

Jacobson's Progressive Muscle Relaxation Technique (JPMR) Effects on Cancer Patients

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Abstract

Background of the study: It's not an astonishing reality that cancer treatment centers, healthcare facilities and especially medical centers can be stressful. When somebody has cancer, it affects one's world in numerous ways. A technique called Jacobson's Progressive Muscle Relaxation (PMR) can help patients in both hospital and community settings to cope with stress. Several studies have approved the JPMR technique, and we chose this one to test its efficacy on cancer patients stress levels because it has been endorsed by other studies.

Goal of the study: The study's primary aim is to determine the effect of JPMR on stress among cancer patients.

Materials and methods: 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 JPMR technique is a 15-day, 20-minute procedure that targets certain muscles. Then we assessed each client's level of stress.

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

Keywords: JPMR Stress • Patients • Cancer • Oncological therapy

Introduction

Chronic sickness that has gone untreated has been managed but not cured; pain and weariness are hallmarks of degenerative condition [1-3]. When in a scenario like these changes causes stress, which manifests itself in a variety of ways. Stress has an impact on the mind and body in two ways: mentally and physiologically [4-6]. This type of circumstance puts individuals at the greatest risk of developing cancer and cancer is the second chronic killer, cancer-related death is a serious worry, as is cancer therapeutic outcome bring the psychosomatic problems [7,8]. In India, 17.3 million new cancer cases are expected to be identified by 2020, with 8.8 million fatalities. Cancer will affect 3.7 million of the 7.5 million people who are sad. Only 12.5% of patients receive treatment on time, while others have agonizing procedures [9,10]. Unsurprisingly, Prolonged oncological therapy has been shown to be detrimental to people's psychological wellbeing. The effectiveness of psychological relaxation treatments in reducing anxiety and sorrow has been proven. Quality of life can be improved with psychotherapy, it assisting patients in coping with treatment-related oncological therapies [11,12].

Material and Methods

This research was conducted on patients admitted to a cancer specialty hospital in 2021. This study included 35 adult volunteers (both male and female) aged ≥ 18 years. This study is a quantitative evaluation study; study setting is the cancer specialty hospital, Goraj. When doing this research patients with cancer who are hospitalized and undergoing oncological treatment, are over the age of 18, and are willing to participate in relaxation therapy represent the sample. Those under the age of 18 who are taking antipsychotic medications or receiving relaxation treatment, as well as those who have had surgery or who have Stage III cancer and individuals who are unable to stretch and relax are excluded from the study.

Procedure methodology

Representative sample selected by 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 Jacobson Muscle Relaxation Techniques Repetition of this process for 15 consecutive days at the hospital's physiotherapy center will be followed by a post-evaluation. Jacobson muscle relaxation technique is a type of therapy for cancer patients that focus on tightening and relaxing certain muscles for 15 days, practiced daily for 20 minutes. After second week, each client's level of stress evaluated.

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.

Results

A cancer patient's demographic characteristic was 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 and Figure 1).

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 and Figure 2).

Table 1. The Stress levels among cancer patients were distributed differently before and after the tests and N=35.

	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
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

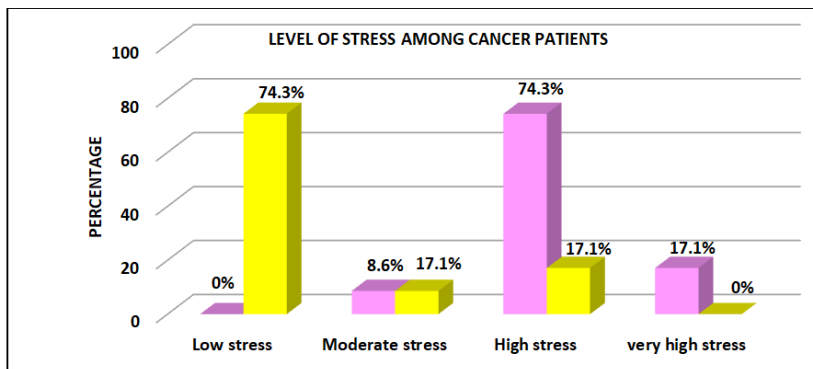


Figure 1. It shows the stress levels of cancer patients before and after testing, it was determined that 26 of the respondents (74.3%) experienced high stress, while 6 (17.1%) had very high stress and 3 (8.6%) experienced moderate stress. **Note:** (█) Pre-test, (█) Post-test.

Table 2. A determines whether Jacobson's Progressive Muscle Relaxation method has any influence on the degree of stress experienced by cancer patients and 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				

Note: *P<0.05 level of significance; NS-Non significance

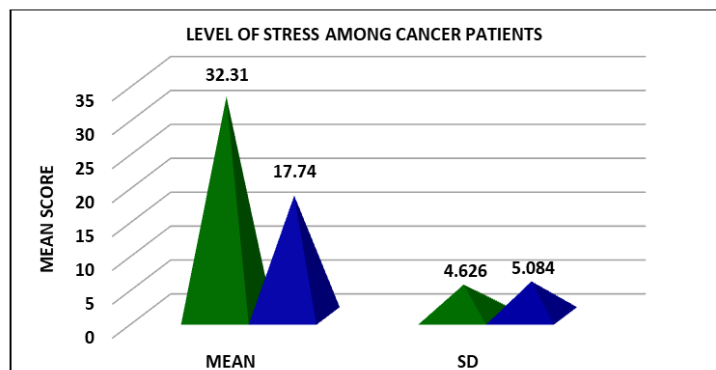


Figure 2. The stress level in cancer patients after they are given Jacobson's Progressive Muscle Relaxation Method Results indicated a mean pre-test-stress score of 32,31 ± 4,626 and a median post-test stress level of 17,74 ± 5,084. **Note:** (█) Pre-test, (█) Post-test.

The amount of stress reduction resulting from Jacobson's Progressive Muscle Relaxation 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 Jacobson's progressive muscle relaxation 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.

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 [13,14] was also comparable, using Jacobson's Progressive Muscle Relaxation technique to discover the effects of stress on cancer patients.

The study's second aim was to determine the effect of Jacobson's Progressive Muscle Relaxation 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 Jacobson's Progressive Muscle Relaxation 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 [15,16] tested the efficacy of Jacobson's Progressive Muscle Relaxation method among cancer patients in relieving stress.

The third aim of the study was to see if pre-test 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 patients pre-test stress level investigated stress levels in breast cancer patients. The data indicated that the employment of women with breast cancer was statistically linked to their degree of stress.

Conclusion

The effect of Jacobson's Progressive Muscle Relaxation (JPMR) 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 (Jacobson's Progressive Muscle

Relaxation 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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