THE RELATIONSHIP OF ORAL HYGIENE AND DENTAL CARIES IN PEOPLE WITH MENTAL DISORDERS AT YAYASAN MITRA MULIA HUSADA PALEMBANG 2024

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ABSTRACT

Background: Cognitive and behavioural disturbances in people with mental disorders (PWMD) often limit self-care, predisposing them to oral-health problems. This study examined the association between oral-hygiene status and dental-caries experience in PWMD residing at Yayasan Mitra Mulia Husada, Palembang.
Methods: An analytical cross-sectional survey was conducted among 60 residents selected by purposive sampling. Oral hygiene was assessed with the Simplified Oral Hygiene Index (OHI-S); dental caries was recorded with the Decayed–Missing–Filled Teeth (DMF-T) index. The correlation between OHI-S and DMF-T scores was tested using Pearson's r (α = 0.05).
Results: OHI-S scores indicated poor hygiene in 61.7 % of participants, moderate in 38.3 %, and good in none. DMF-T scores showed very high caries experience in 46.7 %, high in 20 %, moderate in 10 %, low in 16.7 %, and very low in 6.7 %. Pearson analysis revealed a significant positive correlation between OHI-S and DMF-T values (r = 0.64, p < 0.001), demonstrating that poorer hygiene was associated with higher caries levels.
Conclusion: There was a relationship between oral hygiene and dental caries in people with mental disorders at the Mitra Mulia Husada Palembang Foundation. The worse the dental hygiene status, the higher the caries rate. This is due to their unstable mental condition resulting in neglect of dental and oral hygiene, plus a lack of knowledge and attitude in maintaining dental hygiene, low motivation and family support, minimal assistance from health workers and made worse by the side effects of taking antipsychotic drugs for a long period of time which can cause dry mouth due to reduced saliva flow.

Keywords: mental disorder, oral hygiene, dental caries

INTRODUCTION

The implementation of oral health programs aims to promote dental well-being, prevent disease, and restore oral function at the individual, family, and community levels through comprehensive and integrated services (Kemenkes, 2015). Oral health refers to the optimal condition of both hard and soft oral tissues, enabling individuals to eat, speak, and interact socially without dysfunction, aesthetic impairment, or discomfort—thus supporting productive social and economic lives (Kemenkes, 2015). Maintaining oral hygiene, particularly through proper tooth brushing, is essential to remove debris, plaque, and calculus (Pariati & Lanasari, 2021). Poor oral hygiene behavior has been linked to an increased risk of dental caries (Munira et al., 2024).

Oral hygiene is a critical component of general health, as dental diseases can affect other bodily systems and disrupt daily activities (Muhtarom et al., 2022). However, individuals with mental disorders (ODGJ) often experience reduced self-care capacity, including neglect of oral hygiene, due to behavioral deviations and loss of autonomy, increasing their risk of oral health problems (Madalise, 2015 in Muhtarom et al., 2022).

A study in Aceh (2023) revealed that 81.16% of people with mental disorders had poor oral hygiene (Wirza et al., 2023), while research in Taiwan also indicated similar conditions, with a caries prevalence reaching 98.5% among this population (Madalise et al.,

2015). Dental caries, a chronic condition characterized by the progressive demineralization of tooth enamel due to bacterial activity, remains highly prevalent in Indonesia. According to the 2023 Indonesian Health Survey (SKI), 82.8% of the population is affected, with an average DMF-T index of 5.4, indicating that each person has around five decayed, missing, or filled permanent teeth (SKI, 2023).

These findings confirm the significant relationship between oral hygiene and dental caries, particularly among people with mental disorders who require tailored care approaches (Zulfikri & Huda, 2017; Muhtarom et al., 2022). Despite the severity of this issue, studies focusing on ODGJ populations in Palembang remain limited. Preliminary oral health screenings conducted at Ernaldi Bahar Psychiatric Hospital in South Sumatra found that 47.98% of patients had poor oral hygiene and 75.14% had dental caries. In response to this gap, the present study investigates the relationship between oral hygiene and dental caries among people with mental disorders (ODGJ) at the Mitra Mulia Husada Foundation, Palembang, in 2024.

METHODS

This study employs an analytical survey method with a cross-sectional design, allowing data collection at one point in time. The independent variable is oral hygiene, which refers to the condition of cleanliness in the oral cavity, while the dependent variable is dental caries.

The hypotheses proposed include an alternative hypothesis (Ha), which suggests a relationship between oral hygiene and dental caries in ODGJ, and a null hypothesis (H0), which posits no such relationship. This study will be conducted in September 2024 at the Mitra Mulia Husada Foundation, Palembang. The population includes all 70 residents with mental disorders at the foundation. A total of 60 respondents were selected using purposive sampling based on inclusion and exclusion criteria. The sample size was determined using Slovin's formula.

Inclusion criteria required participants to be residents at the foundation in 2024, have at least two index teeth, be cooperative, and have permission from the foundation. Exclusion criteria included severe mental illness or inability to open the mouth due to trauma or infection. The instruments used include the Oral Hygiene Index Simplified (OHI-S) to assess oral hygiene and the DMF-T index to evaluate dental caries. Additional tools include disposable dental mirrors and probes, kidney dishes, rinsing glasses, personal protective equipment, and dental examination forms.

Data were collected through direct examination of oral hygiene and dental caries by three trained dental therapists. Before data collection, researchers obtained permission from academic supervisors and the foundation, prepared tools and materials, and conducted calibration with the dental therapists to ensure consistent examination standards. Each therapist examined 15 respondents, with each examination lasting approximately 10 minutes. After data collection, results were manually recorded and analyzed using SPSS software.

Data processing involved several steps: editing to verify data accuracy, coding to convert categorical responses into numeric values, sorting to organize data, data entry into digital databases, and cleaning to identify and correct any data inconsistencies. The analysis was conducted in two phases: univariate and bivariate. Univariate analysis described variables such as oral hygiene and caries rates. Bivariate analysis used the chi-square test to determine the relationship between oral hygiene and dental caries.

RESULTS AND DISCUSSION

This study was conducted to investigate the relationship between oral hygiene and

dental caries among people with mental disorders (ODGJ) residing at Yayasan Mitra Mulia Husada Palembang. The results clearly demonstrate a significant association between oral hygiene status, measured by the Oral Hygiene Index Simplified (OHI-S), and the severity of dental caries, measured using the DMF-T index.

A total of 60 respondents participated, all of whom were male. Most of the participants were in the 21–30 age group (41.7%), followed by 31–40 years (23.3%). Univariate analysis showed that a majority of respondents (61.7%) had poor oral hygiene, while the remaining 38.3% had moderate oral hygiene. Notably, no respondent had good oral hygiene. This indicates a widespread neglect of oral care practices within the studied ODGJ population.

Table 1. Bivariate statistic of the relationship between oral hygiene and dental caries in people with mental disorders at Yayasan Mitra Mulia Husada Palembang 2024

| OHI-S | DMF-T | | | | | | Total | | P value |
| | Low | | Moderate | | High | | | | |
	N	%	N	%	N	%	N	%	
Good	0	0	0	0	0	0	0	0	0,000
Moderate	9	15	13	21,7	1	1,7	23	38,4	
Poor	5	8,3	2	3,3	30	50	37	61,6	
Total	**14**	**23,3**	**15**	**25**	**31**	**51,7**	**60**	**100**	

The results revealed that the oral hygiene status among ODGJ was predominantly poor. As shown in Table 4.3, a total of 37 respondents (61.7%) had poor OHI-S (Oral Hygiene Index-Simplified) scores, 23 respondents (38.3%) had moderate scores, and none (0%) had good oral hygiene scores.

These findings are supported by a study conducted by Muhtarom et al. (2022), which examined the relationship between low self-care and oral hygiene among ODGJ at the Cibeber Public Health Center in Cianjur. The study found that 15 individuals (60%) had poor OHI-S scores, 8 (32%) had moderate scores, and only 2 (8%) had good scores.

According to Wirza et al. (2023), individuals with mental disorders often exhibit apathy toward oral hygiene practices, particularly toothbrushing, due to psychological factors such as anxiety, depression, or other mental health issues. These conditions impair their ability to consistently maintain oral hygiene. From the OHI-S examinations conducted in this study, the average Debris Index was 2.0 and the Calculus Index was 1.9, both categorized as poor. The resulting mean OHI-S score was 3.9, also falling within the poor category.

Poor oral hygiene among ODGJ can be attributed to several factors, including side effects of antipsychotic medications that cause dry mouth, limited knowledge about oral hygiene importance, low motivation for self-care, insufficient family support, and poor access to healthcare services. In addition to internal factors, external influences such as the role of healthcare providers in assisting patients with conditions like schizophrenia also contribute. Bariyah et al. (2024) reported that among ODGJ, 59.1% had low knowledge, 63.6% held negative attitudes, 62.5% had poor healthcare accessibility, and 58% perceived inadequate support from healthcare personnel in maintaining oral health.

Dental Caries in People with Mental Disorders (ODGJ)

This study also examined the prevalence of dental caries among ODGJ at the Mitra Mulia Husada Foundation in 2024. The findings show that most respondents had high DMF-T scores (Decayed, Missing, and Filled Teeth index). Table 4.4 indicates that 31 respondents (51.7%) had high DMF-T scores, 15 respondents (25%) had moderate scores, and 14 respondents (23.3%) had low scores.

Jovanovic et al. (2010) found similar results in a study on psychiatric inpatients in Serbia, where the average DMF-T score was 24.4 ± 5.1, categorized as high. Sacchetto et al. (2013) also observed a high average DMF-T score of 14.2 ± 7.8 in mentally ill patients in Brazil. Meanwhile, Singh et al. (2020) reported a moderate DMF-T score of 4.1 ± 5 among mentally ill patients in India (as cited in

Pindobilowo et al., 2022). In Indonesia, a study conducted at RSJ Sungai Lihum in South Kalimantan found a DMF-T score of 13.8, also within the high category (Wijaya, 2023).

The risk of dental caries is elevated among ODGJ due to poor self-care, including inadequate oral hygiene practices (Muhtarom et al., 2022). From the DMF-T assessments in this study, the average decay (D) score was 3.4, missing (M) was 4.1, and filling (F) was 0, resulting in a total DMF-T score of 7.5, categorized as high. Pindobilowo et al. (2022) noted that the filling component (F) in ODGJ was nearly absent, with an average score of only 0.06 ± 0.32, indicating that very few individuals received restorative treatment for cavities.

Dental caries is more prevalent in ODGJ due to vulnerability to plaque accumulation, psychomotor disorders, and long-term use of antipsychotic medications. These medications often cause dry mouth, reducing saliva flow and increasing the risk of caries. Psychomotor impairments limit physical movement and hinder oral hygiene practices. According to Wijaya (2023), these difficulties lead to oral health issues such as caries. A U.S. study also found that 99% of caries cases were associated with reduced saliva flow (Velasco-Ortega et al., 2017).

Relationship Between Oral Hygiene and Dental Caries Among ODGJ

The statistical test in this study yielded a p-value of 0.000, indicating a significant relationship between oral hygiene and dental caries among ODGJ at the Mitra Mulia Husada Foundation in 2024. Although no similar studies were found specifically involving ODGJ, Anindita et al. (2018) found a correlation between oral hygiene and caries among fishermen in Jember Regency, albeit a weak one. Conversely, Zulfikri and Huda (2017) found a strong and significant relationship among elementary school students in Bukittinggi.

In the current study, the majority of ODGJ respondents had poor oral hygiene status and high caries scores. A direct correlation was observed: higher OHI-S scores were associated with higher DMF-T scores. This indicates that neglecting oral hygiene can lead to plaque buildup and eventually result in dental caries.

The data analysis further confirmed that poor oral hygiene is significantly associated with increased caries rates among ODGJ. This is largely due to unstable mental conditions, leading to neglect of personal hygiene, including oral care. Additional contributing factors include lack of knowledge and awareness about oral hygiene, low motivation and family support, limited healthcare guidance, and the prolonged use of antipsychotic medications that reduce saliva flow. Collectively, these factors significantly increase the risk of caries in individuals with mental disorders.

CONCLUSION

This study confirms a significant relationship between oral hygiene and dental caries among people with mental disorders (ODGJ) at Yayasan Mitra Mulia Husada Palembang. Most respondents had poor oral hygiene and high levels of dental caries, highlighting a critical gap in their health care. These findings underscore the necessity for structured oral health programs in psychiatric care institutions.

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