

PREVALENCE AND RISK FACTORS OF HYPERTENSION AND DIABETES MELLITUS AMONG THE EMPLOYEES

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Abstract

Introduction:-Diabetes mellitus is a group of metabolic disorder characterized by increased levels of glucose in the blood (hyperglycemia) resulting from defects in insulin secretion, insulin action or both. It is very fast gaining the status of potential epidemic in india. The major classification of diabetes mellitus are type I and type II diabetes depends on causes sign / symptoms and treatment, others types are gestational diabetes, secondary diabetes and pre diabetes. The sign and symptoms are blurred vision, slow healing sores, increased thirst, frequent urination, extreme hunger and unexplained weight loss. The exist causes of diabetes mellitus is unknown, but it may occur due to gene mutation and obesity. Blood pressure is the force exerted by the blood against the walls of the blood vessels to maintain the tissue perfusion during activity and rest, due to the integration of both systemic and peripheral vascular effect. **Aim:** The aim of this narrative review is to findout the prevalence and risk factors of Hypertension and Diabetes mellitus among employees who are working indifferent schools in Sharda University. **Methodology:-**Monitoring of blood pressure and blood glucose level. **Types of studies:-**Qualitative research. **Types of participants:-**Employees who are working in differentschools in ShardaUniversity. **Setting-** Sharda University. **Outcome-** This narrative review result shows that assessing the prevalence and risk factors of hypertension and diabetes mellitus will be very helpful for acquiring knowledge as well as for detecting the new cases.

INTRODUCTION

Diabetes mellitus is very fast gaining the status of potential epidemic in india, and one of the metabolic disorder characterized by increased levels of glucose in the blood resulting from defects in insulin secretion, insulin action or both. The cause of diabetes mellitus in india is multifactorial as well as genetic .The major classification of diabetes mellitus are type I and type II diabetes depends on causes sign / symptoms and treatment, the others types are gestational diabetes, secondary diabetes and pre diabetes. (Suddarth's,B,13th edition, vol. 2) 2015

Blood pressure is the force exerted by the blood against the walls of the blood vessels to maintain the tissue perfusion during activity and rest, due to the integration of both systemic and peripheral vascular effect. High blood pressure is defined as a persistent SBP >140mmhg.DBP>90mmhg. Hypertension means that the heart is working harder than normal, putting both the heart and the blood vessels under strain. Individuals having SBP of 120 to 139 mmhg and DBP of 80 to 89 mmh, said to have prehypertension and high risk of developing hypertension. Hypertension is increase with age. (Singh,S,.et al) 2017

This hypertension screening camp was organized by Javali R., et al at Raichur Institute of Medical Sciences in 2013, The total no. of sample was 163 both teaching and non-teaching staffs. Hypertension and its risk factors were assessed by using structured questionnaire, that included socio demographic details, family history, dietary pattern and personal history. The height, weight and blood pressure of the participants were recorded. Out of 163 participants, 101 were males and 62 were females. Majority, 79.1%, had mixed diet, 20.9% were vegetarians, and 18.4% are taking extra salt to the diet. Physical activity level was good among 27% as they were exercising for ≥ 30 minutes in a day. The study is concluded that prevalence of hypertension was 11.7%, out of that 6.7% were newly detected and 5% were previously diagnosed to have hypertension. (Javali R., et al) 2013

A cross-sectional study was conducted by Singh S., et al in 2017 at Banaras Hindu University, Uttar Pradesh in India among urban population of Varanasi. The sample size was calculated by taking most probable prevalence of hypertension as 50% and permissible error as 5% with 95% confidence interval. An interview schedule was taken on 640 sample in between age group of 25–64 years, Result shows that the prevalence of hypertension was 32.9% out of that 40.9% was male and 26.0% females. The total sample 211 are hypertensive only 81 subject were aware about their hypertension status, 57 subject were seeking treatment and 20 subject had their blood pressure controlled. This study is concluded that around one-third of the subjects were hypertensive and half of the study subjects were pre hypertensive in this area. (Singh S., et al) 2017

A cross sectional study was conducted by Maroof, K.A., et al at Meerut (Uttar Pradesh) from July 2006 to November 2006. The total number of employees both officer and clerical grade was 200. Information regarding their biosocial characteristics and their type of diet was recorded in a pretested schedule, also their weight, height, blood pressure was measured and recorded using a mercury sphygmomanometer in sitting position. Body Mass Index (BMI) 30 kg/m^2 was considered obese and waist circumference for males 102 cm and for females 88 cm was classified as obese. The age group of the study population was 46 years. In the study population, there were 176 males and 24 females. Prevalence of hypertension was 69.5% to 75.88%. As a result shows that the prevalence of hypertension was significantly higher (79.7%) in the bank employees of age 45 years as compared to the prevalence (46.8%) among those less than 45 years of age. This study is concluded that the burden of hypertension among the bank employees shows the high risk of coronary heart disease, so special programmes, primitive, preventive and curative care for bank employees are required urgently. (Maroof, K.A., et al) 2006

This study was conducted by Brahmanekar, R, T., et al in January 2014 to December 2015. In this study total sample size was 340 employees from different 40 branches. The data was collected by using semi structured questionnaire. Result shows that the overall Prevalence of hypertension was 39.7% and pre-hypertension was 41.8% among the study population. Socio-demographic factors like age, male gender, family history of hypertension, mode of travel, physical activity, overweight, years of service, intake of

coffee and smoking had shown significant association with hypertension. This study is concluded that the prevalence of hypertension was found as significantly higher in bank employees than the general population of India. Among the non-hypertensive, large part was pre-hypertensive which are also at high risk of developing hypertension in the future. (Brahmankar, R, T., et al) 2014

A cross sectional study was conducted by Yadav, B,B., et al in February to October 2014 at Belagavi, among all the non-teaching staff of Jawaharlal Nehru Medical College. The total sample was 500 out of that 394 males and 106 female participants between age group 20-59 years. The risk factors were collected through pre tested questionnaire. Physical examination were done to calculate BMI, waist hip ratio and IDRS (Indian diabetes risk score). The RBS was checked to identify the diabetes and pre-diabetics cases. As a results showed that the prevalence of diabetics, pre diabetics was 5 to 17 % and Type II diabetes was highest in 50-59 years age group. The risk factor like bad habit, waist hip ratio in males and in females, BMI and IDRS attributed to high prevalence of pre diabetics and diabetics. This study is concluded that the prevalence of diabetes was more among non-teaching staff so both preventive and curative services should be provided to them.(Yadav, B,B.,et al) 2014

This study was conducted by Kumar, N, K, .et al at Khammam in Telangana from 01 January to 31 December 2015. The study was conducted to assess the prevalence of diabetes mellitus type II in a rural population of age 30 years and above. Age group of subjects was 30 years or above. A total sample 910 persons aged 30 years. Result showed that all about 74 were diagnosed with type II diabetes mellitus, and prevalence of type II diabetes mellitus was 16.22% in between age group of 30-40 years, 24.32% in between age group of 41-50 years, 43.34% in 51-60 years age group and 16.2% in 61-70 years age group. It shows that diabetes mellitus type II increases with age and the association between age and prevalence of type II diabetes mellitus was found to be statistically significant. This study is concluded that there is a need to increase awareness of type II diabetes mellitus in the general population, health education should be given in terms of risk factors of diabetes. (Kumar, N, K, .et al) 2015

This cross sectional study was conducted by Ayana, A, D.,et al at Harar Eastern Ethiopia from May to July 2013. The sample size was 714 employees working in ten government offices. To find the risk factor of diabetes mellitus type II, structured questionnaire was formulated than used to identify the risk factors of type II diabetes mellitus and fasting blood glucose level was analysed by using a commonly digital glucose monitor that was 126 mg/dL. Result showed that total 50 participants were found to have fasting blood sugar level of 126 mg/dl. Out of these 1.5% participants were known of diabetic cases. This study is concluded that behavioural change communication on the need for healthy lifestyle, with a special emphasis on fruits and vegetables consumption and regular check-up for blood sugar level is recommended for prevention and early detection of type 2 diabetes mellitus.(Ayana, A,D.,et al) 2013

This study was conducted by Berraho,M.,et al in three Moroccan regions from February to July 2006. A study was carried out on 525 type II diabetics in three Moroccan regions. The structured questionnaire was used to gather information on socio demographic variables, history of hypertension, use

of anti-hypertensive medications and duration of diabetes. Anthropometric measurements were done. Blood pressure was measured using clinical sphygmomanometer, prevalence of hypertension was 70.4%. It indicates that hypertension was associated with age, BMI and duration of diabetes mellitus type II. The result showed out of 525 diabetic participants 68.7% were females, 47.1% were >60 years old and 77.3% were illiterate. The half of sample (50.3%) had been suffering from overt diabetes for a period less than 5 years, 42.7% have overweight and 31.2% were obese, 2.7% were current smokers and 5.9% were former smokers. The prevalence among men was similar to that among women. The rate of hypertension increased with age. Obese and underweight subjects had significantly got higher rate of hypertension (77.4% and 80.0% respectively) than overweight (70.9%) and normal weight (60.6%) groups. This study is concluded that the prevalence of hypertension, frequencies of undiagnosed hypertension and uncontrolled hypertension among Moroccan patients with type 2 diabetes were very high.

This study was conducted by H,Asresahegn,.et in Jigjiga city of Somali (Ethiopia) from October to November 2014. A study was conducted among the age group 25–65 years. The participants were permanent residents of Jigjiga city who have been living there at least for 6 Single population proportion formula was applied to calculate the sample size by using hypertension prevalence rate of 28.3% with 5% precision at 95% confidence level, 5% non-response rate. Result shows that total 487 adults provided data for analysis in between age group 35 and 32 years old. Out of that 10.3% and 3.3% of the total study participants were known cases of hypertension, and type II diabetes mellitus, while 82 and 64 have family history of hypertension and type II diabetes mellitus. On the other hand, 182 and 131 of the total respondents were chewer and smoker. The study is concluded that the prevalence of hypertension was high according to finding efficient health screening and regular check-ups as well as promoting healthy lifestyles, diet control, and control of overweight and obesity.

METERIAL AND METHOD:

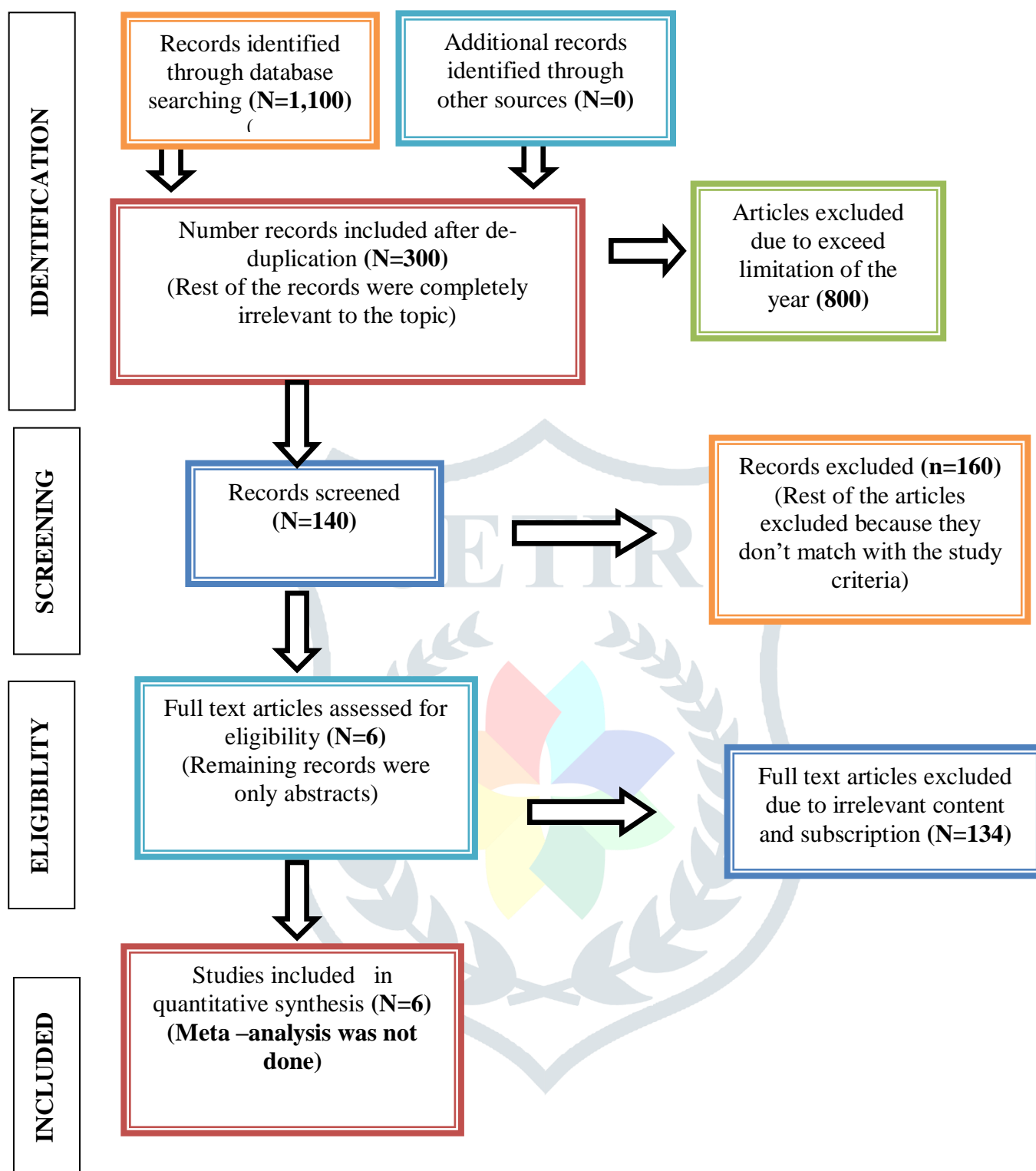


Figure 1: Prisma flow diagram of narrative review

FINDINGS

The systematic search was conducted by formulating the terms separately and in integration with all synonyms, also according to the database. Likewise, a manual Google scholar search was undertaken using the keywords and search synonyms from already articles. An addition of 6 articles was found in the database. Initial search recovers 1100 articles over which 300 articles were selected manually. 160 articles were rejected as a result of replication in the database. Replication was removed and reviewed 140 articles for acceptability. 134 more studies were rejected because of unreachable of the full text. Hence 6 articles were screened which includes quantitative study.

DISCUSSION

These findings are supported by a study conducted by Ahsana Shah and Mohammad Afzal (2013). The study reports that the prevalence of Diabetes mellitus and Hypertension and its influence from its possible risk factors. The result showed that the overall prevalence of diabetes and hypertension in the entire study population was found to be 16.63% and 18.16% respectively. About 13.8% individuals had shown co-prevalence of Diabetes Mellitus and Hypertension. This study suggests that prevalence, risk factors of hypertension and diabetes mellitus will help to detect the new cases of diabetes mellitus and hypertension.

CONCLUSION

Systematic review and meta-analysis evaluating that monitoring of hypertension and diabetes mellitus is very effective. There was a significant change in mortality and morbidity rate, thus it is an effective method for acquiring knowledge for diabetes mellitus and hypertension.

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CONFLICT OF INTEREST: Nil

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