

Relationship between Knowledge Level of Clean and Healthy Living Behaviour (PHBS) with Dental and Oral Hygiene at the Quranic House Bustanul Mustafa Lhokseumawe

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Abstrak

Kesehatan gigi dan mulut adalah kondisi sehat jaringan keras dan lunak pada gigi serta elemen terkait di dalam rongga mulut. Penelitian ini bertujuan untuk menganalisis hubungan antara tingkat pengetahuan mengenai Perilaku Hidup Bersih dan Sehat (PHBS) dengan kebersihan gigi dan mulut pada siswa di Rumah Quran Bustanul Mustafa Lhokseumawe. Penelitian ini menggunakan desain deskriptif korelasi dengan pendekatan cross-sectional. Sampel terdiri atas 62 siswa yang dipilih menggunakan teknik purposive sampling. Instrumen yang digunakan meliputi kuesioner untuk mengukur tingkat pengetahuan PHBS, yang telah diuji validitas dan reliabilitasnya, serta lembar observasi kebersihan gigi dan mulut menggunakan indeks OHI-S (Oral Hygiene Index-Simplified). Analisis data dilakukan menggunakan uji korelasi Spearman dengan tingkat signifikansi 0,05. Hasil penelitian menunjukkan bahwa terdapat hubungan yang signifikan antara tingkat pengetahuan PHBS dan kebersihan gigi dan mulut dengan nilai $p = 0,000 (<0,05)$. Nilai korelasi sebesar $-0,654$ menunjukkan hubungan yang kuat dan negatif, di mana semakin tinggi tingkat pengetahuan siswa, semakin baik tingkat kebersihan gigi dan mulut mereka. Distribusi tingkat pengetahuan menunjukkan 48,38% (30 siswa) memiliki pengetahuan baik, 32,26% (20 siswa) memiliki pengetahuan cukup, dan 19,36% (12 siswa) memiliki pengetahuan kurang. Sementara itu, kebersihan gigi dan mulut siswa menunjukkan bahwa 29,04% (18 siswa) memiliki kebersihan baik, 38,70% (24 siswa) cukup, dan 32,26% (20 siswa) kurang. Kesimpulannya, terdapat hubungan yang signifikan antara tingkat pengetahuan PHBS dengan kebersihan gigi dan mulut pada siswa di Rumah Quran Bustanul Mustafa Lhokseumawe. Hasil ini menekankan pentingnya edukasi PHBS untuk meningkatkan kesehatan gigi dan mulut anak-anak.

Kata Kunci: pencegahan karies; promosi kesehatan; kebersihan mulut; perilaku kesehatan masyarakat

Abstract

Dental and oral health is the healthy condition of the hard and soft tissues of the teeth and related elements in the oral cavity. This study aims to analyze the relationship between the level of knowledge regarding Clean and Healthy Living Behavior (PHBS) and dental and oral hygiene among students at Rumah Quran Bustanul Mustafa Lhokseumawe. This research uses a descriptive correlation design with a cross-sectional approach. The sample consisted of 62 students selected using purposive sampling technique. The instruments used include a questionnaire to measure the level of PHBS knowledge, which has been tested for validity and reliability, as well as a dental and oral hygiene observation sheet using the OHI-S (Oral Hygiene Index-Simplified) index. Data analysis was carried out using the Spearman correlation test with a significance level of 0.05. The results of the study showed that there was a significant relationship between the level of PHBS knowledge and oral hygiene with a value of $p = 0.000 (<0.05)$. The correlation value of -0.654 shows a strong and negative relationship, where the higher the student's level of knowledge, the

better their level of dental and oral hygiene. The distribution of knowledge levels shows that 48.38% (30 students) have good knowledge, 32.26% (20 students) have sufficient knowledge, and 19.36% (12 students) have poor knowledge. Meanwhile, students' oral hygiene showed that 29.04% (18 students) had good hygiene, 38.70% (24 students) had sufficient hygiene, and 32.26% (20 students) had poor hygiene. In conclusion, there is a significant relationship between the level of PHBS knowledge and dental and oral hygiene among students at Rumah Quran Bustanul Mustafa Lhokseumawe. These results emphasize the importance of PHBS education to improve children's dental and oral health.

Keywords: caries prevention; health promotion; oral hygiene; public health behavior

Introduction

Oral health is an integral part of general health and must receive adequate attention. Oral health refers to the healthy condition of the hard and soft tissues of the teeth and related structures in the oral cavity, enabling individuals to eat, speak, and interact socially without dysfunction, aesthetic disturbances, or discomfort caused by diseases, malocclusion, or tooth loss. Good oral health contributes to an individual's ability to lead socially and economically productive lives (1). However, many people neglect oral hygiene, leading to common issues such as cavities, which are frequently reported by both adults and children. These oral health problems can significantly affect quality of life, causing pain, discomfort, disability, acute and chronic infections, and eating and sleeping disorders, all of which pose a high risk of hospitalization (2).

Globally, oral diseases are recognized as a major public health concern. The World Health Organization (WHO) has conducted oral health surveillance since 1971, revealing a consistent increase in the prevalence and severity of oral diseases over the years. As of 2022, WHO reported that nearly half of the global population, or approximately 3.5 billion people, suffer from oral and dental diseases. Notably, three out of four of these cases occur in low- to middle-income countries, including Indonesia (3). Similarly, data from Indonesia's Basic Health Research (Riskesdas) in 2018 revealed that 57.6% of the population across all age groups had experienced oral health problems (4).

In Indonesia, the high prevalence of oral health problems is reflected in the rates of dental caries (88.80%) and periodontitis (74.10%) (5). According to the Indonesian Dental Conservation Association (2021), approximately 60% of children have experienced dental caries. This figure could reach 90%, considering that 99% of Indonesians consume carbohydrates daily, a known risk factor for caries (6).

The situation in Aceh Province mirrors national trends. Data from Riskesdas 2018 indicated that 55.34% of the population in Aceh experienced oral health problems.

Further studies in 2019 found that the prevalence of dental caries in the province had reached 80%. By 2021, the total number of reported dental health cases in Aceh had risen to 131,005 (7).

Riskesdas 2013 data focusing on children revealed that 28.9% of children aged 5-9 years had oral health problems, with only 35.1% receiving treatment from dental professionals. Among children aged 10-14 years, 25.2% experienced oral health problems, and only 28.3% sought professional care (8). These findings emphasize the vulnerability of school-age children (6-12 years), who are at a critical stage of development where they begin to take responsibility for their behavior and acquire essential knowledge and skills to adapt to adult life (9).

Knowledge plays a crucial role in shaping behavior, as stated by Notoatmodjo. Clean and Healthy Living Behavior (PHBS) is the second-largest determinant of health after environmental factors, encompassing knowledge, attitudes, and actions related to personal hygiene and disease prevention (10). Diseases commonly affecting school-age children are often linked to poor PHBS practices (11). According to the Ministry of Health (2011), PHBS includes behaviors that empower individuals and communities to improve health and prevent disease. Specific to oral health, PHBS involves practices such as brushing teeth at least three times a day, limiting the consumption of sweet foods, and regularly visiting dental health services for check-ups (12). The Indonesian Ministry of Health Regulation (Permenkes) No. 89 of 2015 emphasizes the importance of these behaviors in maintaining oral and dental health (13).

Given the significant burden of oral health problems and the role of PHBS in addressing these issues, this study aims to examine the relationship between knowledge about Clean and Healthy Living Behavior (PHBS) and oral and dental hygiene among students at Bustanul Mustafa Quranic House, Lhokseumawe.

Methods

This research employed a quantitative approach with an analytical and cross-sectional design. The cross-sectional design was chosen to examine the relationship between the level of knowledge about Clean and Healthy Living Behavior (PHBS) and oral and dental hygiene among students at the Bustanul Mustafa Quranic House in Lhokseumawe. The research was conducted from April to May 2023 at the Bustanul

Mustafa Quranic House. This design allowed for the assessment of variables at a single point in time, providing a clear snapshot of the relationship under investigation.

The population in this study consisted of all students studying at the Bustanul Mustafa Quranic House in Lhokseumawe. Sampling was carried out using a purposive sampling technique, where participants were selected based on specific inclusion criteria, including active student status and willingness to participate. The sample size was calculated using the Slovin formula with a 10% margin of error, resulting in a total of 62 respondents. Exclusion criteria applied to students who were absent or unwilling to participate in the study.

Data collection used both primary and secondary data sources. Primary data were obtained using a structured knowledge questionnaire to assess the level of knowledge about PHBS. The questionnaire was designed based on relevant literature and underwent validity and reliability testing to ensure the accuracy and consistency of the results. Students completed the questionnaire independently under supervision to minimize bias. Secondary data were collected through direct observations of oral hygiene using the Oral Hygiene Index-Simplified (OHI-S). The OHI-S assessment involved measurements of the debris index and calculus index, which were conducted by trained personnel following standardized protocols to ensure consistency and reliability in data collection.

The data analysis process included both descriptive and inferential statistical techniques. Descriptive statistics were used to summarize demographic characteristics, knowledge levels, and oral hygiene status of the respondents. Inferential analysis was conducted using the Spearman correlation test to examine the relationship between knowledge about PHBS and oral hygiene. A significance level of $p < 0.05$ was used to determine the statistical significance of the findings.

Results

The number of respondents in this study was 62 people. The characteristics of respondents in this study are described based on age and gender.

Table 1. characteristics of respondents based on gender , age, recent education history and occupation.

Respondent Characteristics	n	%
Gender		
Male	23	37,10%
Women	39	62,90%
Age		
6-12	40	64,52%
13-15	22	35,48%

Based on the table above, it shows that the male sample is 23 people (37.10%) and the female sample is 39 people (62.90%). As for the age category, it shows that the most age category is in the age range of 6-12 years, namely 40 people (64.52%), followed by the age range of 13-15 years, totalling 22 people (35.48%).

Students' level of knowledge about Clean and Healthy Living Behaviour (PHBS) Students of Rumah Quran Bustanul Mustafa Lhokseumawe

Based on the results of the research that has been carried out, the distribution data of respondents regarding Clean and Healthy Living Behaviour (PHBS) can be seen in the following table:

Table Data distribution of respondents based on level of knowledge about Clean and Healthy Living Behaviour (PHBS)

Knowledge level	n	%
Good	30	48,38%
Simply	20	32,26%
Less	12	19,36%
Total	62	100%

From the table above, the results of the level of knowledge of students regarding Clean and Healthy Living Behaviour (PHBS) can be obtained. It can be seen from 62 respondents who have good knowledge as many as 30 people (48.38%), sufficient knowledge about as many as 20 people (32.26%) and less knowledge as many as 12

people (19.36%).

Oral and dental hygiene level of students of Rumah Quran Bustanul Mustafa Lhokseumawe

Based on the results of the research that has been conducted, the distribution data of respondents regarding the level of oral and dental hygiene of students of the Bustanul Mustafa Quranic House in Lhokseumawa can be seen in the following table:

Data table of respondent distribution based on the level of oral and dental hygiene of students of Rumah Quran Bustanul Mustafa Lhokseumawe

Oral and dental hygiene levels	n	%
Good	18	29,04%
Simply	24	38,70%
Less	20	32,26%
Total	62	100%

The table above shows the distribution data of oral and dental hygiene levels of students of the Bustanul Mustafa Lhokseumawe Quranic House. It can be seen from 62 respondents who have a good level of oral and dental hygiene as many as 18 people (29.04%), the level of oral and dental hygiene which is in the sufficient category is found in 24 people (38.70%) and the level of oral and dental hygiene is less found in as many as 20 people (32.26%).

Based on the conceptual framework, bivariate analysis has tested the relationship one by one between the independent variable and the dependent variable. The independent variable is the level of knowledge of Clean and Healthy Living Behaviour and the level of oral and dental hygiene is the dependent variable. This bivariate test uses the *Pearson Correlation* test using $\alpha = 5\%$. *Pearson correlation* obtained sig value $0.000 < 0.05$ means there is a relationship. The *pearson correlation* value of -0.654^{**} shows that the direction of the relationship is *negative* (-), which means that when the value of the knowledge variable increases, the value of the oral hygiene variable decreases. The value of the relationship is in the range of 0.5 - 0.7 so that it falls into the strong category.

<i>Variable</i>	<i>Pearson Correlation Coefficient</i>	<i>Sig. (p-value)</i>	<i>Direction of Relationship</i>	<i>Strength of Relationship</i>
<i>Knowledge of PHBS and Oral Hygiene</i>	-0.654**	0.000	Negative (-)	Strong

Discussion

Knowledge level of Clean and Healthy Living Behaviour

Knowledge is the result of knowing and this occurs after a person senses a certain object. Most human knowledge is obtained through the eyes and ears. Knowledge in this study is that respondents are able to know Clean and Healthy Living Behaviour. From the results of the study it was found that the level of knowledge of students regarding Clean and Healthy Living Behaviour (PHBS) of 62 respondents who had good knowledge was 30 respondents (48.38%), sufficient knowledge about as many as 20 respondents (32.26%) and less knowledge as many as 12 respondents (19.36%).

The results showed that most respondents had good knowledge of Clean and Healthy Living Behaviour. Good knowledge in this study is the insight or understanding that respondents have about Clean and Healthy Living Behaviour, and disease prevention efforts which include understanding, healthy habits and disease prevention measures that can be taken. Good knowledge will greatly affect student behaviour in getting used to a healthy life so as to increase the level of oral and dental hygiene.

Knowledge is one of the factors that influence a person's *personal hygiene*. One of the causes of oral problems in the community, especially in school-age children, is behavioural factors and attitudes towards ignoring oral hygiene. The characteristic picture is elementary school children aged 6-12 years. This is based on the lack of knowledge and behaviour of the importance of oral maintenance, the condition of elementary school children with a lack of knowledge and tooth brushing behaviour is still very low. In addition, the level of compliance of children to continue to carry out clean and healthy living behaviour is still considered low, so parental supervision is needed to pay attention to children's compliance to live clean and healthy (8).

Oral and dental hygiene level

According to schuura, healthy teeth are clean teeth without cavities or other dental diseases. Healthy teeth are teeth that do not look black. Healthy teeth are: No plaque, No tartar, No tooth roots, No odour in the mouth. To prevent this from happening, awareness is needed for the community in carrying out clean and healthy living behaviour (9).

From the results of research data distribution Level of oral and dental hygiene of students of the Bustanul Mustafa Lhokseumawe Quranic House. It can be seen from 62 respondents who have a good level of oral and dental hygiene as many as 18 respondents (29.04%), the level of oral and dental hygiene which is in the sufficient category is found in 24 respondents (38.70%) and the level of oral and dental hygiene is less found in as many as 20 respondents (32.26%). The results found are of course still less than expected because the level of good oral and dental hygiene is not up to half the number of respondents.

The level of oral and dental hygiene, especially in school-age children, needs to be considered by parents given the habits of children who like sweet foods. Sticky and chewy foods such as candy or chocolate should be eaten during regular meals not during snacking/between meals. If necessary, brush your teeth after every meal. Reduce the habit of consuming sugary foods that produce a supply of acid that makes cavities. Reduce flour-containing foods Children at school age often consume sweet foods such as cakes, fried foods and so on. Consuming these foods if not controlled with proper dental care will risk dental caries. These foods when left in the teeth and the appearance of bacteria will cause acids that make cavities. Consumption of these unhealthy foods certainly cannot be noticed directly by parents when children go to school.

Relationship between knowledge level and oral and dental hygiene

Based on the results of data processing with statistical applications, the direction of the relationship is *negative* (-), which means that when the value of the knowledge variable increases, the value of the oral hygiene variable decreases. The value of the relationship is in the range of 0.71 - 0.90 so that it is in the very strong category. Based on the results of the analysis regarding the relationship between the level of knowledge and the level of oral and dental hygiene at the Bustanul Mustafa Lhokseumawe Quranic

House, it can be concluded in accordance with theory and related research that respondents with a good level of knowledge have better oral and dental hygiene disease prevention actions compared to respondents with less and sufficient knowledge. This can be interpreted that knowledge is a very important domain for the formation of a person's actions because good knowledge can create good behaviour (7). Knowledge is needed as support in generating confidence as well as attitudes and behaviour every day, so it can be said that knowledge is a very important domain for the formation of a person's actions and attitudes (10). Clean and healthy living behaviour (PHBS) with tooth brushing behaviour and the correlation between the two variables is sufficient, namely 0.471. This study is in line with Nuslan's research, that school-age students need knowledge about PHBS because the emergence of diseases in school-age children is generally related to PHBS. Behaviour arises from knowledge, therefore it is important for students to have good knowledge about PHBS, teachers are asked by the school to slip material about health, especially material related to clean and healthy living (11).

Conclusion

The research conducted at Rumah Quran Bustanul Mustafa Lhokseumawe concludes that the majority of respondents, consisting of 62 individuals, were female, with the dominant age category ranging from 6 to 12 years. The level of knowledge and practices regarding oral and dental hygiene among the students were generally in the good category. Furthermore, there is a strong and significant relationship between the level of knowledge and attitudes toward the prevention of oral and dental hygiene problems. These findings emphasize the importance of increasing public awareness and understanding of oral and dental hygiene through various information sources. Health services are encouraged to intensify health promotion programs focusing on clean and healthy living behaviors, as well as the prevention of oral and dental issues, to enhance the community's overall health. Future research should explore a broader population, include additional variables, and employ more comprehensive data collection methods to deepen insights into this issue.

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