Relation between knowledge on hypertension management and medication adherence among patients with hypertension in selected hospital in Khurdha

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Abstract: Introduction: Hypertension is a serious health problem worldwide. From 1990 to 2016 the hypertension cases increased from 0.78 to 1.73 crores. The majority of the patient has a lack of specific knowledge on hypertension. Deficient knowledge is one of the important etiological cause of stroke, coronary disease, and other non-communicable diseases. The major objectives of this study are to find out the correlation between the patients' knowledge on antihypertensive and adherence to medication among patients with hypertension in selected hospitals in Khurdha and to find out the patient knowledge and medication adherence association with selected socio-demographic variables. Methodology: It was a correlational study conducted among 254 hypertensive patients attended at the Medicine OPD, IMS SUM Hospital Bhubaneswar, Odisha selected through simple random sampling. The data were collected by a self structured questionnaire. Results: The study findings showed that among the total participant's majority of them were between the age of 40-60 years (45.3%) and more than half of the participants were (63.4%) were females. The majority of the participants have had a knowledge on the treatment aspects (57.48%) and the medication adherence (63.78%) of hypertension. The hypertension knowledge of the high blood pressure patients showed that around 87.8% of participants had a poor on hypertension management knowledge. Majority of the participants had low medication adherence. The Knowledge of anti-hypertensives and adherence to medication among hypertensive patients have a significant weak positive correlation. Conclusion: Hypertension is an important risk for non-communicable diseases. Knowledge of hypertension can reduce the risk of hypertension complication.

Keywords: Hypertension, Antihypertensive Medications, Medication Adherence, Knowledge, Relation

INTRODUCTION

Hypertension is a serious health problem worldwide.[1] From 1990 to 2016 the hypertension cases increased from 0.78 to 1.73 crores.[2] It is estimated that the world's population about 972 crores people (26%) are suffering from high blood pressure, and the prevalence is increased to be 29% by 2025 mostly in economically developing nations. [3] The urbanization, sedentary lifestyle, obesity, alcohol usage and

more sodium intake are the reasons for high blood pressure in the world. [4] 2017 data from the centre for disease control & preventions (CDC), National centre for health statistics (NCHS) spanning 2015-16. Show a hypertension prevalence of 29% among those age 18 and older. [5] That indicates that the prevalence of hypertension is increasing globally. [2]

In 2018 hypertension is attributable to 10.8% of the mortality rate in India. Hypertension is responsible for 29% of stroke and 24% of coronary diseases in India. Among the whole population, about half to two-thirds of the population are suffered in stage 1 hypertension and rest have stage 2. Use of community health personnel and health technology are promising tools for increasing rates of hypertension treatment and promote control and adherence to healthy lifestyles and medicines. About 10.8% of all deaths in India are due to hypertension and its complication[6].

Odisha is one such state in India having more poor socio-economic status people. The poor living standard like lower income, poor home environment, less education affects the health of people in Odisha. On the occasion of the world heart day, it has found that about 26.28% of deaths are occurring in the age group above 40years in Odisha. It is near about one-third of total death rate recorded in last year, Odisha. Approximately 7.6 million premature deaths were due to high blood pressure[7].

The majority of the patient has a lack of specific knowledge on hypertension. Deficient knowledge is one of the important etiological cause of stroke, coronary disease, and other non-communicable diseases. A modified health service through health education is needed to increase the knowledge of hypertension among the public in India. [1] Medication adherence refers that how far a patient is stick on their treatment protocol and continuing that.

The major objectives of this study are to find out the correlation between the patients' knowledge on antihypertensive and medication adherence among patients with hypertension in selected hospitals in Khurdha and to find out the patient knowledge and medication adherence association with selected socio-demographic variables.

METHODOLOGY

It was a quantitative correlational study. Study samples were the hypertensive patients of Medicine OPD, IMS & SUM Hospital, Bhubaneswar with a sample size 254. The present study sampling technique was random sampling technique is used. The tool used for the study was a self-structured Socio-demography questionnaire, modified hypertension knowledge-level scale, and Morisky Medication Adherence Scale. The tools were validated by different experts from a concerned speciality with the reliability score of 0.82. The socio-demographic data includes Age, Gender, Marital status, education, occupation, monthly income, Height, weight, BMI, Blood pressure, Substance abuse, Exercise, Family history of hypertension, Stage of hypertension, Source of information, Food habit, Sleeping pattern, and any history of comorbidity. The hypertension knowledge questionnaire scored a Low level of knowledge on Hypertension with less than or equal to 17 out of 22 and a High level of knowledge on hypertension between 18 and 22. The medication adherence questionnaire rating scale scored as Low adherence with less than or equal to 6 out of 8, Medium adherence between 6 to 8 and a High adherence at 8.

ANALYSIS

The study findings showed that among the total participant's majority of them were between the age of 40-60 years (45.3%) and more than half of the participants were (63.4%) were females. The table number 1 and fig number 1shows the detailed socio-demographic distribution of the patients.

Table No: 1 Socio-demographic variable of the hypertensive patients among selected hospital, Khurdha.

Socio-demographic variables		Frequency (N)	Percentage (%)
Age	20 years-40 years	41	16.1

	40 years -60 years	115	45.3
	60 years -80 years	98	38.6
Gender	Male	161	36.6
	Female	93	63.4
Marital status	Married	242	95.3
	Unmarried	12	4.7
Educational status	Primary	61	24
	Matriculation	71	28.0
	Higher secondary	40	15.7
	Graduation	78	30.7
	Post Graduation	2	0.8
	Post Certificate	2	0.8
Occupational status	Health professional	21	8.3
	Agriculture	45	17.7
	Engineer	12	4.7
	Buissiness	42	16.5
	Others	134	52.8
Income per month	Below 25000 Rupees Per Month	186	73.2
	25000 Rupees-50000 Rupees	53	20.9
	>50000 Rupees	15	5.9
BMI	Underweight	15	5.9
	Normal BMI	143	56.2
	Overweight	96	37.8
Substance abuse	Yes	86	33.9
	No	168	66.1
Types of substance abuse	NIL	168	66.1
	Smoking	15	5.9
	Alcohol	13	5.1
	Tobacco use	57	22.4
Exercise	Yes	107	42.1
	No	147	57.9
Exercise per day	NIL	150	59.1
	0-3HRS	102	40.2
	>3HRS	2	0.8
The family member having Blood pressure	Yes	94	37.0
	No	116	63.0
Stage of hypertension	Prehypertension	44	17.3
	Stage 1 hypertension	146	57.5
	Stage 2 hypertension	64	25.2
Source of information	Television	63	24.8
	Radio	0	0
	Newspaper	28	11
	Social Media	22	8.7
	Others	141	55.5
Food habits	Vegetarian	52	20.5
	Mixed Diet	202	79.5
	Eggetarian	0	0

| Sleeping hour	<6 hours	56	22
	6-8 hours	170	66.9
	>8 hours	28	11
History of co-morbidity	Diabetes Mellitus	73	28.7
	Chronic Kidney Disease	12	4.7
	Cerebro Vascular Accident	15	5.9
	Others	154	60.6

Fig No: 1 Time span of hypertension among the hypertensive patients among selected hospital, Khurdha.
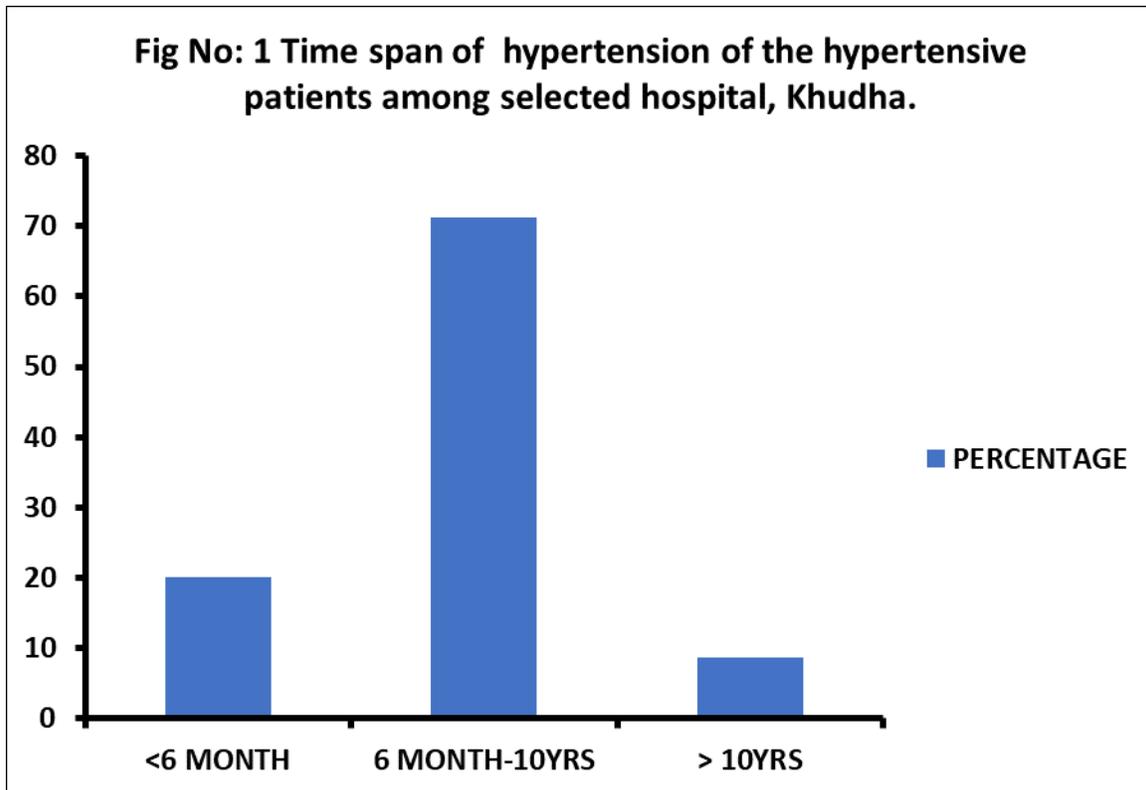
Knowledge regarding hypertension among Hypertensive patients

The knowledge level of the participants was collected by hypertension knowledge level scale (HKLS), which contains a total of 22 questions. After each question analysis, it showed that the maximum number of the participant gave the correct answer to the question number 7(87.8%), 11(89%), 13(88.2%), and 16(85.4%) [fig no 2].

Fig No: 2 Distribution of knowledge regarding hypertension among Hypertensive patients in a selected hospital, Khurdha.

Fig No : 2 Fraction Of Correct Answers (%)
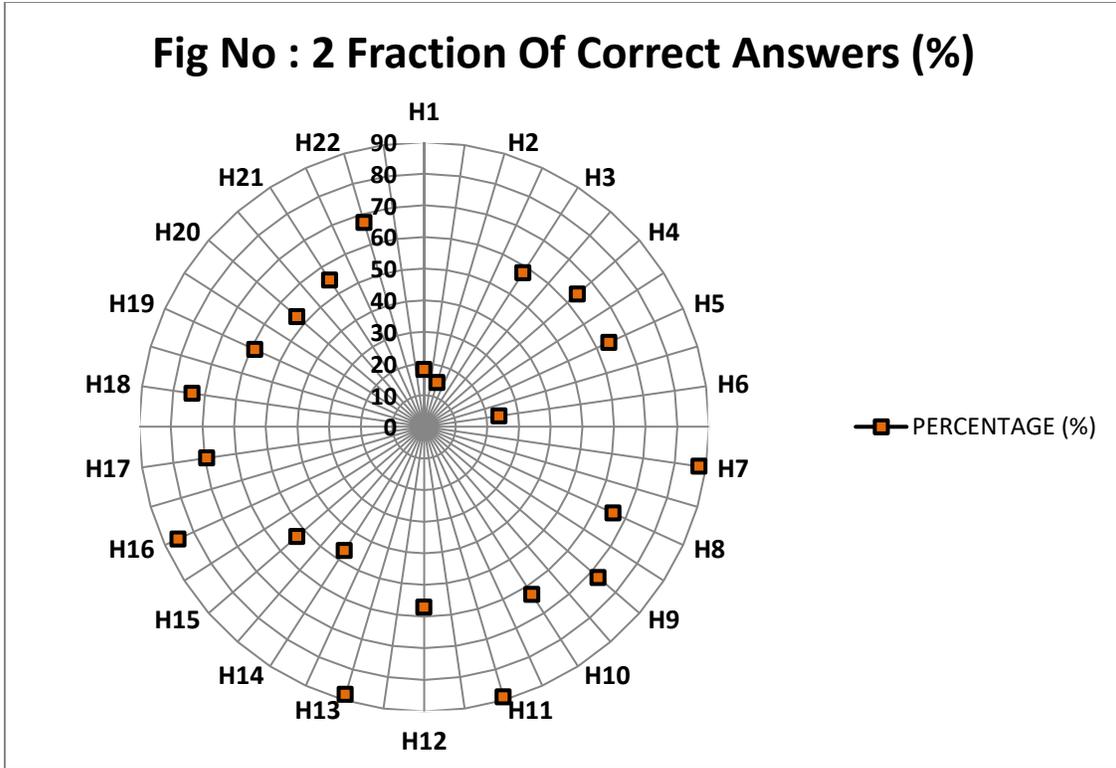
The HKLS questionnaire was divided into different domains, Definition, Treatment, Drug Adherence, Life Style, Diet, and Complications. The result showed that the majority of the participants were had a knowledge on the treatment aspects (57.48%) and the medication adherence (63.78%) of hypertension [fig no 3].

FIG No: 3 Proportion of correct answers in different domains

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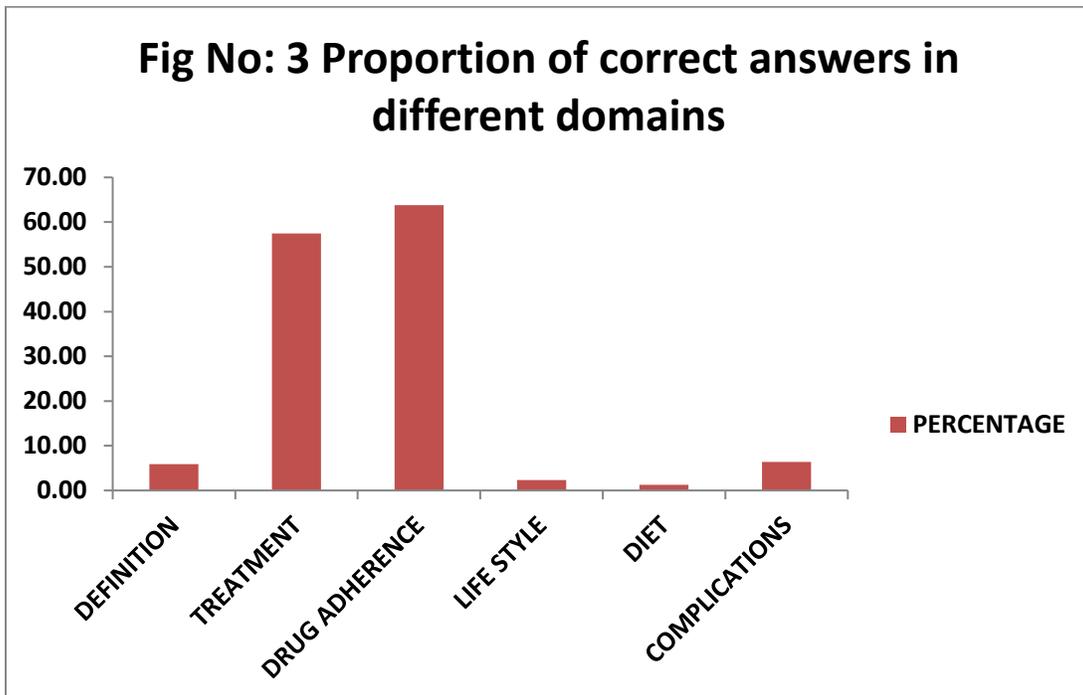
The hypertension knowledge level among the hypertensive patients showed that around 87.8% of the participants are poor on the hypertension knowledge [table no 2].

Table No: 2 Distribution of hypertensive patients according to their knowledge level

HKLS	FREQUENCY (N)	PERCENTAGE (%)
GOOD KNOWLEDGE	31	12.2
POOR KNOWLEDGE	223	87.8

Level of medication adherence among hypertensive patients

The level of medication adherence among the hypertensive patients was collected by Morisky Medication Adherence Scale-8. This scale had a total of 8 questions. After the question wise analysis it showed that the hypertension patients are given the correct response on question number 3 (83.1%) [fig no 4].

Fig No: 4 Fraction of Level of medication adherence among hypertensive patients in a selected hospital, Khurdha.
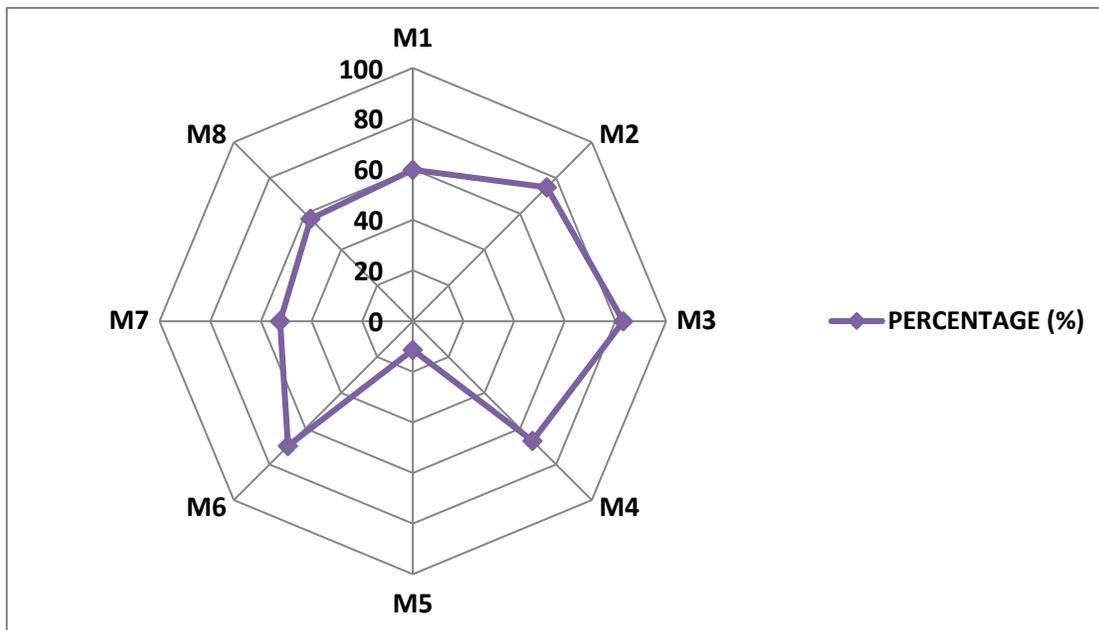
Level of medication adherence on hypertensive treatment among hypertensive patients

Among the total hypertensive patients, 0.4% had a high medication adherence, 37.8% had medium medication adherence level and 61.80% had low adherence. It showed that majority of the participants had a low medication adherence.

Correlation of hypertension knowledge and adherence to medication among hypertensive patients

The Knowledge on anti-hypertensives and adherence on medication of hypertensive patients illustrate a significant weak positive correlation with a Karl Pearson correlation coefficient value 0.202 at 0.01 level of significance.

Association between the selected socio-demographic factors and the knowledge status on high blood pressure among hypertensive patients

The variables the marital status (0.022), educational status (0.040), exercise (0.021), exercise per day (0.019) had an association with hypertension knowledge.

Association between the selected socio-demographic variables and adherence on medication among the high blood pressure patients in a selected hospital, Khurdha.

The variable sleeping hour (0.046) is having an association with medication adherence.

DISCUSSION

The study result showed that most of the participants knew the treatment aspects (57.48%) and medication adherence (63.78%) of hypertension. The hypertension knowledge status knowledge among the hypertensive patients showed that around 87.8% of the participants are poor on hypertension knowledge. A study by Dzudie A et al showed that among the 2120 participants 31.7% had awareness of their hypertension status[8].

 Another cross-sectional study showed that among 6388 participants around 60.15 had awareness of hypertension[9]. A study conducted among the older population showed that the women older than 70 years had less awareness of their hypertension[10]. A study on hypertension knowledge on 284 community dwellers showed that the mean knowledge on them was 73.65 and they had a high level of knowledge on the complications and life style[11]. Another study revealed that nd 32.6% of participants had poor knowledge of hypertension. Mahmut K et al conducted a study among the hypertension patients showed that around 6.6% only had high-level knowledge[12]. Suligowska K conducted a study among randomly selected 2413 adults aged between 18- 79 years to find out the knowledge on hypertension showed that they had insufficient knowledge (7.8%) [13]. A community survey on prevalence, awareness and treatment status of hypertension showed that among 13723 adults aged between 25- 64 years, around 50% of them are aware of their hypertension status and females had more knowledge than males[14].

 The present study showed that among the total hypertensive patients 0.4% had a high medication adherence, 37.8% had medication adherence in medium-range and 61.8% had low medication adherence. It said that majority of the participants had a low medication adherence. Another related study showed that among 189 participants 46% are highly adherent, 41.3% are, medium and 12.7% are low adherence to the medicine[15]. Another study showed that 73% of the participants had adherence to the medication over s period of one week[16]. A study on hypertension in the Parsi community showed that among 2415 participants around 48.5% are unaware of their hypertension status and around 36.4% were non-compliant with their medication. Only 13.6% had control over their hypertension[17]. A study on 200 hypertension patients on treatment showed that around 96% of them had an adherence more than 85% and around 13% of participants are not taking their medication regularly for last one month[18]. A similar study conducted among 140 adults showed that among the participants 42.9% had adherence to their treatment. Ungari et al researched the high blood pressure patients showed that among 109 patients 79.8% had adherence to their treatment[18].

The present study showed that the variables the marital status (0.022), educational status (0.040), exercise (0.021), exercise per day (0.019) had an association with hypertension knowledge. The variable sleeping hour (0.046) is having an association with medication adherence. A study among 303 hypertensive patients on hypertension knowledge, awareness and medication adherence showed that 40.5% of the participants were not aware of their disease status, 75.8% were unaware of their Blood pressure status. Majority of them are poor drug compliance and most of them were given that forgetfulness is the reason for non-compliance to their treatment[1]. A study by Dzudie A et al showed that the gender, BMI and

physical inactivity had an association with the poor hypertension control[8]. Another study showed that female participants with high BMI and a family history of Diabetes are positively associated with the awareness of hypertension[9]. Similar study results showed that the participants who had checked their blood pressure 6 months before had an association with hypertension awareness[10]. Another similar study showed that higher educational status, regular exercise and hospital visit and other chronic comorbidities had an association with the knowledge on the hypertension[11].

Conclusion: Hypertension is an important risk for non-communicable diseases. Knowledge of hypertension can reduce the risk of hypertension complication. The known hypertensive patients should follow a regular treatment strategy to control hypertension properly otherwise there is more chance of getting the complications.

Conflict of interest There is no conflict of interest

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