



## PARENTAL KNOWLEDGE TOWARDS CHILDREN'S DENTAL AND ORAL HYGIENE

Agno Elman Efzi<sup>a</sup> ; Emilda Sari<sup>b\*</sup>

<sup>a,b</sup> *Department of Dental Hygiene, Poltekkes Kemenkes Banjarmasin ; Mistar Cokrokusumo No.1A ; Banjarbaru 70714 ; Indonesia*

### Abstract

Dental and oral hygiene problem is the leading cause of daily activities disruption in children such as missing school, bad learning concentration, appetite and nutritional intake. Knowledge of dental and oral hygiene should be given at early age in family by the parents. The aim of our work was to determine relationship between parents' knowledge and dental hygiene of the SDLB children (children with special needs). We undertook this research with analytical survey. A cross-sectional design was carried out. The sampling method was total sampling namely parents of children with special needs and the children as many as 80 people. Chi-Square test was performed to analyze the data. The results show that the knowledge of parents about dental and oral hygiene is not good (85%), while the dental and oral hygiene in children with special needs is poor (85%). Based on the Chi-Square Test, it produces a p-value of sig (2-sided) = 0.002 in the test, so it can obtain a p-value (probability value) from the test ( $p = 0.002 < = 0.05$ ) so that  $H_0$  is rejected. In conclusion, a relationship between parental knowledge and oral hygiene in children with special needs does exist.

**Keywords:** *Knowledge; Dental and oral hygiene; Children with special needs; Parents*

### 1. Introduction

Caries is the most common chronic dental problem yet it is actually preventable (Syreen, et al. 2018; Alhabdan, et al., 2018). Caries attacked 3.5 billion people in the world and it is started when the first teeth appear at children age. The report of World Health Organization reveals 60 – 90% of school children worldwide has experienced caries especially in Asian countries (Van Chuyen, et al., 2021). A study found that the caries prevalence and DMFT score of a group of children aged 12 years old in Indonesia are higher than children in the same age in Southeast Asian countries (Zhang, et al. 2014; Urwannachotima & Hanvoravongchai, 2020; Lai, et al., 2018; Kubota, et al., 2017). It is proven that 61% of 12-year-old Indonesian children were affected by dental caries with the

mean DMFT score in 1.58 (Maharani, et al., 2019).

Children may experience psychiatric and mental health issues. Special needs children are those under the age of 18 who have either physical or cognitive disabilities including intellectual disability (ID), Down Syndrome (DS), autism spectrum disorder (ASD), and attention deficit hyperactivity disorder (ADHD). They have higher risk of dental problems and poor oral hygiene than normal children (Yeung, et al., 2019; Mota-veloso et al., 2012; Vellappally et al., 2014). This condition can lead to dental aversion which associated with increase plaque levels and caries experience. Intellectual disabilities may also limit the self-care, resulting in poor dental hygiene (Sarvas, 2017). Children with special needs require more assistance because of their mental as well as physical challenges, even if they are over seven years old. Because some of them may learn slowly and being uncooperative, have difficulty to

\*) Corresponding Author (Emilda Sari)  
E-mail: melda\_akg\_bjm@yahoo.co.id

understand the behavior of dental hygiene such as brushing teeth (Ningrum, et al., 2021). It was mentioned that children with special need is prone having a high dental carries index and inadequate oral hygiene (Pini, et al., 2016).

The role of parents is essential in dental hygiene as they are the main caregivers to their children. The behavior of parents, particularly mothers can affect their children's health. Some of the behavior of the parents include tooth brushing habit, dietary, and food choices. A good behavior of the parents can affect the children in the effort of caries risk reduction (Bozorgmehr, et al., 2013). Family environment has something to do with the influence of good behavior about dental hygiene (Duijster, et al., 2015).

The relationship of the parental knowledge regarding the dental hygiene of their children are very important to understand. Over the past ten years, the information of the relationship of the parent on the dental hygiene of the children have been conducted. A significant relationship of parental behavior and preschool children in Kerman, South East of Iran was proven in (Bozorgmehr et al., 2013). However, this study doesn't evaluate the knowledge of the parent among the relationship to the children dental hygiene, though it was mentioned that knowledge and attitude of the parents affect children dental health behavior and status. A survey on parental oral knowledge and behavior has been conducted in relationship to the children oral health in (Priya, et al., 2018; Abdat & Ramayana, 2020; Rogéria, et al., 2013). The results indicate that the children poor oral health practice is reflected by the parent partial knowledge and behavior toward oral health. However, all aforementioned research suffer from a relationship to the children with special needs.

Our objective was to evaluate the relationship of parental knowledge to the dental hygiene of the children with special needs. The study was performed by evaluating the knowledge of the parents by using questionnaire and the dental oral hygiene by examining OHI-S of the children. A further objective was analyzing the parents' knowledge and the dental hygiene of the children with special needs.

## 2. Method

### *Study design and sampling procedure*

Our study type was analytical survey. The cross-sectional approach was used to determine the relationship between parental knowledge and oral hygiene and the approach and the variables of research were obtained in the same time. The study was conducted from October 2019 to May 2020. The variable of research consists of independent variable, i.e. knowledge of parents and dependent variable i.e. dental and oral hygiene of the children. The research instrument using the questionnaire of knowledge for the parents regarding dental and oral health.

The population was all 40 students with special needs and 40 parents at SDLB N 1 Martapura, Banjar Regency. Total sampling was carried out with the total population, namely all students with special needs and their parents at SDLB 1 Martapura, Banjar Regency with a total sample of 80 people.

### *Data collection*

Primary data collection was carried out by conducting direct examinations of children with special needs at the SDLB N 1 Martapura, Banjar Regency using a diagnostic instrument set, OHI-S format and giving a dental and oral hygiene knowledge questionnaire to parents of children with special needs. The validity of question has been done using Corrected-Item Total-Correlation. The value of  $r$  table is in significance 0.05 or 5%. Because all the values in Corrected Item-Total Correlation is more than 0.4329, so, it can be concluded that the questions are valid.

Secondary data was data obtained from the research site, SDLB N 1 Martapura, Banjar Regency, regarding the names of students and their parents, age, gender, type of disability and the number of students with special needs and the parents.

### *Data analysis*

Data analysis was started by inputting the primary and secondary in frequency distribution table. After collecting the results of dental and oral hygiene examinations for children with special needs, then the results were statistically tested using the SPSS program with the Chi

Square test to find out the existence of relationship in parental knowledge and oral hygiene (Mchugh, 2013). The category used for Debris Index and Calculus is based on in which good is scored 0 - 0.6; fair if scored 0.7 - 1.8; poor if 1.9 - 3.0.

### 3. Result and Discussion

Results on frequency distribution are divided into distribution based on the parents and children. The data of parents include the number of respondents and knowledge. Meanwhile the data of children includes the number of respondents, and dental and oral hygiene.

The number of parents of children with special needs in which 30% of the respondents are male parent (father) and 70% are female parent (mother). In this research, not all of the respondents are mothers, because not all of the children go to school with their mothers. Some of them are accompanied by their fathers. Even their fathers wait and pick up the children. Thus, the researchers found difficulty to meet the mother of each children. Some of the parents are also comfortable if the respondent is the father.

The number of parental knowledge with poor category is 34 (85%) and good category is 6 (15%) parent. In addition, the table 1 show that the highest dental and oral hygiene percentage is in category of poor with 34 children or 85% of the total respondents.

**Table 1.** Frequency distribution of dental and oral hygiene of the children

Category	Number of Respondents	Percentage (%)
Good	4	10
Fair	2	5
Poor	34	85
Total	40	100

Table 2 shows from 40 parents, at good parental knowledge, there is 1 parent (16.7%) who has children with good dental and oral hygiene, 2 parents (33.3%) who have children with fair dental and oral hygiene and 3 parents (50%) who have children with poor dental and oral hygiene.

**Table 2.** Cross Tabulation of the Relationship between Parental Knowledge and Dental and Oral Hygiene in Children with Special Needs

Parental knowledge	Dental and oral hygiene of the children						Total	
	Good		Fair		Poor		n	%
	n	%	n	%	n	%		
Good	1	16.7	2	33.3	3	50	6	100
Poor	3	8.8	0	0	31	91.2	34	100
Total	4	10	2	5	34	85	40	100

Meanwhile, at poor parental knowledge, there are 3 parents (8.8%) who have children with good dental and oral hygiene and 31 parents (91.2%) who have children with poor dental and oral hygiene.

In table 2, the number of parents who have poor knowledge of dental and oral hygiene is higher than those who have good poor knowledge. As shown in the research of (Mahat & Bowen, 2017), parents actually have awareness that teeth are important to maintain. However few understand the cavities appear in their children's teeth which cause cavities in permanent teeth. So, the bad dental and oral hygiene may be caused by baby teeth cavities that parents didn't realize.

One objective of Ministry of Health of Indonesia 2030 is that to reduce the proportion of dental caries experience of children at age 12 (Ministry of Health of Indonesia, 2019). WHO recommends three prevention of childhood caries i.e. primary prevention which includes primary health care programs especially for maternal and child health that is conducted in early age such as no sugars for baby until 2 years. Secondary prevention is performed focusing on early detection of carious lesions. This is focusing on the dental personnel and even mothers to detect early signs of carious lesions. Tertiary prevention includes reduce cavity by avoiding unnecessary extraction and restoration function. In tertiary prevention may apply rehabilitation for children if there is problem of child's behavior and cooperation (World Health Organization (WHO), 2016). This show that actually the starting point of caries prevention is by making sure that mother or the parents are having knowledge of dental and oral hygiene to promote good dental and oral hygiene to their own children. Since parental knowledge has significant influence on children's dental caries (Isong, et al., 2012).

In table 2, it shows that at parent with good parental knowledge, the number of children who

have poor dental and oral hygiene is higher than that with good dental and oral hygiene. This shows that even though parents have good knowledge, however, most children with special needs have less awareness in keeping dental and oral health so that there is still a lot of those who have poor dental and oral hygiene. Children with special needs are at higher risk than normal children because they may have impaired cognitive abilities, behavioral problems, poor motor coordination, uncontrolled body movements, neuromuscular problem such as drooling, swallowing problem (Ningrum et al., 2021). These problems can hamper them to clean their own teeth or use the common brushing method. Besides, the problems can also reduce the saliva flow that naturally can help wash the food residue in their mouth (Zamani, 2010).

The biggest percentage is poor parental knowledge and poor dental hygiene of the children in 91.2%. The biggest obstacle faced by most of parents regarding dental services to their children is the awareness. Parents tend to visit dentist when there is necessity and not experience professional dental care. This can be caused by the lack of information given to parents regarding oral health from health and social care staffs. Besides, the level of education can also be the factor of poor knowledge of the parents about dental and oral care to their children. It is mentioned that stigma of the shame having a child with special needs also becomes a factor that parents having fear of being discriminated (Hegde et al., 2015). Thus, parents can be isolated, not getting any support and information which enable them to access oral health care. In consequence, their knowledge is poor. This situation impact to the children that the children with special needs don't get any dental care service at home.

**Table 3.** Chi Square test results on parental knowledge and dental oral hygiene of the children

	Value	Df	Sig (2-sided)
Person Chi-Square	12.664 <sup>a</sup>	2	0.002

Table 3 shows the p value in the sig (2-sided) = 0.002 column in the test, meaning that the p value (probability value) of the test is less than, so  $H_0$  is rejected. In conclusion, there is a relationship between parental knowledge and dental and oral hygiene in children with special needs at SDLB N 1 Martapura. So, if the parental knowledge about dental and oral health is good,

the dental and oral hygiene of their children can be way better too.

Children with special health care needs (CSHCN) require health and related services more than that of children in general. The children with special needs can suffer from mental and physical disabilities that influence them in mobility hindrance which resulting in higher poor dental hygiene (Bayarsaikhan, et al., 2015). This is in line with our study according to table 2 that even the parent have good knowledge, the highest category in dental and oral hygiene is poor. However, this is in accordance to the parental knowledge, which is in line with our study result in table 3 that there is relationship between parental knowledge and the dental and oral hygiene status of the children with special needs.

Therefore, it is recommended that assessment of parental knowledge is important to perform first before the appropriate education program for the target is held (Mahat & Bowen, 2017). The poor dental and oral hygiene of the children with special needs is also caused by poor routine dentist visit, perception that dental care is expensive (Hendaus et al., 2020), socioeconomic (Oberoi, et al., 2016), educational background (Al-batayneh, et al., 2019). The dental health personnel is needed to educate them, and it is recommended to initiate dental home process (Hendaus et al., 2020).

#### 4. Conclusion and Suggestion

We have presented a research to evaluate the relationship of parental knowledge and dental and oral hygiene status of the children with special needs in SDLB N 1 Martapura, Banjar Regency. The results comes into conclusion that there is a relationship between parental knowledge and dental and oral hygiene status of the children. It is shown by the results that the poor knowledge of the parent does in line with the poor dental and oral hygiene status of the children. Even though parents have good knowledge, however, most children with special needs have less awareness in keeping dental and oral health so that there is still a lot of those who have poor dental and oral hygiene. It is due to the barriers such as behavioral problem experienced by children with special needs. We suggest that the parents engage more in the importance of dental and oral hygiene and

follow the instruction from health practitioners regarding their children dental and oral health. Besides, Public Health Center can increase the education of dental and oral health towards the parents in SDLB so that parental knowledge can be better.

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