

Status of Dental Health with the Utilization of Dental and Oral Health Services at Public Health Center

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Abstract— Background: Dental health problems in the community are in the high category, where the prevalence of caries in the population in Indonesia is 72.6% with a DMF-T index of 4.5, while the population with dental and oral problems who receive care and treatment is 31.1% and. So it can be interpreted that dental cases in Indonesia are high but the utilization of dental health services is still low. **Purpose:** To analyze the relationship of dental health status to the utilization of dental and oral health services at public health centers. **Methods:** This type of research is a quantitative research with a cross sectional approach. The study was conducted on patients at the Dental Polyclinic of Mangkurawang Health Center, Kutai Kartanegara Regency, East Kalimantan Province. The research sample was taken by purposive sampling technique, as many as 200 people. The independent variable is dental health status and the dependent variable is the utilization of dental health services. Data analysis was carried out using the Kendal's tau test, which aims to determine the relationship between dental health status and the utilization of dental and oral health services. **Results:** From the results of the study, it is known that most of the respondents have a high category of dental health status with the status of utilization of dental and oral health services in the bad category, namely 49 respondents (24.5%). Analysis with Kendal's tau test obtained p -value 0.000 ($p < 0.05$) meaning that there is a significant relationship between dental health status and utilization status of oral and dental health services at the public health centers. **Conclusion:** There is a significant relationship between dental health status and the utilization status of dental and oral health services at the public health centers.

Keywords— Status of dental health, utilization status of dental and oral health services

I. INTRODUCTION

Dental and oral health is an inseparable part of health in general, because dental and oral health will affect the health of the body. The role of the oral cavity is very large for human health and well-being. In general, a person is said to be healthy, not only a healthy body but also a healthy oral cavity and teeth. Dental and oral health plays a very important role in supporting the health of a person's body [1–3].

Dental and oral health status is generally expressed in the prevalence of dental caries and periodontal disease, because dental caries and periodontal disease are experienced by almost all people in the world. The method of assessing oral health status, especially dental caries, is using the DMF-T (Decay Missing Filled Teeth) value, while for oral hygiene, OHIS (Oral Hygiene Index Simplified) is used [4–6].

The caries prevalence of the population in Indonesia is 72.6% of the population with dental and oral problems who receive care and treatment of 31.1% and the tendency of the DMF-T index is 4.5. Data also shows that DMF-T in children aged 12 years is 1.38, while WHO expects the Global Goals for Oral Health 2020, DMF-T in children aged 12 years 1. Preventive measures against oral disease need to be taken so that there is no disruption of function, activity and decreased work productivity. The government has carried out various activities to improve the degree of dental and oral health, one of which is carrying out preventive dental health services, the implementation of which is entrusted to the public health center [7–9].

The awareness of adults in Indonesia to come to the dentist is less than 7% and in children it is only 4% of visits. The fact

is that 72.1% of the Indonesian population has cavities and 46.5% of them do not treat cavities. On average, patient visits to the public health center are already in an advanced state for treatment, so it can be interpreted that the level of public awareness in general to seek treatment as early as possible still cannot be implemented. People visit when they have a toothache. This can be seen from the low number of visitors who use health services at the public health centre. Utilization of dental and oral health services is not only in the form of tooth extraction and dental fillings, but the public must visit at least once every 6 months [10–12].

Data from the Mangkurawang Public Health Center, Kutai, East Kalimantan, in January there were 146 visits to the dental clinic. A total of 65% (100 people) are female and 35% (46 people) are male with an average age of 35 years. There are complaints including toothache, cavities, and loose teeth. After checking and recording the patient's medical record, it was found that the average DMF-T was 4.5 including high criteria.

II. RESEARCH METHODOLOGY

The design of this research is an analytic observational research with a cross sectional research design. The data collection was carried out in December 2020 for patients at the Dental Polyclinic of the Mangkurawang Health Center, Kutai Kartanegara Regency, East Kalimantan Province. The research sample was taken by purposive sampling technique, as many as 200 people. The independent variable is dental health status and the dependent variable is the utilization of dental health services. The instrument of dental health status was measured by calculating the DMF-T contained in the medical records of each patient. The data obtained are then

recapitulated in the dental health status sheet and categorized as follows according to WHO. For the variable of utilization of dental health services, it is measured based on the number of patient visits to the dental clinic for 1 year, then categorized by the scale of utilization of dental and oral health services based on Yosa's research [13]. Data analysis used the Kendal's tau test which aims to determine the relationship between dental health status and the use of dental and oral health services

III. RESEARCH RESULT

TABLE 1. Characteristics of the study participants by age

Age	Frequency	Percent
17 – 25	99	49.5
26 – 35	51	25.5
36 – 45	50	25.0
Total	200	100

Table 1 shows that the age of 17-25 years at most, namely 99 respondents (49.5%).

TABLE 2. Characteristics of the study participants by gender

Gender	Frequency	Percent
Male	99	49.5
Female	51	25.5
Total	200	100

Table 2 shows that most of the research subjects are women, namely 128 respondents (64%).

TABLE 3. Frequency distribution of dental health status

Dental health status	Frequency	Percent
Low	21	10.5
Moderate	49	24.5
High	130	65.0
Total	200	100

Table 3 shows that the dental health status in the High category was mostly experienced by research subjects, namely 130 respondents (65%).

TABLE 4. Frequency distribution of utilization of dental and oral health services

Utilization	Frequency	Percent
Not good	21	10.5
Enough	49	24.5
Good	130	65.0
Total	200	100

Table 4 shows that most of the research subjects have a not good category utilization, namely 112 respondents (56%).

TABLE 5. Frequency distribution based on dental complaints

Dental complaints	Frequency	Percent
Toothache	65	32.5
Dental filling	56	28
Tooth extraction	62	31
Periodontal disease	17	8.5
Total	200	100

Table 5 shows that most of the research subjects have complaints of toothache, namely 65 respondents (32.5%)

TABLE 6. Frequency distribution dental health status and utilization of dental and oral health services

Dental health status	Utilization of dental and oral health services						Total
	Not good		Enough		Good		
	f	%	f	%	f	%	
Low	1	0.5	6	3	14	7	21
Moderate	22	11	8	4	19	9.5	49
High	89	44.5	34	17	7	3.5	130
Total	112	56	48	24	40	20	200

Table 6 shows that most of the research subjects had a high category of dental health status with not good utilization status, namely 89 respondents (44.5%).

TABLE 7. The results of the Kendall's tau correlation test between dental health status and the use of dental and oral health services

Kendall's tau	α	p-value
	0.05	0.000

Based on the analysis of Kendall's tau in table 7, it shows that $p = 0.000$ which means $p < 0.05$. These results can be concluded that there is a relationship between dental health status with the utilization of dental and oral health services.

IV. DISCUSSION

The results showed that most of the research subjects were in the age range of 17-25 years, as many as 99 respondents (49.5%) and are female, namely 128 respondents (64%). The results of this study are in accordance with the research of Lumenta et al. that someone who enters their late teens is in a productive age so they have a high awareness of seeking services when they need it. The older one gets, the more one's ability to make decisions, think rationally, be wiser, and be able to control emotions and be tolerant of the views of others. Characteristics of patients that affect the use of health services are gender, women are more likely to use health services than men [14].

The results showed that most of the research subjects have dental health status in the High category, as many as 130 respondents (65%). Dental health status was obtained using the DMF-T index. The DMF-T index in developing countries generally increases every year, for example Indonesia. Indonesia is at high risk for caries and has the highest DMF-T index among other countries [15].

Data in table 4 shows that most of the respondents have the status of utilization of dental health services in the Bad category, as many as 112 respondents (56%). The status of utilization of dental health services is obtained by calculating the number of visits by respondents in the last 1 year. There are 3 categories, namely not good utilization status if the visit is 1 time a year, enough utilization status if 2 visits a year, and good utilization status if the visit is 2 times a year.

Table 5 shows that most of the research subjects came to dental health services with complaints of toothache, as many as 65 respondents (32.5%). Toothache is the most common disease group that people complain about, dental and oral disease ranks first [16].

Table 6 shows that most of the respondents with a high category of dental health status had a not good category of

utilization of dental health services, as many as 89 respondents (44.5%). The level or degree of illness is increasingly felt to be severe, then the individual will increasingly need healing thus the more need for health services, as well as the need for health services, if the higher the need for a service, the higher the desire to take advantage of the health service. So if the results of the study show that DMF-T is high, it means that each individual requires high care as well [17,18].

The results of the calculation of the Kendall's tau statistical test in table 7 between dental health status and utilization status of dental health services obtained a p-value of 0.000, this indicates that there is a significant relationship between dental health status and utilization status of dental health services in Mangkurawang Health Center. Less of socialization about dental and oral health is a vital reason people are lazy to visit the dentist. Some people think that dental disease is not a serious thing and can go away on its own after brushing your teeth [19].

V. CONCLUSION

Based on the results of the study, it can be concluded there is a significant relationship between dental health status and the utilization of dental health services at the public health center

VI. CONFLICT OF INTEREST

The author hereby declares no conflict of interest

VII. ETHICAL CLEARANCE

The study was conducted after obtaining approval from the Ethics Committee of the Health Polytechnic of the Ministry of Health Yogyakarta No. e-KEPK/POLKESYO/0640/X/2020

REFERENCE

- [1] Purnama T, Rasipin N. Tedi's Behavior Change Model to Improving Brushing Teeth Behavior Parents. *J Appl Heal Manag Technol* 2020;2:1–12.
- [2] Gil-Montoya JA, de Mello ALF, Barrios R, Gonzalez-Moles MA, Bravo M. Oral health in the elderly patient and its impact on general well-being: a nonsystematic review. *Clin Interv Aging* 2015;10:461.
- [3] Bhattacharya PT, Misra SR, Hussain M. Nutritional aspects of essential trace elements in oral health and disease: an extensive review. *Scientifica (Cairo)* 2016;2016.
- [4] Heilmann A, Tsakos G, Watt RG. Oral health over the life course. *A Life Course Perspect Heal Trajectories Transitions* 2015:39–59.
- [5] Kuppaswamy VL, Murthy S, Sharma S, Surapaneni KM, Grover A, Joshi A. Oral hygiene status, knowledge, perceptions and practices among school settings in rural South India. *Oral Heal Dent Manag* 2014;13:146–54.
- [6] Bridges SM, Parthasarathy DS, Wong HM, Yiu CKY, Au TK, McGrath CPJ. The relationship between caregiver functional oral health literacy and child oral health status. *Patient Educ Couns* 2014;94:411–6.
- [7] Balitbang Kemenkes RI. *Riset Kesehatan Dasar*. Jakarta: 2013.
- [8] Peres MA, Macpherson LMD, Weyant RJ, Daly B, Venturelli R, Mathur MR, et al. Oral diseases: a global public health challenge. *Lancet* 2019;394:249–60.
- [9] Kemenkes RI. *Pedoman Paket Dasar Pelayanan Kesehatan Gigi dan Mulut di Puskesmas*. Jakarta Direktorat Jenderal Upaya Kesehatan Kemenkes RI 2012.
- [10] Mintjelungan C, Mariati NW. Gambaran status karies dan pola pemeliharaan kesehatan gigi dan mulut pada mahasiswa asal Ternate di Manado. *e-Gigi* 2013;1.
- [11] Laumara TT, Paridah P. Studi Pemanfaatan Poliklinik Gigi di Puskesmas Kapoiala Kecamatan Kapoiala Kabupaten Konawe Tahun 2016. *J Ilm Mhs Kesehat Masy* 2017;2.
- [12] Slack-Smith L, Lange A, Paley G, O'Grady M, French D, Short L. Oral health and access to dental care: a qualitative investigation among older people in the community. *Gerodontology* 2010;27:104–13.
- [13] Yosa A, Wahyuni S. Faktor-Faktor Yang Berhubungan Dengan Kunjungan Pelayanan Gigi Di Puskesmas Way Laga Kota Bandar Lampung. *J Anal Kesehat* 2017;4:420–6.
- [14] Tasya N, Andriany P. Faktor-Faktor Yang Berhubungan Dengan Pemanfaatan Pelayanan Kesehatan Gigi Dan Mulut di Rumah Sakit Gigi Dan Mulut (RSGM) Universitas Syiah Kuala Banda Aceh. *J Caninus Dent* 2016;1:54–62.
- [15] Faranitha R, Muhibat S, Suryanti N. Perbedaan indeks DMF-T antara siswa SMP di perkotaan dan perdesaan usia 12-13 tahun The difference in the DMF-T index between 12-13-years-old junior high school students in urban and rural areas. *J Kedokt Gigi Univ Padjadjaran* 2016;28.
- [16] Mubasyiroh R. Determinan Keluhan Sakit Gigi. *Bul Penelit Kesehat* 2018;46:141–6.
- [17] Rumengan DSS, Umboh JML, Kandou GD. Faktor-faktor yang berhubungan dengan pemanfaatan pelayanan kesehatan pada peserta BPJS kesehatan di Puskesmas Paniki Bawah Kecamatan Mapanget Kota Manado. *Jikmu* 2015;5.
- [18] Lourenço CB, de Lima Saintrain MV, Vieira APGF. Child, neglect and oral health. *BMC Pediatr* 2013;13:1–8.
- [19] Sari M. Hubungan Perilaku Sehat dan Perilaku Kesehatan Gigi dan Mulut Terhadap Derajat Kesehatan Gigi pada Komunitas Tukang Becak di Kota Surakarta, Jawa Tengah. *JIKG (Jurnal Ilmu Kedokt Gigi)* 2019;2.