

# Assessment of knowledge and risk factors of hypertension among school teachers in a selected district in North Central Province of Sri Lanka

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## Abstract

**Background:** Hypertension is a major public health problem in developing countries including Sri Lanka. Prevalence of hypertension in Sri Lanka in 2014 was 21.2%. Studies indicate that work related risk factors are causative agents in the development of hypertension and school teachers are more vulnerable to develop hypertension due to the above mentioned risks.

**Method:** This study was a population based descriptive cross-sectional study aimed to find out the prevalence, knowledge and life style factors of hypertension among school teachers in a selected district in Sri Lanka. Cluster sampling technique was used to recruit 397 teachers and self administered questionnaire was used for data collection.

**Results:** There were 397 school teachers of whom 79.6 % were females. A total number of 87(21.9%) among surveyed school teachers were found to be hypertensive (during the study period). Most of the subjects (59.9%) had poor knowledge with regard to hypertension. Only 1.3% respondents possessed good knowledge on basic information about hypertension.

Most of the teachers had following factors and life style behaviors that might contribute to development of hypertension in the future, i.e., 57.8% had family history of hypertension, 51.6% were found to be obese, 22.2% were overweight, 50.9% never do regular physical activities (exercises for at least 30 minutes/day), 45.7% male teachers consume alcohol, usage of non-steroidal anti-inflammatory drugs was recorded in 19.1%, 47.4% use salt more than the recommended amount/day (5g/full tea spoon).

**Conclusion:** Due to the poor level of knowledge about the disease condition and high levels of risk factors among the study population, there is an urgent need for health education sessions and screening programmes for teachers in Sri Lanka, to prevent hypertension becoming a burden in the country.

**Index Terms-** Hypertension, Knowledge, Risk factors, School teachers, Sri Lanka

## I INTRODUCTION

Hypertension is one of the most important preventable causes of premature death worldwide (NICE, 2011). During

the past decades, hypertension has been identified as a major cause of the cardio vascular disease morbidity and mortality. It is a rapidly growing public health problem and becoming a major burden globally. The global prevalence of hypertension is estimated to be 1.56 billion in 2025(WHO, 2011). Hypertension kills nearly 8 million people every year, worldwide (WHO, 2014). Approximately one-third of the adult population in the South East Asia region has hypertension (WHO, 2014). According to the latest statistics of WHO; the prevalence of hypertension in Sri Lanka (2014) was 21.2% (WHO, 2014).

Therefore, it is vital to conduct population based studies on modifiable causes for premature death such as hypertension in different populations in the society to improve the quality of life of the present as well as future generations. But there were scanty numbers of studies which conducted among school teachers throughout the world. Thus, there was a need to conduct a study among teachers to address this important aspect.

According to previous studies it was highlighted that the school teachers are vulnerable to develop hypertension due to their work related risk factors such as unhealthy dietary habits, overweight, obesity and less active life style (Ali &Asadi, 2009; Kamel, 1992; Vijaya Kumar, 2013). In spite of them being an educated group in the society, their lack of knowledge about the prevention of hypertension and lack of motivation to reduce the incidence might be responsible for these reported data.

Thus, it is very pertinent to study the knowledge about hypertension and the awareness about the risk factors that might contribute to the development of hypertension among school teachers as their physical and mental status will affect the quality of education of the students they are handling. Teachers with good knowledge about risk factors will be able to influence the life styles of their students in a positive manner as well as pass these health messages to the society as they are the role models of the students.

Therefore, the aim of this study was to estimate the proportion of school teachers with diagnosed hypertension, assess knowledge about hypertension and risk factors that might contribute to hypertension among school teachers in a selected district in North Central Province of Sri Lanka.

The findings of this research will help the stake holders of education sector as well as health sector to improve the health of teachers by organizing educational programs, screening programs and various other multidisciplinary tasks.

## II RESEARCH ELABORATION

This was a descriptive cross-sectional study & study population were school teachers who were employed in a selected district in North Central Province of Sri Lanka. Cluster sampling technique was used to recruit 397 school teachers (Females - 316, Males - 81) from 10 selected schools in the selected area. Pre tested, self-administered, questionnaires were distributed to the participants to collect data on three categories; Part 1: Socio-demographic data - age, gender, religion, ethnicity, marital states, and education etc., Part 2: Knowledge on Hypertension - disease condition, signs and symptoms, risk factors. One mark was given per one correct answer for the questions in part 2 (total marks 20) Afterwards, their level of knowledge was assessed in 3 different categories as poor, fair and good; poor (0-12), fair (13-17), good (18-20) (Tshering, 2010), Part 3: Life style factors – food habits, alcohol intake, smoking, physical activity, stress, family history.

Ethical approval was obtained from the Ethical Review Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka. Permission was obtained from the educational directors of relevant educational zones and also from the principals of selected schools. A convenient time and venue for teachers was used to give the questionnaire to them (Interval time at staff rest room) and a labeled box was kept in the staff rest room to drop the questionnaire. Written informed consent was taken after explaining the study by using information sheet and consent form. Data were analyzed using descriptive statistics with SPSS version 16.0. Results are presented by percentages.

## III RESULTS

### Socio demographic characteristics of the participants

The age of the participants varied from 20-65 years. The maximum respondents (39.8%) were within the age group of 41-50 years and minimum (2.8%) were within the age group of 61-65 years. Females constituted 79.6 % out of total number of participants. The majority was married (88.7 %) and the maximum number of respondents (25.3%) has served as teachers for 21-25 years. Nearly half of the respondents (46.3%) have a university degree as the highest education qualification. Most of the participants, (65.4%) lived within 1-5 km away from their working school and majority of the teachers, (74.2%) used their personal vehicles to reach school daily while 21% teachers traveled by bus and only 4.8% traveled by foot.

The respondents were asked about their current health status and majority (61%) reported as healthy and only 1% reported of having very poor health status. In addition, 49.4% of participants have had their blood pressure checked within one year while 15.4% had never checked their blood pressure during their life time.

The proportion of the teachers with diagnosed hypertension among surveyed school teachers (during the study period) was 21.9% and it was almost the same as the prevalence of hypertension of general population in Sri Lanka (21.2%). In addition, it is comparable to the results of few other studies conducted with school teachers in other countries. One study revealed that 23.3% of teachers in Alexandria, Egypt were diagnosed with hypertension (Kamel, 1992) and 21.3% among secondary school female teachers in Basrah, Iraq were hypertensive (Ali & Asadi, 2009). The prevalence of hypertension is 21.8% for teachers in Addis Ababa, Ethiopia (Fikadu & Lemma, 2016)

Majority of the hypertensive subjects (93.1%) were under treatment for hypertension while 4.9% had given up medication due to their personal preference without any medical advice. Although they are educated individuals, they have neglected their personal health by not paying attention on their medication regime for hypertension. Nearly half of the teachers who have hypertension (47.1%) have been diagnosed recently within 1-5 years range. However, 57.5% of the respondents reported that they were diagnosed as having hypertension from government hospitals and reason for the diagnosis for majority (70.1%) was having headache and dizziness.

When considering the characteristics of participants who have been diagnosed with hypertension, 88.5% respondents were more than 40 years of age. Most of those respondents were females (80.5%) and majority of them (98.9%) were married. Maximum number of them (24.4%) had their monthly family income level within range of USD 207 – USD 333. Among the respondents with hypertension, 66.7% of teachers had been working as a teacher for more than 20 years. More than half (56.3%) of the teachers with hypertension were teaching in grade 6 -11 section. Most of them (94.6%) traveled by their personal vehicles or by bus from their residences to the schools.

### Knowledge level about hypertension of the participants

Only 1.3% respondents possessed good knowledge on basic information about hypertension (i.e., questions included; what it is, normal blood pressure value, and high blood pressure value etc.), symptoms of hypertension and preventive and curative aspects of hypertension. As shown in table I, the majority (59.9%) possessed poor knowledge on hypertension indicating the urgent need to conduct proper educational measures to enlighten these aspects of the study population as well as the general public.

When considering the level of knowledge, among the participants who are already diagnosed with hypertension, majority (60.9%) had poor knowledge and 37.9% had fair knowledge on hypertension (Table 1) which is a concern that needs to be effectively addressed. Majority possessed poor knowledge on hypertension possibly because the awareness on hypertension is very minimal. It might lead to poor control of hypertension as well as higher chance of development among these subjects. This may ultimately affect their ability to lead a normal life as well as deliver a proper education in school. When analyzing the data it

emphasis that the level of knowledge is similar among the total participants and participants already diagnosed with hypertension. This raises an alarm as to the consequences the later group will face with time to come due to their lack of knowledge about the disease.

Table I: Level of knowledge regarding hypertension among total participants and participants with diagnosed hypertension

	Knowledge level (Percentage)		
	Poor	Fair	Good
Total participants	59.9%	38.8%	1.3%
Participants with diagnosed hypertension	60.9%	37.9%	1.1%

### Sources of information on hypertension

When inquired about the available sources of information on hypertension, 37% of participants mentioned that they gained information about high blood pressure and its complications from media (newspapers, television, and radio) while 33.8% from health care workers such as doctors and nurses. Few of them (12.2% and 11.9%) had obtained information from their relatives and friends, respectively. Only 5.1% of them have had their information on hypertension from their different levels of education.

This further indicates that the mass media can expand their role in educating the general public regarding hypertension as well as other non-communicable diseases related to health matters and enlighten the public on the prevention aspects on these health issues to reduce these becoming a major threat and affecting the development of the country.

### Prevalence of risk factors of hypertension among participants

#### 1. Family history of hypertension of the participants

The respondents were asked about the status of their immediate family history (parents /grandparents / siblings) with regard to hypertension. Among the 397 subjects, 57.8% respondents reported that there is family history with regard to hypertension and 37.1% mentioned that there is no family history of hypertension while 5.1% interestingly was not aware about having or not having a family history. As shown in table II, majority of the respondents, (62.1%) who were diagnosed with hypertension reported that their family had a history of hypertension and 32.2% said that their families don't have history of hypertension that the rest of the teachers were unaware about the family history. The ignorance about

the health issues present in the family is a crisis that needs to be addressed as this will prevent the present and future generations taking preventive measures or diagnosing the diseases that run in the family early enough to manage well.

Table II: Family history of hypertension

	Family history (percentage)		
	Yes	No	Not aware
Total participants	57.8%	37.1%	5.1%
Participants with diagnosed hypertension	62.1%	32.2%	5.7%

#### 2. Life style of the participants

When considering the Body Mass Index (BMI) of the participants, about 2.7% were under weight. More than half of the teachers, (51.6%) were obese and 22.2% participants were overweight while rest of the participants had normal BMI in this study.

When considering salt intake of the study subjects, 51.9% reported that they don't use salt more than the recommended amount per day for one person (5g/full tea spoon). But 47.4% of participants use salt more than the recommended amount. Half of the respondents, (49.4%) with hypertension have reported that they use salt more than recommended amount per day.

According to the table III, respondents were categorized in to 3 broad categories which reflect their alcoholic status such as, current alcohol drinker, non-drinker and past habitual drinker. Majority of the males, (51.9%) reported that they are non-drinkers, whereas 45.7% males revealed that they are current alcohol drinkers. However, 2.5% male teachers were found to be past habitual drinkers. Only 8.6% participants used alcohol once a week while majority (30.9%) out of 37 teachers had only on special occasions and festivals. Further, 14.4% teachers took traditional medicines which contained alcohol (Table III).

As shown in table III, 48.9% responded that they engage in regular physical activities (exercises for at least 30 minutes/day) while majority of the respondents, (50.9%) never engaged in regular physical activities. Only 2.3% respondents engaged in vigorous physical exercises [Eg-running, swimming, cycling, , carrying heavy loads, competitive sports and games (Football, Volleyball)] and 24.2% respondents engaged in moderate physical exercise [Eg-walking briskly, slow dancing, housework and domestic chores (vacuuming,

Table III: Life style factors of study subjects

Variables		Frequency	Percentage
<b>Salt/day (whether consuming more than recommended amount per day)</b>	Yes	188	47.4
	No	206	51.9
<b>Alcohol- males</b>	Yes	37	45.7
	No	42	51.9
<b>Alcohol type</b>	Local variety	23	28.4
	Beer	10	12.3
	Wine	1	1.2
	Whisky	5	6.2
<b>Alcohol/week</b>	Once a week	7	8.6
	1-3days/week	4	4.9
	4-6days/week	3	3.7
	Others-occasionally	25	30.9
<b>Traditional medicine</b>	Yes	34	0.3
	No	358	90.2
<b>Smoking-males</b>	Yes	8	9.9
	No	72	88.9
<b>Physical activities</b>	Yes	194	48.9
	No	202	50.9
<b>a. Vigorous activities</b>	Yes	9	2.3
	No	188	47.4
<b>b. Moderate activities</b>	Yes	96	24.2
	No	101	25.4
<b>c. Light activities</b>	Yes	126	31.7
	No	71	17.9
<b>NSAID(Non Steroidal Anti Inflammatory Drugs)</b>	Yes	76	19.1
	No	318	80.1
<b>OCP(Oral Contraceptive Pills)-females</b>	Yes	14	3.5
	No	295	94.6
<b>Meditation</b>	Yes	98	24.7
	No	295	74.3

sweeping the floor), gardening, yoga, active involvement in games and sports with children /walking with domestic animals]. Majority of the respondents, (31.7%) engage in light physical activities [Eg-walking slowly (shopping, walking around the school), sitting at the computer, making the bed, eating, preparing food, and washing dishes]. In addition to lack of engaging in physical activities, the majority of the teachers of this study usually travel by their personal vehicle or by bus (94.6%) and no longer have regular physical activities such as walking and cycling, and it is reasonable to consider this also as a risk factor for hypertension. Hence, public health initiatives should encourage healthier lifestyles with emphasis on preventing obesity and increasing physical activity.

#### IV CONCLUSION

This study identified that the proportion of teachers with diagnosed hypertension among surveyed school teachers in a selected district in North Central Province of Sri Lanka was 21.9%.

According to the findings of this study, there is a deficiency in their knowledge on hypertension and prevention strategies. In addition, most of them had risk factors that might contribute to the development of hypertension such as less active life style, extra salt intake, immediate family history of hypertension, increasing Body Mass Index, consumption of alcohol, Non-Steroidal Anti Inflammatory Drugs intake etc.

Therefore, there is a vast need for implementing effective health promotional interventions for school teachers to assist in halting the escalating problem by the health care providers and authorities of education sectors. These programs should concentrate to educate, motivate school teachers to modify their lifestyles. Due to lack of time to speak to public & patients on diseases by health care workers, it's very important that there are other methods to enhance knowledge on diseases by regular media advertisements & programs as well.

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