

Correlation between knowledge and compliance with tooth brushing to free plaque score of mentally disabled students

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Abstract

Background: The Jambi Province Riskesdas in 2018 showed that the number of residents who brushed their teeth every day was 96.4%, and only 1.0% did as recommended after breakfast and before going to bed at night. Data shows that 96.5% of students aged 10-14 years brush their teeth every day and only 2.1% brush their teeth in the morning after breakfast and before going to bed.

Method: This type of research is descriptive correlational which aims to find whether there is a relationship. The sample in the study were 30 mothers and students at SLBN 1 Jambi City with mental retardation. The sampling technique used a purposive sampling method. The data analysis used in this study is the Spearman test.

Results: 1) The correlation coefficient and P-value of the relationship between parental knowledge and the level of knowledge of mentally retarded children are 0.492 and 0.006, 2) The correlation coefficient and P-value of the relationship between parental knowledge and adherence to brushing teeth in mentally retarded children are 0.921 and 0.000, 3) The correlation coefficient and P-value of the relationship between the level of knowledge of parents and the free plaque score of mentally retarded children are 0.489 and 0.006, 4) The correlation coefficient and P-value of the relationship between the level of knowledge and adherence to brushing teeth of mentally retarded children are 0.386 and 0.035, 5) The coefficient value the correlation and P-value of the relationship between the level of knowledge and the free plaque score of mentally retarded children were 0.185 and 0.329, 6) The correlation coefficient and P-value of the relationship between children's tooth brushing adherence and the free plaque score of mentally retarded children at SLBN 1 Jambi City were 0.428 and 0.018.

Conclusion: 1) there is a significant relationship with moderate strength between the knowledge level of parents and the level of knowledge of mentally retarded children, 2) there is a significant relationship with very strong strength between the level of parental knowledge and adherence to brushing teeth in mentally retarded children, 3) there is a significant relationship with has sufficient strength between the level of parental knowledge and the free plaque score of mentally retarded children, 4) there is a significant and low strength relationship between the level of knowledge and adherence to brushing teeth of mentally retarded children, 5) there is no relationship with very low strength between the level of knowledge and the child's free plaque score mentally retarded, 6) there is a significant relationship with sufficient strength between children's tooth brushing compliance with free plaque scores of mentally retarded children at SLBN 1 Jambi City.

Keywords: Knowledge; compliance; free plaque score.

INTRODUCTION

Data from the World Bank shows that the worldwide population of students with special needs reaches 10%. It is estimated that 85% of students with special needs worldwide who are under 15 years old are in

developing countries (1). Based on the Basic Health Research report from the Ministry of Health (Riskesdas) Jambi Province in 2018, 96.4% of the population brushed their teeth every day, and only 1.0% did as recommended after breakfast and before

going to bed at night. Data shows 96.5% of students aged 10-14 years brush their teeth every day and only 2.1% brush their teeth in the morning after breakfast and before going to bed (2).

One of the causes of dental and oral health problems is the behavioral factor or attitude of ignoring dental and oral hygiene. This is based on a lack of knowledge about dental and oral health and its treatment. A person's awareness of the importance of dental health can be seen from the knowledge they have. When a person has a high level of knowledge, the concern for caring for his teeth and mouth is also high (3).

The dental health education program (counseling) is one of the dental health programs with the aim of tackling dental health problems in Indonesia. Dental health education (counseling) is a planned and directed effort to create an atmosphere so that a person or group of people wants to change old behavior that is less profitable for dental health to become more profitable for their dental health, community groups are motivated to improve how to maintain dental and oral health (4).

The priority of this research is adherence to brushing teeth for mentally retarded students and can increase knowledge and skills in brushing teeth properly and correctly so that the tooth surface is free of plaque. The originality of this research is that monitoring cards are very effective, they can be used by parents of mentally retarded students to monitor their child's compliance, so that mentally retarded students can brush their teeth independently. Contribution to health, namely the research results are expected to be applied to mentally retarded students in Special Schools (SLB), thus improving the dental health status of students with special needs, especially mentally retarded students

METHOD

This research uses a correlational descriptive research design. The sample in this study were mentally retarded students at SLBN 1 Jambi City totaling 30 students who were taken by purposive sampling, namely

sampling with certain characteristics (5). Research steps: 1) First visit: distribute questionnaires to mentally retarded parents and students, explain how to fill out questionnaires, fill out questionnaires, distribute monitoring cards to be filled out for 1 month, 2) Second visit after one month: ask for monitoring cards already filled in, applying disclosing solution, on the entire surface of the teeth, then rinse once, perform a free plaque score check on mentally retarded students, brush their teeth, collect all data in one file for processing. The data analysis used in this study is the Spearman test.

RESULTS

Research that has been conducted on 30 parents and children obtained the following results.

Table 1. Frequency Distribution of the Relationship between Parents' Knowledge Level and Knowledge Level of Mentally Disabled Children at SLBN I Jambi City in 2023

Level of parental knowledge	Child Knowledge Level				Total		Correlation coefficient	p-value
	medium		high		N	%		
	n	%	n	%				
medium	8	44,4	0	0	8	26,7	0,492	0,006
high	10	55,6	12	100	22	73,3		
Amount	18	100	12	100	30	100		

Table 2. Frequency Distribution of the Relationship between Parents' Knowledge Level and Compliance with Tooth Brushing in Mentally Disabled Children at SLBN I Jambi City in 2023

Level of parental knowledge	Compliance with Tooth Brushing in Mentally Disabled Children				Total		Correlation coefficient	p-value
	Not obey		obey		N	%		
	n	%	n	%				
medium	8	88,9	0	0	8	26	0,921	0,000
high	1	11,1	21	100	22	73		
Amount	9	100	21	100	30	100		

Table 3. Frequency Distribution of the Relationship between Parental Knowledge Level and Free Plaque Score in Mentally Disabled Children at SLBN I Jambi City in 2023

Level of parental knowledge	Free Plaque Score in Mentally Disabled Children				Total		Correlation coefficient	P Value
	bad		Good		N	%		
	n	%	n	%				
medium	5	62,5	3	13,6	8	26,7	0,489	0,006
high	3	37,5	19	86,4	22	73,3		
Amount	8	100	22	100	30	100		

Table 4. Frequency Distribution of the Relationship between Knowledge Level and Compliance with Tooth Brushing for Mentally Disabled Children at SLBN I Jambi City in 2023

Child Knowledge Level	Compliance with Tooth Brushing in Mentally Disabled Children				Total		Correlation coefficient	P Value
	Not obey		obey		N	%		
	n	%	n	%				
medium	8	88,9	10	47,6	18	60	0,386	0,035
high	1	11,1	11	52,4	12	40		
Amount	9	100	21	100	30	100		

Table 5. Frequency Distribution of the Relationship between Knowledge Level and Free Plaque Score for Children with Mental Disability at SLBN I Jambi City in 2023

Child Knowledge Level	Free Plaque Score in Mentally Disabled Children				Total		Correlation coefficient	P Value
	bad		Good		N	%		
	n	%	n	%				
medium	6	75	12	54,5	18	60	0,185	0,329
high	2	25	10	45,5	12	40		
Amount	8	100	22	100	30	100		

Table 6. Frequency Distribution of the Relationship of Compliance with the Free Plaque Score of Children with Mental Disability at SLBN I Jambi City in 2023

Compliance with Tooth Brushing in Mentally Disabled Children	Free Plaque Score in Mentally Disabled Children				Total		Correlation coefficient	P Value
	bad		Good		N	%		
	n	%	n	%				
Not obey	5	62,5	4	18,2	9	30	0,428	0,018
obey	3	37,5	18	81,8	21	70		
Amount	8	100	22	100	30	100		

DISCUSSION

Table 1 shows that at the level of knowledge of children with moderate criteria there is 55.5% of the knowledge level of parents with high criteria and at the level of knowledge of children with high criteria there is 100% level of knowledge of parents with high criteria meaning that there is no

knowledge of parents with moderate criteria in the group of mentally retarded children whose knowledge is of high criteria. The table also shows a correlation coefficient of 0.492. That is, the level of strength of the relationship between parental knowledge and children's knowledge is moderate with a significance value (2-tiled) of 0.006, which means that there is a significant (meaningful) relationship between these variables. According to Natamiharja (2010) Knowledge of the mother who is the closest person to the child in health care has a significant influence on the knowledge of the child's attitude and behavior (6). This is slightly different from the results of Worang's research (2014) which was conducted on preschool children in Manado, parents' education and knowledge do not guarantee children's daily behavior to care for their dental and oral health, but it is the participation and attention of parents that is really needed (7). Researchers agree with this opinion, but even though the parents participate and care for their children but are not supported by sufficient knowledge, it will not guarantee the health of their children's teeth and mouth.

Table 2 shows that there are 21 (100%) mentally retarded children who adhere to brushing their teeth in the group of parents who have a high level of knowledge. The table also shows a correlation coefficient of 0.921, which means that the strength of the relationship between parental knowledge and children's adherence to brushing their teeth is very strong with a significance value (2-tiled) of 0.000, which means that there is a significant (significant) relationship between these variables. This is consistent with the results of Pangestika's research (2021) which states that there is a very strong relationship between the level of mother's knowledge and adherence to brushing her teeth with a p-value = 0.000 and r = 0.677 (8). Mother's knowledge about dental health is very important because it is an important factor in influencing children's dental health and disease (9).

Table 3 shows the free plaque score of mentally retarded children with good criteria coming from parents who have a high level of

knowledge of 86.4% and moderate knowledge of 13.6%. The table also shows a correlation coefficient of 0.489. That is, the strength of the relationship between the parental knowledge variable and the mentally retarded child's free plaque score is sufficient with a significance value of 0.006, which means that there is a significant (meaningful) relationship between these variables. This is in line with the results of Primawati's research (2022) which states that there is a relationship between the level of knowledge of parental dental hygiene and the dental hygiene status of mentally retarded children at the Cinema State SLB, Tasikmalaya Regency (10). Knowledge is the result of knowing someone about an object through the senses they have. Each person's knowledge will vary depending on how each person senses an object or something. Sensing occurs through the human senses, namely the senses of sight, smell, feeling, hearing and touch, some human knowledge is obtained through the eyes and ears (11). Parental knowledge is very important in maintaining the cleanliness of the teeth and mouth of children. Parents act as the closest person to the child who always educates, trains and gives love to children. Parents' knowledge is very important in maintaining the cleanliness of their children's teeth and mouth, especially for children who have special needs such as mentally retarded children (12).

Table 4 differences in adherence to brushing teeth of mentally retarded children who have high and moderate levels of knowledge differ only slightly, namely 52.4% and 47.6%. The table also shows a correlation coefficient of 0.386. That is, the level of strength of the relationship between the variables of children's knowledge and children's obedience is low with a significance value (2-tailed) of 0.035, which means there is a significant (significant) relationship between these variables. The strength of the relationship between the variables of children's knowledge and children's adherence to brushing their teeth is low because only 40% of children have high knowledge and mentally retarded children require parental participation and attention.

The active role of parents in question is to guide, provide understanding, remind, and provide facilities to children. Children under the age of 5 years cannot maintain proper and effective oral hygiene, so parents must brush their children's teeth at least until the child is 6 years old and then supervise this procedure continuously. Early childhood should also be invited and introduced early to dentists (13). Children with mental retardation experience obstacles in adaptive behavior or social adaptation so that at a certain age the child is not able to do something that normal/average children can do. These conditions/conditions appear in children during their developmental period, namely at the age of 0-18 years (14).

Table 5 shows the correlation coefficient of 0.185. That is, the strength of the relationship between the knowledge variable and free plaque are very low or there is almost no correlation with a significance value of 0.329, which means that there is no significant (meaningful) relationship between these variables. The relationship between the knowledge variable and the free plaque score is very low or there is almost no correlation because children who have high knowledge and have a good free plaque score are only 45.5%. Children who have knowledge in efforts to maintain dental and oral health, the child will be able to carry out dental and oral health maintenance independently. This research is supported by (Santoso et al., 2020). One of the functions of the family is as an educational function where for children, the family is the first and foremost place in their education (15).

Table 6 shows the correlation coefficient of 0.428. That is, the strength of the relationship between the compliance variable and the free plaque score is sufficient with a significance value of 0.018, which means that there is a significant (significant) relationship between these variables. This is because mentally retarded children require the participation of their parents and mentally retarded children tend to obey if what they do is supported by their parents. The characteristics of mentally retarded children who are slow and have difficulty learning new things, especially in maintaining their own

health, really need guidance, especially parents, in maintaining the cleanliness of their children's teeth and mouth. Factors that influence a person cleaning their teeth and mouth are body image, knowledge, socioeconomic status, social practices, culture, personal choice, physical condition (16).

CONCLUSIONS

1) there is a significant relationship with moderate strength between the knowledge level of parents and the level of knowledge of mentally retarded children, 2) there is a significant relationship with very strong strength between the level of parental knowledge and adherence to brushing teeth in mentally retarded children, 3) there is a significant relationship with has sufficient strength between the level of parental knowledge and the free plaque score of mentally retarded children, 4) there is a significant and low strength relationship between the level of knowledge and adherence to brushing teeth of mentally retarded children, 5) there is no relationship with very low strength between the level of knowledge and the child's free plaque score mentally retarded, 6) there is a significant relationship with sufficient strength between children's tooth brushing compliance with free plaque scores of mentally retarded children at SLBN 1 Jambi City.

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