21.08	0.01	0.41
		Group \times Phase	3.45	1.37	2.51	22.28	0.01	0.42
		Error	4.65	41.18	0.11			
Over-identification	Between-subjects	Group	3.46	1	3.46	4.70	0.04	0.14
		Error	22.13	30	0.73			
		Phase	0.19	0.18	0.16	1.46	0.23	0.04
Over-identification	Within-subjects	Group \times Phase	0.10	1.18	0.09	0.83	0.39	0.02
		Error	3.94	35.51	0.11			
		Group	0.05	1	0.05	0.05	0.81	0.01
Over-identification	Between-subjects	Error	28.43	30	0.94			
		Phase	6.76	1.60	4.21	24.63	0.01	0.45
		Group \times Phase	5.53	1.60	3.44	20.15	0.01	0.40
Over-identification	Within-subjects	Error	8.24	48.19	0.17			
		Group	7.31	1	7.31	6.61	0.02	0.18
		Error	22.18	30	1.10			

5. Conclusion

Self-healing training can be effective in improving self-compassion and reducing body image concern in patients with skin cancer. Therefore, the psychological problems in these patients can be decreased by this training at different stages of treatment or after it. Thus, it is suggested to hold self-healing training courses in workshops of hospitals and consider this training in executive programs for consultants of universities, especially that of Medical Sciences, to help solve physical and psychological problems in patients. Results of the present study are limited to women with skin cancer in Khorramabad; the inattention to variables, such as socio-economic level and quality of life, which might affect the research results, is the limitation.

Funding

No funding.

Ethical considerations

The study was approved by the Ethical Committee of Lorestan University of Medical Sciences (IR.LUMS.REC.1398.003).

Declaration of competing interest

The authors have no conflict of interest to disclose.

CRedit authorship contribution statement

Zohreh Latifi: Conceptualization, Investigation, Resources, Supervision, Project administration, Writing - review & editing. **Mozghan Soltani:** Conceptualization, Methodology, Data curation, Writing - original draft. **Shokoufeh Mousavi:** Investigation, Validation, Writing - original draft, Formal analysis.

Acknowledgment

We would like to thank all the participants, as well as all employees of Shahid Rahimi Educational and Medical Center in Khorramabad city for their kind support.

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