



Influencing the Utilization of Dental Health Services at Rengas Pulau Public Health Center

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<p>Track Record Article</p> <p>Accepted: 25 July 2024 Revised: 31 August 2024 Published: 30 September 2024</p> <p>How to cite : Ginting, C. N., Nadapdap, T. P., & Alfida, S. (2024). Influencing the Utilization of Dental Health Services at Rengas Pulau Public Health Center. <i>Contagion: Scientific Periodical Journal of Public Health and Coastal Health</i>, 6(2), 1154–1169.</p>	<p style="text-align: center;">Abstract</p> <p><i>Dental health is one of the factors supporting the healthy paradigm and is a national development strategy to achieve health development. Utilization of dental and oral public health services is crucial to maintaining dental and oral health. However, the low utilization of these health services remains a problem. This study aims to analyze the factors influencing the utilization of dental health services at Rengas Pulau Public Health Center. This type of research is an observational analytic study using a cross-sectional design. The study was conducted at Rengas Pulau Public Health Center from September 2023 to December 2023. The study population included all patients who visited Rengas Pulau Public Health Center more than once in 2023, totaling 151 patients. The research sample consisted of 60 people. The sampling technique used was accidental sampling. Data collection procedures were conducted through questionnaire interviews. Data analysis was performed using SPSS software, bivariate analysis using the chi-square test and multivariate analysis using multiple logistic regression with a significance level of 95% ($\alpha=0.05$). The results showed that the factors influencing the utilization of dental health services at Rengas Pulau Public Health Center were distance from residence ($ExpB= 3.527$; $p\text{-value}=0.003$), the distance from the residence to the healthcare facility results in underutilization of dental health services; knowledge ($ExpB= 3.158$; $p\text{-value}=0.005$), people with good knowledge are more likely to utilize dental and oral health services because they understand that maintaining dental and oral health contributes to overall quality of life; and attitude ($ExpB= 15.619$; $p\text{-value}=0.001$), patients with a positive attitude will believe that undergoing an examination will significantly improve their dental and oral health, with the most dominant factor being patient attitude. It is recommended that Public Health Center improve health services by conducting socialization or outreach related to the available health services at the center.</i></p> <p>Keyword: Dental, Services, Utilization</p>
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INTRODUCTION

Dental health are crucial factors supporting the healthy paradigm and serve as a national development strategy for achieving overall health development (Fisher et al., 2023). However, dental and oral health are often neglected by many people, even though the mouth and teeth are the ‘*port of entry*’ for bacteria and germs that can affect other organs (Susilawati & Damayanti, 2020; Abebe, 2021).

The dental and oral health of the Indonesian population still requires attention from healthcare professionals, both doctors and dental nurses. The 2018 Basic Health Research, reported that the national prevalence of dental and oral health problems was 57.6%, but only 10.2% received care from healthcare professionals (Kementrian Kesehatan Republik Indonesia, 2019). One of the causes of the high rate of dental and oral health issues is the low

percentage of adult visits to dentists in Indonesia, which is less than 7%, and only about 4% for children. In fact, 72.1% of the Indonesian population has cavities, and 46.5% of them do not treat their cavities. Patients' visits to public health centers are typically in advanced stages of illness, indicating that the general public's awareness of seeking early treatment is still lacking. People tend to visit only when they already have a toothache (Kementrian Kesehatan Republik Indonesia, 2023).

According to World Health Organization (2023), at least half of the world's population does not have access to adequate healthcare services. The issue of healthcare accessibility is particularly prevalent in developing countries, where 56% of people living in rural areas worldwide lack access to essential healthcare services (Chowdhury & Ravi, 2022).

The study by Susilawati & Damayanti (2020), indicates a significant relationship between the value of dental health and the decision to utilize dental and oral health services. Research by Jayanti et al. (2021), states that low utilization of dental health services is influenced by individual characteristics and perceptions regarding their dental health. According to Salpiana et al. (2023), the low utilization of health services, such as public health centers, is often associated with factors like limited knowledge, long distances to health facilities from residences (either in terms of distance or lack of transportation), high costs, and unsatisfactory service. The findings of Bariyah et al. (2024), show a relationship between knowledge, attitudes, education, accessibility, and the role of health workers with the utilization of dental and oral health services among patients at RSJD Lampung Province. Mashuda et al. (2024), report that health-illness perception, insurance membership, and the availability of facilities and infrastructure are significantly associated with service utilization.

The utilization of healthcare services remains a significant issue. Several previous studies have identified various factors affecting the use of healthcare facilities, including regional differences, distance from residence, economic status, education level, age groups, and gender (Wulandari et al., 2023; Ipa et al., 2023; Suharmiati et al., 2023; Laksono et al., 2023)

The utilization of dental and oral health services refers to the use of dental and oral healthcare facilities and programs aimed at individuals or groups, with the goal of maintaining dental and oral health (Rout et al., 2021; Radiani et al., 2021). Community utilization of dental and oral health services is crucial for maintaining dental and oral health. Dental check-ups are also essential for oral health, as they not only address dental issues but also impact overall oral health, potentially leading to dangerous diseases that, if left untreated, could be life-threatening (Nengsi, 2020).

Interviews with patients Rengas Pulau Public Health Center who used dental services more than once indicated that they were interested in continuing to use the services due to the proximity of the health center to their homes, the high quality of service provided by the staff, and the comprehensive facilities available at Rengas Pulau Public Health Center. The utilization of healthcare facilities often refers to individuals ability to seek healthcare services according to their needs. This study aims to analyze the factors influencing the utilization of dental health services at Rengas Pulau Public Health Center in 2024.

METHODS

This study is an observational analytic research using a cross-sectional study design. The research was conducted at Rengas Pulau Public Health Center located at Marelan V Stret, Rengas Pulau Village, Medan Marelan District, Medan City, from September 2023 to December 2023. The study population included all patients who visited Rengas Pulau Public Health Center more than once in 2023, totaling 151 patients. The sample size was calculated using the Slovin formula, resulting in a sample of 60 participants.

The sampling technique used was accidental sampling, where respondents were selected based on chance encounters with the researcher, provided they met the study criteria. The inclusion criteria were: patients willing to be respondents, patients able to communicate effectively, adult patients aged 18 years or older with early caries, and patients who have used the healthcare services at the public health center more than once. The exclusion criteria were: patients unwilling to be respondents, patients unable to communicate effectively, children under 18 years old with early caries, and patients who have used the healthcare services at the public health center only once. Data collection was performed through questionnaire interviews. The questionnaire for the knowledge variable consisted of 10 questions with three response options: a, b, and c. The attitude variable was assessed with 10 questions, using a Likert scale with four points: SD (Strongly Disagree) scored as 1, D (Disagree) scored as 2, A (Agree) scored as 3, and SA (Strongly Agree) scored as 4.

The research variables include the dependent variable which is the utilization of dental health services at the public health center, measured on an ordinal scale (categorical data). The independent variables are age, gender, education level, distance from residence, knowledge, and attitude, all measured on an ordinal scale (categorical data). Data analysis was performed using SPSS software version 27. The data analysis involved three steps: first, univariate analysis using frequency counts; second, bivariate analysis using the chi-square test; and third,

multivariate analysis using multiple logistic regression with a significance level of 95% ($\alpha = 0.05$).

The principal researcher received an ethical approval certificate from the Health Research Ethics Committee of Universitas Prima Indonesia (No:043/KEPK/UNPRI/VI/ 2024). Additionally, permission was obtained from the academic administrator of the institution and relevant authorities prior to data collection, with the aim of securing informed consent from respondents before distributing the questionnaire.

RESULTS

Characteristics of patient include age, gender, education, and distance from residence. The frequency distribution of patient characteristics for those visiting Rengas Pulau Public Health Center is shown in the graph below:

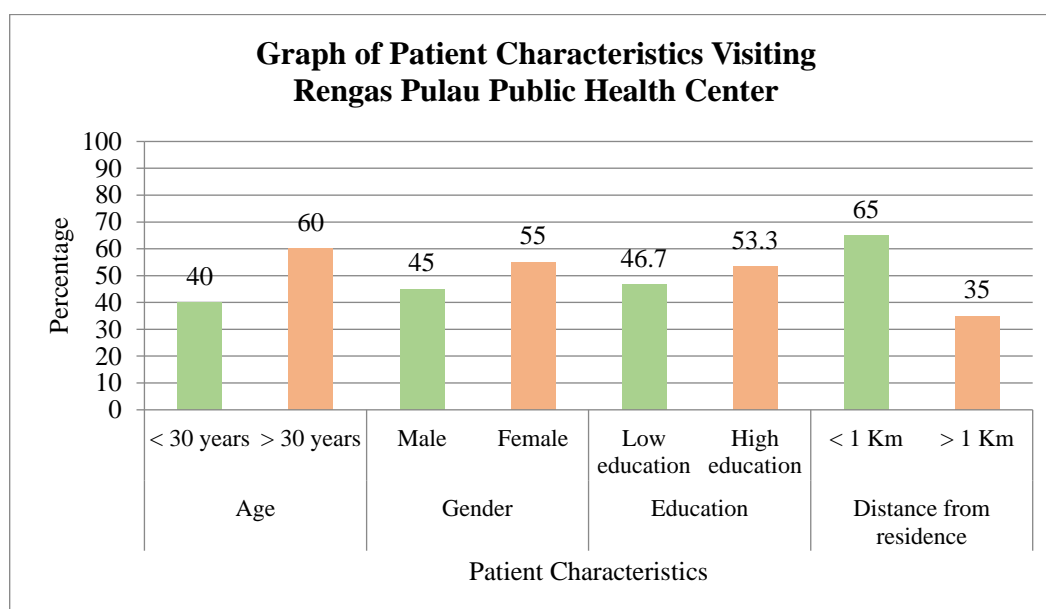


Figure 1. Graph of Patient Characteristics Visiting Rengas Pulau Public Health Center

Based on the graph above, it is known that the majority of patients visiting Rengas Pulau Public Health Center are over 30 years totaling 36 patients (60.0%). Female patients totaling 33 patients (55.0%), high school-educated patients totaling 28 patients (46.7%), patients with employment status totaling 34 patients (56.7%), and patients living less than 1 km from the center totaling 39 patients (65.0%).

The frequency distribution of patients knowledge visiting Rengas Pulau Public Health Center is shown in the graph below:

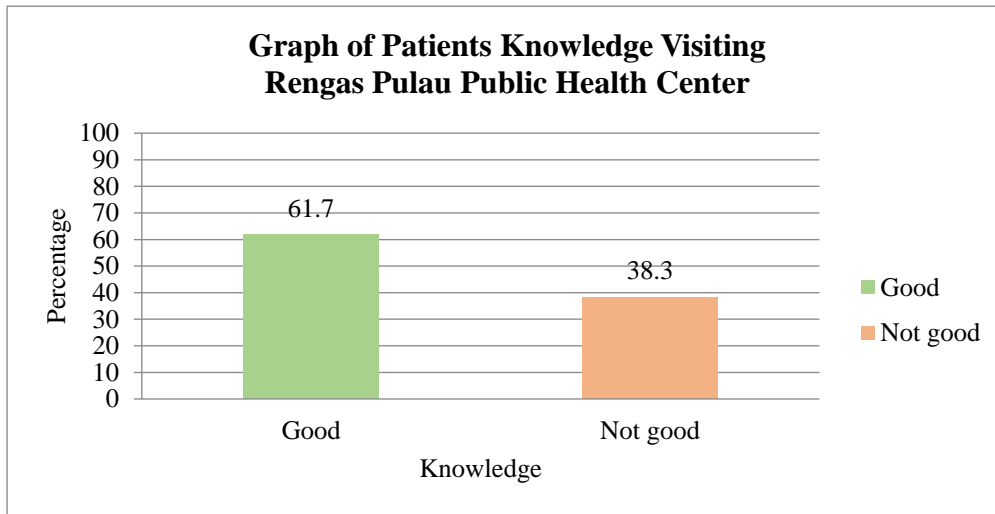


Figure 2. Graph of Patients Knowledge Visiting Rengas Pulau Public Health Center

Based on the graph above, the majority of patients visiting Rengas Pulau Public Health Center have good knowledge, totaling 37 patients (61.7%), while the remaining 23 patients (38.3%) have not good knowledge.

The frequency distribution of patients attitudes visiting Rengas Pulau Public Health Center is shown in the graph below:

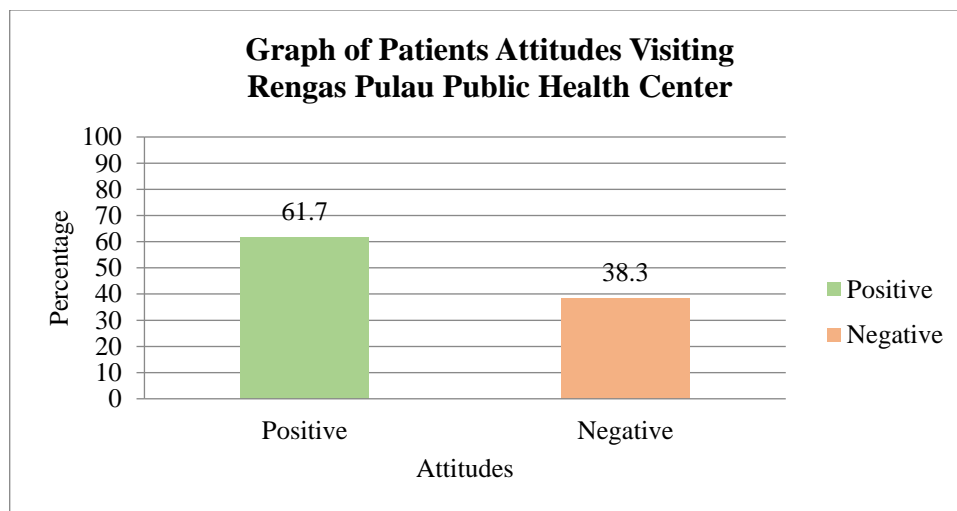


Figure 3. Graph of Patients Attitudes Visiting Rengas Pulau Public Health Center

Based on the graph above, the majority of patients visiting Rengas Pulau Public Health Center have a positive attitude, totaling 37 patients (61.7%), while the remaining 23 patients (38.3%) have a negative attitude.

The frequency distribution of dental health service utilization at Rengas Pulau Public Health Center is shown in the graph below:

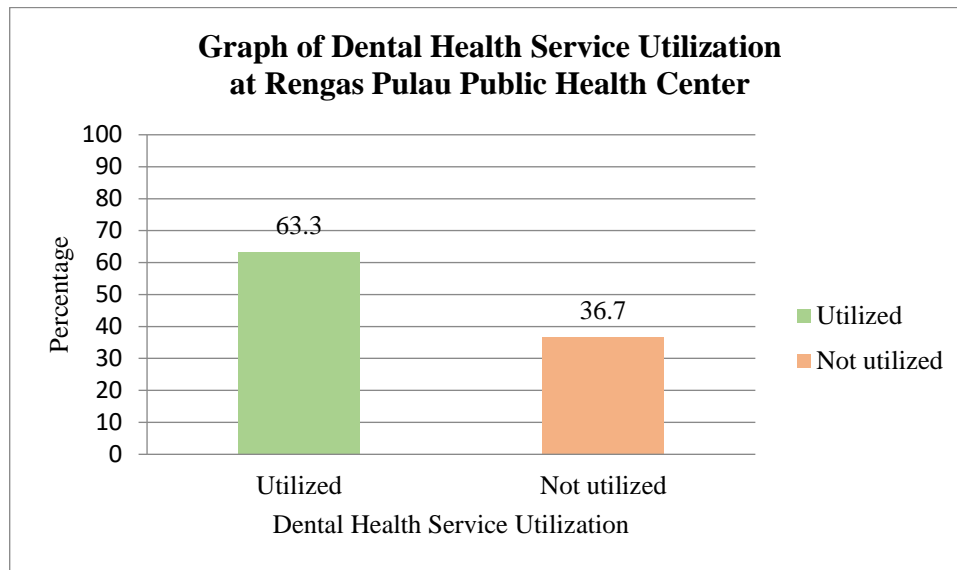


Figure 4. Graph of Dental Health Service Utilization at Rengas Pulau Public Health Center

Based on the graph above, the majority of dental health service utilization at Rengas Pulau Public Health Center involves patients who utilized the services, totaling 38 patients (63.3%), while the remaining 22 patients (36.7%) did not utilize the services.

The results of the analysis of the relationship between patient characteristics and the utilization of dental health services at Rengas Pulau Public Health Center can be seen in the table below:

Table 1. Relationship Between Patient Characteristics and Utilization of Dental Health Services at Rengas Pulau Public Health Center

Patient Characteristics	Dental Health Service Utilization				Total		P value
	Utilized		Not utilized		N	%	
	n	%	n	%			
Age							
< 30 years	13	21.7	11	18.3	24	40.0	0.353
> 30 years	25	41.7	11	18.3	36	60.0	
Gender							
Male	17	28.3	10	16.7	27	45.0	1.0
Female	21	35.0	12	20.0	33	55.0	
Education							
Low education	24	40.0	4	6.7	28	46.7	0.002
High education	14	23.3	18	30.0	32	53.3	
Distance from residence							
< 1 Km	36	60.0	3	5.0	39	65.0	0.001
≥ 1 Km	2	3.3	19	31.7	21	35.0	

Based on Table 1, it is evident that the relationship between patient characteristics and the utilization of dental health services at Rengas Pulau Public Health Center involves

education and distance from residence. The relationship between education and dental health service utilization at Rengas Pulau Public Health Center shows that out of 28 patients (46.7%) with low education, 24 patients (40.0%) utilized dental health services. Meanwhile, out of 32 patients (53.3%) with higher education, 14 patients (23.3%) utilized dental health services. Statistical analysis yielded a p-value of 0.002 ($p\text{-value} < 0.05$), indicating a significant relationship between education and the utilization of dental health services at Rengas Pulau Public Health Center.

The relationship between distance from residence and dental health service utilization at Rengas Pulau Public Health Center shows that out of 39 patients (65.0%) living within 1 km, 36 (60.0%) utilized dental health services. In contrast, out of 21 patients (35.0%) living more than 1 km away, only 2 (3.3%) utilized dental health services. Statistical analysis yielded a p-value of 0.001 ($p\text{-value} < 0.05$), indicating a significant relationship between distance from residence and the utilization of dental health services at Rengas Pulau Public Health Center.

The results of the analysis of the relationship between patient knowledge and attitudes and the utilization of health services at Rengas Pulau Public Health Center can be seen in the table below:

Table 2. Relationship Between Patient Knowledge and Utilization of Health Services at Rengas Pulau Public Health Center

	Dental Health Service Utilization				Total		<i>P value</i>
	Utilized		Not utilized		N	%	
	n	%	n	%			
Knowledge							
Good	35	58.3	2	3.3	37	61.7	0.001
Not good	3	5.0	20	33.3	23	38.3	
Attitudes							
Positive	36	60.0	1	1.7	37	61.7	0.001
Negative	2	3.3	21	35.0	23	38.3	

Based on table 2, the relationship between knowledge and the utilization of dental health services at Rengas Pulau Public Health Center is evident. Out of 37 patients (61.7%) with good knowledge, 35 (58.3%) utilized dental health services. Conversely, out of 23 patients (38.3%) with not good knowledge, only 3 (5.0%) utilized dental health services. Statistical analysis yielded a p-value of 0.001 ($p\text{-value} < 0.05$), indicating a significant relationship between knowledge and the utilization of dental health services at Rengas Pulau Public Health Center.

The relationship between attitude and the utilization of dental health services at Rengas Pulau Public Health Center is evident. Out of 37 patients (61.7%) with a positive attitude, 36

patients (60.0%) utilized dental health services. Conversely, out of 23 patients (38.3%) with a negative attitude, only 2 patients (3.3%) utilized dental health services. Statistical analysis yielded a p-value of 0.001 (p-value < 0.05), indicating a significant relationship between attitude and the utilization of dental health services at Rengas Pulau Public Health Center.

The factors influencing the utilization of dental health services at Rengas Pulau Public Health Center were analyzed using multivariate analysis with multiple logistic regression. Variables included in the multiple logistic regression model were those with a p-value of 0.25 or less in the bivariate analysis. All variables included in the final multivariate model can be seen in the following table:

Table 3. Factors Influencing the Utilization of Dental Health Services at Rengas Pulau Public Health Center

Variable	B	Exp.B	95% CI for Exp B		Pvalue
			Lower	Upper	
Education	0.297	0.734	0.179	2.734	0.101
Distance from residence	1.227	3.527	1.244	20.317	0.003
Knowledge	1.469	3.158	1.115	19.359	0.005
Attitude	2.669	15.619	3.479	84.919	0.001

Based on the results in table 3, the analysis shows that three independent variables influence the utilization of dental health services at Rengas Pulau Public Health Center: distance from residence, knowledge, and attitude. The most dominant factor affecting the utilization of dental health services at Rengas Pulau Public Health Center is attitude, with an influence of 15.619. This means that patients with a positive attitude are 15 times more likely to utilize dental health services at Rengas Pulau Public Health Center compared to those with a negative attitude.

DISCUSSION

The research results in Table 1 show that the most dominant age of respondents is respondents aged < 21 years, namely 57 respondents (71.2%). According to the Indonesian Internet Service Users Association, Internet users in Indonesia come from the young age group, aged 19 – 34 years, with around 49.52% of total users, and students are the largest population in that age range.

Based on the research results in Table 1, it is known that there were 13 male respondents (16.2%) and 67 female respondents (83.8%). There were more women in this study because female students dominated the Faculty of Public Health at Universitas Sumatera Utara. Hence, the opportunity to get a sample of women was greater than that of men. Based on an initial survey conducted by researchers, women are more likely to spend time using social media than

men, who prefer to gather with friends outside the home, so there are more female respondents than male respondents.

There are two study programs at the Faculty of Public Health at Universitas Sumatera Utara, namely the Bachelor of Public Health and Bachelor of Nutrition study programs. The research results in Table 3 show that there were 79 respondents with a Bachelor of Public Health study program (98.8%) and 1 respondent with a Bachelor of Nutrition study program (1.2%). There were fewer respondents in the nutrition study program because the nutrition study program itself is a new study program at the Faculty of Public Health in Universitas Sumatera Utara.

Social media influences various societies in allowing individuals to make their views and lives public) (Rajeev et al., 2015). Social media influence teenagers' social lifestyles, sometimes the impact can be negative (Shabir et al., 2017). Based on the results in Table 2 show that students from the Faculty of Public Health, Universitas Sumatera Utara, were included in the high social media influence category as many as 32 respondents (40%), and those included in the low social media influence category were 48 respondents (60%).

These results show that respondents are respondents in the low social media influence category, followed by respondents in the high social media influence category. Eating patterns is a method and effort to regulate the type and amount of food consumed to maintain health, ensure adequate nutritional intake, and prevent or accelerate disease onset (Amaliyah et al., 2021).

Healthy eating patterns must contain carbohydrates, proteins, vitamins, fats and oils that suit the body's needs. Apart from that, the recommended eating pattern is three times a day. Snacks are also needed and consumed in the morning and afternoon when leading food is insufficient. Even though they are needed, snacks should not be consumed too much because they can interfere with appetite, which decreases when consuming the main meal.

The research results in Table 2 show that the distribution of eating patterns in the wrong category among students at the Faculty of Public Health, Universitas Sumatera Utara, was 46 respondents (57.5%). In contrast, the distribution of eating patterns in the excellent category among students at the Faculty of Public Health, Universitas Sumatera Utara, was 34 respondents (42.5%).

Healthy food has portions that must correspond to the size the body will consume (Leppänen et al., 2022). Individuals with an ideal body weight do not need to reduce or increase their food portions they just consume healthy foods according to their portions (Rodgers et al.,

2022). If an individual is overweight, the portion of healthy food consumed must be reduced (Jane et al., 2017).

Research in 2019 conducted on teenagers, obtained data showing that 68.75% of teenagers have unhealthy eating habits, which are described as frequently buying and consuming snacks such as chips, consuming fast food soft drinks and rarely consuming vegetables and fruit (Sholikhah, 2019)

Based on the data in Table 3, the results show that respondents in the age category < 21 years, as many as 33 respondents (57.9%) have a poor eating pattern, and 24 respondents (42.1%) have a good eating pattern. In the age category ≥ 21 years, 13 respondents (56.5%) had a poor eating pattern, and 10 respondents (43.5%) had a good eating pattern.

Based on the results of data analysis using the chi-square test, the $p\text{-value} = 0.910 > \alpha = 0.05$, meaning that H_a is rejected and H_0 is accepted, it can be concluded that there is no correlation between the age of the respondent and the eating patterns of students at the Faculty of Public Health in Universitas Sumatera Utara 2023.

There is no correlation between the gender of respondents and the eating patterns of students because dietary choices are primarily influenced by personal preferences, lifestyle, and individual health goals rather than gender alone. While societal norms might suggest different eating habits between genders, many studies indicate that both male and female students can exhibit similar dietary behaviours based on factors such as cultural background, social influences, and access to food. Additionally, personal values and health consciousness often drive dietary decisions more significantly than gender, leading to diverse eating patterns among all students (Trevino et al., 2021).

Based on the data in Table 5, the results show that of respondents in the Bachelor of Public Health study program category, 46 respondents (58.2%) had a poor eating pattern, and 33 respondents (41.8%) had a good eating pattern. In the S1 Nutrition category, 0 respondents (0%) had a poor eating pattern, and 1 respondent (100.0%) had a good one. Based on the results of data analysis using the chi-square test, the $p\text{-value} = 0.242 > \alpha = 0.05$, meaning that H_a is rejected and H_0 is accepted, it can be concluded that there is no correlation between the respondent's study program and the eating patterns of students at the Faculty of Public Health in Universitas Sumatera Utara 2023.

There is no correlation between respondents' study programs and the eating patterns of students because dietary choices are primarily shaped by individual preferences, lifestyle, and social influences rather than academic discipline. While some study programs may emphasize nutrition, students often prioritize convenience, peer behaviour, and cultural factors when

making food choices. Additionally, social influences and peer behaviours can play a significant role, leading to similar eating patterns across different academic disciplines (Steinsbekk et al., 2021).

Based on the research results in Table 6, it was found that respondents with high social media influence in the lousy eating patterns category were 25 respondents (78.1%). In the excellent eating patterns category, there were 7 respondents (21.9%). Meanwhile, there were 21 respondents with low social media influence in the lousy eating patterns category (43.8%) and 27 in the excellent eating patterns category (56.2%).

Based on the results of data analysis using the chi-square test, the $p\text{-value} = 0.002 < \alpha = 0.05$, meaning that H_a is accepted and H_0 is rejected, it can be concluded that there is a correlation between the influence of media and eating patterns of students at the Faculty of Public Health in Universitas Sumatera Utara 2023.

The study has some limitations, such as the sample diversity limitation. If the sample lacks diversity in demographics such as age, gender, socioeconomic status, or geographic location, the results may not apply to all groups. For example, dietary behaviours and social media use may vary significantly between urban and rural populations or among different cultural groups. There is a significant correlation between adolescents' social media behavior and their eating patterns. Social media platforms play a crucial role in shaping how adolescents perceive food and nutrition, often promoting trends, ideals, and lifestyles that directly influence their dietary choices. The visually driven nature of these platforms, emphasizing aesthetically pleasing food content, encourages adolescents to engage with and replicate popular food trends, such as specific diets, trendy ingredients, or viral recipes.

Social media also promotes food products to users (Modrzejewska et al., 2022). The advertisements that influencers or YouTubers present on social media show specific food products and recommend their purchase, and they are not always healthy (Packer et al., 2022). These are sponsored advertisements paid for by significant food concerns. Research to date provides sufficient evidence of the effectiveness of influencer marketing on consumption, primarily among adolescents (Lou et al., 2019).

The influence of individuals focused on selling potentially unhealthy products to children and adolescents is often underestimated. Influencers carefully craft their online images, promoting specific products and brands more for self-presentation than genuine use. This can create misleading perceptions about what is desirable or healthy, potentially shaping misguided attitudes toward health among young audiences (Boyd et al., 2007).

Taking these actions is crucial due to phenomena such as the "echo chamber," where online content is personalized to fit individual user profiles, leading to exposure only to information that aligns with existing interests and views. This selective exposure can reinforce pre-existing beliefs and limit the diversity of perspectives, particularly concerning for children and adolescents still developing critical thinking skills. Additionally, the trend of "mukbang," popular on platforms like TikTok and YouTube, involves hosts consuming various foods while engaging with their audience through multimodal communication. While entertaining, mukbang can glamorize excessive eating and negatively influence body image perceptions. Together, these trends significantly impact young viewers' awareness, body image, and eating habits, underscoring the need for proactive measures to mitigate their effects. (Cinelli et al., 2021).

Moreover, social media fosters a sense of community among users, particularly within age groups that are highly engaged online (de Vries et al., 2019). Adolescents often seek validation and connection through likes, shares, and comments, which can lead to a desire to conform to the eating habits showcased by peers or influencers (Coates et al., 2019). This peer influence can create pressure to adopt specific diets or food choices that may not align with their preferences or nutritional needs, leading to positive and negative dietary behaviors (Scapaticci et al., 2022).

In summary, the interplay between adolescents' social media use and eating patterns is complex and multifaceted. It underscores the need for greater awareness and media literacy regarding food content online. Promoting healthy eating habits and critical engagement with social media can help adolescents make informed dietary choices that support their physical and mental well-being (Merino et al., 2024).

Public health policies and interventions play a crucial role in addressing the unhealthy eating patterns often observed among adolescents. Imagine a school where students learn not just about math and science but also about the importance of nutrition. Through engaging in educational programs, they become empowered to make informed dietary choices and understand the benefits of a balanced diet.

At the same time, the impact of regulations on marketing unhealthy foods should be considered. By limiting advertisements targeting adolescents, public health policies can reduce their exposure to poor dietary options, helping to reshape their perceptions of what constitutes "normal" eating.

Finally, addressing the mental health aspects related to eating behaviours is essential. By providing support and resources to tackle issues like body image and eating disorders,

public health initiatives can help adolescents develop a healthier relationship with food. Public health policies can create a nurturing environment that promotes healthier eating among adolescents through education, access, regulation, community involvement, and mental health support. This holistic approach leads to improved dietary habits and paves the way for better public health outcomes in the long run (Hadi et al., 2023).

CONCLUSIONS

Social media influence at the Faculty of Public Health in Universitas Sumatera Utara is dominated by the low category, namely 48 respondents (60%). Furthermore, most students at the Faculty of Public Health in Universitas Sumatera Utara have poor eating patterns, namely 46 respondents (57.5%). There is no correlation between individual characteristics and the eating patterns of students at the Faculty of Public Health, Universitas Sumatera Utara, and there is a correlation between the influence of social media and the eating patterns of students at the Faculty of Public Health, Universitas Sumatera Utara in 2023.

To improve eating habits among students at the Faculty of Public Health at Universitas Sumatera Utara, it is essential to implement workshops on assessing nutritional information from social media, launch interactive healthy eating campaigns, and establish peer support groups for sharing recipes. Additionally, providing nutrition counselling, integrating nutrition education into the curriculum, and collaborating with reputable health influencers can enhance positive dietary choices. A feedback mechanism will refine these initiatives to meet students' needs better.

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