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Parent Education Program about Dental Health Education for Intellectual Disability Children in Wetland

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ABSTRACT

Background: Wetlands are swamps with a water pH of 3.5-4.5. There are also cariogenic bacteria, including *Streptococcus* sp. Parents living in wetlands have a habit of using wetland water for their daily routine, such as for gargling after toothbrushing. Oral health problems in intellectual disabilities children include gingivitis, periodontitis, and rapid dental caries. Dental Health Education can increase the awareness of people in wetlands.

Purpose: to analyse the effectivity of parent education program about dental health education for intellectual disability children in Wetland

Methods: A quasi-experiment study with pretest and posttest without control design that used a simple random sampling technique.

Results: Thirty-eight parents of intellectual disabilities children filled questionnaires for pretest, then asked to watch an animated video of Dental Health Education for moderate intellectual disabilities children living in wetlands concerning dental caries prevention. As for the posttest, the samples were asked to fill the same questionnaire after 20 days. Data were analyzed using Wilcoxon statistical test. The results of the Wilcoxon test prove value = 0.000 ($p < 0.05$).

Conclusion: There is an effect of the parent education program through Dental Health Education video for intellectual disabilities children in wetlands on dental caries prevention. This video can be applied to parents of children with intellectual disabilities as promotive action for dental health education.

INTRODUCTION

The American Association of Mental Deficiency (AAMD) defined intellectual disability as a disorder with general intelligence below average ($IQ < 70$), which is seen before 18 years old and is related to adaptive behavioral disorder or lack of intelligence, thus having difficulties in performing daily activities. Intellectual disability is classified into four categories in relation to intelligence level (IQ), i.e.; Mild (IQ 50-70), moderate (IQ 35-50), severe (IQ 20-35), and profound (IQ below 20-25) (Özgül et al., 2014).

Based on the National Census (2012), intellectual disabilities children placed highest, with 66,610 compared to children with other disorders and approximately 57% had a mild or moderate intellectual disability. Oral health problems in intellectual disabilities children include gingivitis, periodontitis, and rapid dental caries. The oral health in intellectual disabilities children is poorer than normal children because of their limitations. Lower intelligence level causes a high level of dental caries, calculus, and debris. The Association for Education and Communication Technology (AECT) stated that media is a tool to channel information. Media act to express learning messages from the sender to the

receiver to stimulate the mind, feeling, awareness, and interest of students (Motto et al., 2017) (Anjasti, 2017).

South Kalimantan is one of the regions with wetlands. Wetlands are swamps with a water pH of 3.5-4.5. The water in South Kalimantan wetlands cariogenic bacteria, including *Streptococcus sp.* Most parents living in wetlands have a habit of using wetland water for their daily routine, such as gargling after toothbrushing. Learnings about self-development for intellectual disabilities children are generally delivered through the lecture method. Therefore, some information concerning personal hygiene did not reach children and children tend to be bored to follow the learning. Another method of learning is needed to improve independence in personal hygiene in intellectual disabilities children by providing interactive video (Dewi et al., n.d.; Firdaus & Hakim, 2020; Suyami et al., 2019).

Intellectual disabilities children have low intelligence levels. Therefore, they require special service or help to learn on development, especially for education and guidance. Parents have a very important role in their children's oral hygiene. The roles of parents include giving an example of oral hygiene, motivating in oral hygiene. Parents affect the development and independence of children. Parents with intellectual disabilities children have a role in educating and training their children in the process of development. Intellectual disabilities children mostly experienced physical and motor limitations, which cause problems in fulfilling personal hygiene needs. Personal hygiene is required to maintain health, both physical and psychological. One of the activities of personal hygiene is oral hygiene. Only listening has a different level of understanding compared to seeing and listening. Therefore, a good education medium for intellectual disabilities children is an interactive video. The steps of oral hygiene are given in an interactive video so that the children can observe and practice these steps after they understood the activities in the video (Sandy, 2018).

METHODS

Research Desain and Sample

This study is a quasi-experimental with non-equivalent without control group (non-randomized without control group pretest-posttest) design. The samples were parents of moderate intellectual disabilities children in South Kalimantan PIK POTADS foundation in Banjarmasin, South Kalimantan. Thirty-eight samples of parents were chosen with criteria including parents who care for intellectual disabilities children for 24 hours, had children with moderate intellectual disability (IQ 55-40) and could communicate well, parents with intellectual disabilities children without congenital disorder or other diseases, parents with intellectual disabilities children aged 5-15 years old, parents with intellectual disabilities children living in South Kalimantan wetlands with inclusion criteria: Parents who care for intellectual disabilities children for \pm 24 hours, Children with moderate intellectual disabilities (IQ 55-40) and can communicate well, Children with intellectual disabilities do not have congenital abnormalities or other diseases, Children with intellectual disabilities aged 5-15 years, Parents and children with intellectual disabilities living in wetland areas. Exclusion Criteria Children who are sick, children with physical disabilities, children who refuse to practice, parents and children who cannot participate in the research until it is completed.

Research Proses

The first step of the study was obtaining ethical clearance number 08/KEPKG-FKGULM/EC/VIII/2021 before starting to make a dental health education video for parents of intellectual disabilities children living in wetlands to prevent dental caries using an animated video modified with the Makaton method. The content of the animated video for intellectual disabilities children modified with the Makaton method was the addition of children songs in the form of symbols on the correct choice of toothbrush and toothpaste, the proper way of toothbrushing, types of foods and drinks that are good and bad for teeth,

the choice of good gargle water after toothbrushing in children living in wetlands, the use of safe mouthwash for intellectual disabilities children, how to maintain oral health and routinely visit the dentist to check for oral health.

The parents were asked to fill a questionnaire containing 25 items concerning Dental Health Education as a pretest, where is the content of the question in the Dental Health Education video. Then, they were instructed to watch a 10-minute animated video of Dental Health Education on intellectual disabilities children living in wetlands concerning dental caries prevention. Video content consists of choosing a child's toothbrush, fluoridated toothpaste, using toothpaste sizes, choosing mouthwash when brushing your teeth, how to brush your teeth, types of food and drink that are good for oral health (vegetables & fruit), bad types of food and drink. for dental and oral health (food contains a lot of sugar), prevention of transmission of Covid through the oral cavity.

The final assessment was observation. Measuring the knowledge of parents of moderately mentally retarded children about DHE through animated videos using a questionnaire with the resulting answers being Very Good, Good, Enough and Less. After 20 days of education to the parents and children with intellectual disabilities, the author resent the link to the google form as a posttest for parents via online meeting. Data were analyzed using the IBM SPSS Statistics software version 16.01 for Windows. This study used numerical data of ratio, thus the hypothesis test used to test mean difference from two measurement results of pretest and posttest was the Wilcoxon non-parametric test and a conclusion was produced.

RESULTS AND DISCUSSION

Results

The study conducted on 38 parents of intellectual disabilities children in South Kalimantan POTADS Foundation showed that there was an effect of parent education program through a Dental Health Education (DHE) video for moderate intellectual disabilities children living in wetlands on dental caries prevention.

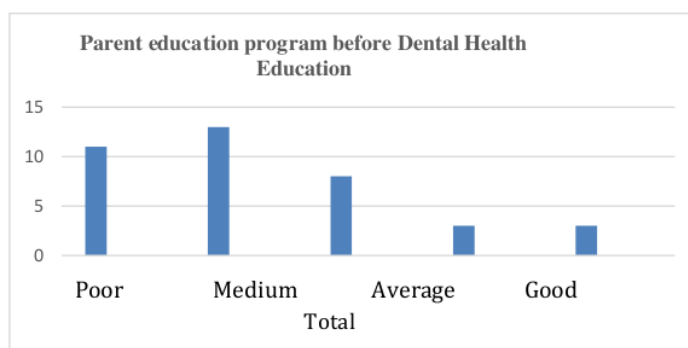


Figure 1. The pretest result of the parent education program

The pretest result of the parent education program before using the animated video of Dental Health Education showed in Figure 1 revealed that 11 parents (28.9%) had poor understanding concerning dental caries prevention, 13 parents (34.2%) had medium understanding concerning dental caries prevention, 8 parents (21.1%) had average understanding concerning dental caries prevention, and 3 parents (7.9%) had a good understanding concerning dental caries prevention 3 parent (7.9%) had excellent concerning dental caries prevention.

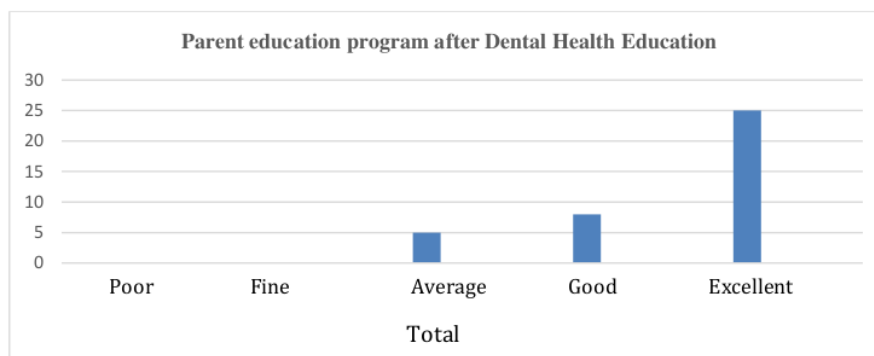


Figure 2. The posttest result of the parent education program after being given a DHE animated video

The posttest result of the parent education program tested 20 days after being given the Dental Health Education video shown in Figure 2 indicated an increase of understanding compared to before being given an animated video of Dental Health Education, which was expressed by 25 parents (65.8%) who had an excellent understanding on dental caries prevention, 8 parents (21.1%) had a good understanding, 5 parents (13.2%) had average understanding, and no more parents with fine or poor understanding concerning dental caries prevention in children.

This study concludes that there is an effect of parent education program through a DHE video for moderate intellectual disabilities children living in wetlands on dental caries prevention with a p-value of $0.000 < 0.05$.

Table 1. Wilcoxon test on the parent education program
Test Statistics

	After the Video	Before the Video
1 Z		-3.837 ^b
Asymp.Sig (2-tiled)		.000
a.	Wilcoxon Signed Ranks Test	998
b.	Based on Negative Ranks	

Description: statistical results before and after watching videos with Wilcoxon test

3
The results showed that there was an effect of parent education program through the DHE video for moderate intellectual disabilities children living in wetlands. This was in line with Fithriyana (2019) concerning the role of parents on children's independence on personal hygiene before given intervention with an average value of 2.73. Independence is not a skill that appeared suddenly, but it must be taught and trained to intellectual disabilities children to not hinder their development tasks (10).

Discussion

Animated video can deliver information in the form of audio (sound) and visual (image). This type of medium has a better ability to motivate and direct parents' and children's concentration to the learning material. If the child is motivated to learn, then the result can also be improved. Audiovisual is highly beneficial in the learning process because it can focus children's attention to a clearer and more direct meaning of a vocabulary to make the learning process more alive. Other than that, it can also attract attention to the learning process because it is interesting to hear or see (PASARIBU, n.d.).

This was also in line with Fajarwati & Sujarwanto (2010), who stated that there was a significant effect of interactive video in improving the ability to start reading in children with moderate intellectual disability in Gedangan Harmoni Special School Sidoarjo. Using learning media with interactive video, children and parents can improve their ability concerning personal hygiene, so that the children are independent to perform personal hygiene as seen and heard from the media and help reduce the burden of parents in taking care of children with moderate intellectual disability. Parents also have a role in their children's behavior in maintaining health, including maintaining oral health (Denis, 2020; Rosmaya et al., 2019).

The increase of mean before and after the education occurred because oral health education concerning toothbrushing with modified Makaton method used symbols on how to brush teeth properly, which is expressed in the form of an interactive video. Interactive video is a learning medium in the form of a moving story accompanied by sound. This medium contains knowledge and skills that are packaged simply and attractively. Therefore, the children are not bored with the content. This was in line with Fajarwati & Sujarwanto (2010) who indicated a significant effect of interactive video in improving the ability to read in children with mild-moderate intellectual disability in Gedangan Harmoni Special School Sidoarjo (Martins et al., 2023; Ribek et al., 2023).

The use of animated video as a learning medium can improve the knowledge on oral health in intellectual disabilities children. Azhar (2007) stated that animated video could also fulfill basic skills, instill attitude, and illustrate clear images that can be repeated as needed for intellectual disabilities children. These children have intellectual barriers, thus require guidance to be able to accept learning materials. Based on Perwiradananta (2016), animated video used as a learning medium is a solution to overcome the limitation in intellectual disabilities children in receiving learning materials. The results of the study revealed that there was a significant increase of oral health knowledge in intellectual disabilities children before and after being given learning using animated video (Zhafirah et al., 2014).

Intellectual disabilities children can only be trained to take care of themselves concerning daily activities and perform social community functions according to their ability. One of the examples of important self-care to be taught to children is maintaining oral health. Therefore, the role of a parent is needed for the oral hygiene of intellectual disabilities children (8).

The role of parents in educating children includes providing basic education, behavior, character, and basic skills such as religion, manners, esthetics, affection, sense of security, and inculcate good habit and discipline. According to Notoatmodjo (2003), parents are the foundation of children's behavior because they are the main target for public health promotion. The role of a parent is a form of actions and attitudes given by the parents to develop the children's personality. Parents actively participate in caring for children for optimal growth and development of the children (8,9).

CONCLUSION

There is an effect of parent education program through the dental health education video for intellectual disabilities children living in wetlands on dental caries prevention. The content of the materials in the dental health education animated video made by the authors can be used as counseling media concerning oral health for intellectual disabilities children living in wetlands. Further studies are needed concerning the overview of oral health and dental caries of children with mild intellectual disability living in wetlands after dental health education counseling using the animated video used in this study.

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