

Effectiveness of Stress Management with Cognitive-Behavioral Approach on Anxiety Sensitivity of the Mothers with Cancerous Children

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ABSTRACT

Background and Purpose: Cancer is considered as one of the most radical hygienic issues in children. It threatens the health and active lives of children and their parents causing numerous personal, familiar and social damages in physical, mental and social dimensions. This study aimed to investigate the effectiveness of stress management with cognitive-behavioral approach on the anxiety sensitivity of the mothers with cancerous children.

Methods: In a quasi-experimental with pretest- posttest study, 30 mothers with cancerous children were selected using purposeful sampling and divided into case and control groups. Both groups were given pretest using the 16 questions questionnaire of anxiety sensitivity. Then, the skills of stress management with cognitive-behavioral approach were taught to the case group for 8 sessions and the control group didn't receive any intervention. Finally both groups were given posttest and the data were analyzed using one-way and single variable variance analysis through SPSS21 software.

Results: Mothers in case group showed reduction in the anxiety compared to the control one and it was maintained in the following period ($p < 0.01$). The highest reduction was in the parameter of the fear of physical concerns ($p < 0.01$).

Conclusion: Teaching the methods of coping with stress with cognitive-behavioral approach is an effective strategy for helping mothers with cancerous children due to its high efficiency especially when it is held in groups.

Keywords: Stress Management; Cognitive-Behavioral; Anxiety Sensitivity; Children; Mother

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INTRODUCTION

Cancer as a debilitating and prevalent disease is the main cause of death in children in both developed and developing countries¹. This disease forms about 4 percent of death in children under 5 and 13 percent of 5-15 years old children in Iranian population². With the advancements in curing children's cancer, most of such patients survive³. However, cancer compared to the other diseases has a poor prognosis and creates more fear and anxiety for the patient and his/her family⁴. Although

cancer medically happens for one person, the patients' families experience stressful events and continuous states of anxiety⁵. Diagnosis of cancer creates a big change in the person's family which Rolland calls it gate crasher (unexpected guest) and needs to be accepted by parents. In each level of the disease, parents face challenges menacing stable relations and their lifestyle⁶. Particularly, mothers with cancerous children would face an exhausting experience in the family. They would be shocked by the diagnosis and have to continue their lives

with an extra load. Disease of their child affects the family and generally the quality of their lives is reduced ⁷.

Different issues such as social psychological problems, tension in the relations of parents, financial problems, social isolation, change in occupational and family duties, entertainment patterns and lack of time for the family to look after healthy children are identified as the other stressful factors in the families with cancerous children. Paying attention to the parents of cancerous patients especially mothers is very important. Studies reported high percentage of affliction with mental disorders in this group ⁸. Anxiety sensitivity as an intermediate variable between stress and the disease has a determining role in creating mental disorders and anxiety disorders in particular ⁹.

Cognitive theories of anxiety suggest that in people with high anxiety are orientations in the processing and recovery of the data related to calling stimulants of anxiety that have a determining role in the creation and continuity of anxiety ¹⁰. Grant and colleagues found out in a study that the index of anxiety sensitivity is the basic factor in predicting the symptoms of social disorders, panics, depressions and anxieties. When people with high anxiety sensitivity face more problems in regulating their emotional functions, they will less be able to identify and accept their emotions and in vague emotional situations they tend to exhibit negative emotions ¹¹. Stress management increases people's ability to reduce stress, anxiety and become adapted to stressful situations. This intervention consists of elements such as increasing consciousness about anxiety, relaxation training, identifying inefficient thoughts, cognitive rebuilding, and teaching problem-solving, teaching skills of self-expression, anger management, and management of the self and planning activities ¹².

Since mothers are counted as the pillars of the family and they should keep family integrity despite disease, teaching how to manage stress can help reaching this important goal. In addition, supportive and instructional interventions have active role in decreasing harmful complications of chronic disease in the child and family. Therefore, this study was carried out with the aim of assessing the effectiveness of stress management with

cognitive-behavioral approach on anxiety sensitivity of the mothers with cancerous children.

MATERIALS AND METHODS

This study was a quasi-experimental with pretest-posttest and long-term follow up. Statistical population includes mothers of the cancerous children who referred to Ghods children's hospital in Ghazvin province from March to June 2016 who were selected purposefully. Considering the fact that the minimum sample size in experimental studies is 15 for each group ¹³ to measure sample size 15 members were recruited for each group. The criteria for taking part in the study included age range of 20-55, conscious desire for participating in the study, ability to take part in the meetings and doing the assignments, cooperation in completing the tools, at least having the certificate of high school and having proper physical and mental stability. Criteria of exiting from the study included lack of desire for taking part in the meetings and being absent for more than three sessions in the instructions and not doing assignments as well as lack of cooperation in the process of training or psychological treatment which was in the plan of this study.

Before implementing the study, in order to comply with ethical considerations, we made sure about the mothers' satisfaction with taking part in the study through making them aware of the goal of the study and the effect of carrying out such studies in improving their psychological state. They were ensured that the information will remain confidential. Mothers were randomly divided into the case and control groups. Then, the case group was taught the skills of stress management with cognitive-behavioral approach in a group for 8 sessions and the witness group didn't receive any intervention. At the end, both groups were given posttest. The protocol of training sessions of stress management has been presented in table 1.

Tools used in this study include sample demographic sheet and the anxiety sensitivity index.

Sample demographic sheet

It included age, education and marital status. This sample sheet was provided and evaluated by the researchers of this study.

Table 1. Validity coefficients of the tool of the study (in this study) [n=30].

Tools	subscale	Number of questions	Internal similarity
Fear of physical concerns		8	0.713
Anxiety sensitivity index (ASI)	fear of not having cognitive control	4	0.606
	Observation of anxiety by others	4	0.621
Total grade		16	0.784

Anxiety sensitivity index

A self-reporting questionnaire that is based on the five-degree scale of Likert (from very low 0 to very high 4) and has 16 items. Each item reflects the idea that anxiety feelings are experienced unpleasantly and they can be resulted in harmful outcome¹⁴. The structure of this questionnaire is composed of three factors; fear of physical concerns (8 items), fear of not having cognitive control (4 items) and fear of seeing others' anxiety (4 items). Investigating psychometric features of this scale shows its internal stability (Alpha between 0.80 and 0.90). Validity of retest 0.75 after 2 weeks and 0.71 for three years has shown that anxiety sensitivity is a stable structure¹⁵. Internal similarity of the questionnaire in this study was reported in table 2.

For analyzing data SPSS version 21 was used. Statistical method used for analyzing the data of study in descriptive statistical level were mean indexes, standard deviation, frequency and the percent of frequency and in inferential statistical level single variable variance analysis was used.

RESULTS

As it is illustrated in table 3 considering the fact that

the indexes of chi-square (for all three demographic variables in the study) are smaller than the index of critical chi-square considering 5 percent error and for 2 degree of freedom (5.991), null hypothesis based on lack of difference in the frequencies is verified with 95 percent certainty. The two study groups were homogenous in terms of demography.

In table 4 mean and standard deviation of grades of the variables of the study (anxiety sensitivity) to separate two study groups (stress management with CBT approach and control) and three times test implementation (pretest, posttest and following) have been presented.

As it is illustrated in table 5, considering that the level of significance of Kolmogorov Smirnov z index in study variables in both groups is higher than 0.05 in in three measuring times, thus with 95 percent certainty distribution of the study variables is normal.

Investigating stress management hypothesis (with CBT approach) on decreasing anxiety sensitivity (and its parameters) is effective for the mothers with cancerous children. To investigate this hypothesis from one-way and single-variable variance analysis total grade of anxiety sensitivity was used for differential grades (the difference between pretest and posttest)¹.

Table 2. Protocol of the sessions of training the skill of stress management.

Session	Subject
First	Introduction of members of the group, practicing greeting, introduction, stress, stress makers, stress responses and awareness from physical effects of stress, training relaxation and diaphragmatic breathing, defining emotional regulation and stress management in the view of cognitive-behavioral approach and investigating their etiology
Second	Awareness of the effects of stress and understanding the importance of such awareness, increasing the awareness of physical responses related to stress makers, explaining feelings, ways of recognizing illogical thoughts, explaining processing errors, teaching reevaluation of thoughts and challenging with them as a solution to change illogical thoughts
Third	Explaining connection of thoughts, emotions and physical feelings, making numerous examples in different situations, explaining thinking errors and automatic negative thoughts
Fourth	Introducing and identifying different kinds of common negative thoughts and cognitive distortions, investigating awareness of pleasant and unpleasant events on feelings, physical thoughts and feelings
Fifth	Challenging common negative thoughts and cognitive distortions and replacing logical thoughts with illogical ones, training and discussing anger management, certainty, time management, recording daily events of teaching how to use the skill of problem solving regarding conflicts, discussing the skills of saying no, delegating authority
Sixth	Training, practicing and implementing the effective strategies of coping
Seventh	Continuing the training, practicing and implementing effective strategies of coping, teaching how to manage stress, the hygiene of sleeping
Eighth	Teaching the importance and understanding of the benefits of social support and overviewing the plan

Table 3. Comparing demographical variables in the two study groups.

Variable	Classes	Group		df	X ²	Level of Significance
		Stress management	control			
Education	Diploma and lower	10	6	2	5.294	0.071
	Academic education	9	5	2	2.143	0.343
Marital status	Divorced	1	2			
	Married	14	13			
Income	Low	2	2	2	0.450	0.799
	Average/ high	13	13			

Table 4. Mean and standard deviation of the Stress management with CBT approach (n=30).

Variable	Parameter	Time of implementation	Mean	Standard deviation
Anxiety sensitivity	Fear of physical concerns	pretest	22.27	1.16
		Posttest	14.27	1.16
	fear of not having cognitive control	pretest	9.73	0.88
		Posttest	7.07	0.96
		Following	6.40	0.74
Observing anxiety by others		pretest	13.33	1.05
		Posttest	9.00	0.93
		Following	9.53	1.06
Anxiety sensitivity	Total grade	pretest	13.33	1.05
		Posttest	9.00	0.93
		Following	9.53	1.06

Table 5. Results of Kolmogorov Smirnov test for investigating normality of the data (n=15).

Parameter/ time of implementation variable	Stress management				Control			
	Mean	SD	Z index	P value	Mean	SD	Z index	P value
Pretest	22.27	1.16	0.784	0.570	22.40	1.72	0.742	0.640
Fear of physical concerns Posttest	14.27	1.16	0.784	0.570	21.80	1.57	0.689	0.729
Following	14.53	1.46	0.724	0.671				
Pretest	9.73	0.88	0.847	0.471	9.80	1.08	0.773	0.589
Fear of not having cognitive control Posttest	7.07	0.96	0.907	0.383	11.13	0.99	0.810	0.527
Following	6.40	0.74	1.187	0.120				
Pretest	13.33	1.05	1.051	0.220	13.33	0.62	1.183	0.122
Observing anxiety by others Posttest	9.00	0.93	1.162	0.134	13.27	1.16	0.997	0.274
Following	9.53	1.06	0.788	0.564				
Total grade Pretest	45.33	1.45	0.740	0.644	45.53	2.10	0.517	0.952
Anxiety sensitivity Posttest	30.33	2.09	0.792	0.556	46.20	1.86	0.545	(0.928
Following	30.47	2.17	0.785	0.568				

Considering that the calculated F index (125/446) is higher than $F_{0.01}$ with degrees of freedom 2 and 42 (5/15), thus, null hypothesis based on the equality of means is rejected with 99 percent certainty. [$\eta^2=0.857$, in other words, around 86 percent of the changes in anxiety sensitivity [total grade] is explained by the type of training/treatment factor and is influenced]. With regard to the results stress management with cognitive-behavioral approach is effective on decreasing anxiety sensitivity of the mothers with cancerous children.

Considering lack of the assumption of linear relationship between the grades of pretest and posttest in covariance analysis the total grade of anxiety sensitivity

was ($p > 0.05$, $F=0.867$), parameters of fear of not having cognitive control ($p > 0.05$, $F=1.233$) and observing anxiety by others was ($p > 0.05$, $F=0.066$), instead of covariance analysis the analysis of differential grades were used.

DISCUSSION AND CONCLUSION

With regard to the purpose of this study based on investigating effectiveness of stress management with cognitive-behavioral approach on anxiety sensitivity of the mothers with cancerous children, findings resulted from single-variable variance analysis revealed that teaching skills of stress management has significant effect

Table 6. One-way and single-variable variance analysis for comparing differential grades of anxiety sensitivity [total grade].

Source of changes	total squares	degree of freedom	mean of squares	F amount of effect (partial Eta square)		
Between group	1963/333	2	981/667	125/446**	0/857	
Within group	328/667	42	7/825			
Total	2292/000	44				

** $P < 0.01$

on the reduction of anxiety sensitivity in the mothers of such children. This finding is consistent with the studies of Ghadiri et al ¹⁶, Ghanbari et al ¹⁷, Alavi Arjmand et al ¹⁸ and Chubforosh et al ¹⁹.

Findings of this study revealed that teaching the skills of stress management leads to stable reduction of symptoms in anxiety sensitivity variables. This is likely to be due to emphasis of cognitive-behavioral methods on inefficient thoughts as well as underlying and core beliefs that get defective in the mothers of children with mental disorders. Explaining their similar finding, Ghadiri et al ¹⁶ state that continuous confrontation with numerous stresses requires teaching and learning proper skills for coping with stress. In other words, in case of stress people must have required coping skills to be able to reduce effects of stress. If it is managed and the influential coping skills are provided, the person will be able to deal with the needs and challenges of her life better. Therefore, intervention of stress management leads to the formation of good feelings in individuals, positive performance; in addition, it creates interest and motivation in people's lives and enhanced self-confidence. As a result, it leads to the increase of psychological welfare.

Ghanbari et al ¹⁷ also state that tension and anxiety can be reduced by different strategies of stress management such as bodily and muscular relaxation. People identify physical symptoms, attain serenity which is inconsistent with tension and they can reduce anxiety and unpleasant feelings. Consequently, their psychological welfare will be enhanced. Chubforosh and colleagues ¹⁹ also explain their similar finding and state that stress management treatments can create numerous changes in individual's beliefs, feelings and behavior. Therefore, reforming individual's evaluations as well as improving coping skills and provided practices for combining what have been taught with real life situations can lead to the reduction of perceived stress and can increase psychological welfare. This study suggests that the change in interpretations and reduction in anxiety sensitivity are possible.

This study has some limitations such as low sample size, measuring with self-reported tools, and lack of control on underlying and individual factors, thus, it is proposed that they are considered for the subsequent studies. While this study wasn't affected by the downfall of subjects, another possible hypothesis is that people overestimated the effect of the plan due to individual desires, optimism and so on. It is suggested that in subsequent studies quasi-treatment plans (placebo plans) are implemented on the control to manage the effect of expectation. In addition, it is suggested to use a bigger

sample size to attain the real effect of the plan.

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