Factors Influencing High-Sodium Food Consumption Behavior among Nursing Students

Suppaluk Thanirat[1], Sineenut Senivong Na Ayudhaya[1], Narathip Panjamas[2], Nitiyakorn Dannalert[2], Ninlanet Tamin[2], Nonthanatda Niphonram[2], Panicha Muanghimphan[2], Thanthip Ampudsa[2]

[1] Lecturer, Boromarajonani College of Nursing Changwat Nonthaburi, Faculty of Nursing, Praboromarajchanok Institute

[2]Boromarajonani College of Nursing Nonthaburi, Faculty of Nursing, Praboromarajchanok Institute

Abstract

The consumption of high-sodium foods is a major cause of various chronic diseases. Controlling or reducing the factors contributing to high sodium intake can help alleviate health problems. This descriptive study aimed to examine the high-sodium food consumption behaviors among nursing students and identify the factors influencing their consumption of high-sodium foods. The samples consisted of 130 nursing students enrolled in the Bachelor of Nursing Science program at Boromarajonani College of Nursing Changwat Nonthaburi in 2024. They were selected by stratified random sampling. The data collection tools comprised a questionnaire covering high-sodium consumption behavior, information perceptions on high-sodium food consumption, accessibility to high-sodium food sources, attitudes toward high-sodium food consumption, and knowledge about high-sodium food consumption. The data were analyzed using percentage, mean, standard deviation, and multiple regressions.

The results showed that the nursing students had a moderate level of high-sodium food consumption (Mean = 3.14, S.D. = 0.70). Their knowledge and risk perception about high-sodium food consumption were both high (Mean = 8.92, S.D. = 1.23; Mean = 3.40, S.D. = 0.50, respectively). Accessibility to high-sodium food sources was also high (Mean = 4.02, S.D. = 0.73), while their attitudes toward high-sodium food consumption were moderate (Mean = 3.20, S.D. = 0.53). There are two factors significantly influenced high-sodium food consumption behaviors: accessibility to high-sodium food sources and attitudes towards high-sodium food consumption. Together, they significantly predicted behavior at the 0.05 significance level. The multiple correlation coefficient (R) was 0.506, the coefficient of determination (R^2) was 0.256, and the standard error of estimate (S.E.est) was 0.607. Therefore, these two variables explained 25.6% of the variance in high-sodium food consumption behavior among nursing students. In conclusion, educational institutions should foster an environment that encourages the consumption of low-sodium foods and increases awareness about the significance of minimizing sodium intake. These measures aim to reduce sodium consumption among students, thereby helping to prevent health risks associated with high sodium levels.

Keywords: High-Sodium Food Consumption Behavior, Chronic diseases, Nursing Students

Corresponding author: Sineenut Senivong Na Ayudhaya
E-mail: sineenut.s@bcnnon.ac.th

Introduction

Sodium is an essential mineral required by the body to maintain the osmolality of extracellular fluids and ensure normal fluid circulation. Sodium is obtained through the consumption of foods, often in the form of sodium chloride (table salt), found in meats, processed foods, semi-prepared or ready-to-eat meals, pickled foods, and seasoning sauces. According to the Bureau of Non-Communicable Diseases, Department of Disease Control (2023), the recommended daily sodium intake should not exceed than 2,000 mg (equivalent to 1 teaspoon of salt). Excessive sodium intake can lead to salt retention and increased extracellular fluid, which subsequently raises blood pressure. Hypertension, as a result, increases the risk of cardiovascular diseases, stroke, and acute myocardial infarction. Additionally, high sodium intake directly affects kidney function, as the kidneys are responsible for sodium excretion. This results in overworking the kidneys, leading to faster deterioration, protein leakage in the urine, and the accumulation of waste in the body (Borrelli et al., 2020; Graudal et al., 2020). Kidney damage, once it develops, remains permanent even if sodium levels in the body are later reduced (Tussanapong, 2020).

Despite the recommended sodium intake limit of 2,000 mg per day, a survey conducted in 2019 revealed that the average sodium consumption among the Thai population was as high as 3,636 mg per person per day, equivalent to 1.8 teaspoons of salt (Bureau of Non-Communicable Diseases, Department of Disease Control, 2023). A health survey of the Thai population conducted during 2019–2020 found that most sodium intake originates from processed foods and eating out, including sodium added during cooking (71%) and adding seasoning to food while eating (11%) (Aekplakorn, 2021). Among individuals aged 15–29 years, the majority consumed high-sodium foods such as freshly prepared meals, followed by ready-to-eat foods (Yungiam & Kittirawutthiwong, 2022). This has resulted in a trend where Thais are likely to consume sodium in amounts higher than normal.

A review of relevant literature reveals various factors influencing sodium consumption. For instance, a study by Boonsiri et al. (2017) found that knowledge about sodium consumption helped students become more aware and reduce their sodium intake, as evidenced by a decrease in sodium levels in their urine after gaining knowledge. Similarly, research by Chaiket (2016) on sodium-related dietary factors among students of Srinakharinwirot University found that access to information about sodium correlated with sodium levels in their diet. Another study by Khunkaew, Khunkaew & Ngadkratok (2020) reported that nursing students in Uttaradit frequently consumed ready-made meals due to the convenience of purchasing such foods and living in dormitories preventing them from cooking their meals. This aligns with the findings of Somchit & Phanomai (2015), who discovered that food accessibility, convenience in food selection, and information about ready-to-eat foods, including type, price, and promotional deals, influenced the purchasing behavior of high school students. Furthermore, Ounkaew (2022) identified that attitudes toward food consumption significantly impacted the eating behaviors of high school students, consistent with Rattanasakornchai's (2019) findings, which revealed a correlation between attitudes and eating behaviors in secondary school students. The literature suggests that factors influencing sodium consumption include knowledge about sodium, access to sodium-related information, food accessibility, and attitudes toward sodium consumption.

Currently, excessive sodium consumption is observed across all age groups, particularly among individuals aged 19–30 years, whose average daily sodium intake is 3,633.8 mg (Bureau of Non-Communicable Diseases, Department of Disease Control, 2023). This trend likely applies to nursing students in colleges, as most are aged between 18 and 25 years. Nursing students are considered part of the healthcare system and

play a vital role in delivering healthcare services. Adopting appropriate sodium consumption behaviors during their college years not only helps prevent chronic illnesses in the future but also enables them to serve as sources of knowledge and exemplary health role models to healthcare recipients. However, previous studies on high-sodium food consumption behaviors or the factors influencing such behaviors among nursing students have been very limited in number. A survey involving 40 students from a nursing college, conducted through a Google Form questionnaire, revealed that the students consumed high-sodium foods daily. The most frequently consumed foods included made-to-order meals with added seasonings (76.2%), semi-prepared foods such as instant noodles (71.4%), and fast food (69%). The primary factors contributing to this behavior were identified as convenience (78.6%), affordability (59.5%), and easy access to food sources (52.4%).

These factors may lead to nursing students consuming sodium in amounts exceeding the recommended levels. Given these circumstances, the researchers are interested in studying the factors influencing the consumption of high-sodium foods among nursing students at College of Nursing. This study aimed to examine the consumption behaviors of high-sodium foods among nursing students and identify the factors influencing high-sodium food consumption among these students. The findings of this study will contribute to the development of solutions and interventions aimed at promoting appropriate sodium consumption behaviors, ultimately reducing the risk of diseases associated with excessive sodium intake.

Research Methodology

Study design

The study was structured as a descriptive research.

Study Population and Sample

Population: Nursing students enrolled in the Bachelor of Nursing Science program at Boromarajonani College of Nursing Changwat Nonthaburi, from years 1 to 4 in the first semester of the 2024 academic year, totaling 705 individuals.

Samples: The sample consisted of 130 nursing students enrolled in the Bachelor of Nursing Science program at Boromarajonani College of Nursing Changwat Nonthaburi, from years 1 to 4 in the 2024 academic year. The sample size was determined using the G*Power Version 3.1.9.7 (Faul, Erdfelder, Lang & Buchner, 2009) with settings as follows 1) Test family: F Test 2) Statistical test: Linear multiple regression: Fixed model, R= deviation from zero and 3) Input parameter: Effect size =0.15 (medium), Alpha = 0.05, Power = 0.95, number of predictors = 4. The sample was selected using stratified random sampling, resulting in 33 participants each from years 1, 2, and 3, and 31 participants from year 4.

Research Instruments

The research utilized a questionnaire, designed through an analysis of relevant literature and related research, consisting of six sections:

Section 1: Personal Information

This section included open-ended questions requiring respondents to select one option or provide answers in the blank spaces. The questions addressed details such as gender, age, year of study, weight, height, favorite food flavors, type of residence during study, monthly financial support from parents, and the average cost of meals per meal.

Section 2: High Sodium Food Consumption Behavior Questionnaire

This section utilized a 5-point Likert rating scale consisting of 15 items to measure high-sodium food consumption behaviors. The interpretation of the mean scores was based on the criteria as follows:

4.20 – 5.00: the highest level of high-sodium food consumption.

3.40 – 4.19: a high level of high-sodium food consumption.

2.60 – 3.39: a moderate level of high-sodium food consumption.

1.80 – 2.59: a low level of high-sodium food consumption.

1.00 – 1.79: the lowest level of high-sodium food consumption.

Section 3: Knowledge about High-Sodium Food Consumption

This section consisted of 10 closed-ended questions designed to evaluate knowledge about high-sodium food consumption. Respondents were required to answer "Yes" or "No." A "Yes" response was scored as 1 point, while a "No" response was scored as 0 points. Criteria for interpreting score are as follows:

8.00–10.00: A high level of knowledge about high-sodium food consumption.

6.00–7.99: A moderate level of knowledge about high-sodium food consumption.

Less than 6.00: A low level of knowledge about high-sodium food consumption.

Section 4: Information Perception on High-Sodium Food Consumption

This section employed a 5-point rating scale comprising 6 items to assess participants' perception of information related to high-sodium food consumption. The interpretation of the mean scores was based on the criteria as follows:

4.20 – 5.00: The highest level of information perception on high-sodium food consumption.

3.40 – 4.19: A high level of information perception on high-sodium food consumption.

2.60 – 3.39: A moderate level of information perception on high-sodium food consumption.

1.80 – 2.59: A low level of information perception on high-sodium food consumption.

1.00 – 1.79: The lowest level of information perception on high-sodium food consumption.

Section 5: Accessibility to High-Sodium Food Sources

This section used a 5-point rating scale consisting of 6 items to evaluate participants' access to high-sodium food sources. The interpretation of the mean scores was based on the criteria as follows:

4.20 – 5.00: The highest level of accessibility to high-sodium food sources.

3.40 – 4.19: A high level of accessibility to high-sodium food sources.

2.60 – 3.39: A moderate level of accessibility to high-sodium food sources.

1.80 – 2.59: A low level of accessibility to high-sodium food sources.

1.00 – 1.79: The lowest level of accessibility to high-sodium food sources.

Section 6: Attitudes toward High-Sodium Food Consumption

This section utilized a 5-point Likert scale with 7 items to measure participants' attitudes toward the consumption of high-sodium foods. The interpretation of the mean scores was based on the criteria as follows:

4.20 – 5.00: The highest level of attitude toward high-sodium food consumption.

3.40 – 4.19: A high level of attitude toward high-sodium food consumption.

2.60 – 3.39: A moderate level of attitude toward high-sodium food consumption.

1.80 – 2.59: A low level of attitude toward high-sodium food consumption.

1.00 – 1.79: The lowest level of attitude toward high-sodium food consumption.

Validation of Research Instruments

The researcher submitted the questionnaire to three experts for evaluation. The content validity indices (CVI) for Sections 2 through 6 of the questionnaire, calculated based on Polit & Beck(2021), were 1.00, 0.97, 1.00, 0.94, and 0.95, respectively. The reliability of the questionnaire was 0.82, 0.79, 0.76, 0.72, and 0.81 for Sections 2 through 6, respectively.

Data Collection

This research was conducted between June - July 2024. The data collection was done as follows:

1. The researcher submitted a formal request to the Director of Boromarajonani College of Nursing Changwat Nonthaburi, seeking permission to collect data from the sample group.

2. Coordination was conducted with class leaders to inform potential participants about the study and arrange appointments for completing the questionnaire.

3. The researchers met with participants who voluntarily agreed to join the study, introduced themselves, explained the research objectives, and emphasized the protection of participants' rights.

4. Participants signed the informed consent forms and completed the questionnaire, which required approximately 15–20 minutes.

5. The researchers reviewed the questionnaires for completeness and accuracy before proceeding with data analysis.

Data Analysis

1. Personal information from the respondents was analyzed using basic statistics, including frequency, percentage, mean and standard deviation.

2. Data on high-sodium food consumption, information perception about high-sodium foods, accessibility to high-sodium food sources, and attitudes toward high-sodium foods were analyzed by calculating the mean and standard deviation.

3. Data on knowledge about high-sodium foods were analyzed using frequency and percentage.

4. Factors influencing high-sodium food consumption among nursing students were predicted using Pearson's correlation coefficient and multiple regression analysis (MRA).

Ethical Approval

This study was approved by the Research Ethics Committee of Boromarajonani College of Nursing Changwat Nonthaburi (BCNNON No. 014/66) on April 9, 2024. Participants were informed about the study through an introduction, an explanation of the research objectives, and a description of the procedures for participation. Informed consent forms were signed by all participants before the research process commenced.

Results

General characteristics of the sample

The majority of the sample group was female, totaling 121 individuals (93.10%). Most participants were aged 19–21 years, with 95 individuals (73.10%) in this age group. The average age was 19.89 years (S.D. = 1.289). Thirty-three persons (25.40%) were in their first to third academic year, and thirty-one individuals (23.80%) were in their fourth year. A total of 119 individuals (91.50%) resided in the college dormitories. Their preferred taste was salty (43.08%). (Table 1)

Table 1. General characteristics of nursing students (n=130)

General characteristics	N	%
Gender		
male	9	6.90
female	121	93.10
Age		
≥ 22 years	13	10.00
19-21 years	95	73.10
≤18 years	22	16.90
Mean =19.89 S.D. = 1.289		
Academic year		
first-year	33	25.40
second-year	33	25.40
third-year	33	25.40
fourth-year	31	23.80
Accommodation		
college dormitory	119	91.50
private apartment	11	8.50
Preferred taste		
salty	56	43.08
sweet	36	27.69
sour	34	23.15
bland	4	3.08

Level of High-sodium food consumption behaviors, Knowledge about high-sodium food consumption, Information perception on high-sodium food consumption, Accessibility to high-sodium food sources, and Attitudes toward high-sodium food consumption of nursing students

The sample group's behavior regarding the consumption of high-sodium foods was at a moderate level on average (Mean = 3.14, S.D. = 0.70). Their knowledge about high-sodium food consumption was at a high level on average (Mean = 8.92, S.D. = 1.23). Information perception on high-sodium food consumption was also at a high level on average (Mean = 3.40, S.D. = 0.50). In addition, accessibility to high-sodium food sources was rated high on average (Mean = 4.02, S.D. = 0.73). Their attitudes toward high-sodium food consumption were at a moderate level on average (Mean = 3.20, S.D. = 0.53). (Table 2)

Table 2. Levels of High-sodium food consumption behaviors, Knowledge about high-sodium food consumption, Information perception on high-sodium food consumption, Accessibility to high-sodium food sources, and Attitudes toward high-sodium food consumption of nursing students (n=130)

Variables	Mean	S.D.	Level
High-sodium food consumption behaviors	3.14	.70	Moderate
Knowledge about high-sodium food consumption	8.92	1.23	High
Information perception on high-sodium food consumption	3.40	.50	High
Accessibility to high-sodium food sources	4.02	.73	High
Attitudes toward high-sodium food consumption	3.20	.53	Moderate

Correlation among the variables and High-sodium food consumption behaviors of the nursing students

The correlation analysis shows that the factor most significantly related to high-sodium food consumption behavior was accessibility to high-sodium food sources, with a positive correlation coefficient of .477 ($r_{x3}y$ = .477) at the 0.01 significance level. The correlation coefficients for the factors are as follows:

1) Accessibility to high-sodium food sources (X_3) and high-sodium food consumption behavior showed a moderate positive correlation, with a coefficient of .477 ($r_{x3}y$ = .477, p≤ 0.01).

2) Attitudes toward high-sodium food consumption (X_4) and high-sodium food consumption behavior showed a low negative correlation, with a coefficient of -.275 ($r_{x4}y$ = -.275, p≤ 0.01).

3) Information perception on high-sodium food consumption (X_2) and high-sodium food consumption behavior showed a low positive correlation, with a coefficient of .229 ($r_{x2}y$ = .229 p≤ 0.01). (Table 3)

Table 3. Correlation analysis of the variables and High-sodium food consumption behaviors of the nursing students (n=130)

Variables	X1	X2	X3	X4
Knowledge about high-sodium food consumption (X1)	1.00			
Information perception on high-sodium food consumption (X2)	.000	1.00		
Accessibility to high-sodium food sources (X3)	-.021	.244**	1.00	
Attitudes toward high-sodium food consumption (X4)	.083	.023	-.236**	1.00
High-sodium food consumption behaviors (Y)	-.125	.229**	.477**	-.275**

** p value ≤ .01

Factor influencing High-sodium food consumption behaviors of the nursing students

The regression analysis revealed that there are two factors significantly influencing high-sodium food consumption behavior: accessibility to high-sodium food sources (X3) and attitudes toward high-sodium food consumption (X4). Together, these variables significantly predicted high-sodium food consumption behavior at the 0.05 significance level. The multiple correlation coefficient (R) was .506, the coefficient of determination (R^2) was .256, and the standard error of estimate (S.E.est) was .608. These two variables explained 25.6% of the variance in high-sodium food consumption behavior among nursing students. (Table 4)

The predictive equation for high-sodium food consumption behavior in raw score form is as follows:

$$Y = 2.182 + 0.418(X_3) - 0.226(X_4)$$

The predictive equation in standardized score form is as follows:

$$Zy = 0.436(ZX_3) - 0.173(ZX_4)$$

Table 4. Regression analysis of the variables and High-sodium food consumption behaviors of the nursing students (n=130)

Variables	b	$S.E._b$	β	t	p- value
Constant	2.182	.501		4.353	.000***
Accessibility to high-sodium food sources (X_3)	.418	.076	.436	5.536	.000***
Attitudes toward high-sodium food consumption (X_4)	-.226	.103	-.173	-2.192	.030*

R = .506, R^2 = .256, S.E.$_{est}$ = .60769, F-Change = 4.804, p = .030

* p value ≤ .05
*** p value ≤ .001

Discussion

The findings of this study revealed that nursing students exhibited moderate levels of high-sodium food consumption behavior. It was also found that accessibility to high-sodium food sources and attitudes toward high-sodium food consumption significantly predicted high-sodium food consumption behavior among nursing students. These two factors accounted for 25.6% of the variance in consumption behavior, indicating their critical role in influencing dietary choices.

High-sodium food consumption behavior

Nursing students demonstrated a moderate level of high-sodium food consumption behavior, as indicated by the findings (Mean = 3.14, S.D. = 0.70). A significant reason for this result may stem from their eating habits, with a preference for salty flavors over others. This preference fosters a habitual inclination to choose high-sodium foods, even though the students possess substantial knowledge about the risks of sodium-rich foods. Furthermore, most students reside in dormitories, where breakfast and lunch are typically sourced from meals sold within the college premises. For dinner, they often rely on made-to-order meals, online food orders, or ready-to-eat options, particularly instant noodles. Additionally, during clinical practice periods, students often prioritize convenience and speed when selecting their meals, frequently choosing food from nearby canteens or convenience stores. The meals in these settings frequently involve high-sodium

seasonings or are processed foods that use sodium as an essential ingredient. Such behaviors likely contribute to the observed moderate level of high-sodium food consumption. This result aligns with previous studies that identified moderate sodium intake behaviors among nursing students (Piaseu et al., 2020; Khamdo et al., 2023). However, this finding is inconsistent with the study by Biswas et al. (2020), which found that only 29.99% of students engaged in behaviors to avoid processed foods in order to reduce salt consumption, and that the median salt intake from adding salt during meals was 3 grams per day. In addition, Wu et.al (2023) studied association between eating habits and sodium intake among Chinese University Students. The result showed that excluding cooking salt and high-sodium seasonings, the daily dietary sodium intake among college students in Changsha, Hunan Province, was 1183.74 mg/day which defined as "high sodium intake".

Accessibility to high-sodium food sources

Accessibility to high-sodium food sources was the strongest predictor, with a moderate positive correlation to consumption behavior ($r_{x3}y$ = 0.477, p < 0.01). This means the more the nursing students easily access to high-sodium food sources, the more they have high-sodium food. This finding aligns with previous studies showing that the availability of certain foods strongly influences dietary patterns. For instance, Story et al. (2008) emphasized that environments abundant in high-sodium foods, such as fast food outlets

and convenience stores, contribute to unhealthy eating practices. Additionally, Laska et al. (2010) found that proximity to high-sodium food sources increased the frequency of their consumption, particularly among college students who may rely on convenience due to time and budget constraints. Recent evidence suggests that environmental accessibility to high-sodium foods strongly influences dietary patterns. For example, interventions that increase the availability of low-sodium alternatives in community and workplace settings have shown to reduce sodium intake among patrons, demonstrating the impact of food environments on behavior (CDC, 2023). Similarly, access to sodium-rich foods often correlates with increased consumption, highlighting the role of food availability in dietary choices.

Attitudes toward high-sodium consumption

Recent research highlights a negative correlation between attitudes toward high-sodium consumption and high-sodium consumption behavior ($r_{x4}y$ = -0.275, $p < 0.01$). This suggests that individuals with more negative attitudes toward high-sodium foods are less likely to consume them. This can be attributed to the fact that nursing students acquire knowledge and awareness about nutrition during their education, including the topic of sodium intake. As a result, nursing students generally exhibit moderate attitudes toward sodium consumption. They believe that choosing bland or unseasoned foods, though less flavorful, is better for their health due to their lower sodium content. Moreover, students believe that understanding the health impacts of high sodium intake leads individuals to adopt better dietary behaviors. These findings align with the research by Satsawatchawanwong (2023), which found a slightly negative correlation between attitudes toward sodium-rich foods and sodium consumption behaviors among the people e in Tha Tako District, Nakhon Sawan Province. (r = -0.058, p = 0.025). However, the results differ from the study by Khamdo et al. (2023), which found no relationship between attitudes

toward sodium consumption and sodium consumption behaviors among nursing students. Similarly, the study by Kanharura and Chupanit (2023) reported no correlation between attitudes toward sodium consumption and high-sodium dietary habits among adults in Mueang District, Udon Thani Province.

Knowledge about high-sodium food consumption

Knowledge about high-sodium food consumption had no significantly correlation to high-sodium food consumption behavior ($r_{x1}y$ = -.125, $p < 0.01$). This could be explained by the fact that nursing students are predominantly in their adolescent or young adult years, a period when overall health is generally strong. This may lead to a lack of full awareness of the negative health consequences associated with excessive sodium intake. Moreover, their preference for flavorful foods, especially those with a salty taste, might explain why a high level of knowledge about high-sodium foods consumption does not significantly influence their sodium consumption behaviors. The assertion that knowledge does not correlate with high sodium consumption among nursing students is supported by recent studies. A study conducted among nursing students revealed that although their knowledge about sodium was significantly improved after participating in a sodium reduction program, their actual sodium consumption behaviors remained at a moderate level, indicating a lack of correlation between knowledge and behavior change (Piaseu et al., 2020). Furthermore, the study by Biswas et al. (2020) which demonstrated that majority of the health science undergraduate students (93.20%) had knowledge regarding the adverse effect of excess salt on health, but only some of them avoided process food to restrict their salt intake. Additionally, a comprehensive analysis reported no direct correlation between salt intake and either knowledge or behavior scores among different cohorts of university students, reinforcing the idea that increased knowledge alone is

insufficient to reduce high sodium consumption (Marakis et.al, 2023).

Information perception on high-sodium food consumption

Information perception on high-sodium food consumption was not significantly predicted on consumption behavior (r_x2y = .229, p > 0.01). This results may be attributed to the fact that the nursing students receives information about high-sodium foods through various channels, including academic courses they learn, and digital media platform that provide abundant information. Consequently, their information perception of high-sodium food consumption is relatively high. However, nursing students may prioritize taste and flavor when selecting foods, with a strong preference for salty flavors (Kourouniotis et al., 2016). Additionally, the availability of food sources such as shopping malls and convenience stores, which frequently stock high-sodium products near colleges and dormitories, facilitates easy access to these foods.

As a result, despite being informed about high-sodium foods, nursing students continue to consume high-sodium food. This indicates that access to information on high-sodium foods does not significantly influence students' dietary behaviors regarding sodium consumption. This result is in agreement with the qualitative research conducted by Ruaisungnoen et al. (2018), which found that despite chronic disease patients possessing awareness of high-sodium food information, they continued to consume such foods. This behavior was attributed to factors such as a preference for salty flavors—perceiving unsalted foods as bland—and the influence of community eating practices. Nevertheless, the findings of this study diverge from those of Kanharura & Chupanit (2023), which reported that information perception significantly affects high-sodium food consumption. Similarly, they are inconsistent with the research by Youngiam et al. (2024), which

identified perception as a significant determinant of sodium-rich dietary behaviors.

Conclusion

Nursing students exhibited moderate levels of high-sodium food consumption (Mean = 3.14, S.D. = 0.699). Two key factors influencing high-sodium food consumption were identified: accessibility to high-sodium food sources and attitudes toward high-sodium consumption. Based on the findings, educational institutions should manage the environment to promote the consumption of low-sodium foods and enhance awareness of the importance of reducing sodium intake. These efforts aim to decrease the sodium content in students' diets, thereby helping to mitigate potential health issues associated with high sodium consumption.

Research Implication

1. Nursing college administrators should promote behavioral interventions to encourage nursing students to make healthier choices regarding sodium consumption.

2. Nursing college administrators should guide the planning and implementation of initiatives aimed at fostering healthier food choices within the nursing college.

Suggestions for the further study

1. Research to develop a model or program for sodium consumption among nursing students is recommended to be conducted promptly.

2. A qualitative study to gain in-depth insights into high-sodium food consumption behaviors among nursing students is advised to be undertaken as a priority.

Acknowledgements

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