

# The effect of dental health education audio media toward the knowledge and ohi-s in visually impaired students of Tasikmalaya Special Extraordinary School (SLB) year 2016

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**Abstract.** Most individuals with disabilities have poor oral hygiene than the general population because of poor dental maintenance and oral hygiene in the home, so that many their teeth are damaged and it creates caries. With regard to this case, prevention is very important priority for the people with disabilities. The prevention should not only about health education of physical health, but also oral and dental health, which directly relates to overall body health. The improvement change behaviour with regard to oral health will improve dental and oral hygiene. **The purpose** of this study is to see the effect of dental health education through audio media on the knowledge and *OHI-S* of visually impaired students at extraordinary school (SLB) of Tasikmalaya 2016. This research used quasi-experiment design with the design of a two group pretest and posttest. The subject are 20 students from class with intervention and 20 students from control class. The measuring instrument used classifier for questioner paper and *OHI-S* paper to know that knowledge and the *OHI-S* of visually impaired children at extraordinary school of Tasikmalaya 2016. The result showed that : 1) The level change for knowledge of visually impaired students at intervention class both of before and after to given dental health education with audio media, the result are : good criteria from 5% become 20%, the mean of oral and dental knowledge is 9.5 become 13.2 (difference 3.7). 2), while the level change for *OHI-S* of visually impaired students at intervention both of before and after to given dental health education with audio media, the result are : good criteria from 20% to 40%. The mean of *OHI-S* before 1.9 and after 1.4 (difference 0.5). 3) There are effect of dental health education with audio media toward the knowledge and *OHI-S* of visually impaired students at extraordinary school (SLB) Tasikmalaya 2016 at paired samples statistic table, to knowledge class p-value= 0.010 (<0.05). and *OHI-S* p-value= 0.001 (<0.05).

**Keywords :** Audio Media, Oral and dental health knowledge, *OHI-S*.

## INTRODUCTION

Children with disabilities is used as a generic term for all children who have incredibility, and to replace the various terms that have been used, such as disabled children, children with disabilities or children's mental weakness. This euphemism term is used to describe the condition of every kind of perversion; especially the deviation which is below normal, such as visual impairment, hearing impairment, mental retardation, physical disabilities and emotional control disability. Visual impaired children who are having visually impaired, so that their visual function may not work properly. Because of that disability, children with visual impairments showed a significant difference with the eyesight of children function normally. Therefore, this exceptionalism requires special care so that the potential possessed by the visual impaired children to develop optimally as normal children (Wardani et al, 2012).

Children with disabilities is a part of Indonesian children who need attention and protection by government, communities and families in accordance with the mandate of Law Number 23 of 2001 on the Protection of Children. Safe guard efforts for children with disabilities together with other children, namely efforts to fulfill the basic needs of children, for children to stay alive, to grow and develop optimally and participate according to their capabilities. The children basic needs include compassion and parenting can be obtained through the efforts of the health sector as well as education and social services (Kemenkes RI, 2014). The Law No 36 of 2009 Chapter VII (seven) Article 139 Paragraph 1 and 2, the health maintenance to people with disabilities should be addressed to maintain their healthy life and socially, economically productive, and dignified and the government must ensure the availability of health care facilities and facilitate people with disabilities to be able to live independently and socially and economically productive (Kemenkes RI, 2009).

As one of the countries that ratified the convention on the rights of persons with disabilities (*Convention on the Rights of Persons with Disabilities / CRPD*) by Law number 19 of 2011, Indonesia has an obligation to the content of the convention in order to be fully implemented in Indonesia. The general principle of the Convention is to improve the fulfillment of the rights of persons with disabilities, including in terms of accessibility to health services. Children with disabilities related to the government through the Ministry of Health has made efforts which include early detection, stimulation and child development interventions, screening congenital hypothyroid and include children with disabilities to become health volunteers in extraordinary school (SLB) through UKS (Student Health Unit). The development program conducted for children with disabilities, there are

two approaches, namely through the UKS program in extraordinary school (SLB) and through health coaching children with disabilities at the family level (Kemenkes, 2014).

Target coaching SLB by health centers are health centers that perform 1 (one) or more of health services through UKS in SLB, among others counseling about students' health, education about environmental health, netting health, mosquito eradication, immunization, treatment and others (Kemenkes RI, 2014). Patients special, in that it is a disability, namely patients who experience barriers to spiritual, or physical, that interfere with the growth and progress in carrying out its social functions need to be addressed as well. In dentistry, care of people with disabilities, was realized in the early stages, but people with disabilities, amounting to 3% of the population need attention to improved dental and mouth (Maulani, 2005).

People with disabilities in Indonesia can be classified based on visual disability, physical disability, mental disability, hearing disability and speech disabilities. In light of the science of dental health, people with physical and mental disabilities were the poorest one in dental care by dentists in general practice (Suparlan, 1998; Maulani, 2005). Most individuals with disabilities have poorer oral hygiene than the normal individual who caused a bad *diet* and lack of maintenance in the home, so many broken teeth and teeth cavities. Problem prevention is very important priority for the people with disabilities (Maulani, 2005).

Knowledge according Aldlaw and Rock (Anggraeni, 2010) said that body health is not only about knowledge about physical health but also the health of the teeth and mouth, because oral health relates to overall body health. Changes in its behavior about oral health will improve oral hygiene. Based on the results of Basic Health Research (Riskesdas) in 2013 that the national prevalence rate of dental and oral health problems was 25.9%, a total of 14 provinces have oral health problems above the national average, with regard to proper behavior in brushing teeth with regard to gender factors, economic condition, and residence. It was found that most of Indonesian people brushing their teeth in the bath in the morning or afternoon bath (77.1%). Brushing teeth properly after eating breakfast and before bedtime, for Indonesia found only 2.3% (Kemenkes RI, 2013).

Brushing your teeth regularly and on appropriate time can prevent caries. The saliva is not much produced at bedtime, so that the teeth will be damaged if leave food residue on the teeth without a brush, then found those who brushed teeth regularly are still having teeth cavities (Ghofur, 2012). Dental cavities or caries is a disease of dental hard tissue due to bacterial activity and become involved (softening) network which followed the formation of dental caries cavity or cavities (Martariwansyah, 2008). The results of the initial data collection conducted at Special School Aysiah Tasikmalaya in June 2015 found an average level of oral hygiene (*OHI-S*) 3.7 which still on bad criteria.

Visual impairment people have limitations in eyesight, so they tend to use the sense of hearing (audio) to be able to receive messages. In the learning process with the subject visual impairment people, the media used is audio media as a means of delivering a message. Excess audio media according Sadiman (2005) is; cheap price, it is easy to be moved, it can be used together with radio recorder tool that can be played back, can stimulate the active participation of hearing students can focus students' attention. Besides, audio media can replace the role of teachers, it also can be more qualified in terms of both scientific and methodical, it is able to present a report immediately, and it can overcome the limitations of space and time.

Based on observations in SLB-A Tamansaristreet Tasikmalaya, it was found that there were poor oral health conditions in the students (*OHI-S* on average 3.7). The lack of knowledge about oral and dental health is the major cause of visual impairment in addition to the limitations of the students themselves. Based on the results of the data above, the authors are interested in conducting further research about "The effect of dental health education audio media toward the knowledge and *OHI-S* in Visually Impaired Students of Tasikmalaya Extraordinary School (SLB) Year 2016".

The purpose of the research is to find out the influences dental health education audio media toward the knowledge and *OHI-S* in visually impaired children of Tasikmalaya Extraordinary School (SLB) Year 2016; determine the average knowledge and oral health knowledge visual impairment students in Tasikmalaya Extraordinary Schools before and after dental health education by using audio media, and to determine the *OHI-S* and the average *OHI-S* blind people in Tasikmalaya Extraordinary Schools before and after dental health education by using audio media.

The significance of the research is to develop knowledge related to improving oral and dental health, especially for visual impairment, before and after dental health education by using audio media in Tasikmalaya Extraordinary schools, and be reference, especially for the study subjects other than beneficial to themselves also benefit their families and the people around them.

## MATERIALS AND METHODS

### Study area

Tools and materials used are *sonde*, tweezers, mouth mirror, disclosing solution, alcohol 70%, *benecide*, *aquadest*, cotton, glass mouthwash, *hand schoen*, sterilizer chemicals, towels, *slaberche*, trays, buckets, CDs, laptops, speakers, stationery, questionnaires oral health knowledge, examination form *OHI-S*. The research was conducted in SLBN Tamansari Kota Tasikmalaya Cidahu Sultannegara street Kelurahan Tamanjaya Kecamatan Tamansari Kota Tasikmalaya, SLB ABC Yayasan Bahagia Taman Pahlawan street No. 20 Kota Tasikmalaya, SLB ABC Lestari Argasari Bantar street No. 65 Kelurahan Argasari Kecamatan Cihideung Kota Tasikmalaya serta SLB ABC Aisyiyah Kawalu Perintis Kemerdekaan street Blk. No. 240 Kelurahan Kersamenak Kecamatan Kawalu Kota Tasikmalaya.

### Procedures

The method used in this research is *quasy experiment* with design *two group pretest and posttest design*. The subject of research in total are two classes which 20 students as a class by the intervention and 20 students in control class. Measuring instruments used in this research are in the form of oral and dental knowledge questionnaire and form *OHI-S*. The intervention class was previously asked to fill a questionnaire to measure oral health knowledge and checked their intraoral to get the value of *OHI-S*. The intervention group then was given dental health education using audio media for the duration of 30 minutes three times for 3 consecutive weeks. After that, they were given the same questionnaire to measure oral health knowledge and the measurement of *OHI-S* was conducted as well.

## RESULTS AND DISCUSSION

### Result

The research conducted at the Tasikmalaya Extraordinary School with the respondent 40 visual impairment students, which a group of 20 students were given the intervention and 20 students as control group. The control group consisted of 40% male and 60% female, while the control group consisted of 45% male and 55% female. The average age group in the intervention group was aged 10-12 years by 35%, while the control group in the age group 7-9 years was 35%.

**Table 1. Frequency Distribution of Dental and Oral Health Knowledge on The Intervention Group Given Before and After Intervention**

No.	Criteria	Before	Percentage (%)	After	Percentage (%)
1.	Good	1	5	4	20
2.	Fair	16	80	16	80
3.	Poor	3	15	0	0
Amount		20	100	20	100

According to Table 1, it showed that the levels of knowledge of oral health respondents before being given intervention were: good criteria with 5% became 20%, the fair criteria still 80% and poor criteria before 15% to 0%.

**Table 2. Frequency Distribution of Dental and Oral Health Knowledge on The Control Group Before and After Treatment**

No.	Criteria	Before	Percentage (%)	After	Percentage (%)
1.	Good	0	0	0	
2.	Fair	17	85	19	95
3.	Poor	3	15	1	5
Amount		20	100	20	100

Based on the table 2 above, it showed that the level of knowledge of oral health respondents before the intervention criteria given both before and after, in the good criteria was 0%, the fair criteria was previously 85% become 95%, and poor criteria previously 15% become 5%.

**Table 3. The Average Dental and Oral Health Knowledge Respondents Before and After Treatment**

No.	Criteria	Average Before	Criteria	Average After	Criteria	Difference
1.	Intervention	9.5	moderate	13.2	moderate	3.7
2.	Control	8.7	moderate	11.4	moderate	2.7

Based on the table 3 above, it showed the average knowledge of oral health respondents before being elucidated using audio media was 9.5. Then after being elucidated, the average was 13.2, so the difference was 3.7. While in the control group the previous average before being elucidated the knowledge, it was 8.7. Then after being elucidated, it became 11.4, so the difference was 2.7.

**Table 4. Frequency Distribution of OHI-S Group Intervention Before and After Intervention**

No.	Criteria	Before	Percentage (%)	After	Percentage (%)
1.	Good	4	20	8	40
2.	Fair	12	60	12	60
3.	Poor	4	20	0	0
amount		20	100	20	100

Based on the table 19 above, it showed that the respondents' OHI-S before being given oral and dental health education using audio media with the criteria of a good got 20% became 40%, the fair criteria still got 60% and the poor criteria 20% became 0%.

**Table 5. Frequency Distribution of OHI-S on The Beginning and The End of Respondent in The Control Group**

No.	Criteria	Before	Percentage (%)	After	Percentage (%)
1.	Good	2	10	4	20
2.	Fair	13	65	15	75
3.	Poor	5	25	1	5
amount		20	100	20	100

Based on the table 5 above, it showed the frequency distribution of OHI-S respondents during the research in the control group were: with the criteria of a good 10% became 20%, the fair criteria previous 65% became 75% and fair criteria 25% became 20%.

**Table 6. The Mean OHI-S Respondents Before and After Treatment**

No.	Group	Average Before	Criteria	Average After	Criteria	Difference
1.	Intervention	1.9	Fair	1.4	Fair	0.5
2.	Control	2.1	Fair	1.8	Fair	0.3

Based on the table 6 above, it showed the average OHI-S respondent before and after being given oral and dental health education using audio media in intervention group 1.9 became 1.4. So the difference was 0.5. While in the control group, it was got 2.1 became 1.8, so the difference was 0.3.

**Table 7. Table of Paired Sample Test Results of Respondents in Oral Dental Health Knowledge**

No.	Variable	P value	N
1.	Pre Knowledge	0.010	40
2.	Post Knowledge		

Based on the table 7 above, it showed that the test results of paired samples of oral health knowledge significant *p value* 0.010 (<0.05).

**Table 8. Table of Paired Sample Test Results Respondents in OHI-S**

No.	Variable	P value	N
1.	OHI-S early	0.001	40
2.	OHI-S final		

Based on the table 8 above, it showed that the results of *paired samples test OHI-S* showed significance *p value* of 0.001 (<0.05).

### Discussion

The level of knowledge of the respondents' oral health before dental health education by using audio media was: *good criterion* was 5% became 20%, while in the knowledge and the mouth of the respondents of control group with *fair criterion* was 85% became 95%. The mean knowledge of oral and dental health education using audio media of respondents before and after being treated was 9.5 became 13.2, so the difference value was 3.7. While in the control group the mean was 8.7 became 11.4, so the difference value was 2.7.

*OHI-S* of respondents before being given the oral health education using audio media was: *the good criterion* was 20%, became 40%. *OHI-S* on the control group was: *good criterion* got 10% became 20%, the *fair criterion* got 65% became 75%. The mean of respondents' *OHI-S* before being given oral and dental health education using audio media was 1.9 became 1.4, so the difference was 0.5. While, in the control group, it was 2.1 became 1.8, so the difference was 0.3.

Dental and oral hygiene status of individual was influenced by four important factors: heredity, environment (physical and socio-cultural), and behavior and health services. Behavior plays an important role in influencing the oral health status. Formation behavior can be obtained from the environment in the form of the experience of everyday life.

Counseling which is done between visual impairment students and counseling to normal students is different. Visual impairment students rely more on his hearing because of limited eyesight. Media audio is helpful both for blind people as well as for teachers in SLBA because it can be played at any time even when health workers are unable to attend them.

The research concluded that the provision of oral and dental health education using audio media influence in improving the oral health knowledge of visual impairment students in SLB Tasikmalaya. It is shown from *Paired Sample Test* results obtained *p value* = 0.010 which means that there was significance difference in oral health knowledge before and after the intervention. While the provision of dental health education using audio media influence in improving oral hygiene on visual impairment students at SLB in Tasikmalaya. It was shown from *Paired Sample Test* results obtained by *p value* = 0.001 which means there was a significance difference on *OHI-S* before and after the intervention.

### CONCLUSION

1. The level of dental and oral health knowledge of visual impairment students in Extraordinary Schools in Tasikmalaya before and after being treated dental health education by using audio media was on good criterion 5% became 20% thereafter. The mean knowledge of oral health before treatment and thereafter was 9.5 became 13.2 (the difference value was 3.7).
2. The *OHI-S* of visual impairment students in Extraordinary Schools in Tasikmalaya before and after being given dental health education by using audio media with good criterion was 20% became 40% afterward. The mean of *OHI-S* before and after the treatment was 1.9 became 1.4 afterward (the difference value was 0.5).
3. The provision of dental health education using audio media has significant influence on oral health knowledge (*p value* 0.010) and the *OHI-S* (*p value* 0.001) visual impairment students in the Extraordinary School in Tasikmalaya.

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