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Improving Oral Hygiene Maintenance Through Teacher Empowerment To Reduce The Debris Index Of Children With Disabilities

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ABSTRACT The prevalence of disability continues to increase. In 2003 there were 0.9% of all children in Indonesia with disabilities, in 2006 there were 1.38% of all children in Indonesia with disabilities and the peak in 2012 was 2.45% of all children in Indonesia. Children with disabilities are vulnerable and prone to exposure to diseases and threats. According to the 2011 Social Protection Programme (PPLS), there were 32,990 children with disabilities from poor families. Disability is defined as the physical inability of the body to perform normal bodily functions. Teacher empowerment is very important because through teacher empowerment, teachers will gain new knowledge, new ideas in achieving the learning process. Through teacher empowerment activities on the importance of maintaining oral hygiene in students with disabilities will motivate teachers to further increase the importance of maintaining oral hygiene in students with disabilities. This study is to analyse the effect of improving oral hygiene maintenance through teacher empowerment on reducing the debris index of children with disabilities. The type of research used is Analytical Quasi Experiment. The targets in the study were all SLB D/YPAC teachers. Data collection methods using questionnaires and observation. Data analysis technique using chi square statistical test. The results of the study showed that there was an effect of knowledge and attitude of maintaining oral hygiene through teacher empowerment on reducing the debris index of children in SLB-D YPAC Surabaya.

INDEX TERMS Maintenance of Dental and Oral Hygiene; Empowerment; Disabled

I. INTRODUCTION

Children with special needs are children who experience physical and mental obstacles that interfere with their growth and development. The oral health of children with special needs is lower than that of normal children. This is due to the low ability to clean the mouth, lack of knowledge, attention and preventive measures against dental and oral problems [1]. The prevalence of disability continues to increase in 2003 there were 0.9% of children out of all children in Indonesia experiencing disabilities, in 2006 there were 1.38% of children out of all children in Indonesia experiencing disabilities and the peak in 2012 there were 2.45% of children out of all children in Indonesia. Children with disabilities are vulnerable and prone to exposure to diseases and threats. According to the 2011 Social Protection Programme (PPLS), there were 32,990 children with disabilities from poor families. Only a small proportion of children with disabilities (14.4%) were in institutions such as schools, centres, and

Child Social Welfare Institutions (LKSA). Children with disabilities, in terms of the percentage of children with special needs, are a relatively small group, estimated at 0.06% of the school-age population [2].

A child with a disability is a child who has a physical condition or brain innervation system disorder that affects the motor organs (muscles) and health conditions and inhibits the process of socialization and communication between the individual and their environment. The process of cognitive development is largely determined by individual experiences as a result of learning. The development of optimal potential in children with disabilities can foster independence in children with disabilities [3]. Children with special needs need help in maintaining oral hygiene, they cannot carry out normal daily life activities so they need the help of other people around them, be it parents, family members, carers, or teachers at school. This is in line with the results of interviews

conducted by with parents of autistic children aged 11-15 years, it was explained that children still do not have independence in doing personal hygiene, to brush their teeth, many still get help from teachers (at school) and parents (at home) [4]. Improving the quality of human resources can be done through education. Teachers and parents are one of the factors determining the success of a child's learning process. Parents are one of the environmental factors that give personality colour to children. Every child born into the world has talent, which is a prominent ability in one aspect of personality obtained as innate, so that it is developed as much as possible through education. Teachers provide formal education as additional information for the continuity of education in children. Teachers are the main factor in education in the school environment [5].

The success of the educational process cannot be separated from the great role of educators (hereinafter referred to as teachers). Teachers have a very important role in the success or failure of learning that takes place at school. The use of learning strategies used by a teacher determines the success of every education. Through this strategy, children will more easily understand the message conveyed. It should be understood that every strategy chosen by teachers and parents must be adjusted to the child's condition [6].

The lack of teacher knowledge about maintaining oral hygiene in children with disabilities is a problem faced by teachers. The solution to overcome this problem is to conduct empowerment activities for teachers. Empowerment in the term empowerment which means: (giving power, strength to others and giving abilities). According to Prasetyowati 2020 [7], empowerment is a process where teachers become able to engage, share and influence which will ultimately have a positive impact on life, and disabilities, the average value of debris index (DI) was 2.17. From the existing debris index (DI) standard, the dental and oral hygiene of students with disabilities is included in the poor category.

Teacher empowerment is very important because through teacher empowerment, teachers will gain new knowledge, new ideas in achieving the learning process. Through teacher empowerment activities, teachers will become motivated through new ideas and new experiences that they will get. With teacher empowerment has a positive link to teacher motivation. By following teacher empowerment about the importance of maintaining oral hygiene in students with disabilities, it will motivate teachers to further increase the importance of maintaining oral hygiene in students with disabilities. For this reason, it is necessary to empower teachers as a starting point in changing the behaviour of students with disabilities in maintaining oral hygiene [8].

Lack of attention to oral hygiene is a major factor in the occurrence of various problems in the teeth and mouths such as cavities (caries), tartar (calculus), inflammation of the gums (gingivitis), inflammation of the tooth supporting tissue (periodontitis), and so on caused by dental plaque. Debris is food residue left in the mouth on the surface and above the teeth and gums (gingiva) after eating that is not cleaned immediately. Debris is easily released by the

movement of the SLB/D YPAC Surabaya is located at JL. Semolowaru Utara V/2A, Semolowaru, Kec. Sukolilo Surabaya. From the survey data obtained through examination of students with The debris index (DI) value is obtained from the amount of debris on the tooth surface and the calculus index (CI) Oral health is an indicator of a person's personal hygiene. To assess a person's oral hygiene, what is seen is debris and tartar (calculus) on the surface of the teeth. value is obtained from the amount of tartar on the tooth surface [6]. Disabilities, the average value of debris index (DI) was 2.05. From the existing debris index (DI) standard, the dental and oral hygiene of students with disabilities is included in the poor category.

This study is to analyse the effect of improving oral hygiene maintenance through teacher empowerment on reducing the debris index of children with disabilities.

II. METHOD

This research was conducted at SLB D/YPAC Surabaya which was held from June to July 2022 [7]. This research is an analytical research with a Quasi Eksperimen. The population in this study were all 19 SLB D/YPAC Surabaya teachers and 20 students from June to July 2022. The primary data collection technique in this study was to fill out a questionnaire on the independent variable teacher empowerment, and the variable tied to index debris measurements using index debris observation sheets. Data collection procedures were carried out by researchers by distributing questionnaires, where previously respondents filled out informed consent forms to be willing to be respondents in this lesson. Teacher empowerment here was obtained from filling out questionnaires. Each respondent who answered correctly was given a score of 1 and the wrong answer was given a score of 0. The number of correct answers was divided by the number of questions on the questionnaire and multiplied by 100% so that the good rating category was 76% -100%, moderate was 56% -75%, bad <56%. How to measure debris by using a debris index with good indicators, 0-0.6 and bad 1.9-3.0.

The analysis technique used in this study used the chi square test, to determine the effect of increasing dental and oral hygiene maintenance through teacher empowerment on reducing the index of children with disabilities.

III. RESULT

A. RESPONDENT CHARACTERISTICS

Based on the data presented in TABLE 1, it can be concluded that the majority of the respondents in this study were female (65%), while only a minority were male (35%). In terms of education level, almost all of the respondents held an S1 degree (95%), while only a small proportion had an S2 degree (5%). TABLE 2 shows that there was an improvement in knowledge among the respondents after receiving counseling, with 14 out of 20 respondents (70%) achieving a good level of knowledge. This suggests that counseling had a positive impact on the respondents' understanding of the relevant issues.

TABLE 3 indicates that there was also an improvement in the attitudes of the respondents after counseling, with 13 out of 20 respondents (65%) demonstrating a good attitude. This suggests that counseling was effective in not only improving the respondents' knowledge but also their overall attitudes towards the issue at hand. Overall, the data presented in these tables suggest that counseling can be an effective intervention for improving knowledge and attitudes towards a particular issue.

TABLE 1
Respondent Characteristics

Characteristics	Frequency	Percentage
	N	%
Gender		
Female	13	65
Male	7	35
Education level		
Bachelor	19	95
Master	2	5
Total	20	100

TABLE 2
Empowerment of Teachers in Knowledge of Dental and Oral Hygiene Maintenance for Children with Disabilities Before and After Counseling

Knowledge	Before Counseling		After Counseling	
	F	%	F	%
Good	10	50	14	70
Moderate	10	50	0	0
Less	0	0	6	30
Total	20	100	20	100

TABLE 3
Empowerment of teachers in the attitude of maintaining dental and oral hygiene of children with disabilities before and after counseling

Attitude	Before Counseling		After Counseling	
	F	%	F	%
Good	11	55	13	65
Moderate	0	0	0	0
Less	9	45	7	35
Total	20	100	20	100

TABLE 4
Debris Before and After Teacher Empowerment

Debris Criteria	Before Counseling		After Counseling	
	F	%	F	%
Good	13	65	13	65
Moderate	7	35	7	35
Less	0	0	0	0
Total	20	100	20	100

Based on TABLE 4 shows that before empowerment and

after empowerment the results are the same in the good category as many as 13 (65%).

TABLE 5
Teacher Empowerment in Dental and Oral Hygiene Maintenance Knowledge of Children with Disabilities on Debris Index

Debris Criteria	Knowledge				p
	Less		Good		
	f	%	f	%	0.032
Good	6	46,2	7	53,8	
Moderate	0	0	7	100	
Less	0	0	0	0	

Based on TABLE 5, the results of the p Value value of 0.032 are obtained, so that H1 is accepted and H0 is rejected, it can be concluded that there is an effect of knowledge of maintaining dental and oral hygiene through teacher empowerment on reducing the debris index of children in SLB-D YPAC Surabaya.

TABLE 6
Teacher Empowerment in Dental and Oral Hygiene Maintenance Attitude of Children with Disabilities Against Debris Index

Debris Criteria	Attitude				P
	Less		Good		
	f	%	f	%	0.016
Good	7	53,8	6	46,2	
Moderate	0	0	7	100	
Less	0	0	0	0	

Based on TABLE 6, it is obtained that the p value is 0.016, so that H1 is accepted and H0 is rejected, it can be concluded that there is an effect of maintaining oral hygiene through teacher empowerment on reducing children's debris index in SLB-D YPAC Surabaya.

IV. DISCUSSION

Children with special needs have different specifications and characteristics from children in general. Therefore, they need more specific attention and affection, both in the home and school environment. Children with disabilities specifically have a form of abnormality or disability in the muscular, skeletal, joint and nervous systems caused by diseases, viruses, and accidents that occur before birth, at birth, or after birth. As stated by Arumugam that children with disabilities can occur in the prenatal phase, natal phase, and postnatal phase. Maintenance of dental and oral hygiene of children with disabilities is the responsibility of all parties both at home and school. In the school environment, teachers have a role in teaching, guiding, training and directing children with disabilities to maintain their dental hygiene [10][11]. Some of the factors supporting the role of teachers in maintaining the dental health of their students are adequate knowledge and attitudes towards maintaining oral health.

Based on the results of the study, it is known that the knowledge of teachers in maintaining oral health in children with disabilities in SLB YPAC Surabaya is in the medium and good categories. While the results of research

related to teacher attitudes in maintaining oral hygiene mostly have a good attitude. However, the results of dental hygiene examination of children with disabilities do not all have good dental hygiene status. The same research results are also known from research conducted by Prasetyowati, et.al that the debris score of BC Optimal Surabaya SLB students is in the medium category.

Increasing the knowledge and attitudes of SLB teachers about maintaining dental and oral hygiene in children with disabilities is expected to increase the role of teachers to inform children with special needs, especially children with disabilities, about how to maintain dental and oral hygiene starting from the method, time, frequency and duration of brushing teeth [12]. The increase in teacher knowledge can improve the dental and oral hygiene status of children with disabilities. Increasing the knowledge and attitudes of SLB YPAC Surabaya teachers is done through teacher empowerment in the context of maintaining oral health hygiene.

Teacher empowerment interventions in the form of training on maintaining dental and oral hygiene for children with disabilities showed a significant effect on changes in the knowledge and attitudes of SLB teachers about maintaining oral hygiene. The results of research at SLB YPAC Surabaya showed an increase in the knowledge and attitudes of teachers in maintaining dental and oral hygiene of children with disabilities. The results of this study are in line with Mahirawati [9]. Research which shows the results that training has a very significant effect on teachers' knowledge, attitudes, and skills in maintaining dental health. Knowledge is the result of knowing someone after sensing either using the senses of sight, hearing, smell, taste and touch. Knowledge is a very important domain in shaping a person's behaviour. Empowerment of SLB YPAC Surabaya teachers is an activity to provide knowledge to teachers about maintaining oral hygiene. This empowerment is carried out by providing counselling related to how to maintain oral hygiene. Overall, teachers already know how to estimate dental hygiene. There is only one question that has not been answered correctly. Most SLB YPAC teachers said that dental examinations need to be done once a year.

According to Newcomb in Atrolina, attitude is a readiness or willingness to act, and not an implementation of certain motives. Attitude is not yet an action or activity but is a predisposition to action of a behaviour. The attitude is still a closed reaction from someone because of a stimulus. Attitudes cannot be seen directly in the form of real action. The attitude of SLB YPAC Surabaya teachers in maintaining dental hygiene showed an increase after dental health counselling. Before the counselling, most teachers still had an inappropriate attitude in maintaining dental hygiene. Some respondents agreed if brushing teeth was done together with bathing in the morning or evening. After the counselling, most of the teachers strongly agreed if the ways of brushing teeth are done with the correct movements according to the parts. Likewise, when brushing teeth, most respondents agreed that brushing is done at the right time and frequency [14]. This

brushing movement will clean the teeth from food residue that can cause debris buildup.

Based on the results of the study, it is known that there is a significant influence between the knowledge and attitudes of SLB YPAC Surabaya teachers in maintaining dental hygiene on the dental hygiene of children with disabilities after the empowerment of these teachers. Teacher empowerment is an effort to include teachers as community members in schools who can help overcome the dental health problems of children with disabilities. Through empowerment, teachers can develop their knowledge, attitudes and skills in the field of dental health. [15].

This is in accordance with the statement of Nabela which states that community empowerment is the spearhead of community independence in developing knowledge, attitudes and actions in solving various health problems in the region. Teacher empowerment at SLB YPAC Surabaya is proven to improve the dental hygiene status of children with disabilities. The results of other studies that show the effectiveness of teacher empowerment are research conducted by Prasetyowati et.al. which shows a decrease in dental plaque index after empowering UKS teachers in oral health care activities in elementary school children.

Teacher empowerment is one form of effort to increase the knowledge of children with disabilities through the role of school teachers in dental health education. The importance of increasing teacher knowledge in maintaining dental health will be able to improve the ability of the teacher's role in providing information about maintaining dental health to children with disabilities so that children with disabilities have knowledge about maintaining good dental health. The results showed that the knowledge and attitudes of SLB YPAC Surabaya teachers increased after teacher empowerment. The results of this study are in line with research conducted on children with disabilities at SLB BC Optimal Surabaya in 2020 which showed that increasing teacher knowledge through empowerment programmed can increase the knowledge of SLB students in maintaining oral health [17][16] [17].

The better knowledge of children with disabilities will change their attitudes and behaviour in maintaining dental hygiene [18][19]. Children with disabilities will be able to perform good dental hygiene maintenance behaviour so that their dental hygiene status will improve. Another factor is the condition of the child's teeth. The quality of the teeth will be affected by the calcium content in the teeth. The smaller the calcium content in the teeth, the easier it is for dental caries to occur [20].

V. CONCLUSION

Based on the results of the research and the previous discussion, it can be concluded that, dental hygiene status of children with disabilities can be obtained through empowerment efforts involving special school teachers. [21][22] In this study, teacher empowerment was

able to improve the knowledge and attitudes of teachers in terms of maintaining dental and oral hygiene of children with disabilities.

The increase in teachers' knowledge and attitudes in the maintenance of dental and oral hygiene of children with disabilities shows an increase in the status of dental hygiene in children with disabilities [23][24]. Thus it can be said that empowering teachers at SLB YPAC Surabaya in maintaining dental hygiene can improve the dental hygiene status of children with disabilities. SLB teachers routinely schedule oral hygiene maintenance for special needs

children, especially children with disabilities in order to improve the degree of oral health of children with disabilities.

Recommendations for research development are to fully examine all factors related to the formation of knowledge, attitudes and skills of teachers and students with disabilities in maintaining dental and oral hygiene against the debris index in order to obtain the right training model.

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