"EFFECT OF JACOBSON MUSCLES RELAXATION TECHNIQUE AND POSITIVE AFFIRMATION ON STRESS LEVEL AMONG SECOND YEAR BSC NURSING STUDENTS: QUASI EXPERIMENTAL STUDY."

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ABSTRACT

Introduction: Stress arises from an individual's perception of their external or internal environment, and can lead to distress and anxiety, impacting physical and mental well-being. Effective Stress management techniques, such as Jacobson's progressive muscle relaxation and positive affirmations techniques, offer relief. In a quasi-experimental study on 50 nursing students, 25 in each group aimed to evaluate the effectiveness of positive affirmations and Jacobson's progressive muscle relaxation in reducing stress levels. Pre-post-intervention assessment using the Perceived Stress Scale showed a significant reduction in stress levels. Post-intervention stress levels averaged 13.6 and 18.84 compared to pre-intervention levels of 21.12 and 23.72, with mean reductions of 7.96 and 4.88 in Experimental Groups 1 and 2 respectively. Positive affirmations were particularly effective for moderate stress, while Jacobson's technique showed efficacy for severe stress. Demographic factors did not significantly influence stress levels.

Keywords: Positive affirmation, Jacobson's progressive muscle relaxation technique, stress level, nursing students.

INTRODUCTION

Health, as defined by WHO, is a state of complete physical, mental, and social well-being, not just the absence of disease [1]. Both mental and physical health are crucial for overall well-being. Spiritual, emotional, and financial health also play roles in holistic health. Good physical health supports bodily functions and can boost mental well-being, enhancing quality of life. Mental health is essential for a balanced lifestyle, not only free from negative emotions but also allowing enjoyment, life balance, security, and reaching one's potential [4]. Today, mental health significantly impacts students'

lives, affecting their academic performance, relationships, and self-care. This can lead to self-doubt and a negative outlook on life. A 2015 study by the American College Health Association found that stress affected 30% of students, anxiety 22%, sleep problems 20%, and depression 14%, impacting their academic performance [5].

Stress, as described by Lazarus and Folkman (1984) [7], is a psychological response to how events in one's environment are perceived, leading to feelings of distress and anxiety. It is the body's reaction to pressure from various life events, especially new or unexpected ones that challenges our self-perception or sense of control [8]. Stress triggers the release of hormones, preparing us for fight-or-flight responses and boosting our immune system [9]. While some stress can be beneficial, chronic stress can lead to constant fight-or-flight mode, causing exhaustion and impacting both mental and physical health. [9]

Recent evidence highlights the widespread prevalence of stress-related conditions. Globally, rates are estimated at 28.0% for depression, 26.9% for anxiety, and 24.1% for post-traumatic stress symptoms, with 36.5% experiencing stress, 50% psychological discomfort, and 27.6% sleep issues [10]. In India, persistent unemployment from various corporations has heightened anxiety levels. A GOQii Indian Fit Report 22-23 survey of over 10,000 Indians revealed that 26% feel anxious about their employment status, 17% due to financial insecurity, and 14% because of relationship issues. The demanding work environment, characterized by long hours, job insecurity, low wages, and fierce competition, adds to this stress. [6]. A meta-analysis by Thi Nhi Vo and Hsiao-Yean Chiu et al. in 2023, involving 121 papers, found that 42.1% of nursing students reported moderate stress, and 19.4% to 25.1% had mild to moderate anxiety, highlighting the varying stress levels among nursing students [10].

Stress can have both positive and negative effects. Positive stress can aid in goal achievement, while unmanaged negative stress can foster pessimism. Long-term stress has been linked to a negative outlook on life. To manage stress, fostering optimism is crucial. This can be achieved through positive affirmations, a concept from the "self-affirmation theory" by Steele in 1988. Empirical evidence suggests that maintaining self-integrity by regularly affirming our optimistic beliefs can help reduce stress [13]. Among various stress management techniques, Jacobson's progressive muscle

relaxation stands out. Introduced by physiologist Edmund Jacobson in the 1930s, this method has been updated for better effectiveness in recent years [11]. Jacobson theorized a connection between muscle relaxation and brain function. Research has since supported its health benefits, including reducing anxiety, relieving work-related stress, lowering blood pressure, reducing seizure risk, and aiding sleep [12].

Jacobson's muscle relaxation technique involves tensing and releasing specific muscle groups to increase body awareness. This simple method can be self-practiced at home using instructions from books, the internet, or podcasts. Taking just 20 to 30 minutes, it offers effective results, making it convenient for busy individuals like student nurses. The technique involves tensing each muscle group for 5 seconds and then exhaling [12].

Steele introduced the "Self-affirmation theory" in 1988, and there's ample empirical evidence suggesting that maintaining self-integrity through optimistic beliefs can reduce stress. Research shows that when thinking about future-oriented basic beliefs, individuals with stress show increased activity in the brain's self-processing system, specifically the medial prefrontal cortex. This approach offers multiple benefits, including boosting confidence before presentations or interviews, managing negative emotions like anger and anxiety, enhancing self-esteem, initiating or completing projects, and increasing productivity [14].

Research by Falk et al., 2016, explored the neuroscientific effects of positive affirmations on the central brain system. MRI analysis indicated increased activity in the central brain pathway for those practicing regular positive affirmations. Specifically, the ventromedial prefrontal cortex, associated with positive valuation and self-related information processing, showed increased activity. Positive affirmations offer various benefits, including reducing health decline [Cooke et al., 2014], promoting positive behavior [Logel & Cohen, 2012], shifting focus from negative health messages to health promotion [Harris et al., 2007], and improving academic performance by reducing GPA decline among students feeling socially excluded [Layous et al., 2017]. They have also been found to alleviate stress and ruminations [15].

MATERIAL AND METHOD:

Design and sample: -

This is an experimental study with a quasi-experimental, pre-test post-test design was

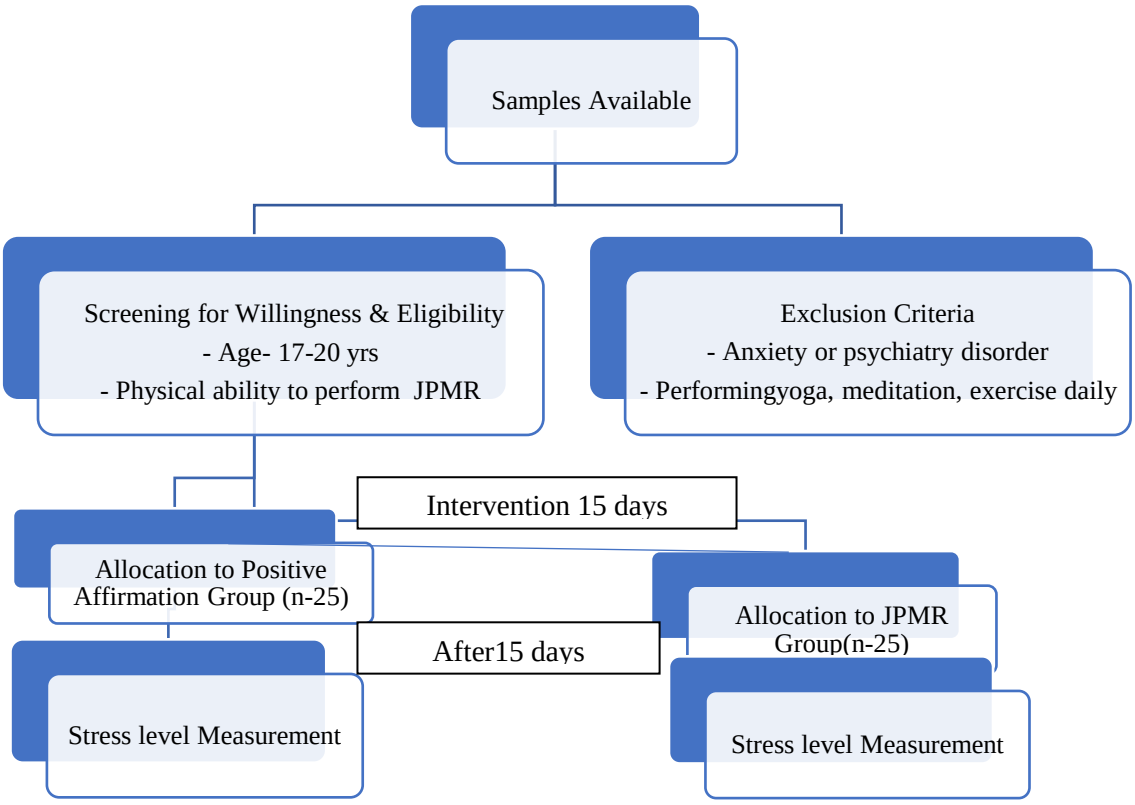
carried out in Surat, Gujarat, in July 2023. The nursing students who are suffering from moderate stress were identified through the perceived stress scale. The samples were selected based on inclusion and exclusion criteria. Anxiety and psychiatry disorders and Yoga/meditation/exercise performed daily are considered an exclusion criterion.

Intervention and observation: -

Initially, 54 samples were selected, from which 50 were qualified for the investigation. To eliminate the influence of the intervention, each experimental group was purposefully assigned an equal number of participants (25 each). Positive affirmations and the Jacobsen progressive muscle relaxation technique were applied for 15 days in experimental groups 1 and 2, respectively. Finally, analysis was performed on 50 participants. After 15 days of therapy, a posttest was completed. The data was analyzed descriptively by measuring frequency, percentage, mean, and standard deviation, and inferentially by using the paired t-test, unpaired t-test, and chi-square test.

Ethical Statement:

This research was approved by the PPSU ethical review committee, P P Savani University, Surat.



Results:

The study was conducted on a range of 18-20 years of age among it, 54% belong to 19 years of age, 56% reside in rural areas, and 47% in nuclear families. Furthermore, 80-90% did not have any financial distress, social problems, personal issues as well physical assault.

Table 1. Sample distribution according to Age, Residence, and Type offamily.

(N=50)

Sl. No.	VARIABLE	FREQUENCY	PERCENTAGE
1.	**AGE**		
	18 years	03	**06%**
	19 years	27	**54%**
	20 years	20	**40%**
2.	**RESIDENCY**		
	Urban	22	**44%**
	Rural	28	**56%**
3.	**TYPE OF FAMILY**		
	Joint family	**13**	**26%**
	Nuclear Family	**37**	**47%**

Table 2 Sample distribution as per financial distress, socialproblem and Physical assault. (N= 50)

Sl. No.	VARIABLE	FREQUENCY	PERCENTAGE
1.	**FIANACIAL DISTRESS**		
	Yes	09	**18%**
	No	41	**82%**
2.	**SOCIAL PROBLEM**		
	Yes	02	**04%**
	No	48	**96%**
3.	**PHYSICAL ASSAULT**		
	Yes	08	**16%**
	No	42	**84%**
4.	**PERSONAL ISSUES**		
	Yes	**06**	**12%**
	No	**44**	**88%**

Table 4: Findings related to category-wise comparison between experimental group 1 and experimental group 2

(N=50)

CATEGORY	POSITIVE AFFIRMATION (GROUP-1)		MEAN DIFFERENCE	JPMR (GROUP-2)		MEAN DIFFERENCE
	PRE-INTERVENTION (FREQUENCY)	POST-INTERVENTION (FREQUENCY)		PRE-INTERVENTION (FREQUENCY)	POST-INTERVENTION (FREQUENCY)	
LOW STRESS (0-13)	01	15	-4.87	03	06	3.17
MODERATE (14-26)	20	05	2.2	10	14	-0.61
SEVERE (27-40)	04	05	4.9	12	05	1.6

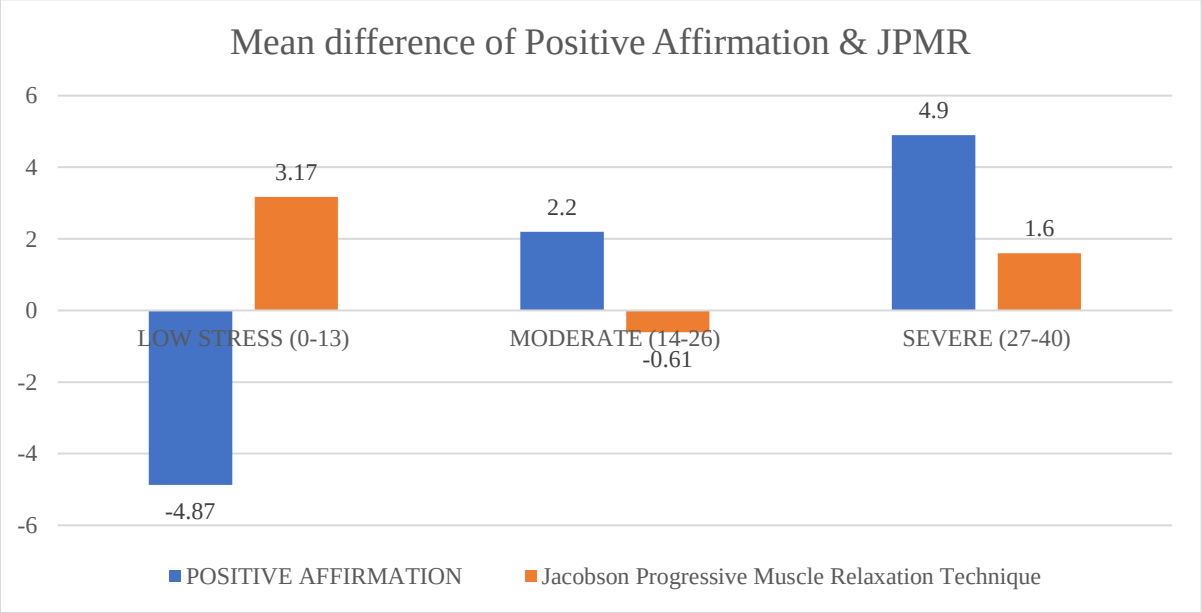


Figure 1 Mean difference of stress between positive affirmation and Jacobson technique.

The samples were categorized into three stress levels: Low, Moderate, and Severe. In experimental Group 1, prior to the implementation of positive affirmation intervention, one student was in the low category (scores ranging from 0-13). This increased to 15

students after the intervention, resulting in a mean difference of -4.8. For the moderate Stress category (scores ranging from 14-26), there were initially 20 students. This number decreased to 5 after the intervention, with a mean difference of 3.1. In the severe stress category (scores ranging from 27-40), there were 4 students initially, which increased to 5 after the intervention, showing a mean difference of 4.9.

In Experimental Group 2, prior to Jacobson's Progressive Muscle Relaxation Technique intervention, 3 students were in the Low stress category. This increased to 6 students Post-intervention, resulting in a mean difference of 3.17. For the Moderate category, there were initially 10 students. After the intervention, this increased to 14 students, with a mean difference of -0.16. In the severe category, there were 12 students initially, which decreased to 7 students after the intervention, showing a mean difference of 2.4.

Table 4 exhibits the comparison between positive affirmation and Jacobson's progressive muscle relaxation technique. Both positive affirmation and Jacobson's progressive muscle relaxation technique are efficacious in reducing stress levels. However, positive affirmation notably excelled in ameliorating moderate stress levels, whereas Jacobson's progressive muscle relaxation technique demonstrated efficacy in alleviating severe stress levels.

Table 5 Effectiveness of Positive Affirmation and Jacobson's Progressive Muscle Relaxation Technique

(N=25)

Group	Mean Stress level		Mean-Difference	SD		't' value Calculated	Tabulated value	Level Of Significance
	Pre-Intervention	Post-Intervention		Pre-Intervention	Post-Intervention			
Positive Affirmation	21.12	13.16	7.96	6.64	8.71	4.07	2.06	0.05
JPMR	23.72	18.84	4.88	8.07	8.86	2.74	2.06	0.05

Table 5, evident that in the positive affirmation group, the mean post-intervention stress level of 13.16±8.71

is lower than the pre-intervention stress level of 21.12±6.64. Additionally, the computed "t" value of 4.07 exceeds the tabulated value of 2.06 at o.o5 level significance. In the JPMR group, the mean post-intervention stress level of 18.84±8.86 is lower than the pre-intervention stress level of 23.72±8.07. Moreover, the computed "t" value of 2.74 surpasses the tabulated value of 2.06 at o.o5 significance level.

The association of stress level with demographic variables indicates there was no relation between demographic variables such as residents, type of family, financial distress, social problems, physical assault, and personal issues with stress in both experimental groups 1 and 2.

DISCUSSION

This research study was undertaken to evaluate the efficacy of positive affirmation and Jacobson's progressive muscle relaxation technique in reducing stress levels among nursing students. Based on the findings, both positive affirmation and Jacobson's progressive muscle relaxation technique were effective in reducing the stress level.

The research carried out by Lanelle Arquiza aiming to assess stress reduction patterns in college students in California, revealed that the implementation of positive affirmations led to a decrease in stress levels among college students. This finding support the present study findings. [17].

Another study supporting the current research was conducted by Jackie Main and Amanda Dillard in 2012, examining stress reduction and motivation through the use of positive affirmation. Their findings indicated a notable decrease in stress levels following the therapy, aligning with the concept of our study [18]. Thus, several studies reinforce the notion that positive affirmations effectively reduce stress. However, some studies present varying perspectives, leading to ongoing discussions and differing views on the effectiveness of positive affirmations.

A study by Devashishpalkar evaluated the impact of Jacobson's progressive muscle relaxation technique on reducing academic stress among MBBS students at a government college in south Gujarat. The findings indicated a significant reduction in stress and anxiety levels among MBBS students following the application of the JMPR technique. This supports the premise of our current study.

Similarly, research conducted by Mrs. Priya Gangadharan and Mrs. Amna Hussain Madani, which examined the effectiveness of Jacobson's progressive muscle relaxation technique on stress reduction in undergraduate nursing students, employed a methodology similar to our study. The result of this study concluded that the therapy had greatly reduced the stress levels of the students which henceforth strongly supported the ideology of the present study [20].

CONCLUSION: -

Positive affirmation and Jacobson progressive muscle relaxation technique Both are useful in reducing stress levels. The nursing student can use the positive affirmation and Jacobson progressive muscle relaxation technique to reduce the stress level and improve mental health.

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