Knowledge and Practice of Salt Consumption in Dhaka's Urban Population: A Cross-Sectional Public Health Study

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Keywords:	Abstract
	Salt, composed of sodium and chloride, is essential for maintaining nerve function and fluid balance. However, excessive salt intake is a major risk factor for hypertension and other non-communicable diseases. This cross-sectional study assessed knowledge and practices regarding dietary salt consumption among residents of Sector 10, Uttara, Dhaka. Using a mixed-method approach, 400 adults aged 18–60 years were recruited through convenience sampling. Data were collected via structured face-to-face interviews incorporating both open- and closed-ended questions. Results showed that while 93% of respondents recognized salt's physiological importance, many were unaware of the recommended daily intake. Approximately 30% reported adding an extra pinch of salt (~0.36 g) to meals, especially with milk and water rice. Although most participants knew of the link between excessive salt consumption and hypertension, only a few monitored salt levels in processed foods. The findings reveal a gap between awareness and actual practices related to salt intake. Public health initiatives emphasizing behavioural change and dietary education are urgently needed to reduce salt-related health risks among urban populations in Bangladesh.

1. Introduction

Salt, chemically known as sodium chloride (NaCl), is an essential dietary component required for maintaining human and animal health. It consists of approximately 40% sodium and 60% chloride (Tan, 2022). Sodium plays a crucial role in regulating nerve transmission, muscle contraction, and maintaining fluid balance within the body. Although it is vital for these physiological processes, only a small amount—about 500 mg per day—is sufficient to meet the body's basic needs (WHO, 2023). However, excessive dietary sodium intake has been

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widely linked to the development of several non-communicable diseases (NCDs), including hypertension, cardiovascular disease, and chronic kidney disorders (Bhattacharya, 2022; WHO, 2023). Globally, the WHO recommends a daily salt intake of less than 5 g (approximately 2 g sodium) per adult to reduce the risk of NCDs (WHO, 2021). Despite these recommendations, average salt consumption across many countries remains significantly higher. Studies have reported that adults in low- and middle-income nations, particularly in South and Southeast Asia, consume between 8–12 g of salt per day (He *et al.,* 2020). This excess intake contributes to nearly 3 million annual deaths worldwide attributable to hypertension and cardiovascular complications (Afshin *et al.,* 2019). In Bangladesh, several small-scale studies have suggested that both urban and rural populations exceed the recommended sodium intake due to habitual consumption patterns, such as adding salt during cooking or at the table, and the increasing intake of processed foods (Islam *et al.,* 2021; Rahman *et al.,* 2022).

Knowledge and awareness play a vital role in shaping dietary behavior. However, previous research indicates a persistent gap between knowledge and actual salt consumption practices, particularly in developing countries (Fathima *et al.,* 2020). Urbanization, lifestyle changes, and the growing popularity of processed and fast foods have contributed to higher salt intake in urban communities. In Bangladesh, urban populations—especially in Dhaka—are at heightened risk due to the easy accessibility of packaged foods and limited awareness regarding hidden sources of sodium. Despite this public health concern, few studies have explored the determinants of salt consumption knowledge and practices in urban Bangladeshi populations using a comprehensive mixed-method approach. Non-communicable diseases, which are not transmissible between individuals, are often chronic and primarily driven by lifestyle-related risk factors. According to global health statistics, NCDs account for approximately 71% of all deaths worldwide. A significant contributor to this burden is the overconsumption of dietary sodium, often resulting from poor nutritional awareness and unhealthy eating habits (Wang, 2023). The World Health Organization (WHO) estimates that approximately 1.89 million deaths annually are attributable to high sodium intake. To mitigate this risk, WHO recommends that adults consume no more than 2,000 mg of sodium (equivalent to 5 g of salt) daily, with proportional reductions for children aged 2 to 15 years (WHO, 2023).

Although numerous global studies have examined salt consumption and its health effects, limited research exists in the Bangladeshi context—particularly at the community level in urban settings such as Dhaka. There is a lack of localized data on the public's knowledge, attitudes, and actual practices regarding salt intake. Moreover, few studies bridge the gap between awareness and behavior concerning dietary salt consumption in low- and middle-income urban neighborhoods. Understanding this gap is essential for designing culturally relevant public health interventions.

The primary objective of this study is to assess the level of knowledge regarding dietary salt intake among the residents of Sector 10, Uttara, Dhaka. In addition, the study seeks to explore the dietary practices related to salt consumption within this urban community, focusing on understanding common behaviors and cultural habits that may influence sodium intake. Another key aim is to identify the discrepancies between individuals' knowledge and their actual behavior concerning salt consumption. By examining these gaps, the research intends to provide evidence-based insights and recommend actionable strategies to enhance public health awareness and promote behavior modification to reduce excessive sodium intake and prevent non-communicable diseases in urban Bangladeshi populations.

Research Contribution

This study contributes to the existing literature by:

- Providing empirical evidence from an under-researched urban community in Bangladesh.

- Highlighting the knowledge-behavior gap in salt consumption practices.

- Offering context-specific insights to support public health policymakers, nutrition educators, and urban health planners in developing targeted awareness campaigns.

- Laying the groundwork for future longitudinal or interventional studies in dietary sodium reduction in South Asia.

This paper is structured as follows. Section 2 reviews relevant literature, focusing on dietary salt intake and its associated health implications. Section 3 outlines the research methodology, detailing the study design, sampling techniques, and data collection instruments employed. Section 4 presents the results and discussion, highlighting key findings related to knowledge and practices of salt consumption among the study population. Section 5 further interprets the results in light of existing literature, drawing comparisons and identifying patterns. Finally, Section 6 concludes the study by summarizing the main findings, acknowledging its limitations, and providing recommendations for future research and policy interventions to improve dietary behavior and public health outcomes.

2. Literature Review

Dietary salt intake has been increasingly recognized as a significant risk factor for non-communicable diseases (NCDs), particularly hypertension and cardiovascular disorders (Bhattacharya, 2022). Numerous studies across various populations have consistently highlighted the detrimental health effects of excessive salt consumption. A strong association between high dietary salt intake and elevated blood pressure levels. Their study demonstrated that 62% of stroke cases and 49% of heart disease incidences were attributed to hypertension (HTN), influenced

mainly by high sodium consumption. The authors further emphasized that elevated salt intake is also linked to other NCDs, such as left ventricular hypertrophy and renal disorders, indicating its wide-ranging impact on global health (Nista, 2020).

A study conducted among the slum population in Bangladesh reinforced these findings, revealing a high prevalence of excessive salt consumption in daily meals. The study found that 61.9% of respondents acknowledged the adverse health effects of excessive salt intake. However, despite this awareness, 58.1% and 63% of participants reported routinely adding extra salt to their food. Interestingly, 82.8% of the respondents claimed they were consuming the "right amount" of salt, suggesting a significant disconnect between perceived and actual dietary practices (Sarker, 2018). Similarly, a study conducted in an urban population in South India, assessing dietary salt intake and its relationship with hypertension. The results revealed a higher prevalence of HTN (48.4%) among individuals consuming salt beyond the WHO recommended limits, while those adhering to lower salt intake showed a significantly reduced HTN prevalence (16.6%) (Bhattacharya, 2022). The findings highlight a clear dose-response relationship between salt consumption and blood pressure levels, underscoring the critical need for public health interventions focused on salt reduction.

In another study carried out among faculty members and doctors at the Bangladesh University of Health Sciences, Zaman *et al.,* (2016) found concerning trends in salt consumption behaviors among healthcare professionals. Of 92 participants, 28.2% admitted adding extra salt during meals, while 31.6% used salty sauces regularly. Notably, 41.8% consumed excessive amounts of processed salty foods. Despite this, 93.5% were aware of the health risks of high salt intake, revealing a disconnection between knowledge and behavior (Zaman *et al.,* 2016). This paradox is particularly alarming, as healthcare professionals are expected to model healthy behaviors and influence public health awareness. A related study conducted by assessed knowledge, attitudes, and practices concerning salt intake among university students (Gokmen, 2024). Among the 400 students surveyed, 31% were in stage 1 hypertension and 14% in stage 2. Despite being a younger population, 89% of participants consumed high-sodium foods, emphasizing the urgent need for preventive strategies and education on healthy dietary practices within academic institutions (Ismail, 2019).

Bhattacharya *et al.,* (2018) conducted a study focusing on the urban slum population of North India. Of 300 participants, 99% reported high-salt foods, and 96% regularly consumed processed foods. Although 75% claimed to consume the right amount of salt, 43% were unaware of the harmful consequences of excess salt intake. This lack of awareness and high consumption of processed foods pose a significant public health challenge, especially in low-income urban settings (Bhattacharya *et al.,* 2018). Lastly, Zaman *et al.,* (2017) compared salt intake patterns between rural and urban populations in Bangladesh. Their findings indicated that 94% of rural respondents habitually added extra salt during meals, while 44% of urban participants exhibited similar behavior. These results suggest

that although urban populations may have better access to health information, both groups are at risk due to ingrained dietary habits (Zaman, 2017).

These studies highlight a widespread issue: the gap between awareness and actual dietary behavior. While many recognize the health risks of high salt intake, their daily practices often contradict this knowledge. The persistence of such behavior across various demographics—rural and urban populations, students, and even healthcare professionals—calls for stronger health education programs and policy interventions. Targeted strategies are needed to bridge the gap between knowledge and practice, ultimately aiming to reduce the burden of NCDs related to high salt consumption.

3. Methodology

3.1 Study Design and Sampling

This study employed a mixed-method cross-sectional design, integrating both quantitative and qualitative approaches to assess knowledge and practices related to dietary salt intake among residents of Sector 10, Uttara, Dhaka. A convenience sampling technique was used to recruit 400 participants aged 18–60 years, representing both males and females. This age range was chosen to capture diverse health risk profiles—from young adults who may have limited awareness of long-term impacts of salt intake to older adults at higher risk of hypertension and other non-communicable diseases.

Sector 10 was selected due to its accessibility and the feasibility of engaging with community members effectively. Participants were recruited consecutively across different areas, including residential households, small businesses, and local markets, ensuring diverse representation. Each participant completed a 20–25 minute session, comprising a structured interview and questionnaire. Data collection was conducted over a period of five to seven days.

3.2 Sampling Rationale

The mixed-method approach allowed for comprehensive insights: quantitative data enabled measurement of adherence to dietary behaviors and statistical comparisons, while qualitative data provided deeper understanding of attitudes and reasons behind salt-related practices. Limiting the study to a single, well-defined community minimized variability in environmental and socio-demographic factors, enhancing the reliability of findings. Convenience sampling was chosen for its practicality, cost-effectiveness, and flexibility, allowing the researcher to easily revisit the community if additional data were needed.

3.3 Data Collection

Data were collected through face-to-face interviews using a structured questionnaire with open- and closed-ended questions. The questionnaire assessed knowledge, attitudes, and practices regarding dietary salt intake. Prior to participation, the study objectives and procedures were explained to all

respondents, and written informed consent was obtained, ensuring voluntary participation and confidentiality.

Participants were selected from randomly chosen roads within Sector 10, and the recruitment process continued until the target sample size of 400 was reached. The study included residents from varied backgrounds, including households, small businesses, and street vendors, ensuring demographic diversity. Each interview lasted approximately 20–25 minutes, capturing both factual and behavioral information.
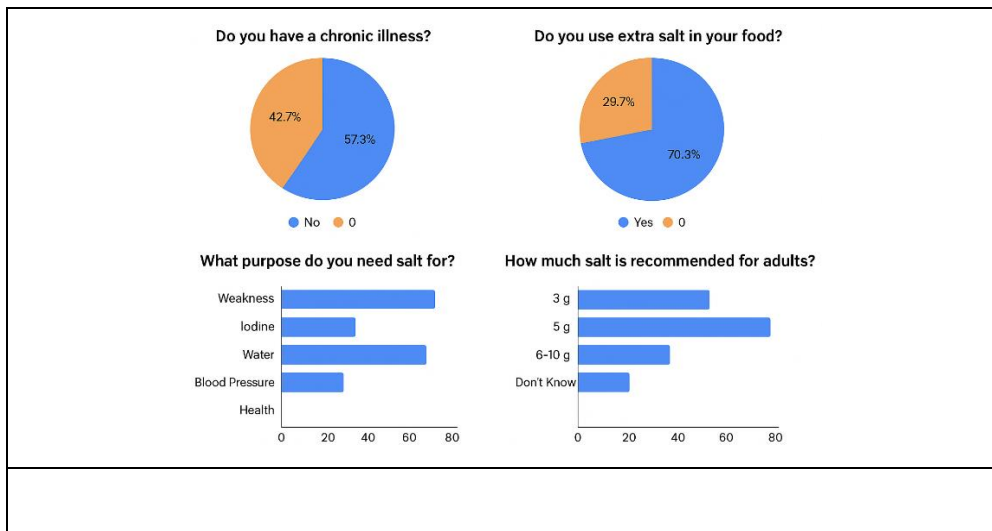
3.4 Data Analysis

Data analysis was conducted systematically to ensure consistency, reliability, and clarity. Each questionnaire item was assigned a unique code to standardize responses across participants. Closed-ended questions were coded numerically (e.g., Yes = 1, No = 0), while open-ended responses were thematically coded to capture recurring patterns, attitudes, and reasons behind participants' behaviors. This approach ensured consistency between data collection and analysis (Deb & Rahman, 2025).

Quantitative Analysis: Descriptive statistics were applied to summarize the data. Frequencies, percentages, and cross-tabulations were calculated for each questionnaire item to assess participants' knowledge and practices regarding dietary salt intake. The analysis allowed comparison across demographic variables such as age, gender, and education level. Quantitative results are presented using tables, pie charts, and bar graphs, which provide clear visual representation of trends and patterns in salt consumption behaviors (Schwabish, 2021; Deb *et al.,* 2025).

Qualitative Analysis: Open-ended responses were analyzed using thematic content analysis. Similar responses were grouped into categories to identify recurring themes, such as reasons for adding extra salt to meals, awareness of health risks, and perceptions about processed foods. Representative quotes from participants were extracted to illustrate key findings, providing context to the quantitative results and enhancing interpretability.

Integration with Tables and Figures: Table 1 summarizes the coded responses for all 13 survey questions, covering demographic characteristics, knowledge, and behavioral practices. Figure 1 visually display the distribution of participants' responses, ensuring alignment between the questionnaire coding and data presentation. This integration allows readers to easily interpret trends and relationships within the dataset.

By combining quantitative and qualitative analyses, this approach provides a comprehensive and holistic understanding of participants' knowledge and practices regarding dietary salt intake. The consistent coding framework and alignment with tables and figures ensure methodological transparency, reliability, and clarity of findings.

3.5 Ethical Considerations

The study adhered to ethical research standards. Participants provided informed consent, and their confidentiality and anonymity were strictly maintained. The research protocol was approved by the institutional ethics review board, ensuring compliance with ethical guidelines for human subject research.

3.6 Summary Table of Survey Questions

Table 1 aligns survey questions with the study objectives, ensuring coverage of both demographic characteristics and knowledge and practice-related aspects of salt consumption.

Table 1. Summary of Participant Responses on Knowledge and Practices Regarding Dietary Salt Intake.

Question Number	Question	Response Options	Participant 1	Participant 2	Participant 3	Participant 4
Q1	Age Group	21-30, 31-40, 41-50, 51-60	31-40	41-50	31-40	21-30
Q2	Gender	Male, Female	Male	Female	Male	Female
Q3	Educational Status	Primary, Secondary, Higher Secondary,	Graduate	Primary	Higher Secondary	Graduate

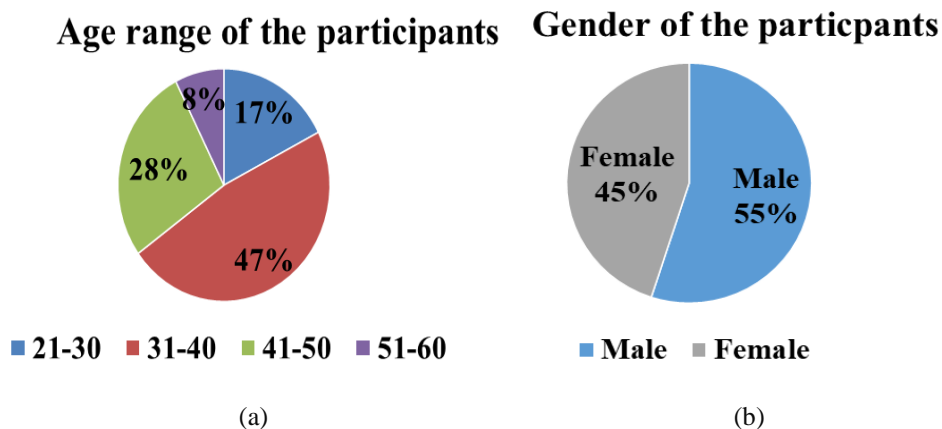|						
		Graduate				
Q4	Occupation	Housewife, Businessman, Private Employee, Tailor, etc.	Businessman	Housewife	Tailor	Housewife
Q5	Do you think salt is necessary for the body?	Yes, No	Yes	Yes	No	Yes
Q6	Do you have a chronic illness?	Yes, No	No	Yes	No	Yes
Q7	Do you use extra salt in your food?	Yes, No	Yes	No	Yes	Yes
Q8	What purpose do you need salt for?	Weakness, Iodine, Water, Blood Pressure, Health	Weakness, Iodine	Water, BP	Health	Iodine, BP
Q9	How much salt is recommended for adults?	3gm, 5gm, 8gm, 10gm, Don't Know	Do not Know	5gm	3gm	5gm
Q10	What are the signs of consuming extra salt?	Increased BP, Headache, Water Retention, Do not Know	Increased BP	Do not Know	Water Retention	Increased BP
Q11	What diseases are caused by excessive salt?	Hypertension, Cardiac Problems, Kidney Disease, Do not Know	Hypertension	Cardiac Problems	Kidney Disease	Hypertension
Q12	Do you check the salt content in packaged food?	Yes, No	No	No	Yes	No
Q13	How much salt do you consume daily?	Less than 5gm, 5gm, 6-10gm, More than 10gm	Less than 5gm	5gm	6-10gm	5gm

Finally, the paragraph highlights that your research questions are aligned with your study results on diseases caused by excess salt and the symptoms of consuming extra salt. It concludes by pointing out that these questions are well-suited for a small-scale survey, and future studies could involve a more extensive or diverse sample to improve the generalizability of the findings.

4. Results

4.1 Age Range of the Participants

Figure 1(a) illustrates the participants' age range and gender, revealing fascinating insights into the demographic distribution of the sample. The largest group of participants, representing 48%, falls within the age range of 31-40 years, highlighted by the maroon section of the chart. This suggests that most respondents were in the early middle adulthood stage, when individuals are often most concerned with health and lifestyle habits, making this age group particularly relevant for studying dietary salt intake (Barbaccia, 2022; Liu, 2012). The second-largest group, comprising 28% of the participants, was in the 41-50 years age range, denoted by the green section. This age group will likely deal with more health-related concerns, including the long-term effects of dietary habits, which may increase the relevance of addressing salt intake. A smaller portion of participants, 17%, fell into the 21-30 age category (represented by the blue section), which may indicate that younger adults are less concerned about dietary practices such as salt intake (Garg, 2019; Khokhar, 2019). They are typically in better health and may not yet experience the adverse effects of excessive sodium consumption. Lastly, 7% of participants were in the 51-60 age group, shown in the violet section. This group, being on the older side of the spectrum, could be more vulnerable to the health risks associated with excessive salt intake, such as hypertension and cardiovascular diseases, making it crucial for interventions to target this demographic (Liu, 2023; Malta, 2018).
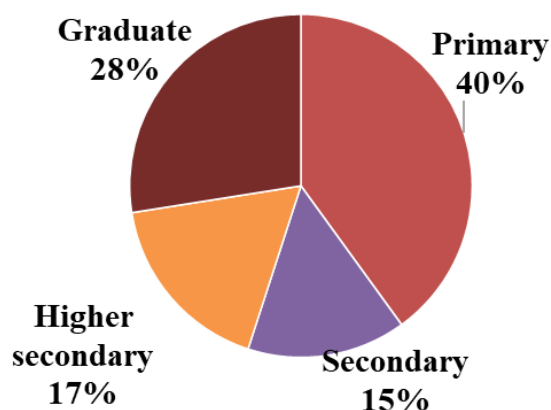

(a)   (b)

Figure 1: Participants for (a) Age range and (b) Gender

Regarding gender distribution, Figure 2(b) indicates that 55% of the participants were male (represented by the blue portion), while 45% were female (shown in ash color). This slight male majority could suggest that health-related surveys of this nature may attract more male participants, though the difference is not significant enough to skew the results. Both genders were represented equally, providing a balanced view of the community's knowledge and practices regarding dietary salt intake. In summary, the age and gender distributions in this study suggest a diverse representation across different life stages, allowing for a comprehensive understanding of dietary salt intake practices among different groups within the community (McKenzie, 2018; Usman, 2024).

4.2 Educational Status of the Participants

Figure 3 illustrates the educational status of the participants and provides a clear view of the distribution of education levels within the sample. The maroon portion, representing 40% of the participants, indicates that most respondents had completed primary-level education. This suggests that a significant proportion of the community has attained only basic education, which could affect their awareness and knowledge regarding health-related issues, such as dietary salt intake. The green portion, representing 17% of the participants, corresponds to those with higher secondary education. While smaller than those with primary education, this group may still be more capable of engaging with and understanding more complex health information. In contrast, the brown portion, representing 28%, shows that many participants had attained a graduate-level education. This indicates a more educated subgroup within the community, which could imply better access to information and resources, potentially influencing their dietary choices and health practices (Bennett, 2022).
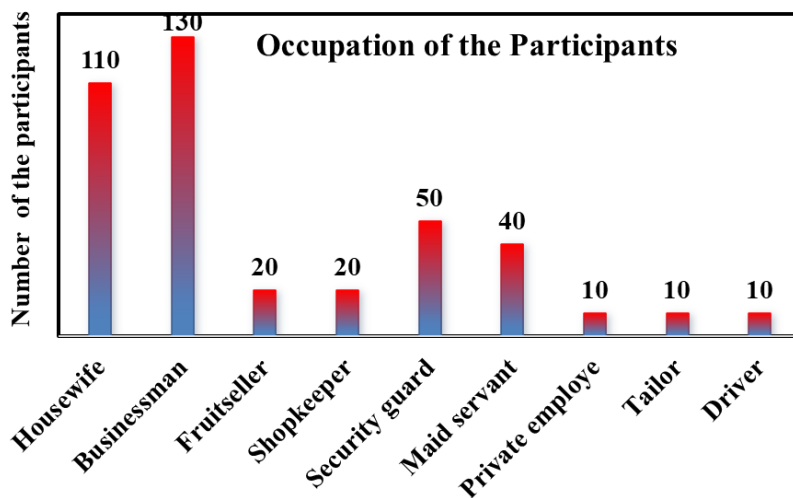

Figure 3: Educational status of the participants.

The yellow portion, with 15%, reflects those with secondary education, the smallest group in the chart. This suggests that fewer participants had progressed beyond primary education but stopped at secondary education, which could point to barriers to continuing education, such as financial or social constraints. The educational distribution highlights a mix of educational backgrounds, with primary education being the most common and graduate education the least prevalent, offering valuable context for understanding the community's health literacy level (Zimmerman, 2015).

4.3 Occupation of the Participants

Figure 4 illustrates the occupational distribution of the study participants. Among the different occupations, businessmen comprise the most significant portion, accounting for 130 participants (33%). This is followed by housewives, who represent 130 participants (28%), indicating a significant presence of non-working or domestic participants.
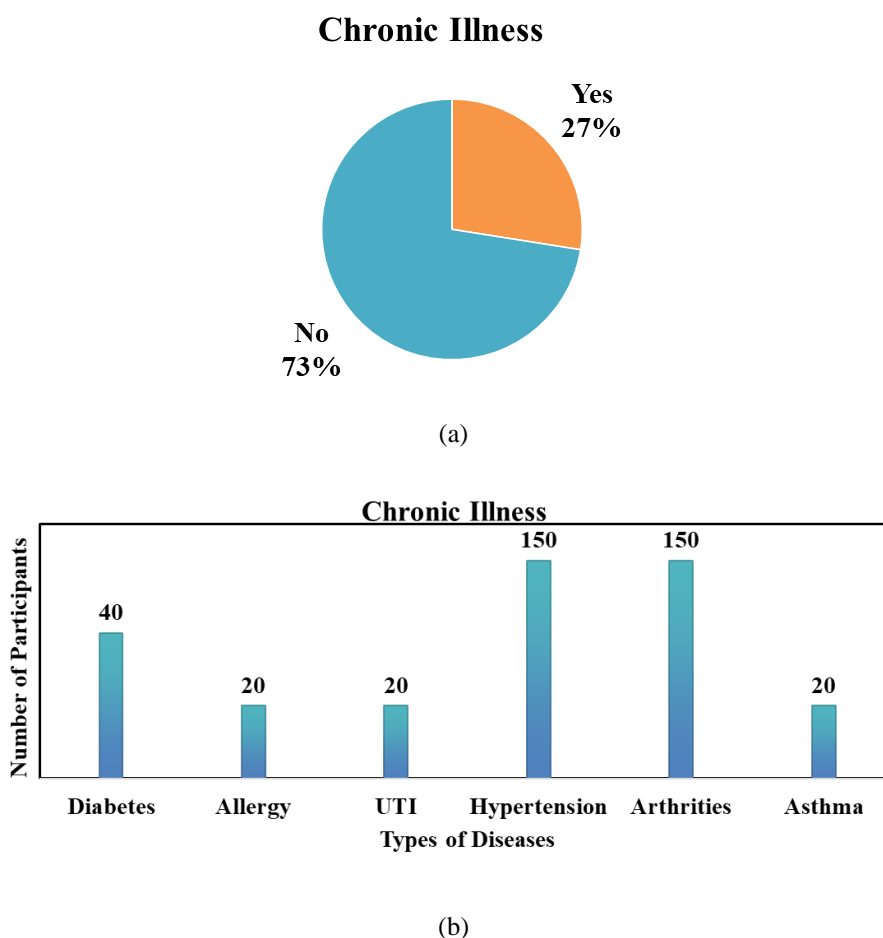

Figure 4. Occupation of the participants.

These two groups combined make up more than half of the participants, highlighting that the study captured responses primarily from individuals engaged in business or domestic responsibilities. In addition, the graph shows that the fruit sellers and shopkeepers each made up 5% of the total participants, suggesting a small but equal representation of informal retail occupations. Security guards accounted for 40 participants (10%), showing moderate representation. The occupations with the least participants were private employees, tailors, and drivers, each constituting only 10 participants (3%). This distribution reflects a diverse range of occupations among participants, though it is evident that business-related and household roles dominate the sample. Such insights can be helpful when

assessing how occupation influences knowledge and practices related to dietary salt intake (IaccarinoIdelson, 2020; Luta, 2018).

4.4 Chronic Illness of the Participants

Figure 5 (a) presents data on the chronic illness status of the 400 participants involved in the study. It illustrates that 27% of participants reported having a chronic illness, while the remaining 73% did not. This indicates that most of the participants were not suffering from any long-term health conditions at the time of the study. The more significant portion of the pie chart representing "No" responses suggests that most individuals were free from chronic diseases, which could influence their dietary practices, including salt consumption.

Chronic Illness

Yes
27%

No
73%

(a)

Chronic Illness

150 150

40

20 20 20

Diabetes   Allergy   UTI   Hypertension   Arthrities   Asthma

Types of Diseases

Number of Participants

(b)

Figure 5: Participants for (a) Chronic illness and (b) Name of chronic illness.

Additionally, Figure 5(b) further breaks down the types of chronic illnesses reported by the 27% who acknowledged having such conditions. The X-axis represents specific chronic illnesses mentioned by participants, including diabetes, allergy, urinary tract infection (UTI), hypertension, arthritis, and asthma. At the same time, the Y-axis indicates the number of individuals affected. The data reveals that hypertension and arthritis were the most commonly reported conditions, affecting 150 participants. 40 participants reported diabetes, allergies, UTIs, and asthma, each reported by 20participants. These results highlight the need to consider chronic health conditions, particularly hypertension and arthritis when evaluating dietary habits related to salt intake among this population (Gioia, 2020; Kuang, 2023).

4.5 Knowledge-based Question

Figure 6(a) illustrates the participants' understanding regarding the necessity of salt in the human body. The chart is divided into two distinct color segments. The blue portion, which constitutes the majority, represents the 93% of participants who responded "Yes," indicating that they believe salt is essential for the human body (Kodintsev, 2022; Elias, 2020). This shows a significant level of awareness among the participants about the biological importance of salt in bodily functions such as maintaining fluid balance, nerve function, and muscle contractions (Bernal, 2023). In contrast, the maroon portion of the pie chart represents the remaining 7% of participants who responded "No." These individuals believed that salt is not necessary for the human body. This smaller percentage may reflect a lack of knowledge or possible misconceptions about salt's role in maintaining health (Sarmugam, 2014). Figure 6 (a) also demonstrates that most participants recognize the necessity of salt in the human body, while a small portion holds a contrary view.

| (a) | (b) |

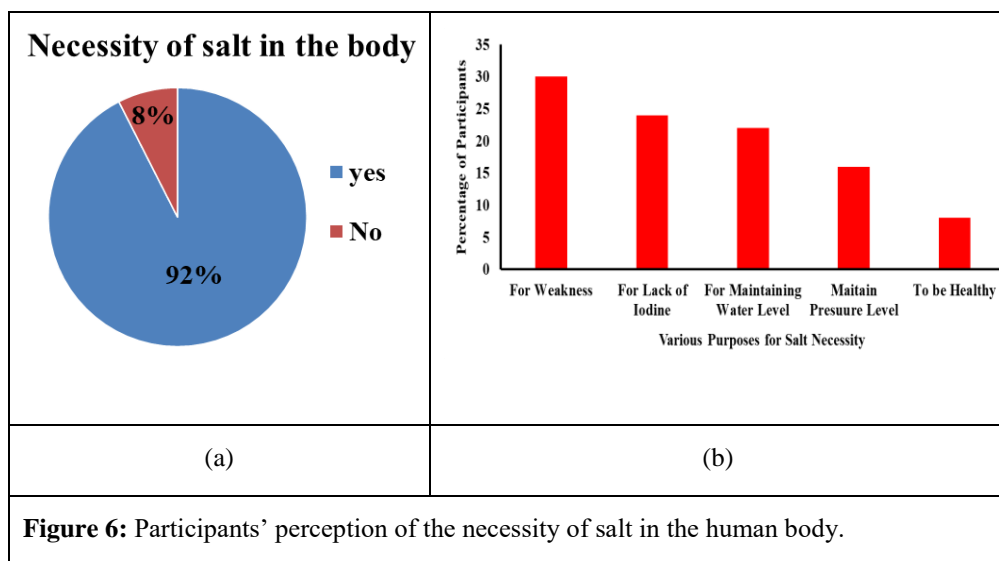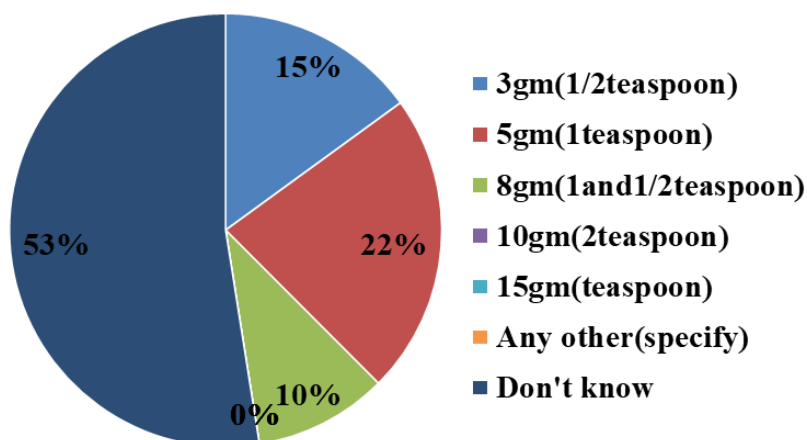**Figure 6:** Participants' perception of the necessity of salt in the human body.

Figure 6(b) presents the participants' views on the different purposes for which salt is considered necessary in the human body. As shown in Figure 6(b), 93% of participants responded positively when asked whether salt is necessary. During the data collection process, many participants mentioned more than one reason for the importance of salt, reflecting a range of awareness levels. Figure 6(b) also illustrates a descending participant response trend. The most frequently cited reason, with 30% of participants, was that salt helps prevent weakness. This was followed by 24% of participants who believed salt is essential due to its role in maintaining iodine levels. Additionally, 22% noted that salt is important for regulating the body's water balance. About 16% of participants associated salt intake with blood pressure control, while 8% believed salt is necessary for overall health. This variety of responses suggests that the community has multiple perceptions of the physiological roles of salt (Sarmugam, 2014).
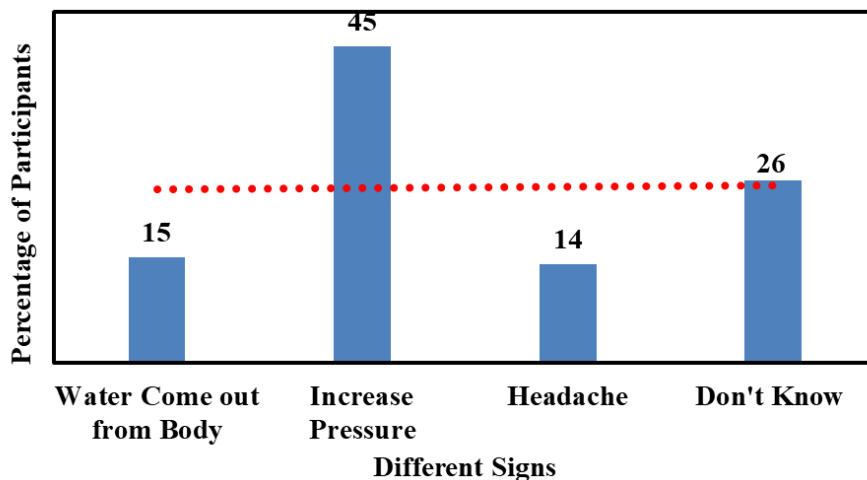
Figure 7 illustrates the participants' knowledge regarding the recommended daily salt intake for an adult person. Although the total number of participants in the study was 400, their responses varied significantly when asked about the appropriate amount of salt. Interestingly, there were no responses for 10 gm, 15 gm, or other unspecified quantities. This indicates participants' general lack of accurate knowledge concerning specific salt intake guidelines (Sarmugam, 2014). The most significant portion of the pie chart—53%, shown in dark blue—represents participants who responded with "do not know," highlighting a substantial knowledge gap.

Figure 7. The participant's knowledge regarding the recommended daily salt intake for an adult person.

Among those who did provide estimates, 22% (represented by the orange portion) believed that 5 gm of salt is the recommended amount for an adult, which aligns with the World Health Organization's guideline. Meanwhile, 15% (light blue portion) of participants guessed 3 gm, and 10% (ash portion) thought 8 gm was appropriate. The distribution of responses reflects varying levels of awareness, with most participants either unaware or unsure about the correct recommendation. This highlights the need for increased public education and awareness campaigns on dietary salt intake and its impact on health (Trieu, 2017; Jayatilleke, 2020).
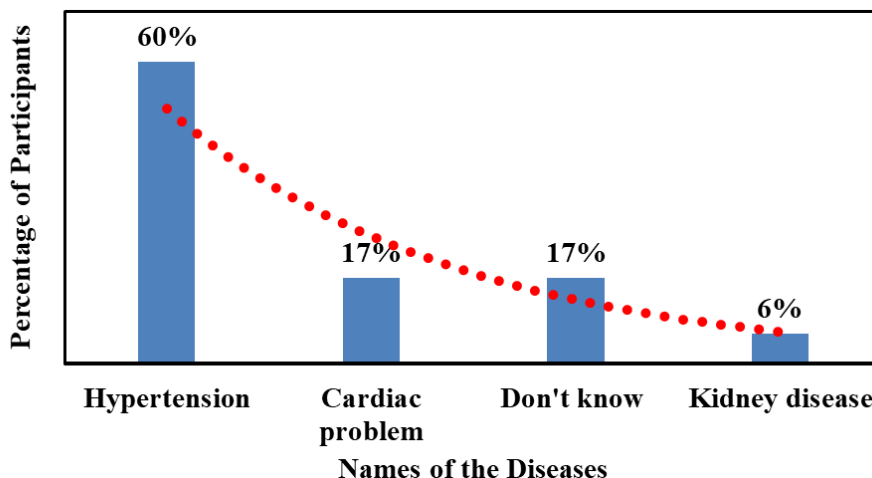
Figure 8 presents the participants' understanding of the signs or consequences of consuming excessive salt. The highest response—45%—believed consuming too much salt can lead to increased blood pressure, which is widely recognized as a common health risk. Meanwhile, 26% of the participants admitted that they were unaware of any signs associated with high salt consumption, reflecting a considerable knowledge gap.

Figure 8. Participants' perceptions of the signs of excessive salt consumption.

Additionally, 15% of participants thought that excess salt intake draws water out of the body, suggesting some awareness of salt's effect on hydration and body fluid balance. Another 14% believed that consuming too much salt can cause headaches. It is important to note that several participants provided multiple answers to this question, indicating that some had broader knowledge of salt's impact on health. The most common response pointed to high blood pressure as a primary sign of overconsumption (Dong, 2018), followed closely by participants expressing a lack of knowledge, underscoring the need for more public health education (Trieu, 2017; Jayatilleke, 2020).

Figure 9 illustrates the participants' awareness regarding diseases that can be caused or worsened by excessive salt consumption. In this question, participants were allowed to provide multiple answers. The highest percentage of responses, 60%, was for hypertension, showing that most participants believed consuming too much salt leads to high blood pressure (Dong, 2018). This indicates a significant awareness among respondents regarding the link between salt intake and hypertension.

Figure 9: Diseases identified by participants as caused or aggravated by excessive salt consumption.

Additionally, 17% of participants mentioned both cardiac problems and indicated they "don't know," suggesting moderate awareness or uncertainty about the broader health effects of salt. Only 6% of the participants identified kidney disease as a consequence of extra salt consumption (Malta, 2018) reflecting relatively low awareness in that area. Overall, the chart shows that while hypertension is well-recognized as a risk of high salt intake, knowledge about other related diseases remains limited among participants.

5. Discussion

Salt is an essential component of the human diet, playing a critical role in several physiological functions. It contains two key electrolytes—sodium and chloride—which help regulate fluid balance, nerve function, and muscle contraction. According to the (WHO, 2017), the recommended daily salt intake for an adult is less than 5 grams, containing about 2 grams of sodium. However, excessive salt consumption remains a global public health concern (Thout, 2019), particularly due to its association with non-communicable diseases (NCDs) such as hypertension, cardiovascular disease, and kidney disorders (Nista, 2020).

The findings of this study reveal a complex relationship between knowledge, attitudes, and practices regarding dietary salt intake among residents of Sector 10, Uttara, Dhaka. In terms of knowledge, although 93% of participants recognized the physiological importance of salt, more than half (53%) were unaware of the recommended daily intake, and only 22% correctly identified 5 grams as the WHO guideline. This indicates that while awareness of salt's necessity is high, understanding of safe consumption levels remains limited. Participants most commonly cited salt's role in preventing weakness (30%), maintaining iodine levels (24%), balancing body fluids (22%), controlling blood pressure (16%), and promoting general health (8%). These findings highlight that the population associates salt with general well-being but lacks precise knowledge of its safe limits.

With regard to practices, approximately 30% of respondents reported adding extra salt to meals—particularly water rice and milk rice—despite being aware of its potential health risks. This behavior underscores the influence of long-standing cultural habits, taste preferences, and misconceptions linking salt intake to vitality and strength. Additionally, a majority of participants admitted that they do not check the sodium content on packaged or processed foods, suggesting low nutritional literacy and limited engagement in health-conscious food selection. Such findings align with previous studies in South Asia that emphasize the persistent role of discretionary salt use in home cooking and food preparation (McKenzie, 2018; Nurmilah, 2022; Deb *et al*.2023).

In examining the knowledge–behavior gap, the study found that many participants who understood the link between excessive salt consumption and hypertension continued to practice high-salt dietary behaviors. While 60% associated high salt intake with hypertension, far fewer identified cardiac (17%) or kidney (6%) problems as consequences. This limited disease-specific awareness and inconsistent behavior highlight the need for interventions that move beyond information dissemination to actively support behavioral change. The influence of education and occupation was also evident—participants with only primary education and those engaged in domestic or business occupations demonstrated relatively lower knowledge and less health-conscious practices, reflecting broader socioeconomic determinants of health literacy.

These findings are consistent with national data indicating that average salt consumption in Bangladesh is around 15 grams per day—three times the WHO recommendation (WHO, 2017). Similar patterns have been reported by Islam *et al.* (2021) and Musa *et al.* (2025), showing that while people acknowledge salt's role in health, they often underestimate its risks. This study therefore reinforces the importance of targeted health education and culturally appropriate communication strategies to bridge the gap between knowledge and practice.

Overall, the results directly support the study's objectives by demonstrating that awareness of salt's importance does not necessarily translate into healthy behavior. Public health interventions should focus on simplifying messages around the 5-gram daily limit, promoting front-of-pack sodium labeling, and encouraging reduced discretionary salt use during cooking. Community-based programs that integrate behavior change communication with practical demonstrations—such as using alternative seasonings—could effectively reduce salt-related health risks. In conclusion, while the residents of Sector 10, Uttara, exhibit moderate awareness of salt's physiological importance, their actual consumption patterns remain inconsistent with recommended health guidelines. To mitigate the burden of NCDs, Bangladesh urgently requires coordinated public health initiatives emphasizing nutrition education, behavioral modification, and the creation of supportive environments for healthier dietary practices. Although this study provides valuable insights into the knowledge and practices of dietary salt consumption among urban residents in Dhaka, the findings are based on a single community sample and therefore may not be generalizable to the entire population of Bangladesh.

6. Limitation and Recommendation

This study has several limitations that may affect the generalizability of its findings. Firstly, the sample size was limited to 400 participants, which is not sufficient to represent the entire population's knowledge and practices regarding dietary salt consumption. Secondly, as the research was confined to a single urban area—Sector 10, Uttara—the results may not be applicable to other regions of Bangladesh that differ in socioeconomic, cultural, or dietary characteristics. Thirdly, a few participants were reluctant to express their views openly or appeared uncomfortable during interviews, which may have influenced the accuracy and depth of their responses. Additionally, the short duration of data collection limited opportunities for follow-up interactions or longitudinal observations.

Based on these limitations, future studies should include a larger and more diverse sample across multiple urban and rural settings to enhance representativeness and external validity. Adopting alternative or mixed sampling techniques, such as stratified or random sampling, may also improve participation rates and data quality. Furthermore, incorporating biochemical measurements of sodium intake (e.g., urinary sodium analysis) alongside self-reported data could provide more objective insights. Expanding the research timeframe would allow for deeper engagement with participants and better understanding of behavioural changes over time. These improvements would contribute to a more comprehensive and nationally representative understanding of knowledge, attitudes, and practices related to salt consumption in Bangladesh.

7. Conclusion

This study assessed the knowledge and practices related to dietary salt intake among residents of Dhaka, Bangladesh. The findings revealed that while most participants were aware of salt's general importance in maintaining body functions such as electrolyte balance and blood pressure regulation, a substantial proportion lacked knowledge of the recommended daily intake limit of less than 5 grams per day as advised by the WHO. Although many respondents recognized the health risks of excessive salt consumption—particularly its association with hypertension—this awareness did not consistently translate into healthier behaviors. A significant number of participants continued to add extra salt to meals and rarely checked sodium content on packaged foods, indicating a persistent gap between knowledge and practice. These results highlight the urgent need for targeted public health interventions to address misconceptions and promote behavior change regarding salt consumption. Community-based nutrition education, improved food labeling, and culturally tailored awareness campaigns could help individuals make more informed dietary choices. Strengthening these initiatives will be essential for reducing excessive sodium intake and preventing non-communicable diseases such as hypertension and cardiovascular disorders among urban populations in Bangladesh.

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Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed significantly and agree with the content of the manuscript. No financial, personal, or professional relationships have influenced the outcomes or interpretation of this work.

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