



EFFECTIVENESS OF PRANAYAMA ON BLOOD PRESSURE AMONG HYPERTENSIVE CLIENTS IN A SELECTED HOSPITAL AT CUTTACK

Nursing

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ABSTRACT

Background: Hypertension is a global health crisis that triggers premature death and disability of an individual (WHO, 2013). Pranayama is an aerobic practice renowned for regulating cardiac autonomic status, for maintaining normal cardio-respiratory functions (Subbalakshmi, N. K., & Saxena, S. K., 2005). Breath is a vital bridge between the body and mind (Varsha Gupta, Yogesh Singh, 2014). Slow and deep breathing keep oneself under control on the mind and helps individual to reduce the stress that will have impact on the reduction of high blood pressure (Subbalakshmi, N. K., & Saxena, S. K., 2005). The objective of present study is to evaluate the effectiveness of pranayama on hypertensive clients. The researcher adapted a pre-experimental design. After obtaining administrative permission from the selected hospital, the subjects were recruited after obtaining their consent. Purposive sampling technique were used and allotted 75 hypertensive clients in this study. Nadisodhan pranayama was used as intervention for pre-experimental group. After 21 days, post-test blood pressure was recorded in the outpatient clinic of selected hospital at Cuttack. The results were calculated through SPSS version 21. The findings show that there was a statistical significant ($P \leq 0.001$) reduction in the mean scores of blood pressure among the subjects from the pre intervention to posttest. This concludes that addition of pranayama can be a useful supplementary management with antihypertensive drugs to decrease the high blood pressure.

KEYWORDS

Hypertension, Pranayama, Blood Pressure, Hypertensive clients, Effectiveness of pranayama

INTRODUCTION

Hypertension is a universal health burden; and it is one of the leading causes for deaths, as it may be symptomless but a lot of complications shall develop quickly and leads to premature death. Prevention and control of hypertension decreases premature death, and heart failure. (Salem, H., Hasan, D. M., Eameash, A., El-Mageed, H. A., Hasan, S., & Ali, R. (2018). Globally, hypertension is a vital public health mess due to its high frequency. Almost seven million demise, globally occur due to elevated blood pressure. It is forecasted to increase to 1.56 billion adults cases with hypertension in year 2025 (Singh, S., Shankar, R., & Singh, G. P., 2017). There is a high prevalence of hypertension among Indian adults, with almost 762 million Indians with the age group of 18 and above in India, which means there are currently 234 million adults with hypertension in the subcontinent (Ramakrishnan, S., Zachariah, G., Gupta, K., Rao, J. S., Mohanan, P. P., Venugopal, K., & Mani, K. 2019). Hypertension, is a modifiable risk factor that may be successfully treated using one or a combination of treatment options, including medication, diet, exercise, tobacco cessation, or complementary and alternative medicine such as deep breathing exercises (Misra, S., Smith, J., Wareg, N., Hodges, K., Gandhi, M., & McElroy, J. A., 2019).

OBJECTIVES

To assess the pretest level of systolic and diastolic blood pressure of patients with Hypertension

To evaluate the effectiveness of Pranayama (Nadisodhan) among patients with Hypertension.

To find out the association between the pretest level scores of blood pressure with the selected demographic variables of hypertensive clients.

HYPOTHESIS

H1 - There will be reduction in the level of systolic and diastolic blood pressure among hypertensive patients after the practice of Pranayama.

H2- There will be significant association between the pre-test level scores of blood pressure with the selected demographic variables of hypertensive clients.

METHODS AND MATERIALS

The study adopted pre-experimental research design of pre and posttest with quantitative evaluative approach. Purposively samples

were recruited and seventy five subjects were included in this study. The systolic and diastolic blood pressure of the samples was assessed by using digital sphygmomanometer. The data was collected in the selected hospital OPDs. Based on the inclusive criteria subjects were recruited in the study. The stage one and stage two hypertensive clients are three primarily recruited as samples. After obtaining written consent from the subjects, pretest was conducted. The practice of pranayama is demonstrated to the subjects. It was demonstrated individually in the separate room near OPD. Initially author demonstrated personally to the subjects and it was asked to re demonstrate by the subjects. It is instructed to the subjects to practice daily at home. Descriptive and inferential statistics have been used for facts evaluation; the hypotheses were set at 0.05 level of significance.

INTERVENTION

Make the patient to sit comfortably with spine erect and shoulders relaxed. Placed the left hand on the left knee, and palms open to the sky or in Chin Mudra (thumb and index finger gently touching at the tips). Place the tip of the index finger and middle finger of the right hand in between the eyebrows, the ring finger and little finger on the left nostril, and the thumb on the right nostril. Patient should use the ring finger and little finger to open or close the left nostril and thumb for the right nostril. Press the thumb down on the right nostril and breathe out gently through the left nostril. Now breathe in from the left nostril and then press the left nostril gently with the ring finger and little finger. Removing the right thumb from the right nostril, breathe out from the right. Breathe in from the right nostril and exhale from the left. Sample completed one round of Nadi Shodhan pranayama. Continue inhaling and exhaling from alternate nostrils.

Complete 9 such rounds by alternately breathing through both the nostrils. After every exhalation, remember to breathe in from the same nostril from which exhaled. Keep the eyes closed throughout and continue taking long, deep, smooth breaths without any force or effort.

FINDINGS

Section I: In this section the description of socio demographic characteristics of the subject is drawn and its percentage analysis has been done.

The demographic information of hypertensive clients shows highest percentage of the were in the age group of above 65 years (32%), according to their gender shows that most of them are male (64%), they had primary education (90.7%), according to their religion (92%)

were Hindus, occupation showed 38.7% were unskilled workers, highest percentage of them were in the income of Rs.5001–Rs.15000 (34.7%), most of them were married (86%), (21.3%) had both the habits of smoking and alcoholism and mostly (89.3%) were non vegetarian.

Table: 1 – Assess the pretest level of systolic and diastolic blood pressure among hypertensive patients in selected tertiary hospital.

Pretest Scores of Blood pressure of the subjects (n=75)			
Blood pressure	Range	Mean	SD
Systolic	140-170	156.45	9.02
Diastolic	90-110	96.3	4.62

Table-1 Shows the mean, range, standard deviation, regarding the pretest level of systolic and diastolic blood pressure among the hypertensive clients. The obtained the pre-test systolic blood pressure mean value 156.4 (SD=9.02) , diastolic blood pressure mean value 96.3 (SD=4.62). It was inferred that

Table: 2 – Evaluate the effectiveness of pranayama on systolic blood pressure among hypertensive patients

Systolic Blood pressure of the subjects (n=75)					
Test	Range	Mean	SD	Mean difference	't' Value (P)
Pre test	140-170	156.45	9.02	14.36	5.78 P=0.0001 ** (S)
Post test	130-160	142.09	9.74		

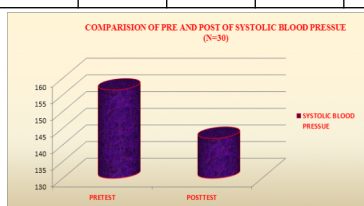


Table-2Shows the mean, range, standard deviation, mean difference and 't' value regarding the pre and post systolic blood pressure among the hypertensive clients. The obtained posttest mean systolic blood pressure 142.09 (SD=9.74) was less than the pre-test systolic blood pressure 156.45 (SD=9.02). The obtained mean difference was 14.36 and the obtained 't' value $t=5.78$ ($P=0.0001$) was significant. It was inferred that systolic blood pressure had significantly reduced after PRANAYAMA among hypertensive patients in experiential group.

Table: 3 – Evaluate the effectiveness of pranayama on diastolic blood pressure among hypertensive patients

Diastolic Blood pressure of the subjects (n=75)					
Test	Range	Mean	SD	Mean difference	't' Value (P)
Pre test	90-110	96.3	4.62	11.7	5.78 P=0.0001 *** (HS)
Post test	80-100	84.6	4.45		

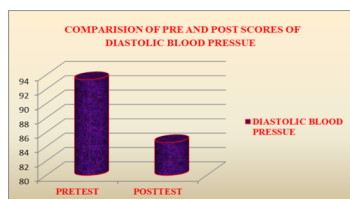


Table-3 Shows the mean, range, standard deviation, mean difference and 't' value regarding the pre and post systolic blood pressure among the hypertensive clients . The obtained posttest mean systolic blood pressure 84.6 (SD=4.45) was less than the pre-test systolic blood pressure 96.3 (SD=4.62). The obtained mean difference was 11.78 and the obtained 't' value $t=5.78$ ($P=0.0001$) was significant. It was inferred that systolic blood pressure had significantly reduced after PRANAYAMA among the hypertensive clients.

DISCUSSION

In this study the mean score of the systolic blood pressure turned into 156.45 in pretest and 142 in posttest; diastolic blood pressure turned into 96.3 in pretest and 84.6 in posttest. The expected value become 5.78 which is significant at $p>0.05$. it indicates that pranayama became powerful in reducing the blood pressure levels amongst patient with hypertension.

Terry selfe, 2013, carried out to observe on effectiveness of pranayama for lowering blood pressure in adults with high blood pressure. Two authors independently assessed, 17 participants who practiced pranayama, shown a significant effect on systolic blood pressure ($p=0.002$) and diastolic blood pressure ($p=0.001$). This study conclude that the blood pressure level within the subjects due to the pranayama practice. Hence the research hypothesis (H_2) is accepted.

CONCLUSION

From the end result of the study it become concluded that PRAYANAMA turned into effective in reducing the blood pressure level amongst patients with hypertension. Nurses have to emphasize and inspire the hypertensive patients regarding the exercise of pranayama. Nursing directors can organize conferences, seminars, and workshops for nurses to inspire the practice pranayama for home in hypertensive clients.

REFERENCES

- Salem, H., Hasan, D. M., Eameash, A., El-Mageed, H. A., Hasan, S., & Ali, R. (2018). Worldwide prevalence of hypertension: A pooled meta-analysis of 1670 studies in 71 countries with 29.5 million participants. *Journal of the American College of Cardiology*, 71(11 Supplement), A1819.
- Singh, S., Shankar, R., & Singh, G. P. (2017). Prevalence and associated risk factors of hypertension: a cross-sectional study in urban Varanasi. *International journal of hypertension*, 2017.
- Ramakrishnan, S., Zachariah, G., Gupta, K., Rao, J. S., Mohanan, P. P., Venugopal, K., ... & Mani, K. (2019). Prevalence of hypertension among Indian adults: Results from the great India blood pressure survey. *Indian heart journal*, 71(4), 309-313.
- Misra, S., Smith, J., Wareg, N., Hodges, K., Gandhi, M., & McElroy, J. A. (2019). Take a deep breath: A randomized control trial of Pranayama breathing on uncontrolled hypertension. *Advances in Integrative Medicine*, 6(2), 66-72.
- Varsha Gupta, Yogesh Singh, Bibhava Vikramaditya, Harpreet Singh, *Journal of Current Trends in Clinical medicine and Laboratory Biochemistry* Volume 2, Issue 3, July-Sep 2014.
- N.K. Subbalakshmi, S.K. Saxena, Urmimala, and Urban J.A. D'Souza, *Thai Journal Of Physiological Sciences*, Volume 18 (No.2, August 2005)
- Black, J.M. (2009). *Clinical Management for Positive Outcome*. (7th edition). Philadelphia: Elsevier Publication. Pg: 1243-1288.
- Brunner & Suddarth's. (2012). *Text eBook of scientific and surgical nursing*. (Fifth editing). Elsevier publication. Pg: 684-689 three. Daniel. (2007). *Biostatistics: A Foundation for analysis in the Health Sciences*. (2nd edition). Philadelphia: John Wiley & Sons Publications. Pg: 144-149.
- Dhaar, G.M & Robbani, I. (2005). *Foundations of Community Medicine*. (1st edition). Elsevier Publications. Pg: 789-792.
- Pramayama benefits [online]. 2006 June [2006 September 4]; Available from: URL: <http://www.Focalpointyoga.Com/pranayama.Htm>
- Tyagi A. (2014). Yoga hypertension. *Journal of opportunity remedy and health medicine*, 20(2), 32-59
- Williams (2010), Treatment of high blood pressure, *journal of cardiovascular pharmacology*, fifty six(4), 336-344
- Zaretuni, (2002), yoga and high blood pressure, *journal for human high blood pressure*, 12(7), 34-35.