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"A STUDY TO EVALUATE THE EFFECT OF PRANAYAMA ON THE PHYSIOLOGICAL PARAMETERS AMONG THE HYPERTENSION PATIENTS ADMITTED IN SHRI VINOBA BHAVE CIVIL HOSPITAL, SILVASSA, DNH &DD"

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Background: Hypertension also called as "silent killer" is one of the major concern in developing countries due to increasing burden of non-communicable diseases (NCDs) in the recent years. The global targets for non-communicable diseases are to reduce the prevalence of hypertension by 33% between 2010 and 2030.

Aim: This study aim to assess the effect of pranayama on the physiological parameters among the hypertension patients admitted in Shri Vinoba Bhave Civil Hospital, Silvassa

Methodology: A quantitative quasi experimental research design was adopted and sample were allotted in experimental group (n=30) and control group (n=30) by non-probability convenient sampling technique. Demographic data was collected using the interview and physiological parameters with bio physiological measurement. The pranayama was performed under the supervision of the investigator for 30 minutes daily for 7 days.

Results: The study findings suggest that the mean post test score of physiological parameters such as systolic blood pressure, diastolic blood pressure, pulse rate and respiratory rate was 140.80, 82.46, 76.63 and 15.06 respectively in experimental group and 144.80, 86.00, 85.46, and 17.73 respectively in control group with the mean difference of 4.00, 3.54, 8.83 and 2.67 respectively. The "t" value were systolic blood pressure (6.58), diastolic blood pressure (4.64), pulse rate (5.71) and respiratory rate (3.79) which were significant at $p<0.01$. It can be inferred that the decrease in post test mean score of physiological parameters in experimental group is greater than control group. Hence, pranayama was useful in reducing the physiological parameters in experimental group among the hypertension patients.

Conclusion: Pranayama is effective in reducing the blood pressure, pulse rate and respiratory rate among hypertension patients. Pranayama is also a cost effective complementary therapy and can be practiced at home for the management of the hypertension.

Keywords: Pranayama; physiological parameters; hypertension patients; complementary therapy.

I. INTRODUCTION

The burden of chronic non- communicable diseases (NCDs) in developing countries has risen sharply in the recent years. Hypertension is a major cause of premature death worldwide. One of the global targets for non communicable diseases is to reduce the prevalence of hypertension by 33% between 2010 and 2030. An estimated 1.28 billion adults aged 30-79 years have hypertension worldwide, most (two-thirds) living in the low and middle income countries and an estimated 46% of adult with hypertension are unaware that they have hypertension. The prevalence of Hypertension in Indian population is about 30-40 %. It is predicted to be increased to 1.56 billion adults with hypertension in 2025 due to rapid environmental and life-style changes with hazardous working condition act together as a web of risk factors which entangles people in it and leads to several chronic diseases. Management of hypertension can be done by regularly checking and treating blood pressure, reducing and managing stress and other medical conditions. [1, 3, 4]

The National Family Health Survey (NFHS-5), 2019-21 report said that 21% of women and 24% of men aged 15 and over have hypertension, and 39% of women and 49% of men aged 15 and over are pre-hypertensive. The findings indicate that 1 in every 5 persons suffers from hypertension. The Southern States have a higher prevalence of hypertension than the national average with Karnataka 25% women and 26.9% men having hypertension. The prevalence of hypertension is 15% in Dadra and Nagar Haveli and Daman and Diu.[3, 5, 6]

Apart from antihypertensive medications, lifestyle modifications have been recommended as an equivalent first line approach for controlling hypertension. Yoga has been the subject of research in the past few decades for therapeutic purposes for modern epidemic diseases like hypertension, coronary heart disease, mental stress, obesity, diabetes and chronic obstructive pulmonary disease. Individual studies report beneficial effect of yoga in these conditions, indicating that it can be used as non pharmacological measure or complement to drug therapy for treatment of various conditions.[7]

Yoga practice has attracted strong attention worldwide from the scientific community and general populations, because of its numerous health benefits. Yoga is a holistic way of life leading to a state of complete physical, social, mental, and spiritual well-being and harmony with nature. It is a union of individual consciousness with the supreme consciousness. Yoga practices involves eight limbs of yoga, including spiritual concepts (Yama and niyama), body postures (asana), breathing manipulations (pranayama), concentration/focusing techniques (dharana), pratyahara, meditation(dhyana) and samadhi. Intense practice of these leads to self-realization, which is the primary goal of yoga. Different pranayama can cause unique physiological response in individuals. Pranayama appears to be effective in reduction of blood pressure and restoring the autonomic imbalance in patients with hypertension with no adverse effects. Hence, it could be effectively added as a complementary therapy along with routine conventional management for hypertension and to reduce risk of complications.[7, 8]

STATEMENT OF THE PROBLEM

"A STUDY TO EVALUATE THE EFFECT OF PRANAYAMA ON THE PHYSIOLOGICAL PARAMETERS AMONG THE HYPERTENSION PATIENTS ADMITTED IN SHRI VINOBA BHAVE CIVIL HOSPITAL, SILVASSA, DNH &DD"

OBJECTIVES OF THE STUDY

- To assess the physiological parameters in experimental and control group among hypertension patients in Shri Vinoba Civil Hospital, Silvassa
- To determine the effectiveness of pranayama on physiological parameters among experimental group of hypertension patients in Shri Vinoba Civil Hospital, Silvassa
- To find out the association between the physiological parameters and selected demographic variables among hypertension patients admitted in Shri Vinoba Civil Hospital, Silvassa

HYPOTHESIS

$H0_1$- There will be no significant difference in physiological parameters after pranayama in hypertension patients among experimental group and control group at 0.05 level of significance.

H_1 - There will be significant difference in physiological parameters after pranayama in hypertension patients among experimental group and control group at 0.05 level of significance.

$H0_2$ - There will be no significant association between physiological parameters and selected demographic variables among hypertension patients at 0.05 level of significance.

H_2 - There will be significant association between physiological parameters and selected demographic variables among hypertension patients at 0.05 level of significance.

II. METHODOLOGY

Research Design: Quantitative Quasi Experimental (Pretest-Posttest Control group) Research Design

Variables: Pranayama was independent variable and Physiological parameters i.e. blood pressure, pulse rate, respiration rate were independent variable. Socio-demographic variables were age, gender, education, occupation, area of residence, family history, duration of hypertension, taking any antihypertensive drugs, and previous practice of any alternative therapy.

Setting: Shri Vinoba Bhave Civil Hospital, Silvassa, DNH &DD

Population: Hypertension patient admitted in SVBCH, Silvassa, DNH & DD

Sampling Techniques and Sample Size: Non probability convenient sampling technique, 60 sample with 30 in experimental and 30 in control group.

Inclusion criteria: Patient with hypertension admitted in inpatient department of svbch, silvassa and who are willing to participate in the study.

Exclusion criteria:

- Patient with hypertension who are terminally ill
- Patient admitted in ICU.
- Patient with abnormal liver, renal or hematological profile and cardiac disease
- Patient who were already doing the practice of pranayama.

Data collection:

- Interview method and bio physiological measurement for physiological parameters were used.
- In experimental group, the Pranayama (Anulom Vilom Pranayama, Kapalbharti Pranayama, Bharamani Pranayama, Sheetali Pranayama and Shitkari Pranayama) was performed under the supervision of the investigator for 30 minutes, daily for 7 days with the routine treatment and the control group was continued with the routine treatment. On day 7 the post test of physiological parameters was done for experimental group and control group.

Description of the tool: The tool is consisting of two sections: Demographic Variables and Physiological Parameters.

Section-I - It consists of socio-demographic variables age, gender, education, occupation, area of residence, family history, duration of hypertension, taking any antihypertensive drugs and previous practice of any alternative therapy.

Section-II - It consists of assessment of physiological parameters such as systolic blood pressure, diastolic blood pressure, pulse rate and respiration rate.

III. RESULT

The frequency and percentage distribution of the sample according to the demographic variables among hypertension patients are as follows:

In this present study, out of 60 samples 18 (30%) were of age 21-35 years, 17 (28.3%) were 36-50 years and 65- 80 years and above and 8 (13.3%) were 51-65years of age with 32 (53.3%) females and 28 (46.6%) males. 18 (30%) were having primary school education, 17 (28.3%) high school education, 8 (26.66%) with middle school education, 14(23.3 %) were graduate, 3(5%) were professional and 1 (1.6%) was illiterate. 23 (38.33%) of them were unemployed, 12 (20 %) were to skilled and semi-skilled worker, 8 (26.67%) professional, 6 (10%) belonged to clerical, shop owner and 4 (6.6%) were semi-professional. 43 (71.6 %) were from the urban area and 17 (28.3%) were from rural area with 38(63.3 %) with and 22 (36.6%) without family history of hypertension. 49 (81.6 %) were having hypertension from 1-5 years and 11(18.3 %) from 6-10 years and 50 (83.3 %) were taking antihypertensive drug and 10 (16.6 %) were not taking any antihypertensive drug. All the samples were not previously practicing any alternative therapy for hypertension management.

Table 1: The comparison of the mean, standard deviation and "t" value of the post test value of the physiological parameters in hypertension patients among experimental group and control group.

(N=60)

Physiological Variables	Group	Post test Mean	Mean Difference	"t" test	df	Inference
SBP	**Experimental Group**	140.80	4.00	6.58	58	**S**
	Control Group	144.80				
DBP	**Experimental Group**	82.46	3.54	4.64	58	**S**
	Control Group	86.00				
PR	**Experimental Group**	76.63	8.83	5.71	58	**S**
	Control Group	85.46				
RR	**Experimental Group**	15.06	2.67	3.79	58	**S**
	Control Group	17.73				

Level of significance is p< 0.01

S- Significant NS- Non significant

Table 1: represent, that the mean post test score of systolic blood pressure level was 140.80 in experimental group and 144.80 in control group with the mean difference of 4.00; diastolic blood pressure level was 82.46 in experimental group and 86.00 in control group with the mean difference of 3.54. In pulse rate, the mean post test score was 76.63 in experimental group and 85.46 in control group with the mean difference of 8.83 and in respiratory rate, the mean post test score was 15.06 in experimental group and 17.73 in control group with the mean difference of 2.67. The paired "t" value for systolic blood pressure, diastolic blood pressure, pulse rate and respiratory rate was 6.58, 4.64, 5.71 and 3.79 respectively, which were significant at $p<0.01$.

It can be inferred that the decrease in post test mean score of physiological parameters in experimental group is greater than decrease in the control group. Pranayama brought significant difference in post test score in experimental group. Hence, pranayama is useful in reducing the physiological parameters in experimental group among the hypertension patients.

IV. DISCUSSION

The Quantitative Quasi Experimental pretest posttest research design was used to assess the effect of pranayama on the physiological parameters among the hypertension patients in Shri Vinoba Civil Hospital, Silvassa, DNH & DD. 60 samples divided into two group experimental group (n= 30) and control group(n= 30). The data was analyzed using the descriptive and inferential statistics. The main focus of the study was to assess the effect of pranayama on the physiological parameters among the hypertension patients admitted in Shri Vinoba Civil Hospital, Silvassa DNH & DD. This study finding suggests that the decrease in post test mean score of physiological parameters in experimental group is greater than decrease the post test mean score in control group. Hence, pranayama is useful in reducing blood pressure, pulse rate and respiratory rate in experimental group among the hypertension patients.

CONCLUSION

Hypertension is a major public health problem due to its high prevalence all around the globe. The study findings suggest that the post test value of the physiological parameters has significant reduction in the experimental group compared to the control group. It can be inferred that the pranayama is useful in decreasing the physiological parameters in hypertension patients. Hence, Pranayama can be used as a cost effective complementary therapy and can be practiced at home for the management of the hypertension.

RECOMMENDATIONS

On the basis of the present study, the following recommendations have been made for further study;

- A study can be conducted with large sample for generalization its findings.
- A study can be conducted to assess the awareness of people regarding pranayama for hypertension management.
- A study can be conducted for other non pharmacological measures to reduce hypertension.
- A comparative study can be done among the inpatient and outpatient of the Hypertension in the hospital.
- A similar study can be conducted in various community settings

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