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Assess The Effect Of Incentive Spirometer On The Level Of Stress Among Patients Admitted In Cancer Hospital

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ABSTRACT

Background of the study: It is not a shocking fact that medical centres, hospitals, and even healthcare institutions may be somewhat demanding. Having cancer changes one "s world in many different ways. Incentive Spirometer is a technique designed to help people in hospital and community environments manage stress. The Incentive Spirometer approach has been authorized by several research, hence we choose this one to investigate its effectiveness on cancer patients stress levels as previous studies support it.

Goal Of the study: The main goal of the study is to find how Incentive Spirometer affects cancer patients' stress level..

Material and method: This study used the convenience sampling technique; the target population is comprised of all cancer patients over the age of 18. The study included 35 cancer patients. The Incentive Spirometer technique is a 15-day, 20-minute procedure that targets certain muscles. Then we assessed each client's level of stress.

Result: Pre-test stress was high (74%), followed by extremely high (17%) and moderate (8.6%), while post-test stress was low (74%), followed by extremely high (17%) and moderate (8.6%). Paired T tests were used to assess stress. (df = 34, p=0.001). Occupation was 0.05 related to pre-test stress level.

Conclusion: The Incentive Spirometer has a statistically significant effect on the difference in scores between pre- and post-test. Following the Incentive Spirometer approach, data were collected using the QSC-R10 tool.

Keywords: *Incentive Spirometer, Stress, Patients*

1. INTRODUCTION

Though not cured, untreated chronic illness has been controlled; degenerative disease is typified by pain and tiredness. [1], [2], [3]. When one finds themselves in a situation like this, stress results and shows itself in different forms. Two ways stress affects the mind and body are physically and psychologically. [4] [5] [6] This kind of situation increases people's chance of cancer; cancer is the second chronic killer; so, cancer-related death is a major concern; also, cancer therapeutic outcome brings psychological issues. [7]," [8] With 8.8 million deaths, 17.3 million fresh cancer cases predicted to be found in India by 2020 Out of the 7.5 million depressed people, 3.7 million will be affected by cancer. While some patients undergo excruciating treatments, only 12.5% of them get therapy on time. [9] [10], Unsurprisingly, prolonged oncological treatment has been demonstrated to be harmful to psychological well-being. Spirometory relaxation techniques have clearly shown how much they help to lower anxiety and sadness. Spirometory helps patients manage treatment-related oncological therapies, therefore enhancing their quality of life.[11], [12]

2. MATERIAL AND METHODS

This study was performed on patients admitted to a cancer specialist hospital in 2024. This research had 35 adult participants (male and female) aged 18 years or older. This research is a quantitative evaluation conducted at the cancer specialty hospital

in Goraj. The sample consists of hospitalized cancer patients over the age of 18 who are receiving oncological treatment and are willing to participate in relaxation therapy. Individuals under 18 years of age who are administered antipsychotic drugs or undergoing relaxation therapy, along with those who have undergone surgery, have Stage III cancer, or are incapable of stretching and relaxing, are excluded from the research.

3. PROCEDURE METHODOLOGY

Representative sample selected by a convince sampling technique. Introduce the study's subject, verify sample eligibility by applying both inclusive and exclusive criteria, taking consent and administering the pre-test by use of QSC-R10 potential stress tool. Assess the patient's level of stress. Educating and demonstrating the Incentive spirometer Repetition of this process for 15 consecutive days at the hospital's physiotherapy centre will be followed by a post-evaluation. spirometer is a type of therapy for cancer patients that focuses on tightening and relaxing certain chest muscles. For 15 days, practiced daily for 20 times. After second week, each client's level of stress evaluated.

4. STATISTICAL ANALYSIS

In this study, used a standardized questionnaire tool (Potential Stress Scale QSC-R10), which is generally based on a Likert scale and assigns a score of 0 to 5 to each domain. Demographic variables and clinical variables were analyzed with descriptive statistics (percentage mean standard deviation) and associated the level of stress with demographic variables by inferential statistics (chi square). Data was analysed using SPSS version 20 (SPSS Inc., Chicago, IL). Paired t-test was used to ascertain the significance of differences between mean Pre-test and post-test. A $P < 0.05$ level was designated as the significance threshold.

5. RESULTS

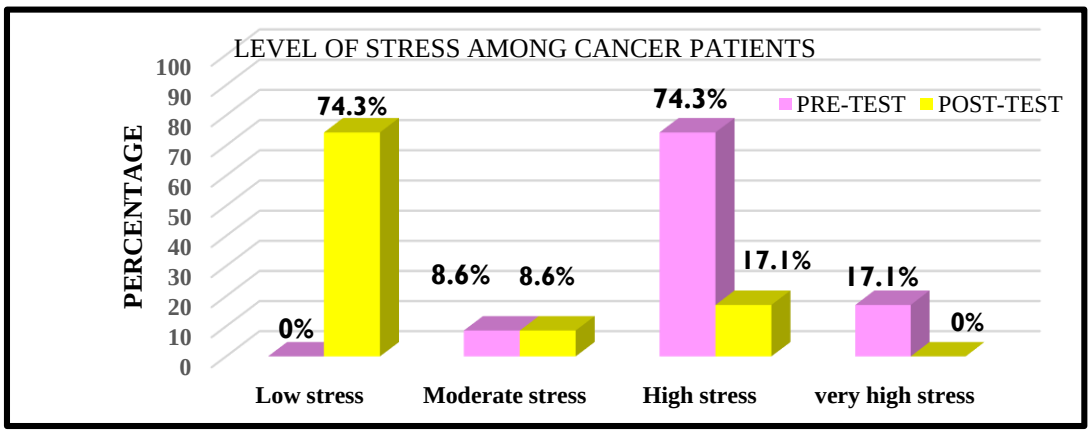
A Cancer patients demographic characteristics were examined for their frequency and percentage distribution.

According to the demographic table data, there were a maximum of 18 male patients (51.4 %) and 17 female patients (48.6 %). There is a total of 14 (40%) private or public sector employees, compared to eight (22.9%) self-employed or company owners. The majority of patients attended elementary school, with 13% earning advanced secondary or diploma degrees. In terms of preceding stress, a maximum of 30 (85%) had it, while 5 (14%) did not. Among cancer patients, 32 (91%) were unaware of relaxation therapy.

Table.1 The Stress levels among cancer patients were distributed differently before and after the tests.

N=35

Level of stress	Pre-test		Post-test	
	f	%	F	%
Low stress	0	0	26	74.3
Moderate stress	3	8.6	3	8.6
High stress	26	74.3	6	17.1
very high stress	6	17.1	0	0



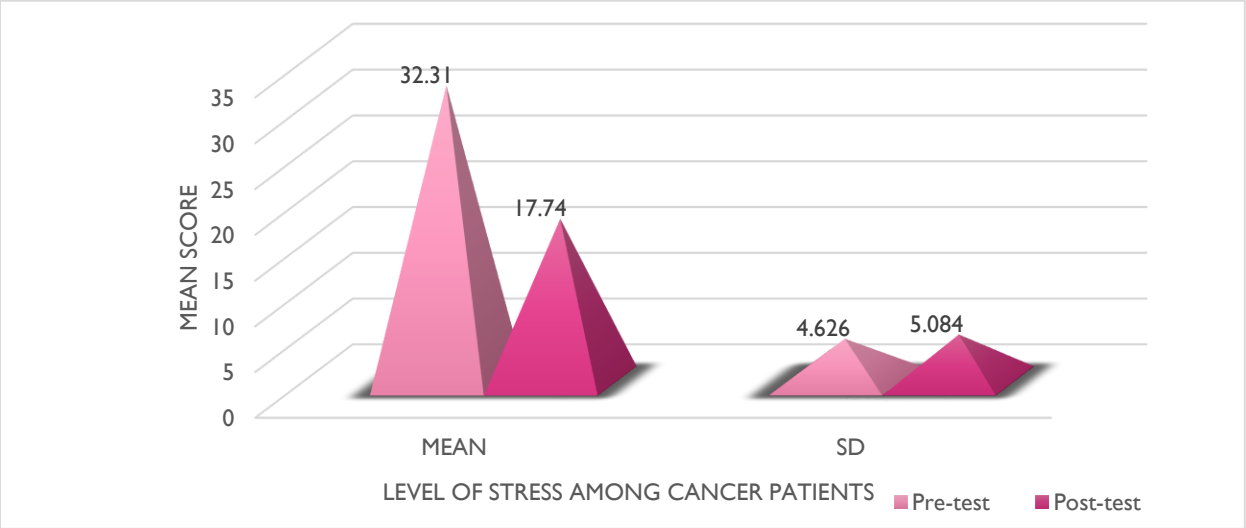
It shows the stress levels of cancer patients before and after testing, it was determined that 26 of the respondents (74.3%) experienced high stress, while 6 (17.1%) had very high stress and 3 (8.6%) experienced moderate stress. Meanwhile, the post-test showed that the vast majority of respondents (26, 74.3%) were low-stress, while 6 (17.1%) were high-stress and 3 (8.6%) were moderate-stress.

Table. 2 A determine whether Incentive Spirometer method has any influence on the degree of stress experienced by cancer patients.

N=35

Level of stress	Mean	SD	Score range	Mean D	t value	df	p value
Pre-test	32.31	4.626	23-43	14.57	11.83	34	**0.001***
Post-test	17.74	5.084	11-31				

***P<0.05 level of significance NS-Non significance**



The stress level in cancer patients after they are given Incentive Spirometer Method Results indicated a mean pre-test-stress score of 32,31±4,626 and a median post-test stress level of 17,74±5,084. The amount of stress reduction resulting from Incentive Spirometer technique was investigated by utilizing a paired t-test, yielding a t value of 11.83 (t=11.83, df=34, p=0.001) that is statistically significant at p<0.05. Research has shown that Incentive Spirometer approach is helpful at reducing stress in people with cancer.

The association between the pre-test stress levels of the subjects, who were also chosen for certain demographic factors, was investigated using a chi-squared test. Stress levels before to testing were shown to be significantly related to employment of patients at the p<0.05 level. Additionally, several demographic variables including age, sex, diet, marital status, education, religion, income per month, and residential community region were statistically insignificant with pre-test levels of stress experienced by cancer patients.

6. DISCUSSION

The research study first aimed to find out how much stress cancer patients faced throughout their stay in a hospital. The majority of respondents (74.3%) were found to have high stress in the pre-test period, followed by (17.1%) with very high stress and (8.6 %) with moderate stress. In the post-test time, (74.3%) were found to have very high stress. Of the respondents, a total of 26 (74.3%) claimed to have a low stress level, 6 (17.1%) reported having a severe stress level, and 3 (8.6%) reported having a moderate stress level. The work of Mohammad R et al. (2018) [13], Masmouei B, Harorani M, Ghafarzadegan R et al. (2019) [18], Tsitsi T, Charalambous A, Papastavrou E, Raftopoulos V et al. (2017) [19] was also comparable, using Incentive Spirometer technique to discover the effects of stress on cancer patients.

The study's second aim was to determine the effect of Incentive Spirometer method on the stress levels of cancer patient, according to the findings of this study, the pre-test stress mean was 32.31±4.626, while the post-test stress mean was 17.74±5.084, with a difference of 14.57. Researchers conducted a paired t-test to evaluate the effectiveness of Incentive

Spirometer Technique on stress levels, resulting in a t value of 11.83 (t = 11.83, df = 34, p = 0.001) that was found to be statistically significant at $p < 0.05$. Progressive Muscle Relaxation showed some success in reducing cancer patients' stress levels. A research study carried out by Violin S, Gurudhas M, Andreas C et al (2015) [14], Paneerselvan (2017) [20], Jose R, D'Almeida V (2013)[15] and Gupta B, Kumari M, Kaur T (2016) [21] tested the efficacy of Incentive Spirometer method among cancer patients in relieving stress·

The third aim of the study was to see if pretest performance level was linked to certain demographic factors, the study demonstrated that pre-test stress levels are related to occupation of patients at a significance level of $p<0.05$. All other demographic variables, such as age, sex, diet, marital status, education, religion, and income per month, were not statistically significant with the cancer patient's pre-test stress level. H.A. Alagizy et al. (2020) [16], Isikhan V, Comez T, Danis MZ(2004) [22], Böttcher HM, Steimann M, Rotsch et al.(2013) [23], Wilkinson SM(1994) [24], Rath HM, Steimann M, Ullrich A(2015) [25] investigated stress levels in breast cancer patients, like the authors did. The data indicated that the employment of women with breast cancer was statistically linked to their degree of stress.

7. CONCLUSION

The effect of Incentive Spirometer on levels of stress was investigated in this research study, which employed a pre-experimental research design (one group pre-test and post-test). The convenience sampling approach was used to pick the participants for the study, which included 35 patients. In order to collect data, the questionnaire QSC-R10 and the socio-demographic variables tool were utilised. Patients' stress levels were measured using a pre-test before receiving an intervention for 15 days (Incentive Spirometer method). After the intervention period, patients' stress levels were measured using a post-test. Inferential statistics were employed to organise and analyse the data, and the findings seem highly significant by the p value of the analysis. The Adaptation Model developed by Sister Callista Roy formed the basis for this investigation (1976).

Ethical approval:

Human subjects were engaged in the study, thus it had to be approved by the university's ethics committee.

Informed Consent:

Participants gave informed consent, and their secrecy was guaranteed.

Declaration of Interest:

The author denies any financial and personal ties to any entity.

Conflict of Interest:

The author asserts that they have no conflicting interests.

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