#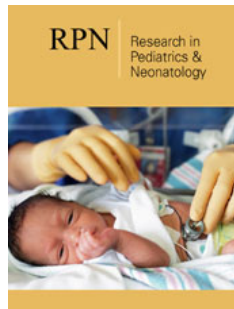 Deep Breathing Exercise in Reducing Blood Pressure Among Hypertensive People at Selected Rural Areas of Northern Gujarat

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Abstract

In developed countries, hypertension is the fourth leading cause of mortality, whereas in poor countries, it is the seventh [1]. Some other treatments are required to manage hypertension. Hypertension is a major public health concern in India and around the world, owing to its high prevalence and associated risk of cardiovascular and kidney disease [2]. Hypertension makes individuals multiple times more inclined to stroke and multiple times bound to have coronary failures. The purpose of this study was to evaluate the effect of deep breathing exercise on blood pressure among patients with hypertension. A Pre-Experimental one Group Pre- test Post- test design was adopted. A sample of 30 Hypertensive patients was selected using convenient sampling technique at Kansarakui visnagar.

Data on demographic variables were assessed. Deep breathing exercise was demonstrated to the participants and their level of blood pressure was measured by sphygmomanometer before and after the intervention. The result displays that in pre-test out of 30 samples, (28%) had pre-hypertension, (20%) had Stage I hypertension, (8%) had Stage II hypertension and (4%) have Normal Blood Pressure. Whereas after intervention, Post-test results shows that out of 50 samples (16%) have Normal Blood Pressure, (20%) had Pre-hypertension and (4%) had Stage I Hypertension among clients with Hypertension. The pre-test mean score among patients with Hypertension was 1.50 with standard deviation 11.352 and post-test mean score among patient with Hypertension was1107 with standard deviation9.090. The calculated paired 't' test value is t=7.971 was found to be statistically significant at p value.

Keywords: Hypertension; Breathing exercise; Hypertensive patients

Introduction

High blood pressure is a major public health issue in India, and its prevalence is on the rise in both urban and rural areas [1]. In fact, hypertension is India's most common chronic condition. Pharmacological, non-pharmacological, and alternative therapy can all be used to treat hypertension [3]. Deep breathing exercise is one of the exercise and relaxation techniques that helps to keep blood pressure in a healthy range [4]. The study's purpose is to see how efficient deep breathing exercise is at lowering blood pressure in hypertensive patients [5]. laughter breathing exercise is also taking key role in reducing stress and helps to recovery from hypertension [2,6].

Need of the Study

In South Asia, high Blood Pressure (BP) is the third most important risk factor for disease related burden (2010). In India, Hypertension (HTN) has a significant public health impact on cardiovascular health and healthcare systems. In India, HTN is directly responsible for 57% of all stroke deaths and 24% of all Coronary Heart Disease (CHD) deaths. In 2013, the global prevalence of high blood pressure in persons aged 25 and above was estimated to be

over 40%. Cardiovascular disease killed 17.3% of persons, and noncommunicable disease kills 80% of people in poor and middle income nations [7].

Objectives

A. To assess the pre and post-test level of the blood pressure among hypertensive clients in experimental group.

B. To compare the pre and post-test level of blood pressure among hypertensive clients in experimental group.

C. To find out the effectiveness of deep breathing exercise on post-test level of blood pressure among hypertensive clients in experimental group.

D. To determine association between the pre-test blood pressure level among clients with hypertension with their selected demographic variable such as age, gender ,education status, occupations, durations of hypertension ,family history ,food pattern

Hypotheses

H_1: There will be significant difference in pre and post-test level of blood pressure level among hypertensive client in experimental and control group

H_2: There will be significant difference between post-test level of blood pressure level among hypertensive client in experimental and control group

H_3: There will be significant Association between pre-test level

of blood pressure level among hypertensive client with selected demographic variable like age, gender, education, status and occupation, duration of hypertension, food pattern, and family history.

Materials and Methods

A Quasi-Experimental One Group Pre-test Post- test research design was used to conduct the study at Kansarakui, visnagar among 30 Hypertensive samples using the convenience sampling technique. The criteria for sample selection were known Hypertension Patient and who is medically fit to do Breathing exercise. The exclusion criteria were smokers and Women under contraceptives. The data collection was done with prior permission from Medical Officer at Kansarakui, visnagar. The purpose of the study was explained to the patients and written informed consent was obtained. The demographic data was collected by using questionnaire and the pre-test level of Blood Pressure was measured by using Sphygmomanometer. After the pre-test, the investigator demonstrated the deep breathing exercise to the patients and Repetitive trails were given to the patients for 10-20 minutes twice a day, for 5 consecutive days. On the 7th day, the post-test level of blood pressure was assessed by using sphygmomanometer and recordings are noted in the chart. The data was analyzed using descriptive and inferential statistics. The sample characteristics and level of Blood pressure were described using frequency and percentage. Chi- square was used to associate the pre-test and post-test level of blood pressure with the selected demographic variables.

Results and Discussion

Table 1: Frequency and percentage distribution of the sample according to the demographic variables in control group and experimental group.

S.No	Socio-Demographic	Frequency (F)	Percentage (%)
	Age		
1	35-50Year	2	6.66%
	51-55 year	6	20%
	56-60 year	15	50%
	61-65 Year	7	23.33%
	Gender		
2	Male	18	60%
	Female	12	40%
	Religion		
3	Hindu	28	93.33%
	Muslim	1	3.33%
	Other	1	3.33%
	Education Status		
4	Graduate	3	10%
	PUC	7	23.33%
	Elementary	2	6.66%
	Illiterate	18	60%

Occupation of Clients			
5	Heavy worker	20	66.66%
	Moderate worker	7	23.33%
	Sedentary worker	3	10%
Marital Status			
6	Married	29	96.66%
	Unmarried	1	3.33%
Family Monthly Income			
7	≥Rs. 41430/-	18	60%
	Rs. 20715/- to 41429/-	6	20%
	Rs.15536/- to 20714/-	3	10%
	Rs.10357/- to 15535/-	2	6.66%
Family History of Hypertension			
8	Yes	28	93.33%
	No	2	6.66%
From How Muchtime You are Suffering Fromhypertension			
9	Less than 1 year	18	60%
	1-5 year	6	20%
	6-10 year	4	13.33%
	11-15 year	2	6.66%
From How Long Your Treatment is Runnning			
10	Less than 1 year	15	50%
	1-5 year	7	23.33%
	6-10 year	5	16.66%
	11-15 year	3	10%

Table 1 show that the Frequency and percentage distribution of demographic variables of patients with hypertension showed that out of 30 sample in regards to the age 40% bellows to 50-60 years, 28% belongs to 40-50 years, 20%belongs to 60-70 years and 12% belongs to 30-40 years. with respect to religion, 98% were Hindu, 0% were Muslim and Christian. Educational status shows that 40% are instructed up to higher secondary. According to occupation 46% are Employee. As far as dietary pattern concerned as 80% are Non- vegetarian and 20% are vegetarian.
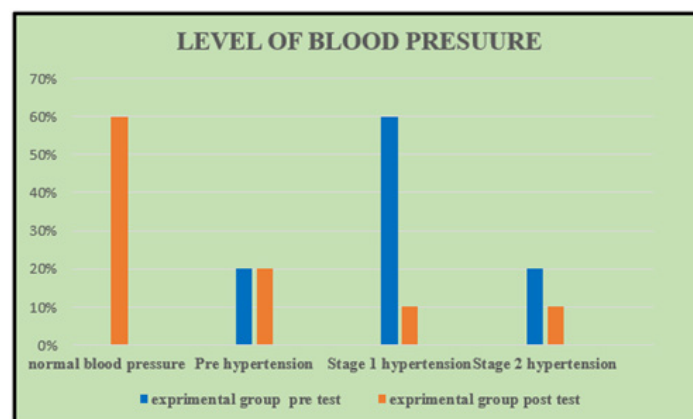

Figure 1: Determine the effectiveness of deep breathing exercise on level of blood pressure among patients with Hypertension.

Figure 1 result shows that in the pre-test, out of 30 samples (20%) had pre-hypertension, (20%) had Stage I hypertension, (60%) had Stage II hypertension and (20%) have Normal Blood Pressure. Whereas in the Post- test after intervention, out of 30 samples (60%) have Normal Blood Pressure, (20%) had Pre-hypertension and (10%) had Stage I Hypertension , (10%) had Stage II hypertension among patients with Hypertension.

Table 2: Mean standarddeviationandpairedtestvalueonpreandpost-testbloodpressurelevelamongclients with hypertension in experimental group and control group.

Group	Test	Mean	SD	Mean difference	Paired T Test	Level of significance
Experimental group	Pre test	3.1	1.6	1.4	8.34	0.05
	Post test	1.9	77	0.14	66	0.05

Mean and standard deviation of pre-test and post-test among patients with hypertension. Table 2 represent, the mean score on blood pressure level in experimental group was 3.0 in pre-test and 1.90in post-test. The paired t' value was 8.34 which is significant at p>0.05. It shows that yoga was effective in reducing the blood pressure level among clients with hypertension. Hence the research hypothesis (H1) is accepted. Association between the Post Test Level of Blood Pressure among Patients with Hypertensive Patients with Selected Demographic Variables The result discovered that there is no significant association between level of blood pressure with selected demographic variables such as Age, Religion, Educational status, occupation and dietary pattern of hypertensive patients.

Discussion

Our current study looked at the impact of a "deep breathing exercise" among hypertensive patients and show decreased blood pressure. The results of the current study show that doing deep breathing exercises twice a day for a week lowers systolic blood pressure significantly. Numerous studies on the benefits of breathing exercise on blood pressure reduction have been conducted, none of which have found a beneficial result. The researchers conducted a 3-month interventional trial with 60 samples of fast and slow breathing exercises, and the results show that both therapies reduced blood pressure longitudinally. In the experimental group, the mean pre-test blood pressure level was 2.0 and the post-test blood pressure level was 9.70. At p>0.05, the paired t value was 7.28, which is significant. It demonstrates that yoga is useful in lowering blood pressure in hypertensive patients. The mean blood pressure level in the control group was 5.96 in the pretest and 2.83 in the posttest. The pairing which is unimportant. There is no link between pre-test blood pressure levels and selected demographic characteristics such as occupation, gender, length of illness, family history, and food pattern among hypertensive patients.

Summary

Using a quantitative evaluative technique, In a selected community, a true experimental design was performed to test the effectiveness of yoga among hypertensive customers. As indicated by Newby, the conceptual framework was based on Ludwig Von Bertalanffy's General System Theory (Modified) (1968). (1996). The study's instrument was divided into two parts. The first half dealt with demographic factors, while the second dealt with yoga. The sample was collected using a simple random sampling procedure, and the data was acquired from the study participants in the experimental group. Descriptive and inferential statistics were used to collect and analyze the data. p > 0.05 was used to determine the threshold of significance. Put the hypothesis to the test.

Conclusion

Regular practice of deep breathing exercise is viable in lessening systolic and diastolic blood pressure by upgrading parasympathetic action and reducing sympathetic excitability thereby effectively reducing the blood pressure.

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