

EFFECT OF RELAXATION ON STRESS, ANXIETY AND DEPRESSION LEVEL OF THE CAREGIVERS' OF CANCER PATIENTS

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Key words: Cancer patient, Caregiver, Stress, Anxiety, Depression

Abstract

The study was carried out to explore the outcome of relaxation on stress, anxiety and depression level of the caregivers of cancer patients. Fifty caregivers of cancer survivors were randomly assigned to two groups. In intervention group, participants received relaxation once a week for five consecutive weeks while control group received no intervention. Stress (life-stress questionnaire), anxiety (anxiety scale) and depression (depression scale) levels were assessed before and after the intervention. Data were analyzed by independent sample t test. Results showed that relaxation helped the caregivers of cancer patients to reduce their stress and anxiety. But relaxation did not reduce the level of depression. Implication of the research and future guideline are also discussed.

Introduction

Illness of human being is not only considered in terms of physical disruption but also includes the well-being of mental state. But life is not that easy and at anytime in any situation a crisis moment may arise and at that time people need support not only externally but also internally. And being psychologically strong relaxation comes in handy in many ways in today's world. Relaxation is apparently the single most important key to health and well-being, antidote to stress which is known to contribute to uplift of diseases. It is the act of comforting the mind and body and can be defined as the state of being peaceful. It slows the rate of breathing, which reduces the need for oxygen, increases blood flow to the muscles. During a relaxation exercise muscle tension decreases, blood pressure goes down, the mind becomes fresh and the harmful effects of prolonged stress, anxiety and depression are manageable⁽¹⁾. Stress and anxiety are something that everyone experiences which cause physical and mental tension. The help guide reports that "relaxation response brings our system back into balance: deepening our breathing, reducing stress hormones, slowing down pulse rate and blood pressure, and relaxing our muscles"⁽²⁾.

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Primary caregivers provide a complex array of support on physical, psychological, spiritual, and emotional domains. They play an important role in the management of cancer or any other fatal diseases. Cancer, being a terminal illness, brings about considerable needs and problems to patients as well as caregivers throughout the journey⁽³⁾. Day by day it has been understood that extensive care for cancer patients includes providing attention to the psychosocial needs of their informal caregivers⁽⁴⁾. In modern time one of the rising public health issues is researches on physical and psychological health of caregivers of cancer patients specially, the emotional and physical impact of cancer on caregivers⁽⁵⁾.

Unlike depression, anxiety has not been looked at comprehensively in the long-term cancer population. "It appears to be at least equal and perhaps more of a problem for spouses than patients"⁽⁴⁾. Depression is one of the most common and most disabling psychological conditions: at any time approximately 5% of the populations meet criteria for major depression, with 10 - 20% of people suffering from major depression within their lifetime⁽⁶⁾. Studies consistently reported that depressive symptoms and mental health problems among caregivers are higher levels than non-care giving peer⁽²⁾.

Primary caregivers of cancer patients receive little preparation, information, or support to carry out their care giving role. However, their psychosocial needs must be addressed so that they can maintain their own health and provide the best possible care to the patient⁽⁷⁾. Relaxation helped patient to cope with depression, anxiety and distress and adjust with the situation⁽²⁾. Meta analysis showed that relaxation therapy had positive outcomes to reduce stress and anxiety of primary caregivers⁽⁸⁾.

Cancer is a life threatening disease. In many cases individuals suffer from psychological impairment and mood disturbance as a result of the close person's cancer⁽⁹⁾. So it is important to provide psychological supports for caregivers of cancer patients to psychological downfall. According to the Bangladesh Bureau of Statistics, cancer is the sixth leading cause of death in Bangladesh. International Agency for Research on Cancer has estimated cancer-related death rates in Bangladesh to be 7.5% in 2005 and 13% in 2030 (Hussain and Sullivan 2013)⁽¹⁰⁾. In spite of having large number of cancer patients in Bangladesh, no psychological support system is available for the cancer patients and caregivers of the cancer patients. Lack of awareness regarding seeking psychological supports of caregiver's of cancer patients is due to lack of knowledge regarding the benefits of psychological support. Very few studies have been conducted about primary caregiver's mental health of cancer patients in Bangladesh. The purpose of this study was to analyze the effect of relaxation on stress, anxiety and depression level of primary caregivers of cancer patients.

Material and Methods

In this study 50 primary caregivers of cancer patients were approached from a private hospital. All of them agreed to participate in this research. Participants were selected by purposive sampling technique. Their ages ranged from 20 to 60 years with a mean age of 36.62 years and a standard deviation of 6.63. 54% of the participants were female and 46% were male. After primary selection they were randomly assigned into two groups: intervention- and control group. The details of the sample characteristics are shown in Table 1.

Table 1. The distribution of participants by age range and gender (n = 50).

Age Group	Male		Female	
	Intervention (n, %)	Control (n, %)	Intervention (n, %)	Control (n, %)
20 – 30	5 (10)	1(2)	1(2)	4 (8)
31 – 40	3 (6)	5(10)	9(18)	4 (8)
41 – 50	4 (8)	4(8)	3(6)	6 (12)
51 – 60	0 (0)	1(2)	0(0)	0 (0)
Total	12 (22)	11(24)	13(26)	14 (28)

For data collection the following instruments were used: Personal information form (PIF) elicited demographic, personal, and social information that included respondent's age, sex, socio-economic status and occupation etc.

An adapted Bangla version of Life Stress Scale⁽¹¹⁾ was used to measure life stress. The questionnaire consisted of 10 items. The correlation coefficient of Bangla version of the Life Stress Questionnaire with the English⁽¹²⁾ was 0.90 ($p < 0.01$). Test-retest reliabilities over a period of two weeks were 0.94, which was significant at 0.01 levels. This means that the reliability of the scale was satisfactory. For scoring items number 1, 2, 3, 7, 9 and 10 respondents got "0" for never, "1" for almost never, "2" for some times, "3" for fairly often, "4" for very often and for items number 4, 5, 6 and 8 respondents got "4" for never, "3" for almost never, "2" for sometimes, "1" for fairly often, "0" for very often responses. A higher score indicates higher level of stress.

Anxiety scale⁽¹³⁾ was used to measure anxiety level of an individual. This scale consisted of 36 items. All the items of the scale were positive and were compiled in Likert format with five options. For each response on each item, a score was assigned 0 for "never occurs", 1 for "mildly occurs", 2 for "moderately occurs", 3 for "severely occurs", and 4 for "profoundly occurs". Total anxiety score of any individual was obtained from sum total of scores of all the 36 items. A larger total score indicates higher anxiety. The highest possible score of 36 items from of anxiety scale was 144 and lowest possible score

was 0. The total score of the respondents can be categorized into four levels of severity. Score ranges for mild, moderate, severe and profound severity were 27 - 54, 55 - 66, 67 - 77, and 78 - 144 respectively⁽¹³⁾.

Depression scale⁽¹⁴⁾ was used to measure depression among participants. The scale composed of 30 items with 5 points rating ranging from 'not all applicable (1)', 'not applicable (2)', uncertain (3), 'a bit applicable (4)' and totally applicable (5). The total score is the sum of all items with a range from 30 to 150. A higher score indicates higher level of depression.

Intervention Module - Researcher used two relaxation (imagery relaxation and progressive muscle relaxation) techniques for intervention in a calm and quiet room of the hospital.

In imagery relaxation participants were guided to imagine pleasant situation using all of five senses. PMR consists of sequentially tensing and relaxing individual muscle groups⁽¹⁵⁾. It helps individuals to develop body awareness and educates them how to release muscle tension. Engaging in a PMR exercise, individuals may start from the top of the body and progress to the bottom, or *vice versa*. Pre-recorded relaxation instructions were used for relaxation therapy, along with other relaxation training accessories (e.g., mats, CD players, and headphones).

Ethical approval was obtained from the concerned authorities prior to the study. Written consent was also taken from each of the participants. All the participants were divided into two groups: intervention group and control group. Standard data collection procedure was followed to collect the data from the participants.

Intervention group - in first week, the researcher measured the stress, anxiety and depression level. Participants completed the questionnaires in a relaxed setting. All the participants were treated individually for each condition by the researcher. In 2nd and 4th week, progressive muscle relaxation and in 3rd and 5th week imagery relaxation was given to the participants. Written feedback from the participants was also collected. After completion of this the researcher measured the three situational levels again and scored that. Control group - in first and fifth weeks the researcher measured the stress, anxiety and depression level. No intervention was provided in between.

Results and Discussion

Data were coded and analyzed by using computer software SPSS (version 16). Independent sample t test was used to see the mean differences of the pre- and post assessment.

There is a significant difference between pre- and post-test stress levels of intervention group (Intervention group: Pre-test stress: Mean = 39.88, Sd = 9.65; post-test stress: Mean = 28.52, Sd = 4.95, and $t = 9.59^{**}$, $p < 0.001^{**}$) but there are no significant differences between pre-test and post-test stress levels of control group (Figs 1-2). Here, the t test value of pre-test and post-test levels of intervention group of primary care-givers of cancer patients is (9.59, $p < 0.001$) significant (Table 2). Relaxation has helped the intervention group of participants to reduce their stress level. These findings are fairly consistent with past studies⁽²⁾.

Table 2. Mean differences of life stress measurement score between pre-test and post-test stress levels of intervention and control group.

	Group	N	Mean	SD	t-value
Pre-test stress	Intervention	25	39.88	9.65	9.59
Post- test stress			28.52	4.95	
Pre-test stress	Control	25	42.24	7.58	0.992
Post- test stress			41.00	10.41	

**P<0.001

Table 3. Mean differences of anxiety score between pre- and post-test anxiety levels of intervention and control group.

	Group	N	Mean	Sd	t-value
Pre-test anxiety	Intervention	25	74.36	4.95	6.422
Post-test anxiety			47.24	17.83	
Pre-test anxiety	Control	25	89.76	10.41	0.218
Post-test anxiety			89.16	28.44	

**P<0.001

A significant difference between pre-test and post-test anxiety levels of intervention group (Intervention group: Pre-test anxiety: Mean =74.36, Sd = 4.95; post-test anxiety: Mean = 47.24, Sd = 17.83, and $t = 6.422^{**}$, $**p < 0.001$) is found but there are no significant differences between pre-test and post- test anxiety levels of control group (Table 3). Here, the t-test value of pre-test and post-test levels of intervention group of primary care-givers of cancer patients is (6.422, $p < 0.001$) significant. Relaxation has helped the intervention group of participants to reduce their anxiety level. These findings are fairly consistent with past studies⁽⁶⁾.

Result shows that there are no significant differences between pre- and post-test depression levels of intervention and control group. Mean of depression level of pre-test level of intervention group is 94 and Sd is 19.28 and mean of post-test level of control group is 97 and Sd is 12.37 (Table 4). Here, the t-test value of pre- and post-test level of intervention group of primary caregivers of cancer patients is (-1.307, $p < 0.204$) not

significant. Relaxation has not helped the intervention group of participants to reduce their depression level.

Table 4. Mean differences of depression score between pre-test and post-test depression levels of intervention and control group.

	Group	N	Mean	SD	t-value
Pre-test depression	Intervention	25	94.00	19.28	-1.307
post- test depression			97.00	12.37	
Pre-test depression	Control	25	93.56	17.19	-0.349
post- test depression			94.24	16.12	

**P< 0.001

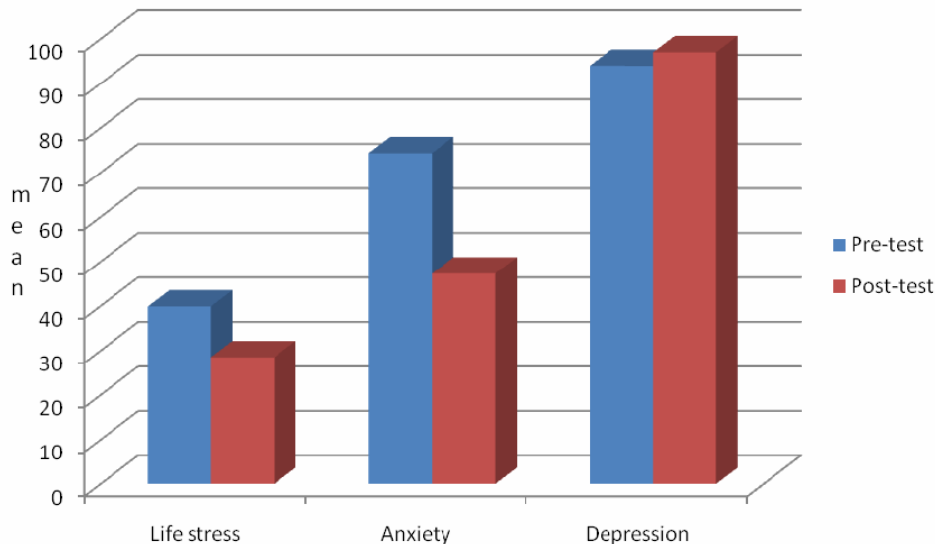


Fig.1. Pre- and post-test mean scores of life stress, anxiety and depression level of intervention group.

As expected, this study alludes relaxation may be the effective intervention technique to reduce the caregivers stress and anxiety level. So caregivers of cancer patients need psychological support to reduce their stress and anxiety. In Bangladesh there are a few opportunities to have psychological support for the caregivers of the cancer patients. This research finding is a first step to develop the awareness about the psychological support for the cancer caregivers.

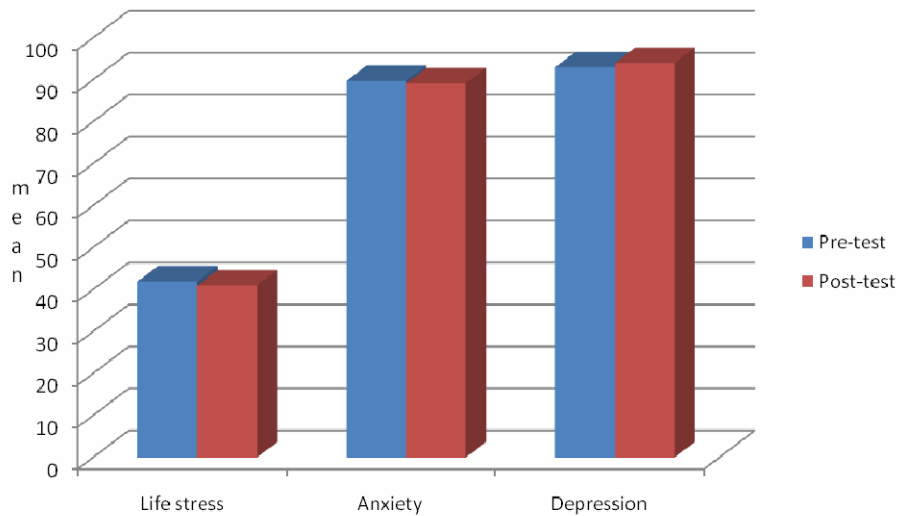


Fig. 2. Pre- and post-test mean scores of life stress, anxiety and depression level of control group.

The findings of this study should be considered with caution, as the sample size was so small and selected purposively. As depression level did not reduce so, further research is needed to find out the appropriate intervention techniques for reducing the depression level of the caregivers of cancer victim. In conclusion, this study indicates a broader perspective of continuing studies in such specific area.

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(Manuscript received on 17 November, 2016; revised on 13 April, 2017)