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Overview of Knowledge, Attitudes, and Behaviors Related to Halitosis in Online Motorcycle Taxi Drivers in Sei Putih Tengah Sub District, Petisah District, Medan, Indonesia

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ABSTRACT

Background: Halitosis is a sign of dental and oral health problems. Halitosis is characterized by the presence of an unpleasant odor in the oral cavity. Halitosis is caused by many things, one of which is a result of impaired saliva production, which is caused by smoking. Online motorcycle taxi drivers are in a community that is very close to smoking. This study aimed to provide an overview of aspects of knowledge, attitudes, and behavior related to halitosis in online motorcycle taxi drivers in Sei Putih Tengah Sub District, Petisah District, Medan, Indonesia. **Methods:** Descriptive observational study. A total of 36 research subjects, namely online motorcycle taxi drivers, participated in this study. Observation of knowledge, attitudes, and behavior refers to a questionnaire developed by the halitosis clinic at the University of Basel, Switzerland. Univariate analysis was carried out with the help of SPSS software. **Results:** The majority of research subjects are independently aware of bad breath and experience similar complaints <1 year. The majority of research subjects felt bad breath after waking up in the morning. The majority of research subjects also stated that dentists were the choice for consultation regarding bad breath disorders. The majority of research subjects know the origin of bad breath, the source of bad breath, and know that smoking is the cause of bad breath. Most research subjects did not feel ashamed of other people even though they felt they had bad breath. **Conclusion:** Knowledge and behavior related to halitosis are good, although attitudes related to halitosis are not good among online motorcycle taxi drivers in Sei Putih Tengah Sub District, Petisah District, Medan, Indonesia.

1. Introduction

Halitosis is a sign of dental and oral health problems. Halitosis is characterized by the presence of an unpleasant odor in the oral cavity. Halitosis is caused by many things, one of which is the result of impaired saliva production. Saliva is a product of the mucosa in the oral cavity, which plays a very important role in self-cleansing in the oral cavity. In fact, several studies have shown that saliva is rich in mucin, which has antibacterial properties as a defense for the body's innate immunity. Smoking is one of the causes of impaired saliva production in the oral cavity. Nicotine, which is the main ingredient in cigarettes, is

the main factor that plays a role in disrupting saliva production in the oral cavity. Nicotine triggers the process of oxidative stress in the oral mucosal cells. The process of oxidative stress triggers a series of chronic inflammatory processes. This chronic inflammation will trigger death receptor activation, which will lead to the death of oral mucosal cells. Mucous cells of the oral cavity are the producer of saliva in the oral cavity. This causes the oral cavity to lose its self-cleansing fluid so that the oral cavity will be dry, and many bacterial colonies will appear and cause bad breath.¹⁻⁵

Online motorcycle taxi drivers are in a community that is very close to smoking. This condition makes this community a vulnerable group to halitosis. While waiting for orders, very often, online motorcycle taxi drivers fill their time by smoking. Of course, this makes this community vulnerable to dental and oral health problems. Aspects of knowledge about what halitosis is and its causes are believed to be a trigger to trigger someone to behave in maintaining dental and oral health. Attitudes to maintaining dental and oral health are believed to trigger awareness to behave in maintaining dental and oral health. Various studies show that there is a relationship between knowledge and a person's attitude and behavior.⁶⁻¹⁰ This study aimed to provide an overview of aspects of knowledge, attitudes, and behavior related to halitosis in online motorcycle taxi drivers in Sei Putih Tengah Sub District, Petisah District, Medan, Indonesia.

2. Methods

This study was a descriptive observational study and used primary data obtained from interviews with research subjects. A total of 36 research subjects participated in this study. The research subjects met the inclusion criteria, namely online motorcycle taxi

drivers with complaints of halitosis aged 20-55 years in Sei Putih Tengah Sub District, Petisah District, Medan, Indonesia. This study was approved by the medical and health research ethics committee, Faculty of Medicine, Dentistry and Health Sciences, Universitas Prima Indonesia.

Observation of knowledge, attitudes, and behavior related to halitosis was carried out using a questionnaire developed at the halitosis clinic at the University of Basel, Switzerland. The questionnaire has previously been tested for validity. This study also carried out observation of the sociodemographic factors of the research subjects. Data analysis was performed using SPSS software version 25. Univariate analysis was performed to present the frequency distribution of each test variable.

3. Results

Table 1 shows the baseline characteristics of the research subjects. The majority of research subjects are male. The majority of research subjects were aged <35 years. The majority of research subjects are Batak tribes. The majority of research subjects had senior high school education.

Table 1. Baseline characteristics.

Demographic characteristics	Frequency (n=36)	Percentage (%)
Gender		
Male	32	88,9
Female	4	11,1
Age		
<35 Years	25	69,4
≥35 Years	11	30,8
Ethnic		
Aceh	1	2,8
Batak	9	25,0
Melayu	4	11,1
Minang	8	22,2
Nias	3	8,3
Java	7	19,4
Education		
Senior high school	21	58,3
Diploma	5	13,9
Bachelor degree	10	27,8

Table 2 presents an overview of knowledge related to halitosis. The majority of research subjects are independently aware of bad breath and experience similar complaints <1 year. The majority of research

subjects felt bad breath after waking up in the morning. The majority of research subjects also stated that dentists were the choice for consultation regarding bad breath disorders. The majority of

research subjects knew the organ of origin of bad breath, the source of bad breath, and knew that smoking is the cause of bad breath. The results of this

study indicate that the knowledge of research subjects related to bad breath is quite adequate.

Table 2. Overview of knowledge related to halitosis.

Knowledge	Frequency	Percentage
The first person to notice you have bad breath		
Self	29	80,6
Other people	7	19,4
Long suffered from bad breath		
< 1 year	26	72,2
≥ 1 year	10	27,8
When you feel bad breath		
After waking up in the morning	33	91,7
All day	3	8,3
Health workers visited to deal with bad breath		
Dentist	28	77,8
Doctor of internal medicine (stomach/ulcer)	8	22,2
Sections are checked for bad breath		
Examine the oral cavity	29	80,6
Check the stomach	7	19,4
The most common source of bad breath		
Tongue	22	61,1
Stomach and digestion	14	38,9
Factors outside the oral cavity are very influential in causing bad breath		
The habit of not brushing the teeth	16	44,4
Smoking habit	20	55,6
The number of cigarettes consumed in a day to reduce bad breath		
<10 cigarettes per day	21	58,3
≥10 cigarettes per day	15	41,7

Table 3 presents an overview of attitudes related to halitosis. Most research subjects did not feel ashamed of other people even though they felt they had bad

breath. The results of the study show that attitudes related to halitosis are classified as unfavorable.

Table 3. Overview of attitudes related to halitosis.

Attitude	Frequency	Percentage
I keep my distance when I'm talking to other people		
Yes	20	55,6
No	16	44,4
I feel embarrassed when other people approach you		
Yes	14	38,9
No	22	61,1
When I have bad breath, I don't like meeting other people		
Yes	19	52,8
No	17	47,2
When I have bad breath, I think the people around me stay away from me		
Yes	16	44,4
No	20	55,6
After suffering from bad breath, I have a hard time starting new relationships with other people		
Yes	32	88,9
No	4	11,1
This bad breath annoys my interlocutor		
Yes	29	80,6
No	7	19,4
This situation affected my social life		
Yes	22	61,1
No	14	38,9

Table 4 shows the habit of the respondents who brushed their teeth in the morning after breakfast and at night before going to bed 52.8%, more than half of the respondents (58.3%) brushed all their teeth and tongue, used mouthwash as much as 47.2% and 72.2

% visited the dentist to treat halitosis, and the respondent's habit of consuming ≥ 10 cigarettes per day was 58.3%. The results of the study showed that the research subjects had satisfactory behavior related to halitosis.

Table 4. Behavioral descriptions related to halitosis.

Behavior	Frequency	Percentage
Time to brush the teeth twice a day		
Yes	22	61,1
No	14	38,9
Time to brush the teeth in the morning after breakfast and at night before bed		
Yes	19	52,8
No	17	47,2
Reducing the factors that cause bad breath (teeth, cavities, white stained tongue)		
Yes	21	58,3
No	15	41,7
Brushing all teeth and tongue		
Yes	21	58,3
No	15	41,7
Using mouthwash to reduce halitosis		
Yes	17	47,2
No	19	52,8
Visiting the dentist for halitosis		
Yes	26	72,2
No	10	27,8
Consuming ≥ 10 cigarettes per day		
Yes	21	58,3
No	15	41,7

4. Discussion

A person's knowledge determines his behavior toward dental and oral health problems. Someone who has good knowledge will take appropriate action against dental and oral conditions and vice versa. In this study, respondents who answered would visit a dentist to treat halitosis (77.8%), visit an internal medicine doctor to treat halitosis (22.2%), consider the tongue as a source of halitosis (61.1%), and regard the stomach as a source of halitosis (38.9%). This study is comparable to other studies, where sufferers visit dentists (36%), visit specialist doctors for gastroenterology (42%), consider the tongue as a source of halitosis (22%), and consider problems in the stomach as a source of halitosis (42%). The teeth and tongue are the sources of halitosis in the oral cavity. In this study, the respondents' knowledge of bad breath occurred after waking up in the morning (91.7%) and throughout the day (8.3%). The results of

this study are comparable to other studies where respondents complained of bad breath after waking up in the morning (83.5%) and throughout the day (10.3%). There is a fact that most people complain of bad breath that other individuals cannot accept when they wake up in the morning. Halitosis that occurs when you wake up occurs because the flow rate of saliva is reduced, so there is an increase in anaerobic bacteria in the oral cavity, causing halitosis. In this study, respondents answered that consuming < 10 cigarettes per day was an action to reduce bad breath (58.3%). Another study showed that the number of cigarettes smoked per day was 6-9 cigarettes and smoking duration > 10 years, that the salivary flow rate is lower in smokers. From this study, it can be seen that the length of time the patient consumes cigarettes greatly influences the oral cavity, even though the smoker smokes 6-9 cigarettes per day.¹¹⁻¹³

The results of this study indicate that respondents who brushed their teeth twice a day (61.1%), in the morning after breakfast and at night before going to bed (52.8%), and brushed all their teeth and tongue (58.3%), used mouthwash (47.2%), and visiting the dentist because of halitosis (72.2%). This study is in line with other studies, which show the habit of brushing teeth twice a day (88.1%) and brushing the tongue (54.3%), using mouthwash (47.2%), and visiting the dentist because of halitosis (72.2%). 2%). In this study, respondents brushed their tongues using toothbrush bristles. The tongue is an organ that plays a role in taste, so its surface structure is different from tooth enamel. The tools for cleaning the tongue are also different. The more recommended tool is to use a tongue scarper or the back of the brush head.¹⁴⁻¹⁶

Based on the results of the research conducted, significant results were obtained related to attitudes toward the male gender ($p < 0.05$). The results of another study obtained the number of halitosis sufferers in males (26.6%) than in females (18.6%). Men have bad habits, namely smoking and alcohol consumption. According to other studies, the causes of halitosis are based on risk factors, namely smoking, alcohol consumption, drugs, and diet. The results of this study are inversely proportional to the results of other studies, where it was found that women suffer from halitosis as much as 75% compared to men (47.10%). From the results of other studies, it was also found that women are more prone to experiencing severe halitosis (75%). Cause of halitosis in women occurs during the menstrual phase and decreases in the premenstrual phase. These phases affect the hormones estrogen and progesterone in the body and also affect the condition of the oral cavity. During menstruation, decreased levels of the hormones estrogen and progesterone result in changes in the oral cavity which cause inflammation of the gums, which is called gingivitis. It is this gingivitis that causes oral halitosis.^{17,18}

In this study, the attitude of the respondents was obtained by 88.9% of respondents having difficulty

starting new relationships with other people, 80.6% this halitosis disturbed the other person, and 61.1% affected social life. The results of this study are in line with previous studies where 71.13% experienced shyness in social life, 54.06% had difficulty speaking with halitosis sufferers, and 42.17% of the distance between partners was caused by halitosis. The results of other studies are in line with this study, which shows a negative attitude towards the social interaction of sufferers and the people around sufferers of halitosis. In sufferers of halitosis, social distancing generally occurs. This causes halitosis sufferers to experience frustration in social relations with other people, feel uncomfortable when they are around someone, and avoid meeting other people. Social discomfort and difficulties this is the reason for respondents visit the dentist 72.2%.¹⁹

5. Conclusion

Knowledge and behavior related to halitosis are good, although attitudes related to halitosis are not good among online motorcycle taxi drivers in Sei Putih Tengah Sub District, Petisah District, Medan, Indonesia.

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