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An explorative study to assess the level of blood pressure and the relationship between selected factors and level of blood pressure among sedentary workers in Jabalpur City M.P.

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Abstract

The sedentary worker's detection of high blood pressure in the adult (Male & Female) population due to prevalent sedentary lifestyle. The purpose of this study was to conduct a review to identify and summarize the research on sedentary workers in this population. The definition of a sedentary lifestyle (known as "Sitting disease") is one in which a person has no regular physical activity. A typical sedentary person of working age may have a sedentary occupation that keeps him or her seated and using a computer in the working day.

Aim: 1. Assess the level of blood pressure among sedentary workers as measured by a manual sphygmomanometer. 2. Identify selected factors influencing blood pressure as measured by checklist. 3. Determine the relationship between the level of blood pressure and selected factors (physical activity, stress, lifestyle pattern).

Methodology: 60 samples of sedentary workers in bank clerical staff are aged between 40-60 years adults. These workers to assess the level of blood pressure in selected banks from Jabalpur city in MP were selected by using the Convenient Sampling technique.

Results: A total of four sections were included. Section I- Distribution of socio-demographic variables by using frequency and percentage bases, Section II- Distribution of sedentary workers according to blood pressure, Section III- Association of assess the level of BP in sedentary workers with selected demographic variables, Section IV-Distribution of the relationship of risk factors with level of blood pressure.

Keywords: Knowledge, blood pressure, sedentary workers, adults, physical activity, risk factors

Introduction

Hypertension is the medical term for high blood pressure, it is known as a "silent killer" since it has no initial symptoms but can lead to long-term disease and complications. Hypertension (HTN) or high blood pressure is a cardiac chronic medical condition in which the systemic arterial blood pressure is elevated. Blood pressure involves two measurements, systolic and diastolic. Normal blood pressure is at or below 120/80 mmHg. High blood pressure is anything above 140/90 mmHg. Hypertension is classified as either primary (essential) hypertension or secondary hypertension; about 90-95% of cases are categorized as "primary hypertension", which means high blood pressure with no obvious medical cause. The remaining 5-10% of cases (Secondary hypertension) is caused by other conditions that affect the kidneys, arteries, heart or endocrine system. The causes of Primary hypertension are many factors such as sedentary lifestyle, smoking, stress, visceral obesity, potassium deficiency, obesity (more than 85% of cases occur in those with a body mass index greater than 25), salt (sodium) sensitivity, alcohol intake, and vitamin D deficiency that increase the risk of developing hypertension. Risk also increases with ageing, and having a family history of hypertension. The causes of Secondary hypertension are resulting due to the compromise or imbalance of the path physiological mechanisms, such as the hormone-regulating endocrine system, that regulate blood plasma volume and heart function. Many conditions cause hypertension, some are common, well-recognized secondary causes such as Reno vascular hypertension and Cushing's syndrome (which is a condition where the adrenal glands overproduce the hormone cortisol).

Hypertension is also caused by other conditions that cause hormonal changes, such as hyperthyroidism, hypothyroidism, and certain tumours of the adrenal medulla (e.g., Pheochromocytoma). Other common causes include kidney disease, obesity, preeclampsia during pregnancy and certain prescription and illegal drugs.

Aim

The present study aimed at to assess the level of blood pressure and the relationship between selected factors and the level of blood pressure among sedentary workers.

Need for Study

Hypertension is a chronic disease which is more prevalent in these years. It is a leading cause of morbidity and mortality due to its micro vascular and macro vascular complications which include coronary artery disease, nephropathy, neuropathy etc. The incidence and prevalence data suggest that hypertension prevalence is on the rise. An estimated 972 million people in the worldwide suffer from high blood pressure. Incidence rate of hypertension range between 3% to 18% depending on the age, gender, ethnicity and body size (2007).

Review of Literature

Russell M, *et al.* (1999) ^[4] Study of Stress, Alcohol, and Blood Pressure in Community-Based Samples of Blacks and Non-Blacks populations in Erie County, New York, in 1986, 1989, and 1993, showed both alcohol use and stress appeared to increase blood pressure. In addition, stress is associated with increased alcohol use. Thomas A. *et al.* (2001) conducted an exploratory study on medical expenditures attributed to blood pressure were estimated, including expenditures for cardiovascular complications. Blair SN, *et al.* (1984), In this study the physical activity were measured and, assessed by maximal treadmill testing in 4,820 men and 1,219 women aged 20 to 65 years. Participants had no history of cardiovascular disease and were normotensive at baseline. Byass P, *et al.* (2009) ^[12] a population-based, cross-sectional survey was conducted to describe the epidemiology of high blood pressure among adults in Addis Ababa an urban population in Ethiopia. Ashavaid TF (2004) ^[13], study was conducted in Mumbai for to find the percentage of people with coronary artery disease and the associated risk factors. Mohmmedirfan H, *et al.* (2010) conducted on the effect of lifestyle Risk Factors on the Prevalence of Hypertension among White Collar jobs. The main objective of this study is to determine the magnitude the of the problem of hypertension among bank employees. Vicki L, Burt, *et al.* (1995) ^[14] A cross-sectional survey to determine the status of hypertension awareness, treatment, and control was conducted among 9901 civilian, non-institutionalized population of the United States. Anand MP, (1999) ^[5]. A study was conducted in Mumbai regarding Non-pharmacological management of essential hypertension. Sherill Nones Cronin (2004) ^[15] conducted an exploratory study to determine if there are differences in the health beliefs of hypertensive. John F, (2009) ^[16] conducted a retrospective cohort study on socio-demographic and clinical characteristics that are not clinically useful predictors of refill adherence in patients with hypertension. Michael E, *et al.* (2010) ^[17] conducted a cross-sectional study on the profile and predictor of health-related quality of life among hypertensive patients in south-western Nigeria. Claudia S, (2010) ^[18] conducted a randomized controlled study on the improvement of self-monitoring and improved blood pressure control by using a new colour-coded blood

pressure diary.

Objectives of the study

- Assess the level of blood pressure among sedentary workers as measured by a manual sphygmomanometer.
- Identify selected factors influencing blood pressure as measured by checklists.
- Determine the relationship between the level of blood pressure and selected factors (physical activity, stress, lifestyle pattern).

Methodology

An evaluation the assess the level of blood pressure and the relationship between selected factors and the level of blood pressure among sedentary workers. The contents included in this chapter are description of the research approach, research design, variables under study the setting, Population, Sample & sampling technique, Development and description of tools, Data & Collection procedures, Description of assessments of the level of blood pressure, Pilot, Final study and plan for data analysis. The present study was carried out on an experimental basis so as to evaluate and assess the level of blood pressure and the relationship between selected factors the and level of blood pressure among sedentary workers.

Hypothesis

H₁: There will be a significant relationship between the selected factors (such as physical activity level, lifestyle pattern and stress level) & level of blood pressure among sedentary workers.

H₂: There will be a significant association between the level of blood pressure and selected demographic variables.

Variables

- **Independent variables:** Age, Sex, Family History, Smoking, Obesity, High Salt Diet, Alcohol, Diabetes Mellitus, Emotional Stress.
- **Dependent variables:** Level of blood pressure of sedentary workers.

Study Setting

The study will be conducted on the clerical workers, working in various selected government and non-government banks offices in Jabalpur city. The rational for the selection of these offices was familiarity with the setting, easy transportation facility, administration approval, cooperation and availability of subjects.

Population

The target population in this study consist of sedentary workers in government and non-government offices. All Clerical Workers of banks and offices between the age group of 25 to 60 years and those who work in sitting positions from 9 am to 5 pm, in the offices of Jabalpur city.

Sample and sample size

A sample is a portion of the population that has been selected to represent the population of interest. Sampling refers to the process of selecting a portion of the population. The total sample size for the study was 60 sedentary workers of banks to assess the level of blood pressure.

Sampling Technique

A convenient sampling technique was selected for sample selection. The researcher might decide to purposely select the widest possible variety of respondents or might choose

subjects who are judged to be typical of the population in question.

Delimitations

The study will be delimited to the sedentary workers of various government and non-government bank offices.

Instrumentation

- Demographic Proforma.
- Blood pressure level classification chart.
- Structure multiple checklist

Data Collection Tools

Data collection tools are the device that researchers used to collect the data. A valid and reliable data collection instrument is considered important to yield high-quality data. Hence, the tool developed for the study was: To assess the level of blood pressure. Structured multiple check-list for assessing the level of blood pressure in sedentary workers.

Results

Section 1: A Distribution of subjects according to socio-demographic variables by using frequency and percentage

(N=60)

Demographic Variable	Frequency	Percentage (%)
Age		
25-35	7	12
36-45	21	35
46-55	15	25
55- above	17	28
Sex		
Male	38	63
Female	22	37
Educational status		
Illiterate	27	45
10 th	14	23
12 th	10	17
Graduate	9	15
Postgraduate	0	0
Occupation		
Clerical worker	23	38
Lower worker	37	62
Weight in KG		
40-50	10	17
51-60	28	47
61-70	17	28
71-above	5	8
Monthly income		
Less 10000-20000	50	83
20000- above	10	17
Marital status		
Single	5	8
Married	55	92
Sedentary worker's Systolic Blood Pressure		
< 110-120	13	22
120-130	24	40
130-140	12	20
140-150	9	15
150 above	2	3
Sedentary worker's Diastolic Blood Pressure		
< 70-80	13	22
80-90	30	50
90-100	13	22
100-110	3	5
110 above	1	2
Family history of Hypertension		
Yes	19	32
No	41	68

Section 2: Distribution of sedentary workers according to blood pressure category

(N=60)

S. No.	Sedentary worker's other f blood pressure categories	Yes	No
01.	Age Above Years	21	39
02.	Family History	22	38
03.	Smoking	24	36
04.	Over Weight	8	52
05.	Physical Activity	51	9
06.	Use of Pills	8	52
07.	Drinking	15	45
08.	Socio Economic Factor	29	31
09.	Use of Multiple Medicine	14	46
10.	Diabetic & Heart Disease	8	52
11.	Use of Extra Salt	14	46
12.	Use of High Fatty Diet	30	30
13.	Use Dairy Products	37	23
14.	Non-Vegetarian	32	28
15.	High-Stress-Level	7	53
16.	Use of Tobacco	35	25
17.	Use of Yoga	5	55
18.	Sleep Apnea Disorder	10	50
19.	Less Healthy Eating Habit	15	45

Section 3: Association of as assessing the level of BP in sedentary workers with selected demographic variables

(N=60)

S. No	Variables	No	Yes	Total	DF	Chi-value	P-value	Inference
1	Age							
	25-35	4	3	7				
	36-45	19	2	21	3	80	0	MS
	46-55	15	0	15				
	55 & above	17	0	17				
2	Sex							
	Male	36	2	38				
	Female	19	3	22	2	2.88	0.41	NS
3	Education							
	Illiterate	24	3	27				
	10 th	12	2	14				
	12 th	10	0	10	5	20	0.017	S
	Graduation	9	0	9				
	Post-graduation	0	0	0				
4	Occupation							
	clerical w.	20	3	23				
	lower w.	25	2	37	2	1.07	0.7833	NS
5	Weight in kg							
	40-50	6	4	10				
	51-60	27	1	28	3	12.73	0.175	NS
	61-70	17	0	17				
	71 -above	5	0	5				
6	Monthly Income							
	less 10000-20000	27	3	50				
	20000-Above	8	2	10	2	5.086	0.1655	NS
7	Marital status							
	Single	4	1	5				
	Married	31	4	55	2	13.01	0.0045	S
8	HTN History							
	Yes	16	3	19				

The result significant at a 0.05% level of sites significance

Section 4

Distribution of the relationship of risk factors with level of blood pressure

The risk factors of blood pressure are Age above 55 years, Family history of Hypertension, Smoking, Overweight, Physical Activity, Female use of Pills or HRT, Drinking, Socio-Economic Factors, Taking of Multiple Medications,

Diabetes and heart disease, use of extra salt habit, taking of high fatty diet, taking more dairy products, non-vegetarian, high stress, tobacco user, not doing yoga to overcome stress, disorder of sleep apnea, less healthy eating habit are having significant relation with score.

Discussion

The purpose of this study was to assess the level of blood pressure and the relationship between selected factors of among sedentary workers. These factors are associated with hypertension. The data indicate a high prevalence of hypertension, smoking, taking high fatty diet, overweight and low physical activity. Our finding is unique because this is one of this study to explore factors associated with hypertension.

Conclusions

The present study concluded that were a statistically significant in assessing the level of blood pressure and giving health education provided of sedentary workers.

Implications

The findings of the study have implications for the assessment of blood pressure, Nursing Administration, and Nursing Research.

Nursing Administration

1. As a part of the administration, the nurse administrator plays a vital role in educating bank officers.
2. The nursing administration may use different technologies as well as attending in-service education in order to the assessment of blood pressure as well as ensure that the nurse may assume responsibility and accountability.
3. Administration can also motivate the nursing staff to develop and use information material to impart knowledge about bank offices.
4. The study finding reveals that assessing the level of blood pressure of the bank officers, which could be used to explain the need for education while the nursing students.
5. The blood pressure is then watched, and recorded in checklist.

Nursing Research

1. The nurse research can also conduct research to assess the level of blood pressure in sedentary workers.
2. The generalization of the study result can be made by replication of the study. More research needs to be conducted with large samples in different settings.
3. Nursing research is an essential aspect of nursing as it uplifts the profession and developed new nursing norms and a body of knowledge.
4. Another research has been added to the nursing literature. Very few studies have been done on a similar basis.
5. The research design, finding and the tool can be used as avenues for further research.
6. The nurse research should be able to conduct research on various aspects of blood pressure factors and more scientific data.
7. The findings of the study will provide insight and baseline data for the student it can be used as a reference for the further study.

8. The generalization of the study, results can be made by replication of this study. More research needs to be conduct with a large sample size in different settings.

Limitation

- This study is limited to a sedentary worker in Government and Non-Government bank offices at Jabalpur City.
- The duration of the study is limited for four weeks only.
- The sample size is limited to 60 only.
- The study is limited only to those who can read and write in English and Hindi.
- The study was limited to assessing the level of blood pressure.

Recommendations

On the basis of the findings of the study, the following recommendations were made

- A similar study can be done on larger samples.
- A similar study can be conducted with experimental and control groups.
- Follow-up of present study subjects can be done to evaluate the long-term effects of sedentary workers in the assessment of blood pressure.
- A similar study can be done using an assessment of blood pressure. Examples are demographic variables, structured multiple check-list etc.
- A similar study could be done on govt. & Non-govt. Bank offices.
- An explorative study can be done on Jabalpur City.
- A similar study could be done on sedentary workers of different age groups.

Conflict of Interest

Not available

Financial Support

Not available

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