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"A study to assess the effectiveness of assisted video on belly breathing to control blood pressure among hypertensive clients in selected community area of sabarkantha district in Gujarat."

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Modern life has not only offered us convenience and comfort but along with them, several complications also on the rise like increasing our indolence, anxiety and stress. Hypertension frequently exists without producing symptoms which is often called a silent killer.

Introduction

Modern life has not only offered us convenience and comfort but along with them, several complications increasing our indolence, anxiety and stress. Our forefathers did not dream of these indulgences as well as these stressful situations. We have paid the price for all these situations in the form of increased complications and risks. Probably the greatest dangers we face are the diseases of cardiovascular system and its fatal complications – heart attack and stroke[1]

Hypertension frequently exists without producing symptoms which is often called a silent killer[1].This induces a major cause of death and disability the world over. Hypertension is a silent killer as early stages of this disease have no clinical manifestation other than raised BP and there is no sign and symptom to lead a person to seek healthcare. Hypertension is the single most important predictor of cardiovascular risk, BP level is related to severity of atherosclerosis, stroke, nephropathy, peripheral vascular disease congestive heart failure. The risk factors associated with hypertension includes stress, obesity, high salted diet, high alcohol intake and lack of exercises[2].

Yogic techniques are known to improve one's overall performance. P*ranayama* (breathing exercise) is known to be a part of yogic techniques.-*Savitri Pranayama, Kapalbhati, Bhastrika Pranayama, Nadisuddhi Pranayama* (Bellybreathing), are well known among them. These breathing exercises are reported to influence cardio-respiratory and autonomic functions[6-9] and also help in reducing the scores of anxiety[10]and stress[11].

Prana, the vital energy pervades the whole body, following flow pattern called Nadis, which are responsible for maintaining all individual cellular activity. The word Nadi means 'channel' or flow of energy and shodhana means purification. Other names: Bellybreathing, Anuloma – Viloma pranayama. Nadishodhana therefore means that practice which purifies

the body. The practice of Nadishodhana is an art of controlling the breath. During the practice the subject tries to keep his or her attention on the act of breathing leading to concentration which in turn de- stress the subject and improves overall health and well-being[12].

Need of the study

Hypertension, a "psychological classical silent killer" is the hallmark of various cardiovascular disorders mainly occurring due to increase in the total peripheral resistance because of several etiological factors – genetic, obesity, glucose intolerance, high salt intake, cigarette smoking, heavy alcohol consumption, increased serum renin levels[13].

In a meta-analysis of multiple cardiovascular epidemiological studies, it was reported that prevalence rates of hypertension, coronary artery disease and stroke have more than trebled in the Indian population. In the INTERHEART and INTERSTROKE study, hypertension accounted for 17.9% and 34.6% of population attributable risk of various cardiovascular risk factors for coronary artery disease and stroke respectively[17].

The review of epidemiological studies suggests that the prevalence of hypertension has increased in both urban and rural subjects and presently is 25% in urban adults and 10%-15% among rural adults[17].

Statement of the problem:

"A STUDY TO ASSESS THE EFFECTIVENESS OF ASSISTED VIDEO ON BELLY BREATHING TO CONTROL BLOOD PRESSURE AMONG HYPERTENSIVE CLIENTS IN SELECTED COMMUNITY AREA OF SABARKANTHA DISTRICT IN GUJARAT."

Objective of the study:

- To assess the knowledge regarding belly breathing to control Hypertension.
- To determine on the effectiveness of Belly breathing on blood pressure among clients with hypertension.
- To find the association between knowledge regarding Belly breathing among hypertensive clients with selected demographic variables.

Hypothesis:

H_1: Hypertensive clients have an adequate level of knowledge regarding belly breathing.
H2: There is a significant difference in blood pressure levels before and after practicing belly breathing among hypertensive clients.
H_1: There is a significant association between knowledge regarding belly breathing and selected demographic variables.

Review of Literature

The review of literature is defined as a critical summary of research on a topic of internet often prepared to put a research problem in context or as the basic for as implementation project.

The Literature review will be discussed based on the following heading:

- Studies related to the prevalence of Hypertension.
- Studies related to the breathing exercises on Hypertension
- Studies related to the reduction of Blood Pressure and Belly Breathing exercise.

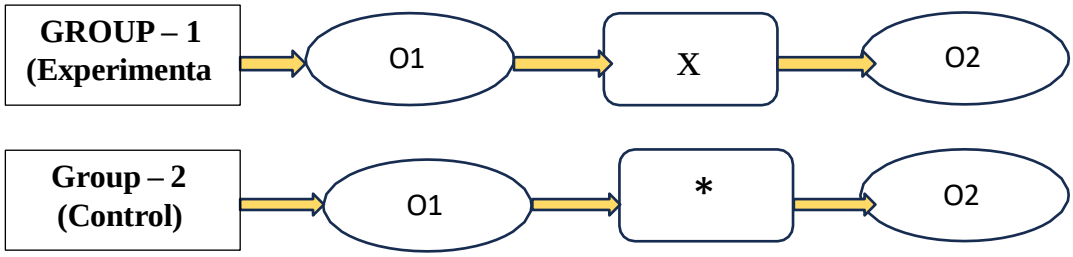
Research Methodology

In this study, a quantitative approach was adopted. A quasi-experimental research design with pre-test and post-test was used to evaluat

effectiveness of belly breathing on blood pressure among hypertensive clients. A non-probability purposive sampling technique was employed for selecting the participants. The total sample size was 40, consisting of 20 participants in the experimental group and 20 participants in the control group. Ethical permission was obtained prior to the study. Data were collected using a structured tool that included selected socio-demographic variables and a knowledge questionnaire related to belly

During the study, a pre-test was administered to both the experimental and control groups. The experimental group then received the intervention of belly breathing practice, while no intervention was given to the control group. After the intervention period, a post-test was conducted for both groups to assess changes in knowledge and blood pressure levels. Data analysis was carried out using both descriptive and inferential statistics to determine the effectiveness of belly breathing on hypertension.

The diagrammatic representation of research design is given below



Keys:

O_1 - Pre-test assessment of the blood pressure of hypertensive patients.
X - Intervention.
O_2 - Post-test assessment of the blood pressure of hypertensive patients.
* - No intervention

Result

The results of the study revealed significant improvements in the experimental group following the alternate nostril belly- breathing intervention. Most participants in both groups were between 50–59 years of age, predominantly male, married, and obese, with many reporting habits such as smoking or chewing tobacco and presenting with secondary hypertension.

Before the intervention, all clients in the experimental group were classified under Stage I or Stage II hypertension, with none falling within normal or pre-hypertensive categories. After practising belly breathing, a remarkable reduction in blood pressure was observed, with many participants shifting to normal and pre-hypertensive levels, and none remaining in Stage II.

In contrast, the control group showed only slight, non-significant reductions in blood pressure, and all participants continued to remain within hypertensive ranges. The effectiveness analysis confirmed this improvement, showing a significant decrease in mean systolic pressure from 161.3 to 135.7 mmHg and in diastolic pressure from 101 to 76.2 mmHg in the experimental group. Meanwhile, the control group exhibited only minimal changes. Overall, the findings strongly demonstrate that alternate nostril belly breathing is an effective non- pharmacological intervention for reducing blood pressure among hypertensive clients.

Table: Frequency and Percentage distribution level of Blood Pressure among Hypertensive clients before and after BellyBreathing in Experimental group.

LEVEL OF BLOOD PRESSURE	SYSYTOLIC				DIASTOLIC			
	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	F	%	F	%	F	%	F	%
NORMAL <120/80	0	0	2	10	0	0	18	90
PRE-HYPERTENSION 120-139/80-89	0	0	9	45	0	0	1	5
HYPERTENSION STAGE-I 140-159/90-99	8	40	9	45	8	40	1	5
HYPERTENSION STAGE-II >160/100	12	60	0	0	12	60	0	0

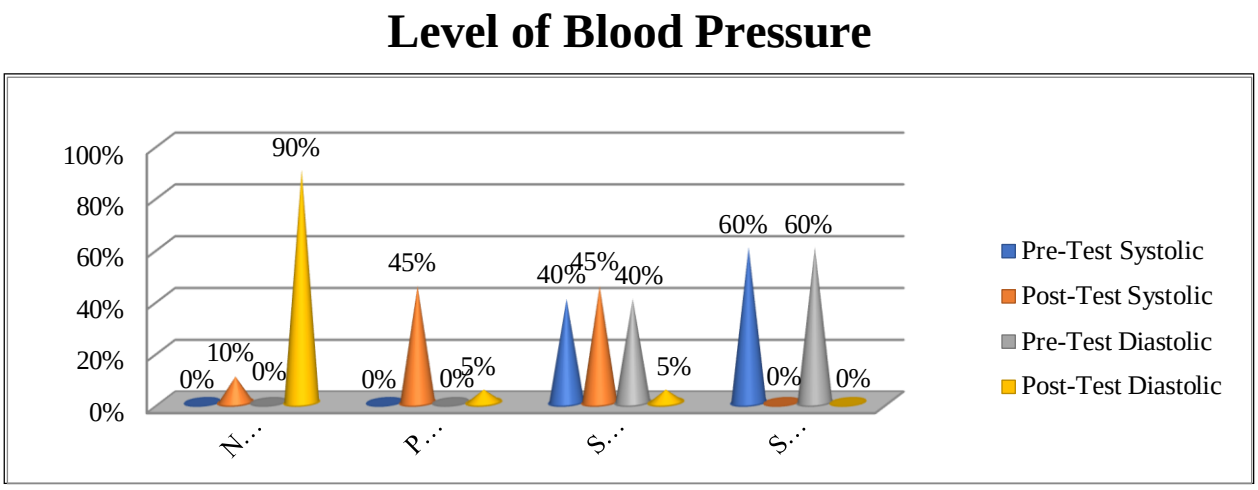


Table: Frequency and Percentage distribution level of Blood Pressure among Hypertensive clients in Control group.

LEVEL OF BLOOD PRESSURE	SYSYTOLIC				DIASTOLIC			
	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	F	%	F	%	F	%	F	%
NORMAL <120/80	0	0	0	0	0	0	0	0
PRE-HYPERTENSION 120-139/80-89	0	0	0	0	0	0	0	0
HYPERTENSION STAGE-I 140-159/90-99	8	40	12	60	8	40	11	55
HYPERTENSION STAGE-II >160/100	12	60	8	40	12	60	9	45

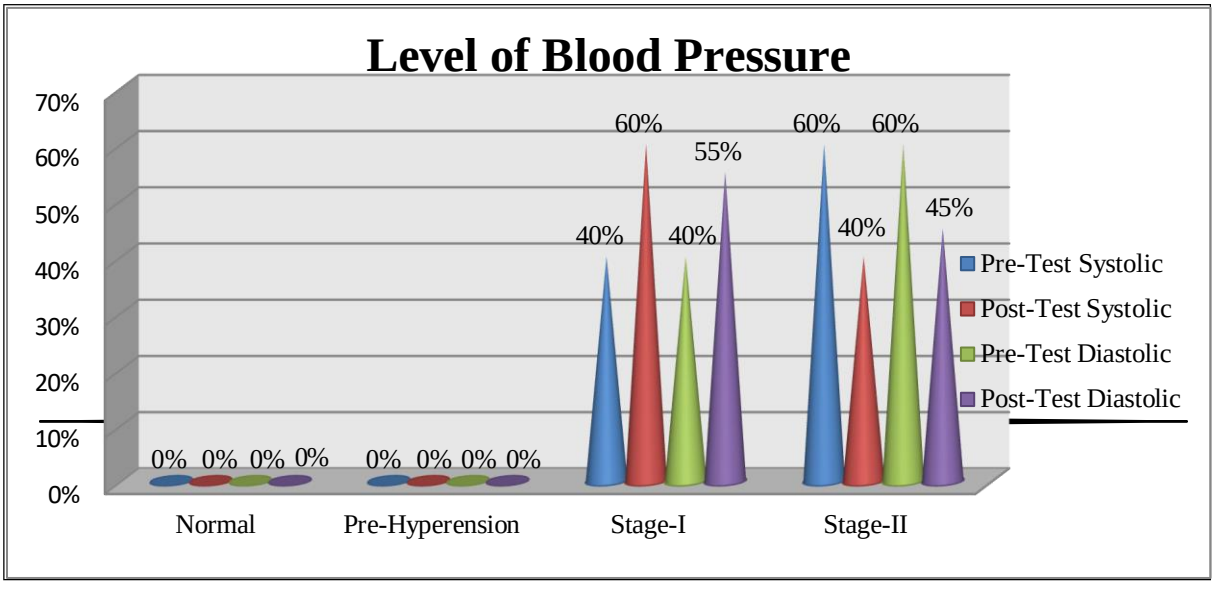


Table: Effectiveness of Belly breathing on blood pressure among hypertensive Clients.

GROUP	VARIABLES	TEST	MEAN	MEAN DIFFERENCE	STANDARD DEVIATION	"t" VALUE
EXPERIMENTAL	SYSTOLIC	PRE	161.3	25.6	9.13	31.2 df=19 p=3.8
		POST	135.7		8.88	
	DIASTOLIC	PRE	101	24.8	4.17	29.8 df=19 p=3.8
		POST	76.2		5.13	
CONTROL	SYSTOLIC	PRE	159.2	3.8	10.24	12.25 df=19 p=3.8
		POST	155.4		10.61	
	DIASTOLIC	PRE	99.3	1.4	3.42	10 df=19 p=3.8
		POST	97.9		2.71	

Implication of the study

The reduction of high blood pressure in hypertensive patients has an important role to play in enabling effectiveness of Belly-breathing intervention as an independent nursing intervention. This can be facilitated by motivating the nurses to:

- Learn accurate assessment of level of blood pressure with sphygmo - manometer.
- Develop sensitivity to the effect of Belly-breathing in reduction of high blood pressure level among hypertensive patients.
- Understand the importance of Belly breathing techniques intervention as a adjunct to the Pharmacological therapy.
- Encourage use of Belly-breathing techniques intervention as a form of relaxation among hypertensive patients.
- Encourage the use of Belly-breathing techniques intervention in reduction of high blood pressure level and to minimize the requirement of non-pharmacological management.

Nursing Education

Health personnel may separate the theory and practice while treating the hypertensive patients and tend to reduce the level of high blood pressure which can be beneficial for the hypertensive patients. So nursing educators should motivate students to

- Ensure that they learn the assessment of levels of blood pressure and effectiveness of Belly-breathing intervention in reduction of high blood pressure, as an independent nursing intervention.
- Provide adequate clinical exposure to students, where Belly-breathing can be used to reduce high blood pressure among hypertensive patients.
- Arrange for participants in demonstrating Belly-breathing techniques by Audio visual aids, group conference and bed side clinics.
- Make available literature related to Belly-breathing techniques in reduction of insomnia in the library, for student reference.

Recommendations

- The study can be replicated with large sample size.
- The intervention ofBellybreathing therapy have good effects that can be taught to all the care givers including family members.
- A study can be conducted to assess the attitude and practice among nurses posted in medical wards.
- Comparative study can be conducted between the Bellybreathingwith other therapies.

Reference

1. Alvin Hopkinson, *Silent Killer - Understanding Why Hypertension is Called the Silent Killer Disease* [online], available from: http://ezinearticles.com/? Silent- Killer---Understanding-Why-Hypertension-is-Called-the-Silent-Killer-Disease&id=2254586 [Accessed on 4th September 2015].

2. Yong JH, Parler P, *The comimg epidemic: hypertension in rural Kyrgyzstan, Central Asia*. Journal of Human Hypertension 2005; 19: 145-8.

3. Brunner. Suddharth.*Textbook of medical surgical nursing.* 12 thedition.NewDelhi.WolterKluver publications;2010,230-285.

4. Diseases and Conditions High Blood Pressure, [online], Available from: http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/basics

/complications/con-20019580. [Accessed on 01st March 2016]

5. Yung P, French P, Leung B, *Relaxation training as a complementary therapy for mild hypertension control and the implications of evidence based practice medicine*, Complementary Therapies in Nursing &Midewifery 2001, Vol 7; 59-65.

6. Madanmohan, Udupa K, Bhavanani AB, Vijayalakshmi P, Surendiran A. *Effect of slow and fast Pranayams on reaction time and Cardiorespiratory variables.* Indian J PhysiolPharmacol,2005; 49: 313-8.

7. Srivastav RD, Jain N, Singhal A., *Influence of Bellybreathing on cardiorespiratory and autonomic functions in healthy young adults*. Indian J PhysiolPharmacol2005; 49:475-83.

8. Jain N, Srivastav RD, Singhal A., *The effects of Right and Left nostril breathing on cardiorespiratory and autonomic parameters*, Indian J PhysiolPharmacol2005; 49: 469-74.

9. Pal GK, Velkumary S, Madanmohan., *Effect of short-term breath exercises on autonomic functions in normal human volunteers*, Indian J Med Res2004; 120: 115-21.

10. Brown RP, Gerbarg PL., *Sudarshankriya yogic breathing in the treatment of stress, anxiety and depression: part 1 neurophysiological model*, J Alt Complement Med2005; 11:189-201.

11. Bhattacharya S, Pandey US, Verma NS,*Improvement in oxidative status with yogic breathing in young healthy males*, Indian J PhysiolPharmacol2002; 46: 349-54.

12. Yeligar RR, Shah KA et al. The most reliable approach to defeat a silent killer, [0nline], IJPSR 2010; Vol 1, Issue 8. Available from: http://medind.nic.in/jac/t12/i1/jact12i1p15.pdf. [Accessed on 12th January 2016]

13. Chaturvedi M, Jindal S, Kumar R et al. *Lifestyle modification in hypertension in Indian context*, JIACM 2009; 10 (1 and 2): 46-51. Available from: http://medind.nic.in/jac/t12/i1/jact12i1p15.pdf [Accessed on 12th January 2016]

14. Albert W Dreisbach, *Epidemiology of Hypertension*, [online], Available from: http://emedicine.medscape.com/article/ 1928048-overview#a3 [Accessed on [Accessed on 12th January 2016]

15. Lewis SM, Heitkemper M, Dirksen SR, Chintamani(ed), T*extbook of Medical Surgical Nursing,* 7th edition,*Philadelpia*, Mosby Elsevier publication; 2011. 766-7.