



A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE ON LEVEL OF ANXIETY AMONG PATIENTS WITH HYPERTENSION RESIDING IN SELECTED AREAS OF DISTRICT LUDHIANA, PUNJAB.

Psychiatric Mental Health Nursing

Rashina Reetu	Post graduate M.Sc. Nursing student of DMCH College of Nursing, Ludhiana
Navneet Kaur*	Assistant Professor, Dept. of Psychiatry, DMCH College of Nursing, Ludhiana *Corresponding Author
Kanika Thapar	Associate Professor, Dept. of Psychiatry, DMCH College of Nursing, Ludhiana

ABSTRACT

Aim/Objective: To assess the effectiveness of progressive muscle relaxation technique on level of anxiety among patients with hypertension.
Methodology: A pre-experimental research design was used on 40 patients with hypertension residing in selected areas of District Ludhiana, Punjab. The convenience sampling technique was used to select the sample. Pre and post-interventional level of anxiety was assessed and compared by using Beck anxiety inventory Scale (1993).
Results: In pre-interventional assessment, 60% patients were having low level of anxiety followed by moderate (37.5%) and high (2.5%) level of anxiety whereas in post intervention assessment, 97.5% patients were having low level of anxiety followed by only moderate (2.5%) level of anxiety at $p=0.000$. There was a significant decrease in pre and post-interventional mean anxiety scores (17.75 ± 9.35 vs 9.13 ± 5.598 , $p=0.000$) respectively. It reflects that there was a significant decrease in level of anxiety after administration of progressive muscle relaxation technique.

KEYWORDS

Effectiveness, progressive muscle relaxation technique, anxiety, patients with hypertension.

Introduction

For almost a century, there has been constant speculation on the relationship between life stress, anxiety, the individual's response and the blood pressure changes. A gift of modern civilization, essential hypertension has no specific cause but stress and anxiety plays a possible role in its etiology and aggravation.¹

Feeling anxious or nervous is a common emotion for people of all ages and is a normal reaction to stress. But when one feels anxious often and anxiety is overwhelming and affects daily tasks, social life, and relationships, it may be an illness. Anxiety is an emotion characterized by feeling of worry or tension marked by excessive uneasiness causing stimulation of sympathetic nervous system, which can lead to increase in blood pressure (hypertension).²

Hypertension also known as high blood pressure is a long-term medical condition in which the blood pressure in the arteries is persistently elevated.³

Hypertension and anxiety have a complex relationship. Hypertension can affect everyone with anxiety, but it is most common with those suffering from anxiety attacks because the intense anxiety and hyperventilation during an attack causes a rapid rise in blood pressure.⁴

Rutledge and Hogan found that the risk of developing hypertension was approximately 8% higher among people who had psychological distress or anxiety compared with those who had minimal distress.⁵

With the availability of wide array of pharmacological treatment, management of essential hypertension continues to pose a difficult problem for the physicians. There are patients who do not respond to pharmacological treatment, or face intolerable side effects or who adhere poorly to drug regimen.¹

Therefore, from 1983 onwards, World Health Organization has recommended the use of non-pharmacological approaches in the treatment of hypertension. Various non-pharmacologic measures for hypertension includes; life style modifications, weight reduction and regular physical exercises. It has been reported that relaxation therapies like imageries may be helpful in lowering blood pressure.⁶

There are several types of relaxation therapies. But here, JPMR or progressive muscle relaxation (PMR) technique is used because of its better-reported results, its simplicity in performance and easy independent practice at home. This deep relaxation technique produces an immediate reduction in state of anxiety, which may have an effect on blood pressure.⁷

Material and Methods

The study was approved by research and ethical committee of DMC and Hospital, Ludhiana. Instructions were given to the subjects and

they were assured that their responses would be kept confidential. Informed consent was obtained from the patients with hypertension. A pre-experimental research design was employed using 'one-group pretest-post-test design' on 40 patients with hypertension residing in selected areas i.e. Shimlapuri (urban area) and Village Jarkhar (rural area) of District Ludhiana. The convenience sampling technique was used to draw sample from target population. The tool was organized as Part-A: Socio-demographic profile Part-B: Clinical profile of patient and Part-C: Beck Anxiety Inventory scale (1993). Pre-interventional level of anxiety was assessed in subjects by using Beck Anxiety Inventory scale (1993). Progressive muscle relaxation technique as an intervention in the form of audio instruction was given for 30 minutes once in a day continuous for 10 days to the patients with hypertension along with daily assessment of physiological parameters (pulse rate, blood pressure and respiration rate) before and after intervention. Post-interventional level of anxiety was assessed on 10th day and was compared with pre-interventional level of anxiety. The data obtained was analyzed by using both descriptive and inferential statistics.

Results

Table 1: Distribution of patients with hypertension as per their socio-demographic profile.

Socio-demographic profile	f (%)
N=40	
Age (in years)*	
30-50	18 (45.0)
50-70	19 (47.5)
≥70	03 (07.5)
Gender	
Male	08 (20.0)
Female	32 (80.0)
Religion	
Hindu	15 (37.5)
Muslim	01 (02.5)
Sikh	24 (60.0)
Educational status	
Illiterate	10 (25.0)
Elementary	16 (40.0)
Secondary	11 (27.5)
Graduate and above	03 (07.5)
Marital status	
Married	36 (90.0)
Widow/Widower	04 (10.0)
Type of family	
Nuclear	16 (40.0)
Joint	23 (57.5)
Extended	01 (02.5)
Habitat	
Urban	20 (50.0)
Rural	20 (50.0)

*Mean Age±SD= 52.5±10.53

Table 2: Distribution of patients with hypertension as per their working profile and lifestyle pattern.

N=40

Working profile and lifestyle pattern	f (%)
Present employment status	
Non-working	25 (62.5)
Working	15 (37.5)
If working (n=15)	
Labour	08 (53.0)
Business	04 (27.0)
Private job	02 (13.0)
Govt. job	01 (07.0)
Monthly family income (in rupees)	
≤10,000	25 (62.5)
10,001-20,000	13 (32.5)
20,001-30,000	01 (02.5)
>30,000	01 (02.5)
Dietary habits	
Vegetarian	30 (75.0)
Non-vegetarian	10 (25.0)
Practicing any relaxation exercise	
Yes	03 (07.5)*
No	37 (92.5)

*Morning walk and Yoga

Table 3: Distribution of patients with hypertension as per their clinical profile.

N=40

Clinical profile of patient	f (%)
Duration of hypertension (in years)	
<5	20 (50.0)
5-10	10 (25.0)
10-15	05 (12.5)
≥15	05 (12.5)
Duration of treatment (in years)	
<5	26 (65.0)
5-10	09 (22.5)
10-15	02 (05.0)
≥15	03 (07.5)
Taking any antihypertensive drug	
Yes	33 (82.5)
No	07 (17.5)
If yes, then (n=33)	
Amlong	31 (94.0)
Homeopathy	01 (03.0)
Amlong+Homeopathy	01 (03.0)
Family history of hypertension	
Yes	15 (37.5)
No	25 (62.5)
BMI	
Normal (18.5-25)	22 (55.0)
Overweight (25-30)	11 (27.5)
Obese class-I (30-35)	07 (17.5)

Table 4: Distribution and comparison of pre and post-interventional level of anxiety among patients with hypertension.

N = 40

Level of anxiety	Pre-interventional f (%)	Post-interventional f (%)	χ ² Value p Value
Low (0-21)	24 (60.0)	39 (97.5)	χ ² = 16.8 p = 0.000*
Moderate (22-35)	15 (37.5)	01 (02.5)	
High (36 and above)	01 (02.5)	-	
Mean±SD	17.75±9.35	9.13±5.598	

*significant p<0.05

Minimum score= 00
Maximum score= 63

Table 4 reveals the distribution and comparison of pre and post-interventional level of anxiety among patients with hypertension. In pre-interventional assessment, more than half i.e. 24 (60%) patients were having low level of anxiety followed by 15 (37.5%) patients who

were having moderate level of anxiety and 01 (2.5%) patient who was having high level of anxiety whereas in post-interventional assessment, maximum i.e. 39 (97.5%) patients were having low level of anxiety followed by only 01 (2.5%) patient who was having moderate level of anxiety. This difference was found to be statistically significant at p=0.000.

Hence, null hypothesis was rejected and therefore, there was significant effect of progressive muscle relaxation technique on level of anxiety among patients with hypertension.

Table 5: Comparison of pre and post-interventional anxiety scores of patients with hypertension.

N=40

Groups	Mean±SD	Mean%	t value	p value
Pre-interventional	17.75±9.35	28.17	13.287	0.000*
Post-interventional	9.13±5.598	14.49		

*significant p<0.05

Table 6: Comparison of pre and post interventional physiological parameters of patients with hypertension.

N=40

Physiological parameters	Pre-interventional Mean±SD	Post-interventional Mean±SD	Mean difference (MD)	t-value	p value
Mean pulse rate	84.75±4.27	81.3±4.32	3.45	20.113	0.000*
Mean systolic blood pressure	154.18±12.28	148.65±12.18	5.53	23.535	0.000*
Mean diastolic blood pressure	94.40±4.48	89.90±4.96	4.50	17.103	0.000*
Mean of mean arterial pressure (MAP)	114.33±6.71	109.53±6.987	4.80	26.705	0.000*
Mean respiration rate	21.38±0.9	20.18±0.958	1.20	14.697	0.000*

*significant p<0.05

Discussion

The present study revealed that during pre-intervention, more than half i.e. 60% patients were having low level of anxiety followed by moderate and high level of anxiety i.e. 37.5% and 2.5% respectively whereas during post intervention, anxiety level was decreased to the lowest level, maximum of the patients i.e. 97.5% were having low level of anxiety followed by 2.5% patient who has moderate level of anxiety and none of the patients have high level of anxiety. A similar study was reported by Naveen Jebakumar M, Porkodi A and Akila P. (2014) who conducted an experimental study to assess the effectiveness of progressive muscle relaxation exercise on psychophysiological parameters among patients with COPD at university teaching hospital in Tamil Naidu, Chennai. The findings revealed that during pre-intervention, 70% patients were having severe anxiety followed by 30% patients who were having moderate anxiety and none was having mild anxiety. On the other hand, during post-intervention, 90% patients were having moderate anxiety followed by 10% patients who were having mild anxiety and none of the patient was having severe anxiety.⁸

The present study revealed that the pre and post interventional mean anxiety scores among patients with hypertension were 17.75±9.35 and 9.13±5.598 respectively at p = 0.000. It reflects the reduced level of anxiety after progressive muscle relaxation technique. Hence, null hypothesis was rejected and the progressive muscle relaxation technique had significant and positive effect on level of anxiety among patients with hypertension residing in selected areas of District Ludhiana, Punjab. A similar study was reported by Charalambous A., Giannakopoulou M., Bozas E. and Paikousis L. (2015) who conducted a randomized controlled trial to assess the effectiveness of progressive muscle relaxation and guided imagery as anxiety reducing interventions in breast and prostate cancer patients undergoing chemotherapy. The study found that the pre and post-interventional mean anxiety scores of the group were 45.01±6.9 and 38.71±6.1 respectively. This reflects a decrease in post-interventional mean anxiety scores, which shows that progressive muscle relaxation and guided imagery are anxiety-reducing interventions in breast and prostate cancer patients undergoing chemotherapy.⁹

Conclusion

The study concluded that progressive muscle relaxation technique has significant positive effect on level of anxiety among patients with hypertension. Hence, null hypothesis was rejected at $p < 0.05$ level of significance.

References

1. Patel DHM, Kathrotia DRG, Pathak DNR, Thakkar DHA. (2012) Effect of Relaxation Technique on Blood Pressure in Essential Hypertension. *NJIRM*, 3(4), 10-14.
2. Anxiety [document on the internet]. Wikipedia, the free encyclopedia; 2016. Mar. 18. Available from: en.wikipedia.org/wiki/Anxiety.
3. Hypertension [document on the internet]. Wikipedia, the free encyclopedia; 2016. Mar. 20. Available from: en.wikipedia.org/wiki/Hypertension.
4. Hypertension and anxiety [document on the internet] Calm clinic. 2016. March. 20. Available from: www.calmclinic.com/anxiety/causes/hypertension.
5. Cheung B, Thy A, Chan S. (2005) The relationship between Hypertension and Anxiety on Depression in Hong Kong. *NCBI*, 10(1), 21-24.
6. Khatri MS, Singaravelan RM, Romi HN. (2011) Effectiveness of Jacobson's Relaxation Technique in Hypertension. *IJHSR*, 1(2), Available from: www.ijhsr.org/currentissue_html_2htm.
7. Shinde N, Shinde KJ, Khatri SM, Hande D, Bhushan V. (2013) Immediate effect of Jacobson's Progressive Muscle Relaxation Technique in Hypertension. *SJAMS*, 1(2), 80-85.
8. Jebakumar NM, Porkodi A, Akila P. (2014) Effectiveness of Progressive Muscle Relaxation Exercise on psycho-physiological parameters among Patients with COPD. *Journal of science*, 4(1), 23-6.
9. Charalambous A, Giannakopoulou M, Bozas E, Paikousis L. (2015) A Randomized Controlled Trial for the Effectiveness of Progressive Muscle Relaxation and Guided Imagery as Anxiety reducing interventions in Breast and Prostate Cancer Patients undergoing Chemotherapy. *Hindawi*, 2015(270876), 1-10.