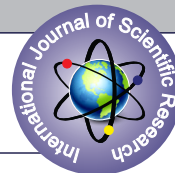


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A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE (SIM) ON KNOWLEDGE OF HYPERTENSION AMONG PRE-HYPERTENSIVE STAFF AND EFFECTIVENESS OF DEEP BREATHING EXERCISES IN LOWERING BLOOD PRESSURE IN PRE- HYPERTENSIVE STAFF OF AGE 25-40 YEARS, WORKING IN DIFFERENT NON-MEDICAL FACULTIES OF SGT UNIVERSITY GURUGRAM



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ABSTRACT

INTRODUCTION

Joint National Commission (2017) reported that Hypertension affects nearly 26 percent of adult population all over world. Hypertension can be alone independent factor for adverse cardiovascular disorders, (Joint National Commission) defines hypertension as blood pressure >140/90 mmHg. Persons whose blood pressure goes above optimal levels, but not clinical hypertension (systolic blood pressure of 120-139 mm Hg or diastolic blood pressure of 80-89 mm Hg, are defined as "Pre-hypertensive". Deep breathing exercise is one of the non-pharmacological, successful method to use in maintaining the normal blood pressure among patients with hypertension and also Continuous practicing of deep breathing exercise can reduce medicine usage thereby it can be used routinely as a corresponding method of treatment for hypertension. Deep breathing exercise will reduce the side effects of medicine in case of hypertension & also decreased its usage. The objective of present study is to Assess the Effectiveness of Self Instructional Module (SIM) on Knowledge of Hypertension among Pre-hypertensive Staff and Effectiveness of Deep Breathing Exercises in Lowering blood pressure in Pre- Hypertensive Staff of age 25-40 years, working in different non medical faculties of SGT University Gurugram. The non-probability purposive sampling technique was used to select 60 Pre- Hypertensive Staff of age 25-40 years, working in different non medical faculties of SGT University Gurugram one group pre test post design was used in present study. Samples were selected by non probability sampling technique. The tool consists of demographic variables and structured tool to assess knowledge on hypertension. Reliability was calculated by using split half method. Analysis of the data was done using descriptive and inferential statistics.

KEYWORDS

Assess, Effectiveness, SIM, Knowledge, Pre-Hypertensive staff, Deep Breathing Exercises, Blood Pressure.

I. INTRODUCTION

The prevalence of pre-hypertension in young adults was 45.2%. The possible factors found to be highly associated with pre-hypertension were age group of 25–30 years, intake of extra salt in meals, salty food intake, pre-obesity, and obesity. Selection strategy for pre-hypertension should be initiated at an early age in the community. The importance of lifestyle modifications with respect to personal habits, dietary habits, physical exercise, and relaxation techniques needs to be impressed upon young adults in the community.^[1]

The deepest breathe taken by human being is after birth, at the time when they cry. First cry provide the maximum inspiratory effort to inflate the collapsed alveolus permanently at the time of birth, at that time the intrapleural pressure becomes up to 70 mm of Hg. Benefits of doing Deep Breathing Exercises have been shown in Hindu Sanskrit Mythologies from ancient time around fifth century. Pranayama yoga, the practice of deep breathing in the pursuit of health is much older and effective.^[2]

Approximately one-fifth of the population above 40 years of age in mid India where a community-based come close to that place was hypertensive. This is considerably lower than the previously documented prevalence rate of one-third or even more prevalence rate in India. The characteristic of caste and religion, a specific rural Indian characteristic did not have any significant bearing on the over results. The prevalence tended to increase progressively with age until 70 years.^[3]

Pranayama, meaning 'breathe control,' is an ancient technique involving slow and rhythmic breathing. It is known that the habitual performance of Pranayama increases parasympathetic tone, decreases sympathetic activity, improves cardiovascular and respiratory functions, decreases the effect of stress and strain on the body and improves physical and mental health. Regular practice of rhythmic slow breathing has been shown to increase bar reflex 18 sensitivity and reduce chemo reflex activation, and to reduce systolic, diastolic and mean blood pressures as well as heart rate variations in hypertensive patients.^[4]

II. STATEMENT OF PROBLEM

"A pre experimental study To Assess the Effectiveness of Self Instructional Module (SIM) on Knowledge of Hypertension among Pre-hypertensive Staff and Effectiveness of Deep Breathing Exercises in lowering blood pressure in Pre- Hypertensive Staff of age 25-40

years, working in different non medical faculties of SGT University Gurugram".

OBJECTIVE OF THE STUDY

1. To identify Pre- Hypertensive Staff (25-40years), working in different non medical faculties of SGT University Gurugram.
2. To assess the pre interventional knowledge of Pre-hypertensive Staff about Hypertension.
3. To administer SIM to Pre hypertensive Staff.
4. To assess the post interventional knowledge of Pre-hypertensive Staff about Hypertension.
5. To intervene them with Deep Breathing Exercises.
6. To find out association of Pre-hypertension with selected demographic variables.
7. To compare pre interventional and post interventional Blood Pressure recordings and assess the effectiveness of the Deep Breathing Exercises.

HYPOTHESES

- **H₁:** There will be significant difference between pre interventional and post interventional blood pressure recordings of pre-hypertensive staff at $p < 0.05$.
- **H₂:** There will be significant association of pre-hypertension with selected demographic variables at $p < 0.05$.

MATERIALS AND METHODS:

Research Approach: Quantitative research approach was used for the present study.

Research Setting: Selected Non-Medical faculties of SGT University Gurugram.

Sample and Sample size: Sample size for the present study was 60.

Sampling Technique: Non-Probability Purposive Sampling Technique was used in the present study.

Description of Tools : The tools include socio-demographic data and structured questionnaire to assess the knowledge of pre-hypertensive staff about hypertension and sphygmomanometer to measure the blood pressure.

Description of the tool for data collection was in three parts

SECTION-I:- Developing **Structured Questionnaire** which was

consisted of demographic variables: such as Age, Sex, Occupation, educational status, preference of dietary salt intake, habit of Smoking, habit of alcoholism, Family history of hypertension and Body mass index (BMI) recording in structured questionnaire.

SECTION-II:- Developing a structured questionnaire to assess knowledge of selected pre-hypertensive staff about Hypertension.

SECTION-III:- Sphygmomanometer was used to check the Blood Pressure. The measured Blood Pressures was categorized according to JNC -8(2014) and was recorded in a Blood Pressure assessment sheet.

Table-1 Category of Hypertension According to JNC -8(2014)

Blood pressure category	Systolic BP mm Hg (upper #)		Diastolic BP mm Hg (lower #)
Normal	Less than 120	and	Less than 80
Pre hypertension	120-139	Or	80-89
High blood pressure Hypertension (stage 1)	140-159	Or	90-99
High blood pressure Hypertension (stage 2)	160 or higher	Or	100 or higher

RESULTS

SECTION-I:-Assessment of pre-interventional knowledge score about hypertension among pre-hypertensive staff.

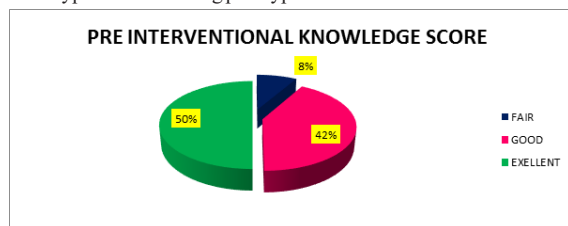


Fig-1 Percentage distribution of pre interventional knowledge score about hypertension among pre-hypertensive staff.

Figure 1- Reveals that 8% of staff had fair knowledge about hypertension, 42% of staff had good and 50% of staff had excellent knowledge score about hypertension. Hence, it was concluded that majority of staff had excellent knowledge about hypertension.

SECTION-II:- Assessment of post-interventional knowledge score about hypertension among pre-hypertensive staff.

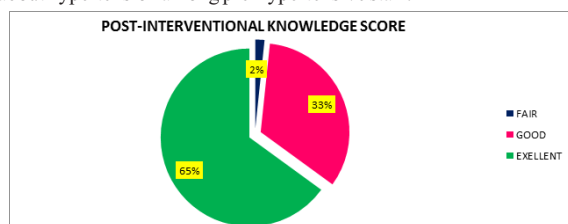


Fig-2 Percentage distribution of post interventional knowledge score about hypertension among pre-hypertensive staff.

Figure 2- Reveals that 2% of staff had fair knowledge about hypertension, 33% of staff had well and 65% of staff had excellent knowledge score about hypertension. Hence, it was concluded that majority of staff had increased their knowledge about hypertension after the intervention.

SECTION-III:- Comparison of Mean, pre and post-interventional MAP of Blood Pressure recording of pre-hypertensive staff.

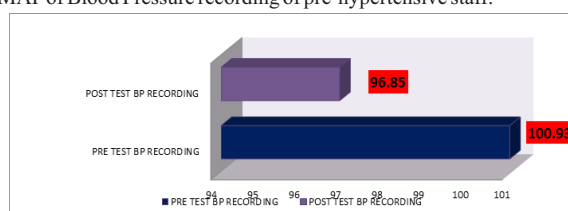


Fig-3 Comparison of Mean, pre and post-interventional MAP of Blood Pressure recording of pre-hypertensive staff.

Figure 3- The comparison of pre-interventional and post-interventional MAP of BP recording to assess the effectiveness of Deep Breathing Exercises among the staff with pre-hypertension. The mean of pre interventional MAP was 100.9333 and post interventional MAP was score 96.85 having a significant difference of -0.7, with t-value for -11.74 at level of significant $p < 0.05$. Which was found as significant at p value < 0.00001 .

DISCUSSION

The findings in presented in the analysis of pre interventional score reveals that 8% of staff had fair knowledge about hypertension, 42% of staff had good and 50% of staff had excellent knowledge score about hypertension and in post intervention knowledge score reveals that 2% of staff had fair knowledge about hypertension, 33% of staff had good and 65% of staff had excellent knowledge score about hypertension. Hence, it was concluded that majority of staff had increased their knowledge about hypertension after the intervention. The comparison of pre-interventional and post-interventional MAP of BP recording to assess the effectiveness of Deep Breathing Exercises among the staff with pre-hypertension. The mean of pre interventional MAP was 100.9333 and post interventional MAP was score 96.85 having a significant difference of -0.7, with t-value for -11.74 at level of significant $p < 0.05$. Which was found as significant at p value < 0.00001 .

Therefore, it was concluded that deep breathing exercises were found effective in lowering blood pressure among the pre-hypertensive staff working in different faculties of SGT University Gurugram.

A quasi experimental study was conducted, in that the mean pre-test total level of hypertension Score before breathing exercise was 40 and mean post-test level of hypertension score was observed to be 26.66. The reduction in hypertension over breathing exercise (Mean = 13.34,) was significant at 5%. So the breathing exercise was effective on hypertensive patient.

Swu L.K, Aruna S. and Gowri M. (2015) concluded that the pre test mean score of systolic BP was 152.67 ± 9.67 and the post mean score of systolic was 145.67 ± 9.12 and the mean score of diastolic BP was 95.67 ± 5.96 and the post mean score of diastolic was 82 ± 4.67 . The calculated paired-t value of $t = 4.263$ and $t = 4.540$ was found to be statistically significant at $p < 0.05$.

CONCLUSION

After the detailed analysis, this study leads to following conclusion that there is a significant difference in MAP of blood pressure before and after on pre-hypertension among the staff with pre-hypertension. The association of post -interventional score with selected demographic variables such as number of gender ,habit of smoking and daily exercises are found statistically significant at of 0.0002,0.00001 and 0.04 ($p < 0.05$). It has been proven that Deep Breathing Exercises (DBE) are effective in lowering blood pressure among the staff with pre-hypertension

SOURCE OF FUNDING

The funding for the study was self.

CONFLICT OF INTEREST:-Nil.

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