

RESEARCH ARTICLE

THE ASSOCIATION BETWEEN DENTAL AND ORAL CARE BEHAVIOR TOWARDS QUALITY OF LIFE IN STUNTING TODDLERS

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ABSTRACT

Introduction: Dental and oral health is an important thing that must be considered, especially in stunted children who need more attention because they have a less level of awareness, are susceptible to disease, and have a low intellectual level compared to children with balanced nutrition. If the problem of dental and oral health in stunted children is not addressed, it will cause malnutrition to get worse and the quality of life for stunted children to get lower.

Methods: This research is an analytic observational study with a cross sectional approach. This study used the Early Childhood Oral Health Impact Scale (ECOHIS) Questionnaire and was conducted on stunted toddlers which would be filled out by the parents of these toddlers in Sumberjambe District, Jember Regency. The sampling technique uses total sampling. Of the 9 villages in Sumberjambe sub-district, 3 villages were taken randomly. Each village takes 1 posyandu with the most participants.

Results: There is a significant relationship between the behavior of maintaining oral and dental health and the quality of life of stunting toddlers. Most of the respondents had poor dental and oral health maintenance behavior and a very impactful quality of life.

Conclusion: The behavior of stunting toddlers in maintaining healthy teeth and mouth is still in the low category and the majority of respondents have a very impactful quality of life.

KEYWORDS: Stunting, Behavior, Quality of Life, Dental and Oral Health.

INTRODUCTION

Short toddler (Stunting) is a condition of failure to thrive in toddlers, especially in the first 1000 days of life which is caused by chronic malnutrition due to lack of nutritional intake in a relatively long period of time, infection, or inadequate stimulation. This condition was measured using the height-for-age index (TB/U) in the anthropometric standard for assessing the nutritional status of toddlers, the results of these measurements were within the threshold (Z-Score) <-2 Standard Deviations (SD) to -3 SD (short / stunted) and <-3 SD (very short / severely stunted). This condition can cause disruption of physical and cognitive development in the future (Ministry of Health RI, 2018).

Based on RISKESDAS results in 2018, cases of stunting in Indonesia reached 30.8% (11.5% very short and 19.3%

short) or the equivalent of 7 million toddlers suffering from stunting, but in 2018 the prevalence of stunting cases has decreased by 6.4% compared to 2013 (Ministry of Health RI, 2018). The prevalence of stunting cases in Jember Regency in 2019 was 11.67%, while stunting cases in 2018 were 10.7%. This shows that there was an increase in cases in 2019 based on data from the Jember District Health Office in 2019. According to Rokhmah et al. (2021), the National Team for the Acceleration of Poverty Reduction of the Republic of Indonesia has released 100 districts/cities for stunted children. The ten regencies/cities are in East Java Province, including Lamongan, Nganjuk, Bondowoso, Sumenep, Probolinggo, Pamekasan, Jember, Bangkalan, Sampang, and Lumajang Regencies. Data from the Department of Health in the field of family health and nutrition shows that the stunting rate in Jember Regency is 17.73%, of

which the 3 sub-districts with the highest stunting rates are Jelbuk District 39.3%, Arjasa 38.8% and Sumberjambe 38.14%.

Dental and oral health is also closely related to general body health conditions (Khasanah et al., 2019). Dental and oral health is an integral part of body health which must be maintained. Dental and oral care is an effort to improve body health. The mouth is not just the entrance for food and drink but the mouth has more functions than that and most individuals are not aware of the large role the mouth plays in one's health and well-being. Therefore, dental and oral health has a very important role in supporting one's health and having an impact on one's quality of life (Ratih & Yudita, 2019).

Knowledge is a very important factor in shaping one's behavior. Behavior based on knowledge will last longer than behavior that is not based on knowledge. Most children have a low level of knowledge and behavior so that awareness in maintaining healthy teeth and mouth is also low. According to Diyanata et al. (2022), stunted children have lower intellectual intelligence than children of their age who are not stunted. Children with stunting experience a 7% decrease in cognitive development compared to children who are not stunted. The behavior pattern of stunted children in maintaining healthy teeth and mouth is still in the low category when compared to children with balanced nutrition. According to Yani et al. (2022), stunting toddlers are able to understand knowledge and attitudes on how to maintain healthy teeth and mouth, but have not been able to implement it in the form of action.

The incidence of dental caries and other dental and oral health problems in toddlers can cause a decrease in appetite. As a result of dental caries, of course it causes pain, in the end it will interfere with the function of mastication. Disruption of masticatory function will affect individual nutritional intake and nutritional status. If nutritional status is disturbed, there is a risk of stunting (Abdat, 2019). Nutritional intake that is not optimal and lasts a long time can cause changes in metabolism in the brain so that thinking power becomes low. Low nutritional status also has an impact on the quality of education, because toddlers with low nutrition tend to fall asleep easily, lack enthusiasm, and think less optimally. The factor of chronic malnutrition influences the behavior of stunting toddlers in maintaining healthy teeth and mouth so that problems with dental and oral health easily

arise (Yani et al., 2022). If the dental and oral health problems of stunted children are not handled, it will cause malnutrition to get worse and the quality of life for stunted children to decrease (Diyanata et al., 2022).

From the problems above, an instrument is needed to assess the extent to which the behavior of maintaining dental and oral health is related to the quality of life of stunting toddlers. One of the qualities of life measurement instruments that can be used is the Early Childhood Oral Health Impact Scale (ECOHIS). ECOHIS is an instrument used to measure the Oral Health Quality of Life Instrument (COHQoL) and the impact of oral health on the quality of life of toddlers. Children aged under five usually still have difficulty understanding basic health concepts, especially those related to dental and oral health (Elfarisi et al., 2018). The filling of the ECOHIS instrument is carried out by parents of toddlers to assess the extent to which dental and oral health is related to the quality of life of children under 5 years of age.

This study aims to analyze the relationship between the behavior of maintaining dental and oral health and the quality of life of stunting toddlers in Sumberjambe, Jember Regency because based on reported data on stunting cases, this area was selected to have a relatively high incidence rate. This research was conducted on stunting toddlers with a questionnaire to be filled in by the parents of the toddlers in Sumberjambe District, Jember Regency. The questionnaire used is a questionnaire related to the behavior of maintaining oral and dental health and ECOHIS related to its suitability for the research target, namely toddlers and in accordance with the research objectives.

METHOD

This research is an analytic observational study with a cross sectional approach. The instrument used to analyze the relationship between dental and oral health behavior in this study was the Early Childhood Oral Health Impact Scale (ECOHIS) Questionnaire. This research was conducted on stunting toddlers with a questionnaire to be filled in by the parents of the toddlers in Sumberjambe District, Jember Regency. This research was conducted in the village of Randuagung, Sumberjambe, Sumberpakem, Sumberjambe District, Jember Regency in June 2022 - August 2022. The study population was stunted toddlers aged 2-5 years with parents who were willing for their children to be involved in the research. The sampling technique in this study used total sampling, which is a

sampling technique where the number of samples is equal to the population. Therefore, the number of respondents in this study were 78 respondents.

Research respondents have filled out and signed an informed consent. All samples in the study must meet the inclusion criteria; stunting toddlers with an age range of 2-5 years who are accompanied by their parents/guardians and fill out a questionnaire in accordance with the directions given. Samples included in the exclusion criteria were stunting toddlers who were uncooperative; refused to be a respondent; and had a systemic disease or mental retardation.

The Early Childhood Oral Health Impact Scale (ECOHIS) questionnaire was used because this questionnaire is in accordance with the research objectives, namely toddlers and in accordance with the research objectives. The data that has been obtained is then analyzed statistically using the SPSS program with the type of ordinal scale measurement. The test to be carried out is the Spearman correlation test to determine the relationship between the

behavior of maintaining oral health and the quality of life in stunting toddlers. This study aims to analyze the relationship between the behavior of maintaining oral health and the quality of life in stunting toddlers in the Sumberjambe area, Jember Regency. The choice of research location was in the Sumberjambe area because based on data reports on stunting cases, this area was chosen to have a relatively high incidence rate.

RESULTS

The total samples obtained in this study were 78 toddlers. Based on figure 1, the results of quantitative data related to gender and age show that the overall number of respondents obtained by the number of male respondents aged 24-35 months was 26 toddlers (59.09%), ages 37-48 months were 13 toddlers (29, 55%), aged 49-60 months were 5 toddlers (11.36%) and the number of female respondents aged 24-36 months was 20 toddlers (58.83%), aged 37-48 months were 11 toddlers (32.35%), aged 49-60 months as many as 3 toddlers (8.82%).

Age (Month)	Gender			
	Man		Woman	
	n	%	n	%
24-36	26	59.09	20	58,83
37-48	13	29.55	11	32.35
49-60	5	11.36	3	8,82
Total	44	100	34	100

FIGURE 1- Distribution of Respondents Based on Gender and Age in Stunting Toddlers, Sumberjambe District, Jember Regency

Based on figure 2, the results of quantitative data related to quality of life on gender, it can be concluded that in the male toddler category with moderate impact there were 14 toddlers (31.82%), the category very impacted were 30 toddlers (68.18%) and in 9 toddlers (26.47%) in the moderately impacted category, 25 toddlers (73.53%) in the very impactful category.

Quality of Life category	Gender			
	Man		Woman	
	n	%	n	%
Less Impact	0	0	0	0
Simply Impactful	14	31,82	9	26,47
Very Impactful	30	68,18	25	73,53
Total	44	100	34	100

FIGURE 2- Distribution of Respondents Based on Quality of Life on Sex in Stunting Toddlers, Sumberjambe District, Jember Regency

Based on figure 3 showing the results of quantitative data related to the behavior of maintaining dental and oral health for gender, it can be concluded that the behavior of maintaining dental and oral health in male toddlers with less category is 43 toddlers (97.73%), enough category is 1 toddler (2.27%) and in female toddlers with less category as many as 32 toddlers (94.12%), sufficient category as many as 2 toddlers (5.88%).

Behaviour Category	Gender			
	Man		Woman	
	n	%	n	%
Not enough	43	97.73	32	94,12
Enough	1	2,27	2	5.88
Good	0	0	0	0
Total	44	100	34	100

FIGURE 3- The Distribution of Respondents Based on The Behavior of Maintaining Dental and Oral Health Towards Gender in Stunting Toddlers, Sumberjambe District, Jember Regency

Figure 4 shows the results of the normality test for the percentage of behavior in maintaining oral health with the percentage of quality of life in stunting toddlers having a *p-value* < 0.05, it can be concluded that the data is not normally distributed. Furthermore, the non-parametric correlation test used to test the relationship between variables was *Spearman* with a significance value of <0.05.

Variable	<i>p-values</i>	Information
Behavior	.000	Abnormal
Quality of Life	001	Abnormal

FIGURE 4- Results Normality Test of The Percentage of Behavior To Maintain Oral and Dental Health with The Percentage of Quality of Life in Stunting Toddlers Sumberjambe District, Jember Regency

Spearman's correlation test results which show a significance of $p < 0.05$ means that there is a significant relationship between the two variables whereas if the significance value of $p > 0.05$ then there is no significant relationship. Figure 5 shows a significance value (2-way) = 0.018, according to the *Spearman* correlation test it shows that a significance $p < 0.05$ which means there is a significant relationship between the behavior of maintaining dental and oral health on the quality of life of stunting toddlers in Sumberjambe District, Jember Regency.

	Quality of Life	Behavior
Correlation coefficient	1,000	.267*
Significance (2-way)	.	.018
N	78	78

FIGURE 5- The results of the correlation test between the behavior of maintaining oral and dental health and the quality of life in stunting toddlers, Sumberjambe District, Jember Regency

DISCUSSION

This study shows that in figure 1, the majority of the gender of the respondents was male with a total of 44 toddlers, at the vulnerable age of 24-35 months there were 26 toddlers (59.09%), aged 37-48 months there were 13 toddlers (29.55 %), aged 49-60 months as many as 5 toddlers (11.36%). The majority of toddler boys are far more active than toddler girls, if the food intake given is not comparable to the physical activity carried out by

toddler boys, they have the potential to experience stunting. According to Aiman *et al.*, (2020) stated that there was no significant relationship between the sex of the toddler and the incidence of stunting, there was no relationship between the gender of the toddler and the incidence of stunting this is because in children there is still no difference in the speed of growth and development of children between boys and girls.

The results obtained in figure 1 also show that the age of the majority of respondents is around 24 to 36 months with a total of 46 toddlers. This shows that at the age of 24 months is the weaning period for toddlers and the active period for toddlers will start to be very active to move, besides that the children's motor functions begin to grow and develop. According to Muliadi *et.al* (2021), toddlerhood is a period of *growth spurt* in which brain growth and development in toddlers is formed optimally, therefore efforts to improve nutrition in toddlers are very important to achieve optimal *growth spurt*. Children will experience nutritional deficiencies if the nutrition given to toddlers at this time is lacking, if this happens continuously it can cause growth disturbances so that they have the potential to experience stunting. This is in line with research conducted by Setyawati (2018) that toddlers aged 24 months and over will begin to be able to eat more food than before weaning, therefore nutritional problems including stunting are not experienced by children aged > 24 months. According to Rahmadiyah *et al.* (2022), malnutrition occurs since the baby is in the womb and in the early days after the baby is born, but stunting only appears after the baby is 2 years old.

The results of the study in figure 2 show that the majority of respondents have a very impactful quality of life with a total of 55 toddlers, which means that the respondent's quality of life is poor. This is probably due to the lack of health services related to dental and oral health in the research area, causing people to care less about oral health. This is in line with Jacob's research (2018) that the more accessible health services are to the community, the better the quality of life for the population. Most people in rural areas prefer to treat their illnesses independently or traditionally rather than treating them at existing health care facilities. According to Iskandar (2022), people's reasons for coming to a treatment are not only medical issues but there are socio-cultural issues surrounding a person's behavior when they seek treatment, including socio-cultural factors, namely regarding compatibility and patient trust (suggestion) as well as from an economic perspective about the high cost of medical treatment.

Figure 3 shows that in this study the categories obtained by respondents based on the behavior of maintaining dental and oral health were lacking with a total of 75 respondents, so this shows that the behavior of respondents in maintaining dental and oral health is still lacking. This is likely to occur due to a lack of knowledge regarding the correct procedure for brushing your teeth.

This is supported by research conducted by Nugraheni *et al.* (2019) which shows the same results, that is, most of the respondents are less know how to brush their teeth properly. These results are also supported by research conducted by Alif *et al.* (2021) which states that 50.6 respondents fall into the less category. How to brush your teeth with the wrong method and done in the long run long enough time can cause damage to the tooth.

Another cause that can lead to less predicfigure behavior is due to the lack of public awareness in maintaining oral health so that the majority of public health behaviors are still lacking. Based on Marsaoly *et al.* (2021) that the majority of children have a level of knowledge and behavior which is low enough so that awareness in guarding oral health is also low. Stunted children need more attention because they have a level of awareness, susceptibility to disease, and a low intellectual level in comparison to balanced nutrition children.

Figure 4 shows the results of the normality test to see whether the behavior score data maintains dental and oral health with quality of life in stunting toddlers with a normal distribution using the *Komolgorov Smirnov test*, with the results obtained the data is not normally distributed. The results of the *Spearman* correlation test in figure 5 show that the significance is <0.05 which means that there is a significant relationship between the behavior of maintaining dental and oral health and quality of life. Based on the correlation coefficient, the number 0.267 is obtained which indicates a weak relationship between dental and oral health maintenance behavior and quality of life. Judging from the value of the correlation coefficient, with a positive value, it means there is a unidirectional relationship. However, this is not in line with the research conducted by Badrudin *et al.* (2021), which states that there is no relationship between the behavior of maintaining oral health and the quality of life of 5-year-old stunting toddlers in Indonesia. This can happen because stunting is a chronic condition and involves other problems, such as nutrition for pregnant women, parental knowledge and environmental factors. This can happen because the quality of life in humans is influenced by several factors including global conditions, external conditions, interpersonal conditions, and personal conditions.

The results of this study are that there is a significant relationship between the behavior of maintaining dental and oral health and the quality of life of stunting toddlers

which is probably due to the fact that the majority of respondents have poor or low behavior of maintaining dental and oral health. The behavior of maintaining oral and dental health that is lacking in respondents can later cause problems in the oral cavity so that it can cause the respondent's appetite to decrease and result in poor nutritional intake. Problems in the oral cavity can have a negative impact on the quality of life of these respondents. This is in line with research by Nasia *et al.* (2022), which states that poor dental and oral health care behavior will have an impact on children's oral health related quality of life (OHRQoL) which reflects a person's comfort when eating, sleeping, interacting socially, and satisfaction someone on oral health. In theory, chronic malnutrition factors affect stunting toddler behavior in maintaining healthy teeth and mouth so that problems with dental and oral health easily arise. the lower (Diyana *et al.*, 2022).

Most children have a low level of knowledge and behavior so that awareness in maintaining healthy teeth and mouth is also low. According to Ekholuenetale *et al.* (2020), stunted children have lower intellectual intelligence than children of their age who are not stunted. The behavior pattern of stunted children in maintaining healthy teeth and mouth is still in the low category when compared to children with balanced nutrition, so that children with stunted conditions face a greater possibility of being susceptible to disease, but stunted children do not receive equal attention *underweight* or *wasting*. According to Yani *et al.* (2022), stunting toddlers are able to understand knowledge and attitudes on how to maintain healthy teeth and mouth, but have not been able to implement it in the form of action. This will increase the incidence of dental caries and other dental and oral health problems in toddlers and can cause a decrease in appetite. Tooth decay in children can cause pain, thereby affecting appetite and nutritional intake, which in turn affects children's nutritional status and has a negative impact on children's quality of life (Nassar *et al.*, 2022). According to Elfarisi (2018), parents have a big role in caring for children, especially mothers who spend more time with their children. A mother has a greater closeness and role in maintaining children's health, especially regarding teeth and mouth, so that it is expected to be able to improve the behavior of maintaining dental and oral health in toddlers from an early age.

CONCLUSION

The results of the research on the relationship between the behavior of maintaining oral and dental health on the quality of life in stunting toddlers in Sumberjambe District, Jember Regency can be summarized as follows:

1. The behavior of maintaining dental and oral health for the majority of respondents has a less category.
2. Quality of life for toddlers, the majority of respondents have a very impactful category.
3. The behavior of maintaining dental and oral health has a significant relationship with the quality of life in stunting toddlers.

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