

EFFECT OF JACOBSON'S RELAXATION TECHNIQUE ON CLINICAL PARAMETERS IN HYPERTENSION PATIENTS - AN EXPERIMENTAL STUDY

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ABSTRACT

Hypertension has been identified as a risk factor associated with neuropathy and micro vascular diseases. Since most of the individuals do not have specific symptoms related to their elevated blood pressure, it is often called as the silent killer disease probably³; today the biggest challenge of the 21st century is hypertension which is a major health issue. One billion individuals are affected with hypertension worldwide. Study aimed to find effect of Jacobson's Relaxation Technique on blood pressure (BP) and pulse rate (PR) in hypertensive patients. Patients having BP \geq 140/90mmHg were included and the ones with diabetes with neuropathy, renal insufficiency, alcoholism, vascular diseases, or other conditions known to cause peripheral

neuropathy were excluded from the study. Fifty hypertensive patients of 35-55 years were divided in two equal groups. In control group hypertensive patients were on medication only while in experimental group patients were given Jacobson's relaxation technique along with medication for four weeks daily. The mean difference (MD) of BP in Control group was 1.94 ± 4.27 , experimental group was 3.20 ± 0.10 and there were significant changes with p value < 0.001 . The mean difference of PR in Control group was 1.94 ± 4.27 , experimental

group was 3.20 ± 0.1 and there were significant changes with p value < 0.001 . Significant improvement in blood pressure and pulse rate were found after Jacobson's relaxation technique in experimental group. Extensive studies will be required considering all grades of hypertension for confirmative analysis.

KEYWORDS: Hypertension, Jacobson's Relaxation Technique, BP, PR.

MANUSCRIPT

INTRODUCTION

The fourth top most disease on the basis of its prevalence is Hypertension.^[2] Since most of the individuals do not have specific symptoms related to their elevated blood pressure, it is often called as the silent killer disease probably.^[3] today the biggest challenge of the 21st century is hypertension which is a major health issue. One billion individuals is affected with hypertension worldwide.^[4] The prevalence of hypertension in India in adult population varies from 3 to 10% and the average of 4.8%. The population at risk above the age of 20 years is 330 million as per 1981 population.^[5] The major risk factor for causing cardiac, cerebral and renal disease is high blood pressure.

Hypertension experts still debate the level of blood pressure considered abnormal. A great deal of effort has been devoted to search for a dividing line between normal tension and hypertension. Systolic blood pressure above 140 mm Hg and or diastolic blood pressure above 90 mm Hg are the accepted currently a baseline based on epidemiological and interventional studies.^[6,7] Relaxation therapies are of several types such as stretch release relaxation (SRR), Jacobson's progressive muscle relaxation (JPMR), cognitive imagery relaxation (COG), and some types of meditations. Here the JPMS technique is used because of its better reported results, its simplicity in performance and easy independent practice at home. The deep relaxation technique produces an immediate reduction in the state of anxiety. The main idea of initiating the relaxation response in this way is to take control of the voluntary muscles through creation of tension in them, it will respond by triggering the muscles to relax, where the rest of the other components of the relaxation response will naturally follow.^[7,8]

METHODOLOGY

Study Design

The study was carried out in the Neurophysiotherapy Department, Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune. Patients of hypertension between the ages of 35-55 years of

either sex. 50 patients were divided in two groups of 25 each. Patients with diabetes with neuropathy, renal insufficiency, alcoholism, vascular diseases, or other conditions known to cause peripheral neuropathy were excluded from the study.

Procedure

Written consent was taken from all the voluntary participants. In control group patients with hypertension were on medication only while in experimental group patients were given Jacobson's relaxation technique along with medication for four weeks daily. At the end of 4 weeks of treatment session of both the groups' blood pressure and pulse rate will be recorded. The data thus obtained were considered for statistical analysis.

Intervention: Jacobson's Relaxation Technique

1. Right hand and forearm. Make a fist with your right hand.
2. Right upper arm. Bring your right forearm up to your shoulder to "make a muscle".
3. Left hand and forearm.
4. Left upper arm.
5. Forehead. Raise your eyebrows as high as they will go, as though you were surprised by something.
6. Eyes and cheeks. Squeeze your eyes tight shut.
7. Mouth and jaw. Open your mouth as wide as you can, as you might when you're yawning.
8. Neck. !!! Be careful as you tense these muscles. Face forward and then pull your head back slowly, as though you are looking up to the ceiling.
9. Shoulders. Tense the muscles in your shoulders as you bring your shoulders up towards your ears.
10. Shoulder blades/Back. Push your shoulder blades back, trying to almost touch them together, so that your chest is pushed forward.
11. Chest and stomach. Breathe in deeply, filling up your lungs and chest with air.
12. Hips and buttocks. Squeeze your buttock muscles.
13. Right upper leg. Tighten your right thigh.
14. Right lower leg. !!! Do this slowly and carefully to avoid cramps. Pull your toes towards you to stretch the calf muscle.
15. Right foot. Curl your toes downwards.
16. Left upper leg. Repeat as for right upper leg.

17. Left lower leg. Repeat as for right lower leg.

18. Left foot. Repeat as for right foot.

Every subject performed this supervised relaxation for 6 repetitions during a single session on once a day basis for four weeks as shown in figure 1. At the end of 4 weeks of treatment session of both the group's blood pressure and pulse rate will be recorded. The data thus obtained were considered for statistical analysis.

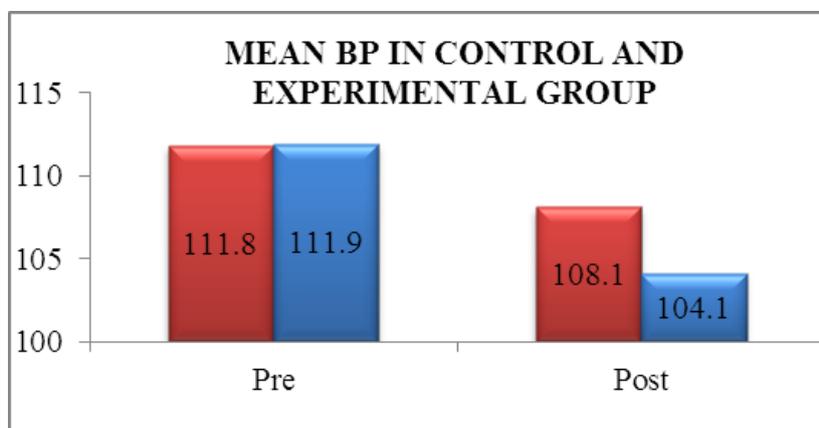


Figure 1: Jacobson's Relaxation Class

RESULTS

Table1. Mean Blood Pressure In Control And Experimental Group:

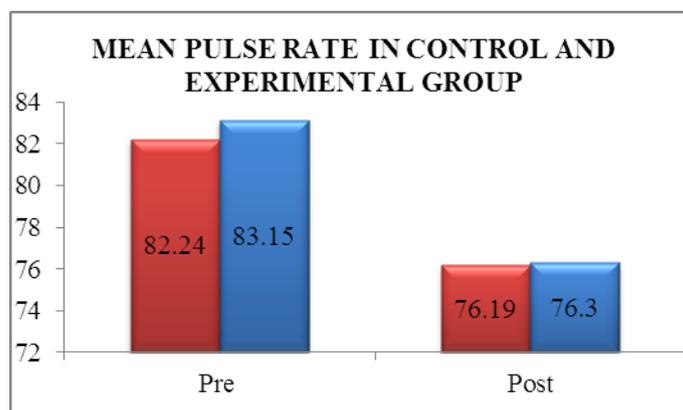
GROUPS	Pre Mean	Post Mean	Pre SD	Post SD	p value
Control	111.8	108.1	3.12	3.11	<0.001
Experimental	111.9	104.1	3.09	3.55	<0.001



Graph: 1. Mean Blood Pressure In Control And Experimental Group:

Table: 2. Mean Pulse Rate In Control And Experimental Group

GROUPS	Pre Mean	Post Mean	Pre SD	Post SD	p value
Control	82.24	76.19	6.789	5.887	<0.001
Experimental	83.15	76.3	6.823	4.669	<0.001

**Graph: 2. Mean Pulse Rate In Control And Experimental Group****DISCUSSION**

The present study evaluates the effect of Jacobson's Relaxation technique on blood pressure and pulse rate among hypertension patients. Patients in control group were on antihypertensive medication while the patients in experimental group were given Jacobson's Relaxation Technique along with antihypertensive medication, for five times/ week for a period of 4 weeks. Blood Pressure and Pulse Rate was assessed before and after 4 weeks of treatment and blood pressure and pulse rate was assessed manual using sphygmomanometer, which showed significant improvement in Blood Pressure and Pulse Rate in both the groups. Viskoper et al 3 have claimed a reduction in nerve conduction velocity in patients with essential hypertension.

Malik RA et al conducted a study in 1998 to find the efficacy of relaxation technique as an adjunctive therapy for control of hypertension, where he took 220 patients with moderate to severe hypertension, those patients were given relaxation therapy two times a week for eight weeks and concluded that relaxation therapy gives better results with standard antihypertensive drug treatment in treating hypertension. According to the sixth report of the Joint National- Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure, Jacobson's progressive muscle relaxation (JPMR) has an immediate and better effect in reducing hypertension compare to other relaxation therapies like cognitive imagery relaxation (CIR), stretch release relaxation (SRR). Jacobson's Relaxation Technique

causes reduction in sympathetic nervous system activity thus there is increase in vagal nerve activity that leads to lowering of pulse rate. In the present study, we examined the blood pressure and pulse rate in patients with hypertension. Statistical significant differences were found in blood pressure and pulse rate in hypertensive patient after the intervention.

CONCLUSION

From the present study we can conclude that Jacobson's relaxation technique can be use as an adjunct to antihypertensive medication for patients with hypertension to improve blood pressure and pulse rate. The study shows significant improvement in Blood Pressure and Pulse Rate in hypertension patients.

REFERENCES

1. Khadilkar HA, Ghattargi CH, ThiteGH. Study of Prevalence of hypertension and sociodemographic factors in a rural community of Maharashtra. *South Asian Journal of Preventive Cardiology*, 2004; 8(4): 205-210. 2.
2. Contractor A. Role of exercise in prevention and treatment of hypertension. *Hypertension India*, 2002; 18(3): 52-63.
3. Maiya M. Improving Hypertension. Control: A Challenge. *Hypertension. India*, 2002; 17(4): 83-88.
4. Gupta R. Hypertension in Indian. Scenario. *Hypertension India*, 2002; 15(1): 5-12.
5. Wallace JP. Exercise in Hypertension: A Clinical Review. *Sports Med.*, 2003; 33(8): 1-9.
6. Sheu, Sheila RN., Irvin, Barbara L., Lin, Huey-Shyan., Mar, Chun-Lin. Effects of Progressive Muscle Relaxation on Blood pressure. *Holistic Nursing practices*, 2003; 17: 1: 41-47.
7. Tesfaye S, Chaturvedi N, Eaton SEM, *et al.* Vascular riskfactors and diabetic neuropathy. *N Engl J Med.*, 2005; 352: 341-50.