

Original Article

Knowledge, Attitude and Practice towards Dietary Salt Intake among Nurses Working in a Cardiac Hospital in Bangladesh Sciences

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Abstract:**Key Words:**

Salt,
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disease risk
factors, Health
education, Nurse,
Bangladesh.

Background: Noticeable proportion of Bangladeshi population including health professionals is habituated with excessive salt intake although having a good knowledge and attitude. There is no related data regarding salt intake practice among nurses in Bangladesh. The aim of this study was to assess the knowledge, attitude and practice towards dietary salt intake among the nurses working in a selected cardiac hospital.

Methods: A cross-sectional study was conducted among 211 nurses working in National Heart Foundation Hospital and Research Institute (NHFHRI), Dhaka. The NHFHRI was selected purposively and all of the nurses were targeted to recruit. Modified WHO Salt Module of STEPS Questionnaire was used for data collection.

Results: All of them believed that too much salt in diet could cause serious health problems, and majority (76.8%) had average knowledge regarding the health effects of excess salt intake. More than eighty percent (83.4%) believed that lowering the salt in diet is very important and about two-third (62.6%) used to consume salt just the right amount. Almost half (49.3%) of the nurses were used to add extra salt during their meal and three-quarter (76.8%) were used to take high salt content processed food. The median of extra salt intake among the always users (n=52) was found 2.5 g per day.

Conclusion: In spite of having good knowledge and positive attitude towards dietary salt intake, the added salt intake behavior was noteworthy among the nurses working in NHFHRI.

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Introduction:

Dietary salt (sodium chloride) is an essential element for harmony of health, and the health-benefits depend on the amount of consumption. Excess salt intake than the recommended level (<5 g/day) is considered as an important risk factor for development of heart diseases and stroke by elevating blood pressure.^{1,2} Globally, high salt intake is responsible for 17-30% of hypertension and significantly increases the risk of blood pressure

related cardiovascular disease (CVD) events in normotensives.^{3,4}

Most of the people around the world are taking too much salt (9-12 g/day) including South-East Asian people.^{1,5,6} Particularly in Bangladesh, people consume a remarkably higher salt estimated as 17 g/day.⁷ Moreover, addition of extra salt during meal is a common scenario here, whereas around 60% of general people are habituated with that.⁸ It is really

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an alarming situation for NCD burden in Bangladesh having 18-26% hypertensive patients, whereas domestic evidence also strengthened that extra salt intake is intertwined with high blood pressure.⁹⁻¹²

Although, health care professionals in Bangladesh like doctors and faculties are habituated to use less extra salt comparatively, yet it is noticeable (28.3%). And, 93.5% of them know that excess salt and salty sauce can cause health problems and 72.8% believed that lowering salt in meal is very important.¹³ On the other hand, 37.2% of medical students are habituated to use extra salt, 89.9% are aware about health consequences, and 57.6% believe that lowering salt is very important.¹⁴ But there is no relevant data of salt intake behavior among the nurses of Bangladesh. If nurses can be educated regarding good dietary salt practice, they can play a crucial role to change the salt practice of the patients by counseling. Therefore, the aim of this study was to assess the knowledge, attitude and practice of dietary salt intake among the nurses working in a cardiac hospital in Dhaka city.

Methods:

Study design, setting and population: It was a cross-sectional study conducted in 2017 among 211 nurses working in National Heart Foundation Hospital and Research Institute (NHFHRI) located in Mirpur of Dhaka city. The NHFHRI was selected purposively in a consideration as a specialized cardiac hospital as well as where a large number of nurses (total 411; 402 with diploma, 8 with BSc. and rest 1 with master degree) have been serving the cardiac patients daily. All of the nurses working in NHFHRI were considered to recruit in this study excluding those who were on leave and on duty in CCU and emergency during data collection period, therefore there was no sampling technique.

Data collection instrument and technique: WHO Salt Module of STEPS Questionnaire was used with necessary modification for the data collection. The questionnaire was translated into Bengali for better understanding of the respondents. Face-to-face interviews were used for the data collection.

Data management, analysis and interpretation: After the collection, all the data were checked for their completeness and consistency, and finally entered into statistical software namely SPSS

software version 21 and analyzed according to the objectives of the study. Descriptive statistics like proportion, mean, standard deviation, median, IQ range was used to describe the respondent's socio-demographic as well as knowledge, attitude and practice related information towards salt intake. To assess the level of knowledge, the respondents were asked 10 questions reflecting relationship between too much salt intake and specific disease occurrence. The answer of each question was scored '1' for 'Yes' response whereas '0' for 'No' and 'Don't know' responses. Hence, the possible maximum total score was '10' and minimum was '0'. The knowledge was identified as 'Good' when the total score was above the Mean+SD, 'Average' when within the range of Mean±SD and 'Poor' when below Mean-SD. As the Mean±SD of knowledge was found 6±2, therefore the 'Good knowledge', 'Average knowledge' and 'Poor knowledge' were determined when they scored >8, 4-8 and <4 respectively out of total score 10. Moreover, the total amount of extra salt use during daily meal was assessed using teaspoon (where 1 teaspoon=5 g).

Ethical consideration: The ethical clearance was taken from Ethical Review Committee of Bangladesh University of Health Sciences (BUHS) and NHFHRI. Both verbal and written consents were taken from every respondent prior to data collection.

Results:

The respondents were aged between 21-48 years with mean age 26.5±4.1 years, whereas almost eight in ten (79%) were in their thirties. Majority of them (92%) were Diploma nurses. All of them had at least one year of working experience in this hospital.

All the nurses (100%) believed that too much salt in diet could cause serious health problems. In this study it was found that, more than three-quarter of the nurses (76.8%) had 'Average knowledge'. Almost all of the nurses believed that too much salt in diet could cause hypertension (98.6%) and heart diseases (99.1%), whereas comparatively less proportion believed for other health consequences like stomach cancer. Regarding attitude, about two-third nurses (62.6%) believed that they were used to take salt as just the right amount, and others believed to use in different patterns. Five in every six nurses (83.4%) believed that lowering the salt in diet is very important (Table-I).

The study reflected that overall (including always, often and sometimes users) half of the nurses (49.3%) were used to add extra salt during their meal and this proportion increased to 60.2% including rarely users. The median of extra salt intake among the always users ($n=52$) was found 2.5 g/day with interquartile range (IQR) 1.3 to 5.0 g. In Bangladeshi perspective, salt is added in regular basis during cooking or preparing foods in everyone's household. Study also revealed that overall (including always, often and sometimes users) three-quarter of the nurses (76.8%) were used to take high salt content processed food like chips, chanachur (locally named food which is made by flour, sweet, salt, saturated fatty acid and pepper), ketchup, sauce, packaged salty snacks, canned salty food, salted hilsa (one type of delicious local fish that is the national fish of Bangladesh), instant noodles or soup etc.

Considering their activities to lower the salt intake, most of them mentioned that they are trying to avoid/minimize consumption of processed foods (64.5%) along with other activities like look at the salt content on food labels during buying or buy low salt/sodium alternatives or use minimum/low salt during cooking or avoid eating outside food in different proportions (Table-II).

Moreover, almost all the nurses were used to counsel their patients to control the salt intake in foods. Among them, multiple response analysis reflected that most of them advised their patients not to take added salt during meal, more than half (56.1%) advised to limit use of salt in cooking, some counseled for looking at the quantity of salt in foods, others advised to limit intake of high salt processed food and not to keep extra salt container in the table (not shown in Table).

Table-I
Knowledge and attitude towards salt intake among the respondents (n=211)

Variables	Number	Percentage
Perception towards too much salt could cause serious health problem		
Yes	211	100
Questions (yes responses counted) <i>Too much salt cause-</i>		
Hypertension	208	98.6
Stroke	191	90.5
Cardiac disease	209	99.1
Kidney disease	160	75.8
Kidney stone	110	52.1
Water retention	165	78.2
Osteoporosis	89	42.2
Stomach cancer	49	23.2
Asthma	62	29.4
Dementia	75	35.5
Perception towards amount of consuming salt		
Far too much	12	5.7
Too much	28	13.3
Just the right amount	132	62.6
Too little	15	7.1
Far too little	24	11.4
How important lowering the salt		
Very important	176	83.4
Somewhat important	32	15.2
Not at all important	3	1.4
Level of knowledge regarding salt intake		
Good	29	13.7
Average	162	76.8
Poor	20	9.5

Table-II
Salt intake practice of the respondents (n=211)

Variables	Number	Percentage
Extra salt use		
Always	52	24.6
Often	3	1.4
Sometimes	49	23.2
Rarely	23	10.9
Never	84	39.8
Amount of extra salt intake* <i>g/day (n= 52)</i>		
Mean (\pm SD)	2.9 (\pm 1.6)	
Median (IQR)	2.5 (1.3 - 5.0)	
Adding salt in cooking foods in household		
Always	211	100
Processed food intake		
Always	19	9.0
Often	25	11.8
Sometimes	118	55.9
Rarely	36	17.1
Never	13	6.2
Practices to control salt intake†		
Avoid/minimize consumption of processed foods	136	64.5
Look at the salt content on food labels during buying	85	40.3
Buy low salt/sodium alternatives	86	40.8
Use minimum/low salt during cooking	115	54.5
Use spices other than salt when cooking	15	7.1
Avoid eating outside food	83	39.3

*Amount of extra salt use was assessed for always users only, using teaspoon where one teaspoon was considered equivalent to 5 gram of salt; SD=Standard Deviation, IQR= Interquartile range;

† multiple responses.

On the other hand, 84.4% nurses mentioned that the hospital authority was used to run different types of awareness programs on salt intake behavior. Among them, multiple response analysis reflected that the authority was used to organize seminar/training mentioned by 96.1% respondents, 56.9% mentioned that they provide leaflet and 61.9% mentioned to keep caution sign/picture/poster/billboard in the hospital.

Discussion:

WHO has acknowledged high sodium intake as one of the silent killers of human responsible for roughly 2.3 million deaths (4% of global mortality) in 2010.¹⁵ In a meta-analysis of 31 trials, reduction of sodium consumption by 75 mmol/day (equivalent to 4 g salt) resulted in an average decrease of 5.0 mmHg systolic blood pressure (BP) and 2.7 mmHg diastolic BP in hypertensive patients.¹⁶ Considering the potential

interaction between nurses and cardiac patients it was very important to know the knowledge, attitude and practice of salt intake among the nurses. The current study rightly explored the facts. Lack of relevant data from Bangladesh as well as other South-East Asian countries was also the propelling potency to conduct this study.

Although level of knowledge found mostly 'Average', the overall knowledge on health consequences of too much salt intake was found hundred percent among the participating nurses when compared to the faculties and doctors (93.5%),¹³ medical students (89.9%),¹⁴ mass-population (60.7%)⁸ and slum population (61.9%)¹⁷ of Bangladesh. The proportion of nurses (62.6%) believed for using just the right amount of salt in meal has been found almost similar to the medical students (60.7%)¹⁴ but double than the faculties and doctors (29.3%),¹³ higher than

mass-population (44.4%),⁸ but less than the slum population (82.8%).¹⁷ Moreover, the proportion of nurses believing that lowering salt in diet is very important was higher (83.4%) than the faculties and doctors (72.8%)¹³ and medical students (57.6%),¹⁴ more than double than the mass-population (38.8%)⁸ and three times higher than the slum population (26.0%).¹⁷ However, more proportion of nurses (49.3%) used to take extra salt in meal than the faculties and doctors (28.3%)¹³ and the medical students (37.2%),¹⁴ but less than the mass-population (59.4%)⁸ and slum population (58.1%).¹⁷ Their high salt containing processed food intake behavior was remarkably higher (76.8%) than the faculties and doctors (41.8%)¹³ the medical students (72.2%),¹⁴ mass-population (65.9%)⁸ and slum population (63.0%).¹⁷ According to the previous evidence from Bangladesh, it is evident that a noticeable proportion of nurses are at risk for developing hypertension considering their salt intake behavior.¹¹

When comparing to the adult population of other countries it was found that most participants in a Jordanian study¹⁸ rarely or never added salt in meal (66%), while only 8% of them regularly added salt which was six times more among the nursing population. However, 80% of the Jordanian participants add salt during cooking often or always whereas all the nurses (100%) add salt during cooking which is considered as Bangladeshi food intake culture. More than eighty percent (82%) believed that their level of salt consumption was appropriate which in this study was only 62.6%. Regarding the importance of modifying salt intake, 29% agreed that decreasing salt consumption was important to health, while approximately half of the participants somewhat agreed and this percentage was far below than this study. Only 1% of the participants check the food labels for salt content regularly which in this study was 40%. Nurses showed mixed findings regarding knowledge, attitude and practice towards dietary salt intake when compared to other health care professionals¹³ and medical students¹⁴ of Bangladesh. The mixed results may be due to education, awareness and training program as well as practicing in the same health care chain. Because of same consideration, nurses showed better results than the mass-population⁸ as well as slum population.¹⁷

Conclusion:

In spite of having good knowledge and positive attitude towards dietary salt intake among nurses of Bangladesh, the added salt intake behavior was substantial. Health education programs on dietary salt intake are needed more extensively among the nurses especially working in cardiac hospitals. So that the nurses can counsel their patients properly during hospital stay and play an important role in prevention of hypertension caused by this factor.

Conflict of Interest - None.

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