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Knowledge, Attitude and Practice (KAP) towards Salt Intake and its Relationship with Blood Pressure

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ABSTRACT

Hypertension is an important modifiable risk factor for cardiovascular disease. Excess salt intake is an etiological factor for hypertension. This study was designed to assess knowledge, attitude, and practice towards salt intake and its relationship with blood pressure. This cross-sectional study was conducted in Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet, between September 1, 2022, and September 30, 2022, among patients attending out-patient departments of surgery, medicine, obstetrics, and gynaecology. A total of 214 respondents were included in the research following the purposive sampling technique. Out of 214 respondents, 36.9% added salt to their food before eating, and the majority (81%) of the respondents always added salt while preparing their food. Among all the respondents, 61.2% seem to consume the right amount of salt per meal, and 45.3% of them knew that too much salt intake can cause hypertension. Only 31.3% of respondents said it was very important to lower salt intake in their diet. The majority (93%) of respondents did not know the national recommendation for daily salt intake for adults. The relationship between knowledge about national recommendations for salt intake and the practice of avoiding table salt was found statistically not significant. There was no significant relationship between the knowledge of respondents about the occurrence of hypertension due to too much salt consumption and their practice of consuming table salt. Even though most respondents believe that they are eating the recommended amount of salt, the study reveals that the majority are unaware of the national recommendation of daily salt intake.

Keywords: *Knowledge, Practice, Salt intake, Hypertension.*

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INTRODUCTION

Hypertension (HTN) is a worldwide problem and a major global health burden, as high salt intake is one of the crucial factors often related to it[1]. The relationship between high salt intake and elevation of blood pressure is currently one of the major focuses of scientific research. According to Parmar et al., the most important factor causing an abnormal rise in blood pressure is high salt intake[2]. Consuming excessive dietary salt can lead to high blood pressure, which suggests that the best way to control hypertension is by creating awareness of this disease and promoting healthy salt intake behaviour[3].

Hypertension may be defined as a persistent elevation of blood pressure (BP) beyond 130/80 mmHg[4]. Increased blood pressure has always been considered a major marker for other risk factors for

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non-communicable diseases (NCDs) like increasing body weight, dyslipidaemia, glucose intolerance, and the metabolic syndrome[5]. Hypertension is being considered to be responsible for 13% of global deaths[6]. With the projection of a 30% increase in worldwide prevalence of this condition by the year 2025 and also for its focal role in the rising global burden of disease and disability, hypertension has become one of the most challenging diseases for world public health[7]. A recent study show that three-quarters of the world's hypertensive population resides in low and middle socio-economic countries, and the prevalence of hypertension is higher in low and middle socio-economic countries (31.5%) than in high socio-economic countries[7]. Bangladesh is one of those low and middle income countries that are experiencing an epidemiological transition from communicable to non-communicable diseases. Risk factors for hypertension include high body mass index (BMI), smoking, arterial stiffness, and high dietary salt intake[8].

The World Health Organization (WHO) and Food and Agricultural Organization (FAO) recommend daily intake of salt of <5 gm from all sources. However, dietary salt intake is much higher than this in many low and middle income countries. In addition to this, many of these countries do not have representative population data on dietary salt intake. Bangladesh is one such country. In Bangladesh, it is a popular practice that people add saltduring their routine meals, as they have a strong preference for a salty taste. The use of salted pickles is also very popular in this country. Many people eat sour seasonal fruits with salt. Preservation of dry fish in salt is another popular dietary practice in Bangladesh. Salt that is taken during meals also constitutes a significant proportion of total salt intake in Bangladesh.

This is true even for the educated society of Bangladesh. Therefore, the avoidance of added salt on the dining table should be the primary target of salt reduction in Bangladesh[9]. This study aimed to understand and assess the factors affecting knowledge, attitude, and practice towards salt intake and its relationship with blood pressure.

MATERIALS AND METHODS

This cross-sectional study was conducted at Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet, between September 1, 2022, and September 30, 2022, among patients attending out-patient departments of surgery, medicine, obstetrics, and gynaecology. A total of 214 respondents were selected by purposive sampling method. The respondents aged more than 18 years, attended the hospital during the study period and willing to participate in the research were included. The respondents aged less than 18 and those who were not willing to participate were excluded. All the participants were informed about the study and its objective and the consent form was filled by the individual participants. The study was approved by the Institutional Review Committee of Jalalabad Ragib-Rabeya Medical College. The data was collected using a pretested, interviewer administered semi-structured questionnaire to evaluate knowledge, attitude, and practice regarding salt intake and its relationship with blood pressure. The questionnaire included baseline exposure variables like age, sex, family size, education, BMI, and knowledge, attitude, and practice related variables. Bodyweight was measured through an analogue weigh scale. Body height was measured using a standard stadiometer. BMI was defined as weight (Kilogrammes) divided by the square of height (Metres). The BMI cutoffs recommended by the WHO were used. The data were analysed using SPSS (Statistical Package for Social Sciences) version 25. The Chi-square test was used to see the relationship between variables, and a p-value of <0.05 was considered statistically significant.

RESULTS

This study includes 214 respondents, among them 62% were male and 38% were female. Most of the respondents (32.2%) were more than 50 years old and 17.3% were in age group 41-50. BMIs of 64.8% of

Table-I: *Sociodemographic characteristics of the respondents, n=214.*

Sociodemographic characteristics		Frequency	Percentage
Age group	18-30	60	28
	31-40	48	22.5
	41-50	37	17.3
	>50	69	32.2
Sex	Male	132	62
	Female	82	38
No. of family members	<5	113	52.8
	5- 10	91	42.5
	>10	10	4.7
BMI	<18.5	30	14
	18.5 to 24.9	138	64.5
	25 to 29.9	36	16.8
	>29.9	10	4.7

respondents were within the normal range and 4.7% were obese (Table-I). Among the respondents, 22% were illiterate, 35% completed their primary education and 29% completed secondary level (Figure-1).

Among all the respondents, 61.2% seem to consume the right amount of salt per meal (Figure-2). Only 31.3% of respondents deemed lowering salt intake in their diet as very important (Figure-3). Majority of the respondents (65.8%) practice table salt, and 93% did not know the national recommendation of daily salt intake. The relation between knowledge about the national recommendation of salt intake and the practice of adding table salt was not significant (p=0.591) (Table-II). More than half of the respondents (54.7%) have no knowledge regarding the occurrence of hypertension due to too much salt consumption. Of them, 34.6% practice table salt intake. On the other hand, 45.3% of the respondents believe that excessive salt intake can lead to hypertension. The relation between the knowledge of the respondents on HTN due to too much salt consumption and their practice of intake of table salt was not significant (p=0.227) (Table-III).

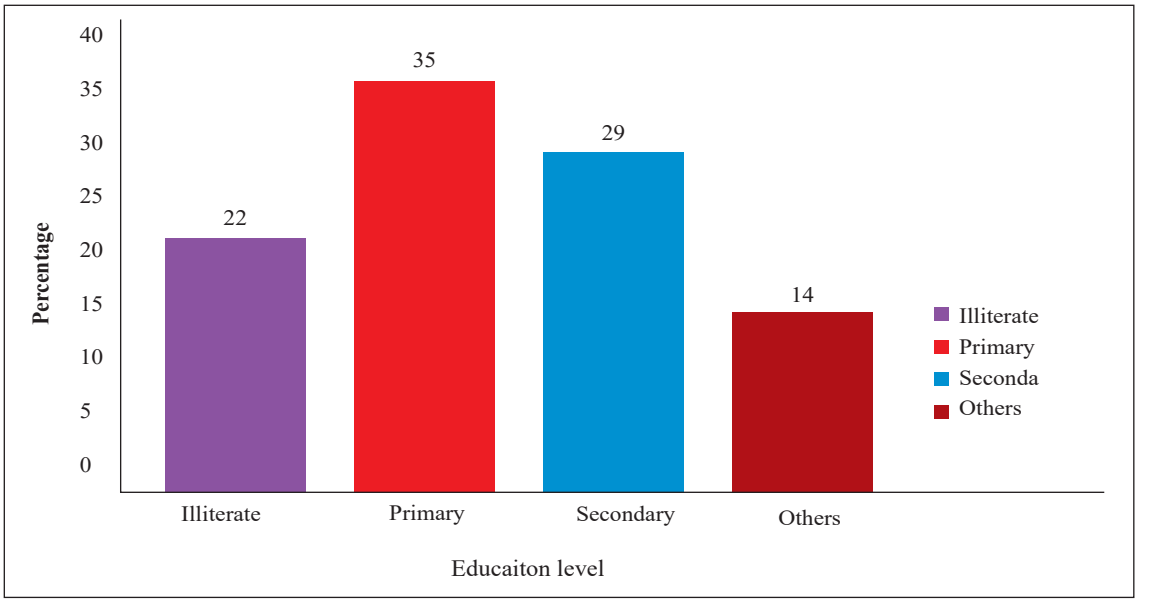

Figure-I: *Distribution of the respondents by their education.*

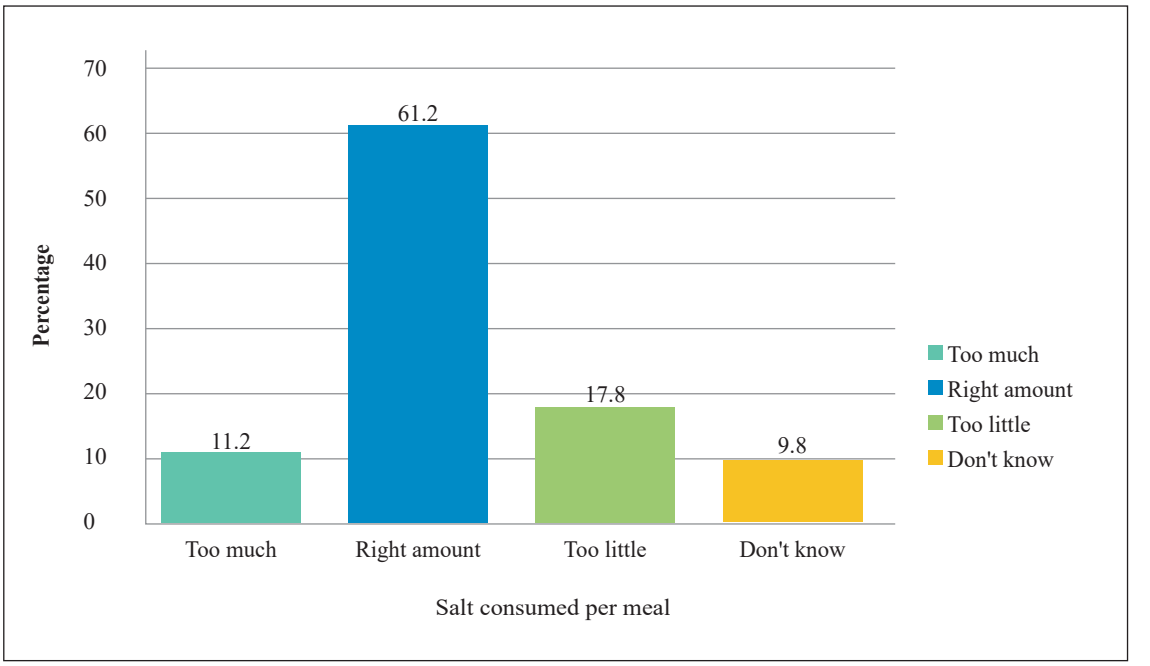

Figure-2**:** *Distribution of the respondents by their practice of consuming salt per meal.*

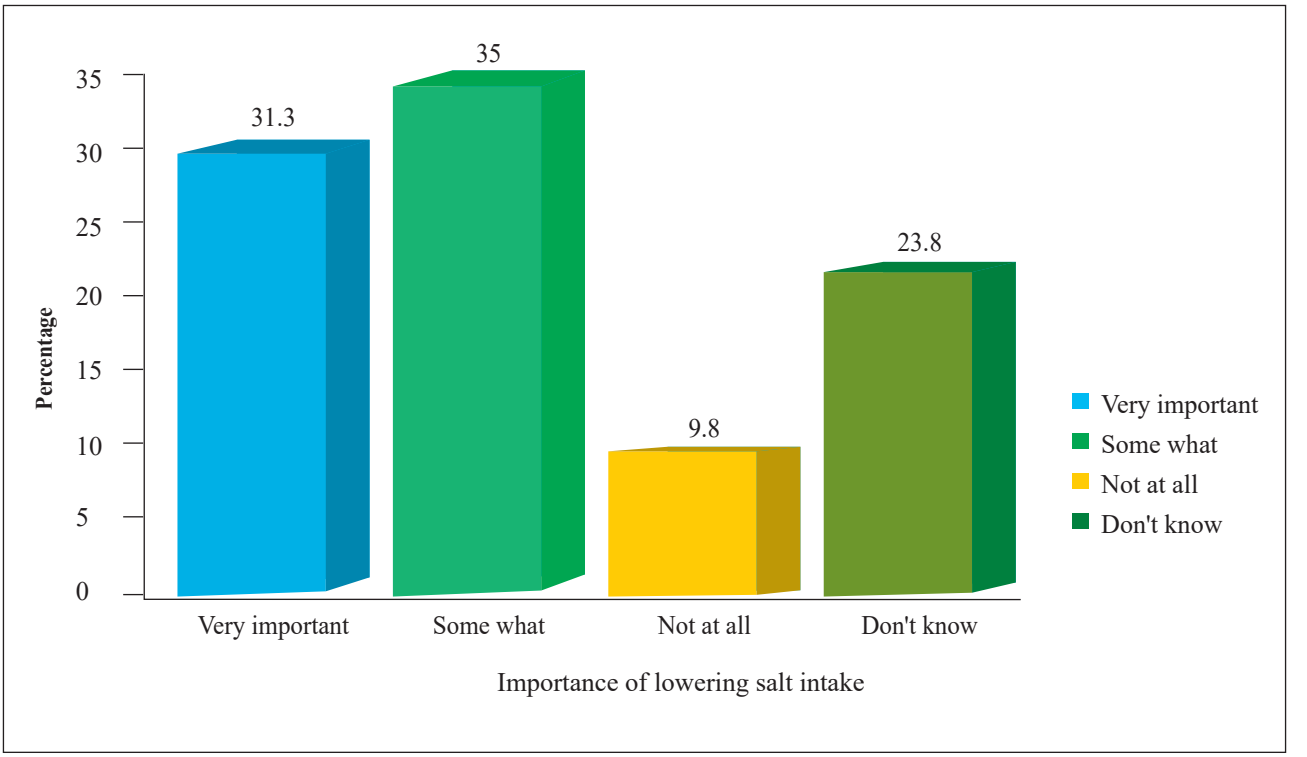

Figure-3: *Distribution of the respondents by their attitude on importance of lowering salt intake.*

Table-II: *Relation between knowledge about national recommendation of salt intake and practice of avoiding table salt.*

National recommendation of daily salt intlke	Practice of adding table salt		p-value
	Yes, n (%)	No, n (%)	
Yes	11 (5.1)	4 (1.9)	0.591
No	130 (60.7)	69 (32.3)	
Total	141 (65.8)	73 (34.2)	

Table-III: *Relation between knowledge of respondents on occurring hypertension due to too much consumption of salt and their practice of intake of table salt.*

Knowledge on occurring hypertension	Practice of adding table salt		p-value
	Always, n (%)	Never, n (%)	
Yes	67 (31.3)	30 (14.1)	0.227
No	74 (34.5)	43 (20.1)	
Total	141 (65.8)	73 (34.2)	

DISCUSSION

Hypertension is a critical global public health issue. It is a well-known fact that excess dietary salt is a major contributor to hypertension. Our study was conducted among people attending the outpatient department of Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet to find out the knowledge, attitude and practice (KAP) towards salt intake and its relationship with blood pressure.

In this study we found that the most of the respondents were more than 50 years of age (32.2%). Another similar study also showed that most of their respondents were aged between 55 to 64 years[10].

The present study showed that less than half of the participants (45.3%) knew that too much salt intake can cause hypertension. The relation between the knowledge of respondents on the occurrence of hypertension due to too much consumption of salt and their practice of consuming table salt was insignificant. In a study conducted by Mondal et al. among nurses in a cardiac hospital in Bangladesh found that all of the respondents believed that too much salt in their diet could cause serious health problems, and the majority (76.8%) had average knowledge regarding the health effects of excess salt intake[11]. This discrepancy may be due to their study population were health workers.

This study suggests that most of the respondents (93%) did not know the national recommendation for daily salt intake for adults. Still majority of them (61.2%) perceived themselves as consuming the right amounts of salt. This attitude indicates a wrong perception, which needs to be rectified. Their knowledge about the national recommendation for salt intake and the practice of avoiding table salt was statistically insignificant. Our study highlighted that the majority of the participants (66.3%) believed that lowering the salt in their diet is important. In another study, more than eighty percent (83.4%) of the respondents believed that lowering the salt in their diet was very important and about two-thirds (62.6%) used to consume just the right amount[11].

Our study found the unfavourable attitudes of the participants toward salt reduction which may be due to poor levels of knowledge. Our findings provided evidence that overall respondents had a poor knowledge about the links between salt and hypertension. This may partly explain why many participants were less likely to take action toward salt reduction. Salt reduction is beneficial in hypertensive people but as people with hypertension are largely asymptomatic, they may fail to perceive a benefit from a diet that they consider too restrictive. A report of a WHO forum and technical meeting stated that a reduction of salt 1 g for at least 6 months' period causes a reduction in systolic and diastolic pressure by an average of 2-4 mmHg in hypertensive patients[12]. Women, in the household, are an important group to target as food salt is controlled by them. They should be educated along with their family members. Effective public education should emphasize the benefits of salt reduction. The awareness program should include all slum women/food makers, as they can play a vital role for the prevention of hypertension by reducing salt in diet. Development and implementation of effective public education initiative is the need of hour for combating the NCDs such as hypertension. Such initiatives will always educate the people on the relationship between excess salt and health. There is a need to increase the public's demand for lower salt in diets and promote individual dietary behaviour change. Health education program (Focused on the importance of dietary salt reduction for prevention of hypertension) can prevent hypertension and its hazardous consequences such as cardiovascular death.

LIMITATIONS

The study was conducted among the people attending the outpatient department of Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet. Hence, the study does not reflect the total scenario of the country regarding people knowledge, attitude and practice towards salt intake and its relationship with blood pressure. The sample size was small and as the samples were selected purposively, the result can't be generalised.

CONCLUSION

A greater portion of the respondents have poor knowledge about the relationship between salt intake and blood pressure. The majority of the respondents thought that they consumed the right amount of salt without having proper knowledge about the national recommendation for daily salt intake.

REFERENCES

1. James PA, Oparil S, Carter BL, Cushman WC, Dennison-Himmelfarb C, Handler J, et al. 2014 evidence-based guideline for the management of

high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). JAMA 2014; 311 (5): 507-20.

2. Parmar P, Rathod GB, Rathod S, Goyal R, Aggarwal S, Parikh A. Study of knowledge, attitude and practice of general population of Gandhinagar towards hypertension. Int J Curr Microbiol Appl Sci 2014; 3 (8): 680-5.
3. Zhang Y, Moran AE. Trends in the prevalence, awareness, treatment, and control of hypertension among young adults in the United States, 1999 to 2014. Hypertension 2017; 70 (4): 736-42.
4. Rashid AK, Azizah AM. Prevalence of hypertension among the elderly Malays living in rural Malaysia. Australas Med J 2011; 4 (6): 283-90. doi: 10.4066/AMJ.2011.660
5. Whelton PK, Carey RM, Aronow WS, Casey DE, Collins KJ, Dennison Himmelfarb C, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/ APhA/ASH/ASPC/NMA/PCNA Guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardio 2018; 71 (19): e127-248.
6. Bloch MJ, Basile J. Cardiovascular risks of hypertension. UpToDate. Jan 2018 [cited 2022 Dec 10]. Available from: https:// pro.uptodatefree.ir/ Show/3850.
7. Mendis S, Puska P, Norrving B, World Health Organization. Global atlas on cardiovascular disease prevention and control. Geneva: WHO; 2011 [cited 2022 Dec 10]. Available from: https://www.who.int/publications/i/item/9789241 564373.
8. Mills KT, Bundy JD, Kelly TN, Reed JE, Kearney PM, Reynolds K, et al. Global disparities of hypertension prevalence and control: a systematic analysis of population-based studies from 90 countries. Circulation 2015; 132: 441-50.
9. Babatsikou F, Zavitsanou A. Epidemiology of hypertension in the elderly. Health Sci J 2010; 4 (1): 24-30.
10. Bhattacharya S, Thakur JS, Singh A. Knowledge attitude, and practice regarding dietary salt intake among urban slum population of North India. J Family Med Prim Care 2018; 7 (3): 526-30.
11. Mondal R, Sarker RC, Sayrin R, Afrin R, Zaman K, Acharya NP, et al. Knowledge, attitude and practice towards dietary salt intake among nurses working in a cardiac hospital in Bangladesh. Cardiovasc J 2019; 12: 53-8.
12. World Health Organization. Reducing salt intake in populations: report of a WHO forum and technical meeting. Paris, France; 2007 [cited 2022 Dec 10]. Available from: https:// apps.who.int/iris/bitstream/ handle/10665/43653/9789241595377_ eng.pdf.