

### Gambaran Faktor Lingkungan Kejadian Diare pada Balita di Pesisir: Studi Kasus di Kota Bitung

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#### Abstrak

**Latar Belakang:** Faktor lingkungan yang berhubungan dengan kejadian diare yaitu pengelolaan sampah dan air limbah adalah komponen lingkungan yang memengaruhi kejadian diare, faktor dominan lainnya penyebab diare yaitu sarana air bersih dan jamban. Tujuan penelitian ini menjelaskan gambaran faktor lingkungan rumah penderita diare balita di wilayah pesisir.

**Metode:** Penelitian ini menggunakan jenis penelitian deskriptif, penelitian ini dilaksanakan di Kota Bitung pada Agustus 2024. Jumlah sampel yang akan di ambil dalam penelitian ini sebesar 154 rumah tangga yang memiliki balita. Selanjutnya sampel di ambil dari populasi menggunakan metode purposive sampling. Faktor lingkungan yang diteliti yaitu berdasarkan pengolahan sampah, saluran pembuangan air limbah, sumber air bersih dan jamban. Data diperoleh melalui wawancara dan observasi/ pengamatan. Wawancara dilakukan terhadap ibu yang memiliki balita menggunakan kuesioner yang sudah disiapkan. Analisis penelitian menggunakan analisis univariat. **Hasil:** Hasil penelitian ini menunjukkan bahwa faktor lingkungan yang masuk kategori baik yaitu pengolahan sampah (80,5%), saluran pembuangan air limbah (49,4%), sumber air bersih yang sehat (100%) dan tingkat penggunaan jamban yang sehat (97,4%). Hasil ini menunjukkan faktor lingkungan yang kurang baik terlihat pada faktor saluran pembuangan air limbah dan pengolahan sampah. Hasil observasi dan wawancara ditemukan banyak rumah tangga yang membuang air limbah rumah tangga di lingkungan sekitar rumah karena tidak adanya saluran pembuangan air limbah. Hal ini menyebabkan terjadinya genangan air limbah rumah tangga yang menimbulkan bau dan air limbah ini bisa masuk mencemari air tanah. Selain itu ditemukan pengolahan sampah yang masih kurang baik dimana banyak ditemukan timbunan sampah di sekitar rumah. Timbunan sampah ini bisa menjadi sumber bau dan tempat bersarangnya vektor penyakit seperti tikus, kecoa, lalat dan nyamuk. Kedua faktor ini jika tidak ditangani dapat berpotensi menyebabkan masalah lingkungan dan kesehatan masyarakat.

**Kesimpulan:** Kesimpulan dari penelitian ini yaitu faktor lingkungan yang sudah dikelola dengan baik yaitu sumber air bersih dan penggunaan jamban sehat namun faktor pengolahan sampah dan saluran pembuangan air limbah masih perlu diperbaiki.

**Kata Kunci:** Faktor lingkungan; Diare balita

#### Abstract

**Background:** Environmental factors related to the incidence of diarrhea, namely waste and wastewater management are environmental components that affect the incidence of diarrhea, other dominant factors causing diarrhea are clean water facilities and latrines. The purpose of this study is to explain the environmental factors in the homes of diarrhoea patients under five in coastal areas. **Methods:** This study uses a type of descriptive research, this research was carried

out in Bitung City in August 2024. The number of samples to be taken in this study is 154 households that have toddlers. Furthermore, samples were taken from the population using the purposive sampling method. The environmental factors studied are based on waste treatment, wastewater drains, clean water sources and latrines. Data were obtained through interviews and observations. Interviews were conducted with mothers who have toddlers using a questionnaire that has been prepared. The research analysis uses univariate analysis. **Results:** The results showed that environmental factors that are categorized as good are waste treatment (80.5%), wastewater sewers (49.4%), healthy clean water sources (100%) and healthy latrines use (97.4%). These results show that poor environmental factors are seen in wastewater sewerage and waste treatment factors. The results of observations and interviews found that many households dispose of household wastewater in the environment around the house due to the absence of wastewater drains. This causes puddles of household wastewater that cause odors and this wastewater can enter and pollute groundwater. In addition, it was found that waste processing was still not good where many garbage was found around the house. The generation of this waste can be a source of odor and a nesting place for disease vectors such as rats, cockroaches, flies and mosquitoes. These two factors, if left untreated, can potentially lead to environmental and public health problems. **Conclusion:** It can be concluded that environmental factors that have been well managed, namely clean water sources and the use of healthy latrines, but the factors of waste treatment and wastewater sewerage still need to be improved.

**Keywords:** Environmental factors; Toddler diarrhea

### INTRODUCTION

Overall body health is important, including dental and oral health which is part of body health. Dental and oral health can reflect the overall health of the body, including in case of nutritional deficiencies and symptoms of other diseases in the body. Disturbances in dental and oral health can have a negative impact on daily life, including declining general health, lowering confidence levels and disrupting performance and attendance at school or workplace (Pertiwingsih 2016; Ministry of Health of the Republic of Indonesia, 2019).

Chewing food should be used evenly on both sides of the mouth. If you only use one side, this habit can have an impact on dental and oral health. Chewing activities can act as self-cleansing. More saliva secretion during chewing then stabilizes the normal flora condition of the oral cavity, if you only chew on one side, it will be clean on one side, while the other side is at greater risk of plaque or tartar (Salim 2017; Susanto and Hanindriyo, 2014).

The habit of chewing food on one side is caused because the teeth on one side feel painful or uncomfortable when used to chew food or it can also be because it has become a habit. Chewing food with one side of the jaw causes thick and strong muscles only on that side (Rahmadhan, 2010). Green and Vermilion stated that bad habits can affect the status of dental and oral hygiene. The status of dental and oral hygiene is the beginning of dental health problems so that the status of dental and oral hygiene must be maintained and maintained to remain good. Oral hygiene can be measured by one index with good,

moderate, and poor criteria. The measurements used were the Oral Hygiene Index Simplified (OHI-S) (Irma & Intan 2013; Putri et al 2018; Suryawati 2010).

Adolescence is a transition period from child to adulthood. These developmental changes include physical, psychological and psychosocial aspects. The age range of adolescents 11-13 has the characteristic of paying more attention to the state of their body and having a great curiosity about the outside world, adolescents 14-17 in this phase begin to determine certain values to find their identity, then adolescents with the age of 18-21 years have a physical image and have a certain stance (Ningsih et al 2021; Andriani et al 2022).

The results of the 2018 Basic Health Research (Riskesdas) by the Health Research and Development Agency of the Ministry of Health of the Republic of Indonesia show that dental & oral problems in the population in Indonesia are 57.6% with cavities/sick teeth problems at 45.3%. In North Sulawesi Province, there are 55.5% of cases of cavities/pain while adolescents with dental and oral problems are 51.9% with the age group of 15-24 years (Ministry of Health of the Republic of Indonesia, 2018).

Research conducted by Dewi et al (2022) regarding one-sided chewing habits with the calculus index of youth organizations in Kedung Tarukan Surabaya with a sample of 40 people found that there was a one-sided correlation between chewing and index calculus in youth organizations in Kedung Tarukan Surabaya. The results of the correlation test obtained a p-value of 0.022 at a value of  $\alpha = 5\%$  where  $p < 0.05$  then it was seen that there was a one-sided correlation between chewing and index calculus in Karang Taruna adolescents in Kedung Tarukan Surabaya.

An initial survey conducted in North Titiwungen Village, Sario District through interviews with 10 teenagers found that respondents did not know how to maintain good dental health, they were used to brushing their teeth more than 2 times a day, brushing time and brushing techniques that were still not right. In addition, as many as 6 adolescents had the habit of chewing using one side of the jaw because there were cavities and 4 other teenagers chewed on both sides of the jaw. The results of the initial measurement of dental and oral health status with the OHI-S criteria found that 3 adolescents were in the good category and 7 adolescents were in the medium category. This indicates that there are problems related to dental and oral hygiene. The purpose of this study is to measure the correlation between the habit of chewing on one side of the jaw and the dental and oral hygiene status of adolescents in Manado City.

## **RESEARCH METHOD**

The type of research is an analytical survey with a cross-sectional approach. This research was conducted in May-June 2023 at the Miftahul Jannah Mosque, North Titiwungen Village, Sario District. A total of 60 adolescents became respondents to this study. The research sampling technique is purposive sampling. The sample criteria were to be present at the time of the study, willing to be a respondent and not in a state of illness. The variables studied were the habit of chewing on one side of the jaw and the teeth and mouth. The research instruments are diagnostic tools, checklist sheets and OHI-S assessment formats. The data obtained were analyzed using the chi squared test. This research was conducted with reference to the Ethical Feasibility Letter of KEPK/01/108/125/2023.

## **RESULT AND DISCUSSION**

### **Distribution of Respondents by Age and Gender**

The distribution of respondents by age group and gender can be seen in Table 1.

Table 1. Distribution of Respondents based on Age and Gender

Characteristic	Category	n	%
Age	15-17 years old	26	43,3
	17-21 years old	34	56,7
	Total	60	100.0 km
Gender	Man	42	70.0 km
	Woman	18	30.0
	Total	60	100.0 km

Tabel 1 showed that the most respondents were in the age group of 17-21 years as many as 34 respondents (56.7%) and 42 respondents (70.0%) were male.

**Distribution of respondents based on research variables**

The distribution of respondents based on the research variables was the habit of chewing on one side of the jaw and the cleanliness of teeth and mouth. This can be seen in Table 2.

Table 2. Distribution of respondents based on research variables

Variable	Category	n	%
Chewing habits	Chewing on One Side	39	65
	Two-sided chewing	21	35
	Total	60	100
Dental and oral hygiene	Good	5	8,3
	Keep	42	70
	Bad	13	21,7
	Total	60	100

Tabel 2 showed that the most respondents had the habit of chewing one side as many as 39 respondents (65%) and had a medium criteria dental and oral hygiene status as many as 42 respondents (70%). **Correlation between variables.**

The correlation between variables is obtained based on the test when squared. The test results can be seen in Table 3.

Tabel 3. Test results when quadrant rat

Chewing Habits	Dental & Oral Hygiene						Sum	%	Asymp. Sig.
	Good	%	Fair	%	Bad	%			
One Side	1	1,7	26	43,3	12	20	39	65	0,000
Double-Sided	4	6,7	16	26,7	1	1,7	21	35	
Total	5	8,3	42	70	13	21,7	60	100	

Table 3 shows that the dental and oral hygiene status of respondents who have the habit of chewing on one side found that as many as 12 respondents (20%) were in the bad

category and only 1 respondent (1.7%) who chewed on two sides was in the bad category. Htest result when squared obtained asymp value . A sig of 0.000 ( $< 0.05$ ) this value shows that the habit of chewing on one side is related to the status of dental and oral hygiene (OHI-S) in adolescents in North Titiwungen Village, Sario District. Dental and oral hygiene is very important to support overall body health. The mouth is the gateway to all food and drinks that enter the body, dental and oral health can have a significant effect on other organs in the body. Oral hygiene can be measured by one index with good, moderate, and poor criteria. The measurement used is *the Simplified Oral Hygiene Index (OHI-S)* (Putri et al., 2018).

Chewing food with one side of the jaw causes thick and strong muscles only on that side. Chewing on one side that is continuously done will over time result in problems or abnormalities in the jaw joint caused by an imbalance in the chewing load (Sopianah 2017). The results of this study are in line with research from Hamudeng & Bakri (201: 6) that the main cause of the habit of chewing on one side is because on the side that is not used there are sore teeth so that over time it will become a habit. Another reason was stated in the research Sari et al (2017) that the reason students chew on one side is dominant because they are used to it, namely 25 people or 35.2%, in addition to that several reasons were also found such as tooth loss, pain and dental caries.

The results of dental and oral hygiene examinations of respondents who chewed on one side were 26 people with moderate criteria and 12 people with poor criteria. Respondents chewed on two sides as seen from the results of the examination as many as 4 people with good OHI-S criteria, 16 people with moderate criteria and 1 person with bad criteria. This can be caused by respondents ignoring dental and oral hygiene measures, they are used to brushing their teeth 2 to 3 times a day with an improper brushing time, namely in the morning, after every meal and during the afternoon shower with an improper brushing technique. The results of this study are supported by the results of research by Supriatna (2017) and Triyanto & Nugroho (2017) that the habit of chewing on one side has a bad impact on the hygiene of a person's teeth and mouth, usually the teeth on the opposite side that are almost never used to chew will be dirtier and have a lot of tartar.

Wulandari et al. (2017) stated that chewing activities can play a role in *self-cleaning*. More saliva secretion during chewing then stabilizes the normal flora condition of the oral cavity. The habit of chewing on one side will make the side used to chew cleaner, while the other side is at greater risk of plaque or calculus formation. Sari et al (2017) who conducted a study on one-sided chewing habits against *the Oral Hygiene Index-Simplified (OHI-S)* in a child, there were 44 students (66.0%) who had one-sided chewing habits, showing a good category of 40.9% and a medium category of 59.1%. The results of this study showed that there was a correlation between one-sided chewing habits and OHI-S status in grade V students at SDN Padasuka Mandiri III, Cimahi City, with a value of  $p < 0.001$  ( $p \leq 0.05$ ).

Research from Dewi et al (2022) stated that there is a correlation between one-sided chewing habits and index calculus in adolescents of Karang Taruna in Kedung Tarukan Surabaya. The cause of tartar is also influenced by an improper way of brushing your teeth. Most people still don't know how to brush their teeth properly and correctly. If this behavior is carried out continuously, it will have a bad impact on the dental and oral hygiene of adolescents.

## **CONCLUSION**

It can be concluded that the chewing on one side of the jaw is related to the dental and oral hygiene status of adolescents in Manado City, because chewing on one side can cause debris buildup and can result in tartar buildup so that dental and oral hygiene becomes poor. Therefore, Teenagers who have the habit of chewing on one side should

change their habits by chewing food with both sides of the jaw to avoid the accumulation of leftover food which can result in tartar buildup.

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### **AUTHORS' CONTRIBUTION**

Author 1: Conceptualization; Project administration; Methodology; Writing - original draft.

Author 2: Data curation; Investigation.

Author 3: Data curation; Investigation.

Author 4: Data curation; Investigation.

Author 5: Data curation; Investigation.

Author 6: Writing - review and editing; Validation

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