The relationship between the dental health knowledge and oral hygiene index of the deaf

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ABSTRACT

Oral hygiene index can be influenced by behavior factor. Behavior have three domain consist of knowledge, attitude, and practice. Knowledge will change the behavior of society which next affect to oral hygiene index. The purpose of the research was to know the relationship between the dental health knowledge and oral and dental hygiene index of the deaf. The research was an analytic with cross sectional method on 63 subjects on 3,4,5 and 6 level class at hearing impaired in Magelang, obtained using the total sampling. Evaluation of dental health knowledge was viewed from the questionnaire. Oral Hygiene Index-Simplified by Green dan Vermillion used to measured oral hygiene index. The research result showed that 65.08% of the deaf on 3,4,5 and 6 level class at hearing impaired in Magelang was in the good category, OHI-S was in the moderate category. Based on Chi square test there was no significant relationship between the dental health knowledge and oral hygiene index of the deaf at hearing impaired in Magelang.

Key words: Deaf, dental health knowledge, OHI-S

INTRODUCTION

Health is one of the important factors in social development to improve the life quality which means a welfare condition of physical and mental and the possibility of each individual to live productive socially and economic, according to Health Law no. 23 year 1992.

Health has several understandings in extensive mean. WHO states that "*Health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity*".

In the development, the community is invited to participate in the health development approaches. They are not only received service from the government, but also have responsibility in implementing the community health and in particularly individual health. The human resource development and management can be implemented according to the nation goal if performed by healthy and intelligent individual; this is the definition of National Health System.[1]

Health knowledge is part of entire health approaches that focusing on effort to improve the healthy behavior. According to WHO (1992), health knowledge increases behavior that support health, prevents disease, and helps the recovery.[2]

Generally, the community that disregards the oral hygiene maintenance and development is resulted from lack of knowledge about the problem, so the behaviors need to be changed.

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This process requires skill and knowledge.[3]

Deaf individual with all hearing, emotional, physical, intelligence and social life limits, often meets obstacles in receiving information from the environment, so the information received is relatively restricted. This condition is caused due to the hearing function is limited, so it is more difficult for them to receive the information and education than normal people.[4]

According to Indonesia Health Law year 1992 article 4: "Every individual has the same right in receiving optimal health degree". Based on this, deaf individual with all their limits have the same right in developing their health degree, beside entailing more specific information delivery in receiving health education in order to improve their heath degree.

The dental health education coverage through school channels includes elementary school, junior and senior high school. This health service development is expected able to improve the student skill in maintaining individual dental health and oral hygiene.[1] The survey performed by Central Java Health Department[5] in 2003 shows that of 2964 elementary students in Magelang District, 1217 students need oral and dental health treatment and only 624 students perform the treatment. This small number is caused by various factors such as economic, low awareness level, and geography factors.[5]

This research aimed to identify the relationship between the dental health knowledge and oral hygiene index of the deaf.

MATERIALS AND METHODS

The research was performed on deaf students of Special Elementary School for Handicapped in Magelang District. The type of research was analytic with cross sectional approach. The research population was deaf students of 3, 4, 5 and 6 degree. The sampling performed based on total sample was 63 students.

The research was performed by the following steps: filling *informed consent* by subjects that were guided by teacher or researcher; recording subject complete identity in the status form; filling questionnaire by subjects individually or with guidance; asking subjects to sit on the chair and instructing them to open their mouth; Put disclosing solution on tip of the tongue with the subject instructed to swap it on dental surface; Performing examination for subject oral hygiene condition by examining plaque accumulation and calculus colored by disclosing solution. The result data was processed and analyzed using Chi-square test to identify the differences.

RESULT

The research was performed using questionnaire and dental and oral hygiene level examination on 63 deaf students of 3, 4, 5 and 6 grade Special Elementary School in Magelang District and most of respondents were male (55.56%). The results were shown in the following table.

Table 1. Dental and oral hygiene knowledge frequency distribution on the deaf.

Category	f	%
High	41	65.08
Moderate	10	15.87
Low	12	19.05
Total	63	100

Table 2. Plaque index frequency distribution on the deaf.

Category	f	%
Good	29	46.03
Moderate	34	53.97
Bad	0	0.00
Total	63	100

Table 3. Calculus index frequency distribution on the deaf.

Category	f	%
Good	19	30.16
Moderate	39	61.90
Bad	5	7.94
Total	63	100

Table 4. Respondent frequency distribution based on OHI-S examination variable.

Category	f	%
Good	17	26.98
Moderate	35	55.56
Bad	11	17.46
Total	63	100

Table 5. The relationship between the dental health knowledge and oral hygiene index.

Knowledge	OHI						Total	
	High		Moderate		Bad			
	f	%	F	%	f	%	f	%
Good	10	15.87	27	42.86	4	6.35	41	65.08
Moderate	4	6.35	3	4.76	3	4.76	10	15.87
Bad	3	4.76	5	7.94	4	6.35	12	19.05
Total	17	26.98	35	55.56	11	17.46	63	100

Table 6. The result of relationship between the dental health knowledge and oral hygiene index.

Correlation	Chi-square count	df	Chi-square table	Test criteria	Conclusion
Knowledge and OHI	7.148	4	9.488	Ho accepted	Non significant

DISCUSSION

The result showed that most of the respondents have high dental and oral hygiene knowledge level. OHS examination performed showed that most of the respondents have moderate oral hygiene level.

The high knowledge level of the deaf can be supported by various factors. The deaf has restriction on hearing sense that considered as on of the primer senses include sight, smelling, tasting, and feeling. This condition can restrict the deaf to receive various experiences, but it can be managed by more specific information delivery to stimulate other primer senses. Materials from each teacher are delivered in fine ways, so the deaf can receive the information using visual aids that support the understanding toward an object. This condition can affect the knowledge level, although they have physical restriction on one of the primer senses.

Moderate oral hygiene level on the deaf can be resulted due to several factors. One of the factors is the restriction in receiving and delivering information of the deaf compare to normal students.[6] Other important factors are individual awareness and practices of dental and oral hygiene maintenance, because usually the activities performed in home are not monitored, and they fully depend on the understanding, awareness, and individual will to maintain the dental and oral hygiene.[7]

The dental hygiene education is an effort that aims to improve the community understanding and awareness so each individual can participate actively in maintaining dental and oral hygiene and preventing or reducing dental and oral diseases.[3]

Family or school is the closest environment of children. It is suggested that early on, children are instructed to care about their dental and oral hygiene. It is already known that the frequency of brushing teeth is twice a day and only few respondents that perform this procedure. This condition can relate to the moderate dental and oral hygiene index.

Fourty eight respondents (76.19%) stated that they did not rinse after consume sweet food. According to Moestopo,[8] the children should perform brushing and rinsing after eat as a habit. Dental brushing performed in school is impossible because generally the students do not bring toothbrush. Rinsing after eat is suggested if the brushing is impossible. Rinsing will not clean the adhered plaque, but it helps in cleaning the pigswill and neutralizes the acid level to prevent plaque formation and dental caries.[9]

Forty four respondents (69.84%) stated that they visit dentist for dental hygiene examination every six months. Regular visit to dentist is one important factor in maintaining dental hygiene.[10-12] The dentist as advice and instruction resource about dental hygiene maintenance is expected to motivate the children awareness. The visit is an early preventive action toward dental and oral disease and prevents the continuous disease.[12] The parent participation is needed to guide, provide understanding, improve, and provide the facilities so children can maintain their oral hygiene optimally.[13]

Chi-square result showed that chi-square

count value was 7.148 and chi-square table value with α=5% and degree of freedom was 9.488. Because the chi-square count < chi-square table so Ho is accepted, it was means that there is no significant relationship between dental and oral hygiene knowledge and dental and oral hygiene index on the deaf.[14]

The knowledge is stimulation from the environment and will create behavior that will be performed in action or practices. A behavior not always implemented in action, it need facilities and supporting and possible conditions from each individual. Hearing sense is one of the primer senses to deliver experiences from outside to inside us and conversely. So if the sense is impaired, it will reduce the sensory experience.[15] It can affect the process of knowledge application obtained to become real action.

CONCLUSION

According to the result, it is concluded that the dental and oral hygiene knowledge level on deaf student of Special Elementary School for the Handicapped in Magelang District is high, the oral hygiene level is moderate and there is no significant relationship between dental and oral hygiene knowledge and oral hygiene index of the deaf in Special Elementary School in Magelang District.

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