



Oral Health Survey at PPA Eagle and PPA Agape: Dental Health Status, Service Needs and WTP (Willingness to Pay)

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ABSTRACT

Low utilization of dental health services, particularly among children, is a significant public health issue. Factors such as distance, cost, and service quality hinder access. Child Development Centers (PPA) present a potential target population for dental health interventions. The objective of this study to assess the oral health status and service needs of PPA children, determine the Foundation's willingness to pay for dental treatments, and explore potential collaborations between the PPA and the Dental Health Department. The methods used a cross-sectional study was conducted on 522 PPA children. Data on oral health status, service needs, and willingness to pay were collected using a questionnaire and analyzed using statistical methods. The results of this study revealed a high prevalence of dental caries among children. The most common service need was dental fillings. The Foundation's willingness to pay for dental services was significantly lower than the current rates offered by the Dental Health Department. The conclusion is the findings highlight the need for affordable and accessible dental care for PPA children. Collaborations between the PPA and the Dental Health Department can help address this issue by providing subsidized or free dental services.

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INTRODUCTION

Improvement in health status can only be achieved if the needs and demands of individuals, families, groups, and communities for health services, including dentistry, can be met properly (Chávez, Kossioni, & Fukai, 2022; Alamri, 2022; Fisher, et al., 2023; Chan, et al., 2024). These needs and demands are reflected in the number of people who need medical services, both for care and treatment. In Indonesia, data shows that only 31.1% of people receive dental health care from medical personnel such as dental nurses, dentists, or dental specialists, while the other 68.9% do not receive such services. Overall, the affordability or ability of people to access dental services is only 8.1%.

According to RISKESDAS 2018 data, 54% of children aged 5-9 years in East Nusa Tenggara (NTT) have cavities, and 97.2% of them have never sought dental treatment.

(Kementerian Kesehatan Republik Indonesia, 2018). The high prevalence of cavities is closely related to improper tooth brushing behaviour, where only 3.7% of people in NTT brush their teeth properly. The low oral health status in NTT Province is caused by a lack of knowledge about dental care, limited access to dental health services, and a shortage of dental medical personnel in various regions.

The Child Development Centre (CDC) assists children from limited economic backgrounds, with an average parental income of between IDR 300,000 and IDR 1,000,000 per month. This income is far below Kupang City's Regional Minimum Wage (UMR) in 2023, which is IDR 2,187,000 per month, so it can be categorised as low socio-economic conditions. Despite this, the PPA Foundation has set up a health fund for each child. However, preventive measures and dental treatment have not been routinely implemented. Children who complain of toothache are only taken to the nearest health centre for medication, without any attention to further dental prevention or treatment. This shows that promotive and preventive efforts towards dental health are still lacking, even though the PPA has the ability and willingness to pay to fund dental care for these children. The purpose of this study is to determine the dental health status of children in PPA, identify their dental health service needs, and evaluate the foundation's willingness to pay (WTP) for dental health problems faced by PPA children.

METHOD

This study used a cross-sectional design. The study subjects consisted of children aged 3 to 20 years who were enrolled as students at PPA Eagle and PPA Agape, with a total sample of 522 people (using the total sampling method). Inclusion criteria for participants were: willing to be a respondent, as evidenced by the return of informed consent filled out by parents, and having a socioeconomic income level of parents between IDR 300,000 to IDR 1,000,000 per month.

RESULTS AND DISCUSSION

Table 1. Percentage of Dental Health Service Needs

Diagnosis	Type of Service	Percentage
Pulp caries	PSA + Filling	33,15 %
Enamel caries and dentin caries	GIC Filling	29,71%
Free	TAF	28,57%
Radix	Extraction	8,57%
Calculus	Scaling	0,01%

Table 1 shows that the highest required service types are PSA and Patching with a percentage of 33.15%. While the type of scaling service is the lowest service requirement with a percentage of 0.01%.

DISCUSSION

The research findings in Table 1 indicate that 71.43% of children experience dental caries, with each child having between 1 and 5 caries, while only 28.57% of children are caries-free. Data from the 2018 Basic Health Research (RISKESDAS) in Indonesia show an extremely high prevalence of dental caries at 92.6%, meaning only 7.4% of children are caries-free (Kementerian Kesehatan Republik Indonesia, 2018). The World Health Organization (WHO) aims for at least 50% of children to be free from caries. The high prevalence of caries may be attributed to the age of children, who are still in the stage of transitioning teeth. Newly erupted teeth are generally free from caries, although dental health services through collaboration between the PPA and local community health centers (Puskesmas) have been implemented.

The Child Oral Impacts on Daily Performances (Child-OIDP) index, which measures the impact of oral health problems on children's daily activities, among 11–12-year-old children in Rio de Janeiro, Brazil, shows that the activities most affected by dental problems are eating, cleaning the mouth, and smiling. High Child-OIDP scores are positively associated with the experience of dental caries. Research by Castro et al. (2011) also revealed that dental health

issues, such as caries, loose milk teeth, bleeding gums, and bad breath, are linked to poor quality of life.

A study in Bengaluru, India, found that more than half of the research subjects suffered from oral diseases requiring treatment to improve their quality of life, with parents being the primary decision-makers in children's health care (Pavithran, 2020). Dental diseases remain a global health issue causing pain, discomfort, and even death. In Saudi Arabia, general dental care is provided free of charge by government health facilities, but due to high demand, these facilities are overburdened, resulting in long waiting times. Limited access to dental health services may worsen patients' suffering, necessitating policies and initiatives to enhance the population's willingness to pay (WTP) for dental health services, particularly for the unemployed, those with low education levels, and individuals without private health insurance (Hawsawi, Immurana, & Al-Hanawi, 2022).

This research also found that the WTP for dental services such as fillings, extractions, and scaling is significantly lower than the rates set by the PPA. Many families in the PPA prefer using BPJS health cards to access free dental health services at Puskesmas. The rates at Puskesmas for patients without BPJS are also more affordable than those at the JKG Kupang Independent Clinic. For instance, the scaling fee at Puskesmas is only IDR 10,000 for one region and IDR 60,000 for all regions. Dental fillings with GIC material cost IDR 20,000, and tooth extraction is only IDR 30,000. These rates have not increased in the past ten years.

The rates at Puskesmas are slightly lower compared to research involving 1,522 outpatients in four hospitals in Tanzania, which showed an average WTP of Tshs 7,398 (equivalent to USD 3.4) for anterior tooth fillings and Tshs 7,726 (USD 3.5) for posterior tooth fillings. WTP for tooth extraction was Tshs 5,448 (USD 2.5) for anterior teeth and Tshs 6,188 (USD 2.8) for posterior teeth. WTP varied based on age, income, outpatient status, and previous experiences with dental services. Younger individuals (18–24 years) and those with higher incomes tended to have higher WTP (Nyamuryekung'e, Lahti, & Tuominen, 2018).

Additionally, research in Singapore on adults aged 60 years and above revealed an average WTP of SGD 30.23 for dental fillings, SGD 30.28 for scaling, and SGD 35.08 for tooth extraction (Mittal et al., 2022). The costs of dental care under the national health insurance (BPJS) system do not cover all types of treatment. For services unavailable at Puskesmas, such as fluoride application, WTP ranges between IDR 75,000 and IDR 100,000. These findings align with research on 264 parents of three-year-old students in Yogyakarta, which examined the WTP for preventive measures against children's dental caries in elementary schools, with an average WTP of IDR 103,371. Parents are more willing to pay higher amounts if their income is higher. Public awareness of the importance of dental health and its impact on overall well-being encourages prioritizing preventive actions, such as paying for dental prevention programs before problems arise (Saptutyningasih & Jati, 2022).

CONCLUSION

The conclusion is the findings highlight the need for affordable and accessible dental care for PPA children. Collaborations between the PPA and the Dental Health Department can help address this issue by providing subsidized or free dental services.

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