

Occurrence of Hypertension and Diabetes Mellitus and It's Risk Factors Among Adults in Selected Community Joymagar, Agartala, Tripura: A Descriptive Survey

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Abstract

A descriptive study was conducted to determine the occurrence of hypertension and diabetes mellitus and its risk factors among adults in selected community of, Agartala. The main objective of the study was to determine the occurrence and risk factors of hypertension and diabetes mellitus among adults. The design adopted was descriptive survey research design. 100 numbers of adults (in between the age group of 35-55 years) were selected by using Non probability Purposive sampling technique. Data was collected by using of valid and reliable structured questionnaire to find out the risk factors of hypertension and diabetes mellitus, sphygmomanometer and glucometer is used to find out the occurrence of hypertension and diabetes mellitus. There was positive correlation between the occurrence of hypertension and diabetes mellitus with its risk factors which was calculated by Karl Pearson's correlation coefficient where $(r) = 0.78$ and both the association between hypertension and diabetes mellitus with its socio demographic variables, the calculated value (r^2) is less than tabulated value at the level of 0.05 significance. So there is no association between hypertension and diabetes mellitus with its socio demographic variables. The study findings revealed that the occurrence of hypertension was 3.56% and diabetes mellitus is 2.37%. Among the risk factors of hypertension and diabetes mellitus maximum adults are falls to moderate risk factor. There is significant association between the occurrence of hypertension and their selected demographic variables and no association between occurrences of diabetes mellitus with their selected demographic variables. The study has implications on clinical nursing practice and nursing research.

Keywords: hypertension, diabetes mellitus

1. Introduction

India currently, has around 40 million cases of diabetes mellitus and these numbers are projected to increase to 87 million by the year 2030. The most common cause of death in the diabetic patient is heart disease. In addition, peripheral vascular disease, end-stage renal disease, blindness and amputations are common co-morbidities in diabetic patients. Now a day's diabetes mellitus and hypertension has been spread worldwide. In India both the diseases are spreading rapidly. This is a burning issue among our country where peoples are afraid to lose their lives. In India 20% peoples of urban and 10% peoples of rural areas are suffering with diabetes and hypertension. Considering the state of Tripura, in today's Tripura also affected by diabetes mellitus and hypertension. The peoples of this state's living in rural and urban areas are worried about this disease. In the state of Tripura 25%

peoples of urban areas and 20% peoples of rural areas are suffering with diabetes mellitus.

1.1 Background

An Asia-Pacific specialist with the International Obesity Task Force, a medical NGO that coordinates with the WHO on obesity issues feels that of all Asians, South Asians have by far the worst problems when it comes to heart disease. Nearly 50% of cardiovascular disease related death in India occurs below the age of 70, compared with just 22% in the west. Hypertension prevalence is on rise, and control rates are decreasing. Hypertension affects approximately 50 million persons 1 in 4 in the United States, with the highest rates of occurrence among the elderly, African Americans, less educated, and poorer people. It is estimated that only 25% of all people with hypertension have blood pressure controlled at a target level below 140/90mm Hg.

2. Objectives

- To determine the occurrence of hypertension and diabetes mellitus among adults in selected community Joynagar, Agartala, Tripura
- To find out the risk factors of hypertension and diabetes mellitus among adults in selected community Joynagar, Agartala, Tripura
- To find out the relation between hypertension and diabetes mellitus and its risk factors among adults in selected community Joynagar, Agartala, Tripura
- To find out the association between hypertension and diabetes mellitus with its socio demographic variables.

3. Assumptions

- Majority of the adult between 35-55 years have hypertension and diabetes mellitus.
- Family history, excessive salt intake, smoking, tobacco use, sedentary life style, stress, increases the risk of hypertension and diabetes mellitus.

4. Hypothesis

H₁: - There will be significant association between the occurrence of hypertension with demographic variables at 0.05 level of significance.

H₂: - There will be significant association between the occurrences of diabetes mellitus with demographic variables at 0.05 level of significance.

5. Delimitation

- The study is delimited to only those adults who have hypertension and diabetes mellitus in selected urban area.
- This study is delimited to those adults who are present in the area during study time.
- This study is delimited to those adults who are willing to participate in the study.
- This study is delimited to those adults whose age group is in between 35-55 years.

6. Methodology

Research Approach: Quantitative research approach was adopted.

Research Design: Descriptive survey research design.

Variables of the Study

Research Variables:

A. Occurrence of hypertension and diabetes mellitus

B. Risk factors of hypertension and diabetes mellitus

Setting of the Study:

The study was conducted in Joynagar..

Population:

People residing in selected community area with hypertension and diabetes mellitus.

Sample and Sampling Technique:

Non probability purposive sampling technique.

Sampling Size:

150 Peoples residing in the Joynagar area with hypertension and diabetes mellitus were taken for the study.

Sampling Criteria

Inclusion Criteria:

- People have hypertension and diabetes mellitus
- People are present in the area during study time
- People are willing to participate in the study
- People in the age group of 35-55 years.
- People do not have any other serious illness and mental illness.

Development of Tool:

The demographic performa, structured questionnaire and In-Vivo biophysiological measurement was developed by an extensive review of research and non research literature regarding hypertension and diabetes mellitus and its risk factors. Individual discussion with guide peer groups, and investigators own experiences also helped in the development of the tools.

Description of Tool

Section A: Demographic performa: The demographic performa consisted 8 items which includes gender, age, religion, education, occupation, marital status, income and type of family.

Section B: Structured questionnaire to find out the risk factor of hypertension and diabetes mellitus. The structured questionnaire consisted 15 items to find out the risk factors of hypertension and 15 items to find out the risk factors of diabetes mellitus.

In-Vivo biophysiological measurement technique was used to measure blood pressure by mercury Sphygmomanometer and blood glucose will be measured by Glucometer.

Reliability Testing:

Reliability of the tool has been checked by split half method using Karl Pearson's correlation coefficient and Reliability of the tool was 0.78 (r). Hence the tool was found to be reliable.

Data Collection Procedure:

- Formal administrative permission was sought from the local general secretary.
- Data collection schedule was planned according to the suitability of time of the subjects.
- With the help of the ASHA worker habitation wise house to house visit has been conducted to collect data.
- Self introduction and establishment of good rapport with the samples to obtain free and frank responses, the purpose of the study was explained to each of the subjects and assured about confidentiality of their responses.
- Total 150 numbers of samples were selected by non probability purposive sampling technique.
- The consent was taken from the each participant for the willingness to take part in the study.
- They were requested to answer all the questions.
- Demographic and risk factor data were collected through interview technique on the 1st day. On next day blood sugar and blood pressure was measured from the samples. Blood pressure was measured for 3 consecutive days at the same time.
- Data collected was tabulated and analyzed by using descriptive and inferential statistics.

7. Data Analysis and Interpretation

Section I: Demographic variables of the study group in terms of frequency and percentage:

Table 1. The frequency percentage distribution of the demographic variables of the study group.

n = 150

Sl No	Variables	Categories	Frequency	Percentage (%)
1	Gender	Male	88	59%
		Female	62	41%
2	Age	35-40 years	28	19%

3	Religion	41-45 years	32	21%
		46-50 years	65	43%
		51-55 years	25	17%
		Hindu	122	81%
		Muslim	28	19%
		Christian	-	-
4	Education	Others	-	-
		No formal education	20	13%
		Madhyamik	75	50%
		Graduation and above	55	37%
5	Occupation	Govt Employee	34	22%
		Pvt Employee	88	59%
		Others	28	19%
6	Marital status	Married	100	67%
		Un-married	50	33%
7	Monthly family income	<5000	41	27%
		5000-10000	59	39%
		10000-15000	22	15%
		>15000	28	19%
8	Types of family	Nuclear family	42	28%
		Joint family	74	49%
		Extended family	34	23%

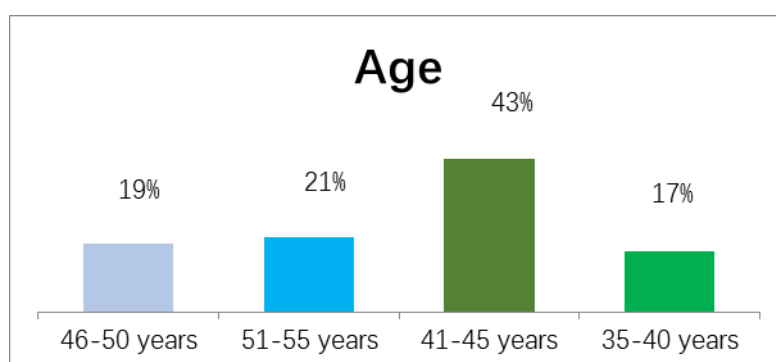


Figure 1.

Table 2. The frequency and percentage distribution of the subject having hypertension and diabetes mellitus.

n =150

Sl No	Categories	Frequency	Percentage (%)
1	Hypertension	90	60%
2	Diabetes Mellitus	60	40%

Section II: Findings related to the occurrence of hypertension and diabetes mellitus among adults.

Occurrence of hypertension among adults:

Total number of adults, clinically diagnosed of hypertension

$$= \frac{\text{Total number of adults, clinically diagnosed of hypertension}}{\text{Total number of adults those who are in between 35-55 years}} \times 100$$

$$= \frac{2524}{90} \times 100$$

$$= 3.56$$

Occurrence of diabetes mellitus among adults:

Total number of adults, clinically diagnosed of diabetes mellitus

$$= \frac{\text{Total number of adults, clinically diagnosed of diabetes mellitus}}{\text{Total number of adults those who are in between 35-55 years}} \times 100$$

$$= \frac{60}{2524} \times 100$$

$$= 2.37$$

The above calculated data revealed that occurrence of hypertension was 3.56% and 2.37% for diabetes mellitus.

Section III: Findings related to the risk factors of hypertension and diabetes mellitus among adults in terms of frequency and percentage.

Table 3. Distribution of hypertension risk factors scores among the subjects

n=90

Risk factor score of hypertension	Frequency	Percentage %
High risk	24	27%
Moderate risk	50	56%
Mild risk	16	17%

Table 4. Distribution of risk factors scores among the subject regarding diabetes mellitus

n=60

Risk factor score of hypertension	Frequency	Percentage %
High risk	18	30%
Moderate risk	30	50%
Mild risk	12	20%

Section IV: Findings related to the relation between hypertension and diabetes mellitus and its risk factors in terms of mean, standard deviation and correlation-coefficient.

Table 5. Description of mean, standard deviation and correlation coefficient of the relation between hypertension and diabetes mellitus and its risk factors.

	Occurrence		Risk factors	
	Hypertension	Diabetes	Hypertension	Diabetes
Mean	122.21	257.83	4.66	4.28

Standard deviation	11.16	38.31	1.21	1.29
(r)		0.78 (r)		

8. Conclusion

From the study it can be conclude that in regarding the occurrence of hypertension and diabetes mellitus among 2524 number of adults (in between the age of 35-55 years) 3.56% of adults are suffering from hypertension and 2.37% adults are suffering from diabetes mellitus. The distribution of hypertension and diabetes mellitus risk factors scores among the subjects represents that majority of the subjects i.e. 56% were having moderate risk of hypertension (i.e. 5 - 6 scores), 27% subjects were under high risk (above 6 scores) and 17% subjects were mild risk (0 – 4 score). And majority of the subjects i.e. 50% were having moderate risk of diabetes mellitus (i.e. 5 - 6 scores), 20% subjects were under mild risk (i.e. 0 – 4 scores) and 30% subjects were high risk (i.e. above 6 scores). There is perfectly reliability in relation between hypertension and diabetes mellitus and its risk factors. There is significant association between the occurrence of hypertension and their selected demographic variables and no association between occurrences of diabetes mellitus with their selected demographic variables.

References

- Lacruz ME, Alexander K, Saskia HM, Markus L, Daniel T, Karin HG, Karl W, Johannes H. (2015). Prevalence and Incidence of Hypertension in the General Adult Population Results of the CARLA-Cohort Study. *Med*, 94(22). 95. Available from: URL: <https://www.ncbi.nlm.nih.gov/pmc>. Jun.
- Alloubani A, Moneam A. (2018). A study on the hypertension and diabetes mellitus as predictive risk factors for stroke. *Diabetes and metab syndr*. Available from: URL: <https://www.ncbi.nlm.nih.gov>. Mar 19.
- Bernard MY, Cheung, Chao L, (2012). Diabetes and Hypertension: Is There a Common Metabolic Pathway. *Crnary Hrt Dis*. 14(2).160-6 Available from: URL: <https://www.ncbi.nlm.nih.gov>. Jan 27.
- Kapoor D, Kumar A. (2014). Prevalence of Diabetes mellitus and its risk factors among permantly settled tribal individuals in tribal and urban areas in Northern state of sub Himalayan region of India. *Int jrnal of chrnc dis*. 9. Available from: URL: <https://www.hindawi.com>.
- Shah A, Afzal M. (2013). Prevalence of diabetes and hypertension and association with various risk factor among different muslim population of Manipur, India. *Jrnal of diabetes and metab disord*. 12. Available from: URL: <https://www.ncbi.nlm.nih.gov>
- Bose S. (2012). An experimental study on occurrence of acute respiratory track infection and diarrhea among infants of two month to twelve month of age and determination of the health seeking behavior of their mothers in selected rural community of Paschim Medinipur, West Bengal. P. 9-10
- Sharma KS. (2016). Text book of Nursing Research and Statistics. 2nd ed. New Delhi: Elsever India Private Limited. P. 101.

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