



“A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF JACOBSON'S PROGRESSIVE MUSCLE RELAXATION THERAPY ON ANXIETY AND QUALITY OF SLEEP AMONG COVID-19 PATIENTS AT SELECTED COVID CARE CENTRE, COIMBATORE”

Mental Health Nursing

Mr. Vasanth G	M.Sc Nursing, Department of the Mental Health Nursing, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences.
Mrs. Nuziba Begum.R	M.Sc(N),M.Sc(C&P), Associate professor, Department of the Mental Health Nursing, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences.
Dr. T. Nirmala	M.Sc (N), Ph.d., Principal, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore-641044.

ABSTRACT

Background: Global prevalence of anxiety and depression increased to 25% during the first year of pandemic. Pandemic is not just a medical phenomenon; it affected individuals, society and caused emotional disruptions, anxiety, stress, stigma and sleep problems. **Aim:** The present study was undertaken with the aim to assess the effectiveness of Jacobson's Progressive Muscle Relaxation Therapy on anxiety and quality of sleep among COVID-19 patients. **Methodology:** A quantitative approach with Quasi-Experimental, one group pretest-posttest design was adopted. A purposive sampling technique was used to recruit the study participants, and the sample size was 60. Pretest level of anxiety and quality of sleep were assessed using Hamilton Anxiety Rating Scale and Modified Pittsburgh Sleep Quality Index. Jacobson's progressive muscle relaxation therapy (JPMR) was administered in individual session for 20 minutes, one session per day for 6 consecutive days. Posttest was conducted by using same questionnaires on the 7th day, after the intervention. **Results:** 'z' test was used to compare the level of anxiety before and after the intervention, the calculated value $z=4.85$ was greater than the tabulated value 3.29 at 0.001 level of significance. With regard to the quality of sleep before and after intervention, the calculated value $z=5.87$ was greater than the tabulated value 3.29 at 0.001 level of significance. **Conclusion:** The study concluded that Jacobson's Progressive Muscle Relaxation Therapy was effective in reducing the anxiety and improving the sleep quality among COVID-19 patients.

KEYWORDS

ANXIETY, SLEEP, JPMR, COVID-19

INTRODUCTION:

COVID-19 is highly contagious, social distancing and self-isolation were the best preventive measure to decrease the risk of infection spread. It have a significant impact on emotional and mental wellbeing and triggered a wide range of psychological problems (Tareke S A, 2022). Through clinical observations, many patients developed anxiety and sleep disturbances in isolation treatment (Liqing, 2020). Relaxing the muscles could relax the mind as well. It is a way to help the patients with anxiety and sleep problems by means of tightening one muscle group while keeping the rest of the body relaxed, and then releasing the tension (Jacobson E, 1920).

Need For The Study:

Psychologists and mental health professionals speculate that the pandemic (COVID-19) is going to impact on the mental health of the population globally (Liu et al., 2020). The prevalence rates of mental health problems have been reported as 21.90% for anxiety (Rossi et al., 2020). Sleep problems in response to the COVID-19 pandemic are high in prevalence (17.4%-57.2%) (Huang et al., 2020). A non drug intervention therapy, progressive muscle relaxation training has the advantages of being economical, easy to operate, safe, and comfortable. It significantly improved negative emotion (Anxiety) and sleep problems in COVID-19 patients (Cai-feglan, 2020).

Statement Of The Problem:

A Quasi Experimental Study to Assess the Effectiveness of Jacobson's Progressive Muscle Relaxation Therapy on Anxiety and Quality of Sleep among COVID-19 Patients at Selected COVID care centre, Coimbatore.

OBJECTIVES:

1. To assess the level of anxiety and quality of sleep among COVID-19 patients.
2. To evaluate the effectiveness of Jacobson's Progressive Muscle Relaxation Therapy on anxiety and quality of sleep among COVID-19 patients.
3. To correlate anxiety and quality of sleep among COVID-19 patients.
4. To find out the association between anxiety and quality of sleep with selected demographic variables among COVID-19 patients.

OPERATIONAL DEFINITION:

Effectiveness

In this study effectiveness refers to the changes in the level of anxiety and quality of sleep after implementation of Jacobson's progressive muscle relaxation therapy.

Jacobson's Progressive Muscle Relaxation Therapy

Jacobson's Progressive Muscle Relaxation Therapy focuses on slowly tensing and then relaxing each muscle group of body's psychological response to anxiety provoking thoughts and reduces the physical tension and interrupts the racing thoughts processes that affect sleep in COVID-19 patients.

Anxiety

Anxiety is the body's natural response to stress; it is a feeling of worry, nervousness or unease about something with an uncertain outcome. In this study anxiety will be assessed by using Hamilton Anxiety Rating Scale.

Quality of Sleep

Quality of sleep is defined as one's satisfaction of the sleep experience, integrating aspects of sleep initiation, sleep maintenance, sleep quantity, and refreshment upon awakening. It will be assessed by using Pittsburgh sleep quality inventory.

COVID-19 Patients

COVID-19 Patients are the people, those who are all admitted in the COVID-19 ward at Sri Ramakrishna Hospital and undergoing treatment for COVID-19 infection with Mild symptoms.

HYPOTHESIS:

- H₁** - There is a significant difference in the level of Anxiety among COVID-19 patients in experimental group before and after implementation of Jacobson's Progressive Muscle Relaxation Therapy.
- H₂** - There is a significant difference in the quality of sleep among COVID-19 patients in experimental group before and after implementation of Jacobson's Progressive Muscle Relaxation Therapy.
- H₃** - There is a significant correlation between anxiety and quality of sleep among COVID-19 patients.
- H₄** - There is a significant association between the level of anxiety & quality of sleep and selected demographic variables among COVID-19 patients.

METHODOLOGY:

Research Approach

Quantitative approach

Research Design

Quasi- Experimental, one group pre test-post test design

Setting

Sri Ramakrishna Hospital Covid-19 ward, Coimbatore

Target Population

COVID-19 Patients

Accessible Population

COVID-19 Patients at Sri Ramakrishna Hospital

Sampling Technique

A Purposive sampling

Sample Size

60 COVID-19 Patients

Variables:**Independent**

Jacobson's Progressive Muscle Relaxation Therapy

Dependent

Anxiety and Quality of sleep

Criteria For Sample Collection:**Inclusion Criteria**

1. Patient diagnosed as COVID-19 positive with mild symptoms.
2. Both male and female COVID-19 patients at Sri Ramakrishna Hospital.
3. COVID-19 patients who were willing to participate.

Exclusion Criteria

1. COVID-19 patients who were under Anti anxiety drugs and Sleep inducing drugs.
2. COVID-19 patients with visual and hearing impairments.

Validity:

The tools were validated by five subject experts in the field of Mental Health Nursing department. Suggestions and recommendations given by the experts were accepted and necessary corrections were done.

Reliability:

The reliability coefficient obtained for Hamilton Anxiety Rating Scale and Modified Pittsburgh Sleep Quality Index were 0.85 and 0.96 respectively.

Ethical Consideration:

The proposed study was approved by IEC of Sri Ramakrishna Hospital, Coimbatore. A written permission was issued to proceed with the study. Informed consent was obtained from each study participant.

Data Collection Procedure:

The study was conducted in Covid-19 ward at Sri Ramakrishna Hospital, Coimbatore. During the data collection period 60 participants were selected through purposive sampling technique. Pretest data were collected from the study participants using questionnaires such as Hamilton Anxiety Rating Scale and Modified Pittsburgh Sleep Quality Index. Jacobson's progressive muscle relaxation therapy was administered as individual session for 20 minutes, one session per day for 6 consecutive days. Posttest was conducted by using same questionnaires on 7th day, after the intervention (JPMR).

Data Analysis And Interpretation:**Demographic variables of COVID-19 patients****Table 1 (n=60)**

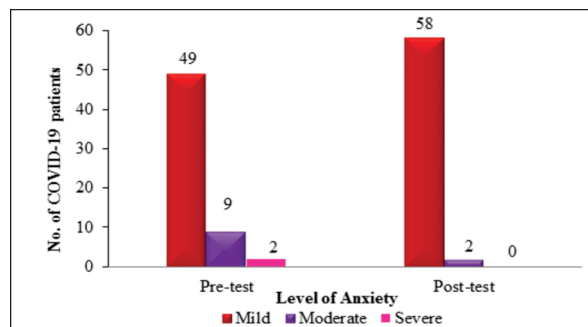
S.No	Demographic variables	Category	Frequency	Percentage (%)
1.	Age	15-30	11	18.33
		21-45	10	16.67
		46-60	18	30
		>60	21	35

2.	Sex	Female	25	41.67
		Male	35	58.33
3.	Marital status	Married	53	88.33
		Unmarried	7	11.67
4.	Residence	Urban	38	63.33
		Rural	22	36.67
5.	Education	Illiterate	17	28.33
		Primary education	7	11.67
		Secondary education	17	28.33
		Graduate	19	31.67
6.	Occupation	Government	8	13.33
		Private	16	26.67
		Business	9	15
		Daily wages	5	8.33
		Unemployed	22	36.67
7.	History of previous hospitalization	No	32	53.33
		Yes	28	46.67
8.	Chronic illness	No	39	65
		Yes	21	35
9.	Habit of smoking	No	40	66.67
		Yes	20	33.33
10.	Habit of drinking	No	39	65
		Yes	21	35
11.	Exercise Regularly	No	35	58.33
		Yes	25	41.67

Assessment on level of anxiety among COVID-19 patients before and after the intervention**Table 2 (n=60)**

S.No	Level of Anxiety	Pre-test		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	Mild	49	81.67	58	96.67
2.	Moderate	9	15	2	3.33
3.	Severe	2	3.33	0	0

The above table 2 depicts that before the intervention (JPMR), majority of 49 (81.67%) COVID-19 patients had mild anxiety, 9 (15%) had moderate anxiety, and 2 (3.33%) had severe anxiety. After the intervention (JPMR), majority of 58 (96.67%) COVID-19 patients had mild anxiety and 2 (3.33%) COVID-19 patients had moderate anxiety.

**Figure 1: level of anxiety among COVID-19 patients before and after the intervention****Analysis on effect of Jacobson's Progressive Muscle Relaxation Therapy on anxiety among COVID-19 patients****Table 3 (n=60)**

Group	Mean	Standard deviation	Mean difference	Calculated Value	Table value
Pre-test	14.73	4.16	3.35	4.85***	3.29
Post-test	11.38	3.25			

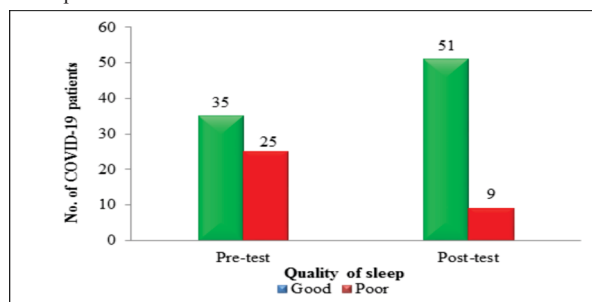
***Significance at 0.001 level

The above table 2 inferred that there was a reduction in the anxiety level among experimental group, which was significant to the administration of Jacobson's Progressive Muscle Relaxation Therapy ($p < 0.001$).

Assessment on quality of sleep among COVID-19 patients before and after the intervention**Table 4** (n=60)

S.No	Quality of sleep	Pre-test		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	Good	35	58.33	51	85
2.	Poor	25	41.67	9	15

The above table 4 depicts that before the intervention (JPMR) 35 (58.33%) COVID-19 patients had good quality of sleep and 25 (41.67%) COVID-19 patients had poor quality of sleep. After the intervention (JPMR) majority of 51 (85%) COVID-19 patients had good quality of sleep and 9 (15%) COVID-19 patients had poor quality of sleep.

**Figure 2:** Quality of sleep among COVID-19 patients before and after the intervention**Analysis on effect of Jacobson's Progressive Muscle Relaxation Therapy on quality of sleep among COVID-19 patients****Table 5** (n=60)

Group	Mean	Standard deviation	Mean difference	Calculated Value	Table value
Pre-test	5.73	2.004			
Post-test	3.97	1.04	1.76	5.87***	3.29

***Significance at 0.001 level

The above table 5 was inferred that there was an improvement in the sleep quality among experimental group, which was significant to the administration of Jacobson's Progressive Muscle Relaxation Therapy ($p < 0.001$).

Correlation between anxiety and quality of sleep among COVID-19 patients**Table 6** (n=60)

Group	Mean	Standard Deviation	'r' Value	Table Value
Pre-test (Anxiety)	14.73	4.16		
Pre-test (Quality of sleep)	5.73	2.004	0.45***	0.408

***Significance at 0.001 level

The above table 6 reveals that there was a strong positive correlation ($r = 0.45$) between anxiety and quality of sleep among COVID-19 patients ($p < 0.001$).

Association between anxiety and selected demographic variables among COVID-19 patients**Table 7** (n=60)

S. No	Demographic variables	Frequency	Level of Anxiety		χ^2 value	Degree of freedom (r-1) (c-1)	χ^2 table value
			$\leq$ Mean	$>$ Mean			
1.	Age 20-25 56-90	32 18	23 13	9 15	4.03*	1	3.841
2.	Sex Female Male	25 35	17 20	8 15	0.73	1	3.841

3.	Residence Urban Rural	38 22	25 12	13 10	0.75	1	3.841
4.	Education Illiterate Literate	15 45	7 30	8 15	1.9	1	3.841
5.	Occupation Employed Unemployed	36 24	25 12	11 12	2.3	1	3.841
6.	History of previous hospitalization No Yes	28 32	19 18	9 14	0.85	1	3.841
7.	Chronic illness No Yes	36 24	27 10	9 14	6.8**	1	6.635
8.	Habit of smoking No Yes	40 20	25 12	15 8	0.04	1	3.841
9.	Habit of drinking No Yes	42 18	27 10	15 8	0.4	1	3.841
10.	Exercise regularly No Yes	35 25	21 16	14 9	0.098	1	3.841

*Significance at 0.05 level **Significance at 0.01 level

The above table 7 reveals that Chi Square value for the age ($\chi^2=4.9$) and chronic illness ($\chi^2=6.8$) had association with the anxiety at 0.05 and 0.01 level of significance respectively.

Other demographic variables had no association with the level of anxiety among COVID-19 patients.

Association between quality of sleep and selected demographic variables among COVID-19 patients**Table 8** (n=60)

S. No	Demographic variable	Frequency	Quality of sleep		χ^2 Value	Degree of freedom (r-1) (c-1)	χ^2 table value
			$\leq$ Mean	$>$ Mean			
1.	Age 20-25 56-90	30 30	21 14	9 16	3.36	1	3.841
2.	Sex Female Male	25 35	13 22	12 13	0.7	1	3.841
3.	Residence Urban Rural	38 22	21 14	17 8	0.4	1	3.841
4.	Education Illiterate Literate	17 43	9 25	8 18	0.13	1	3.841
5.	Occupation Employed Unemployed	37 23	25 10	12 13	3.39*	1	3.841
6.	History of previous hospitalization No Yes	28 32	16 19	12 13	0.02	1	3.841
7.	Chronic illness No Yes	37 23	23 12	14 11	0.6	1	3.841
8.	Habit of smoking No Yes	40 20	22 12	18 8	0.14	1	3.841

9.	Habit of drinking				1.05	1	3.841
	No	42	22	20			
	Yes	18	12	6			
10.	Exercise regularly				0.19	1	3.841
	No	35	19	16			
	Yes	25	15	10			

* Significance at 0.05 level

The above table 8 reveals that Chi Square value for the occupation ($\chi^2=3.39$) had association with the quality of sleep at 0.05 level of significance. Other demographic variables had no association with the quality of sleep among COVID-19 patients.

Limitations:

1. Sample size of the study was small which limits the generalization of the study findings.
2. Sleep quality was assessed after 7 days and long term effect could not be studied.

Recommendations:

1. A similar study can be conducted among the people in various settings.
2. The study can be replicated with large number of samples which would facilitate the generalization of findings.
3. All the staff nurses have to be trained to implement Jacobson's Progressive Muscle Relaxation Therapy
4. A qualitative study can be carried out to examine the lived in experience of people among Covid -19 pandemic.
5. Further study can be carried out to find out the effectiveness of Jacobson's Progressive Muscle Relaxation Therapy on other conditions such as Depression, Schizophrenia, and Substance abuse disorder etc.,

Nursing Implication:

Nursing Education

To deliver the nursing care effectively, nursing educators must focus on alternative and complementary therapies to reduce anxiety and improve sleep quality in practice.

Nursing Administration

The nurse administrator has a responsibility to provide nurses with substantive continuing nursing education opportunities and can draw written policies from the patients regarding application of JPMR.

Nursing Practice

Nurses also can train the patients and help them to practice Jacobson's Progressive Muscle Relaxation Therapy during hospitalization and to follow the same in day to day life.

Nursing Research

The study findings would be help to expand the scientific body of professional knowledge and promote evidence based practice for reducing the level of anxiety and improving the quality of sleep.

CONCLUSION:

The present study established a simple, safe, and non-pharmacological intervention, Jacobson's Progressive Muscle Relaxation Therapy and its effect on anxiety and quality of sleep among COVID-19 patients. The study found that Jacobson's Progressive Muscle Relaxation Therapy reduced anxiety and improved sleep quality among COVID-19 patients. Hence, the researcher suggests that nurses should adopt this intervention in their clinical practice as routine care to reduce the level of anxiety and improve the quality of sleep. This will improve the patients' comfort and well-being in psychiatric wards.

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