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Parents' tutorial on how to keep hands hygiene among children with disabilities during the covid-19 pandemic

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ABSTRACT

Hands are the main pathways of germ transmission. Moreover, palms are one of the sources of the COVID-19 spreading particularly through touching various objects that carry the virus. People knowledge about hands washing and antiseptics are critical in preventing the transmission of the COVID-19. In particular, parents of children with total lindnessness should have the understanding on maintaining hands hygiene to support the inhibiting and slowing the COVID-19. The aim of this study was to develop the video tutorial on healthy living habits to guide parents' of children with total blindness to teach their children to apply hands sanitizer. Therefore, parents could provide assistance for their children both at home and outside the home. This study applied the research and development model in producing video tutorial on how to accompany children with total total blindnessness to use hand sanitizer according to heath standards. As many as ten parents were involved to test the video. Data from parents were analyzed quantiatvely using the descriptive statistics. result from this study is an audio visual tutorial on how parents accompany children with total blindness to use hand sanitizer that has been validated by the experts. Furthermore, parents's responses were also positive towards the video. The conclusion is transmission and spreading of COVID-19 can be minimized through frequent and careful hands hygiene for children with total total blindness by the guidance from their parents through the developed video.

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Introduction

Data from the East Java Government Official's website showed that on January, 2021 more than one hundred thousand people were infected with COVID-19 (infocovid19.jatimprov.go.id).The number has been increased steadily since then. COVID-19 appears to be transmitted person to person through respiratory droplets and close contact (Baker et al., 2020). Therefore, infection can be avoided through applying social distancing, respiratory hygiene, and hands hygiene. Indeed, hand hygiene is one of the crucial measures paramount for preventing the transmissions of the COVID-19 (Amsal, 2020). Hands are a critical vector for transmitting microorganisms and generally remain dirty and contain pathogenic microbes (Alzyood et al., 2020; Peeri et al., 2020).

WHO has advised to protect hands from contamination to increased hand hygiene and protect the immune system through washing hands with soap and water regularly (Amsal, 2020). If there is no immediate access to water and soap, use hand sanitizer. Study by Zhao et al. (2020) showed that handwashing with running water reduces microbial contamination significantly (P<0.001) and lower COVID-19 spread among 21 countries. Moreover, the use of "alcohol-based hand rub (ABHRs)" remains more versatile, convenient, quick, and less irritating than handwashing with soap and water (Edmonds et al., 2012). Often the presence of water and soap becomes an obstacle because there are no means to washing their hands. So that over time, the habit of washing hands has shifted to using hand sanitizers (Lindawati et al., 2014). As recommended by the World Health Organization (WHO) for ingredients of hand sanitizers during the COVID-19 pandemic use a composition of 80% ethanol, 1,45% glycerol, 0,125% hydrogen peroxide, or 75% isopropyl alcohol, 1,455 % glycerol, 0,125% hydrogen peroxide (WHO, 2009). However, for the general public, the CDC suggests washing the hands with soap and water rather than use the ABHR, whenever possible. This is because hand washing can virtually remove pathogens of all types, while the hand sanitizer can effectively kill 99,9% of germs (as less effective with Cryptosporidium and Clostridium difficult (Berardri et al., 2020). Such preparations may contain one or more types of alcohol other active ingredients with excipients and humectants (Gold & Avva, 2020). Non-alcohol products are also available, but they are less preferred by health organizations (Kramer, Benig, & Kampf, 2002). Therefore, it is important to raise the awaraness of washing hands among public, especially students with disabilities.

Within healthcare systems and services for students with disabilities, there have been almost continual awareness campaigns in place to encourage handwashing among students, parents, and teachers. One of those campaigns is 3 M (Memakai Masker, Mencuci Tangan and Menjaga Jarak) or wearing face masks, regular hand washing, and social distancing. This campaign has been sounded in many schools including special schools. For students with disabilities, particularly students with total blindness, washing hands could be a challenging activity. It is because parents or teachers have to provide the specific learning tutorial so that they are able to do it by themselves (Wedler et al., 2014). Some methods to enhance the handwashing behavior with soap include games and fun activities. For example, a study by Dutton, Peschiera and Nguyen (2011) among a total of 30 students (boys and girls), divided into groups which consisted of five students from some schools in Vietnam showed that the storytelling method about handwashing could improve the student's willingness to wash their hands. Moreover, in Vietnam, the Women's Union facilitated the training of 1.200 headmasters and teachers who carried out handwashing activities in over 600 schools in 15 provinces across the country, in total over 340000 students were reache (Dutton, Peschiera, & Nguyen, 2011). However, during this pandemic, as learning is done at home, parents hold critical role to teach their children about the hand washing.

Parents of students with disabilities including parents students with total blindness have to learn on how to teach their children about the washing hands. Indeed, the key aspect of handwashing behavior was the capacity to be a bridge between the school and the home and to link students with disabilities to the larger community. Blum in Notoamodjo (2010) states that four main factors are related to the health status of a person, group, and society, namely behavior, health services, environment, and heredity or heredity. Among these four factors, the most influential determinant is human behavior, followed by environmental factors in the second place. This can occur due to behavioral factors having a greater influence than environmental factors so that the human environment is also greatly influenced by community behavior (Notoatmodjo, 2010.)

In washing hands, students with total blindness may need a specific instruction on how to acces the water source and also how to use soap. It is clear that they need the alternative informations provided for them (Nahar, Sulaiman, & Jafar, 2021). Therefore it is essential to equip parents with a tool to help them teach their children with total blindness to wash their hands. Some previous studies on assiting parents in guiding their children to wash their hands are mostly for children without disabilities (Chandonnet et al., 2017; Kinnula et al., 2021). There has been no study which developed the parents' tutorial for teaching children with total blindness in washing hand. That is why this study is new on this field. Therefore, the objective of the study was to develop a tutorial for parents in the form of audio visual media that is accessible for parents to use and to comprehend in assiting their children with total blindness to wash their hands.

Method

This study applied the research and development model, particularly the ADDIE model (Morrison, 2019). This model included analysis, design, development, implementation and evaluation. During the analysis, the research framework was developed and the idea of creating the tutorial video was formed. On the Design process, the story board for the tutorial video was made, and materials for parents were also created. On the

third stage which was Development, the tutorial video was made alongside with the guideliness book. Guidelines was consisted of activities during the tutorial to prevent the spread of COVID-19 by washing hands with soap and water whenever possible, but if soap and water are not readily available, using a hand sanitizer with at least 60% alcohol, this guide has three steps is the first step design audiovisual for guiding parent's children with total blindness how to select and use hand sanitizer base on verbal and physical prompts, the second step training guide for parent's children with disabilities who potential barriers hands hygiene practices for a day workshop, a lack of knowledge and understanding about COVID-19 spread and transfer, hand washing and use hand sanitizer techniques, and poor social modeling of handwashing and use hand sanitizer, third step evaluation effective of training guide through practice and knowledge.

On the Implementation stage, parents were trained to get their feedbacks about the tutorial video. Ten parents of children with total blindness from the Special School Gedangan, Indonesia and Special School Kemala Bahayangkari Indonesia were participarted. During the training, parents were given a simple questionnaire asking about their understanding about teaching hand washing for their children before and after the traning. Data from parents were then anayzed quantitatively with descriptive statitics namely finding the mean of the responses.

Results and Discussions

The design of the video of hands hygiene audiovisual based on physical and verbal prompts

Preparation begins with selecting theme namely "hands hygiene friendly school for students with disabilities to protect spreading of Covid-19 and to prepare the offline learning", collecting and synthesis references (Prapti, 2018) to create scenario on hands hygiene friendly school for students with disabilities, choose actors from parent and student with total blindness to apply verbal and physical prompts, to create objectives of the training "to build habit hands hygiene friendly schools for parents, teachers, students with disabilities, and everyone", choose a location for shooting, and choose technical equipment for shooting. The needs analysis results include an analysis of media needs as a user and the technical specifications required for design video modeling. Parents of children with disabilities urgently require tutorial media on the process of guiding the use of hand sanitizer correctly according to WHO standard to prevent children with disabilities from transmission and spreading COVID 19 through the hand to the respiratory organ. Online visual tools for guide parents of children with disabilities who have not been in special schools describe guiding the use of hand sanitizer correctly, especially for children with visual impairment and children with cerebral palsy which needs guiding prompts. Parents lack knowledge and understand about how to select, how to use correctly, and why must use hand sanitizer and hand washing during the COVID-19 pandemic. Therefore, parents need the right media to deliver materials as daily accompany children at home. The duration children with parents are long enough through learning from home policy, so need modeling media to improve knowledge and practices how to use hand sanitizer step-by-step correctly as WHO standard. Many infections start when hands are contaminated with the disease-causing germ. This can happen after using the toilet, coughing, sneezing, playing, handling garbage, and touching other contaminated surfaces (Ryan et al., 2001). Most diseases such as diarrhea and pneumonia are transmitted mainly by contaminated hands. Every year an estimated 1.7 million children deaths and this can be prevented by handwashing with soap (Majorin et al., 2014) . Based on coordination with the head of the Gedangan Special School which manages 200 children with disabilities with 8 total blindness children and public Special School of Kemala Bayangkari Gresik which educates 13 total blindness children, stated that there is no available video modeling related to step-by-step correctly to using hand sanitizer according to WHO standards that can be accessed by parents through online. The video modeling for parents use hand sanitizer properly according to the WHO standards to accompany children with disabilitiesand how to select materials correctly, can be accessed through youtube and Google drive.

Technical specification analysis includes the following. (1) the shooting device uses a Canon EOS 400D DSLR camera with an 18-55 mm Lens kit. The picture is transferred to a JPEG file for further processing in the selected program for design video modeling. The pictures taken include the materials, tools, and step-by-step use hand sanitizer to accompany children use hand sanitizer properly to support to create online video modeling, (2) the computer device used to processing image has adequate technical specifications to run the program properly. The computer is the Ulead program which has an Intel Pentium 4 specification, 1.86 GHz speed, 1 G Ram, 128 MB VGA on Board, 80 G Hard Drives, Monitor Advance, Mouse Pen Wacom, and a Keyboard, (3) an image editing device used Ulead 10, which is already standards used in sound editing, both musical and instructional. The result of sound editing is saved in an mp3 file. The editing process includes editing images, narrations that do not match both sound and images, so the result matches and accordance with the script. Production through shooting, a sound record according to the script. Production stage that translates the script to the actual display, to translate images and text. The sound editing process used software

Ulead 10, the editing results are saved in an mp4 file. Postproduction contains editing, mixing, and finalizing the edited video according to the script. In editing video carried out cut used videos and discard unused ones. The next step is to correct the lighting video image, select the image to be used in the video, and sound recording. The result postproduction video modeling uploaded to link https://drive.google.com/file/d/1opngXN3FDQTh9gi9SqtxDwwJ9mWLbEua/view?usp=sharing

The results of the training for parents and teachers

The results of the activity are collected based on data from parents and teachers who had joined the training guide using hand washing and hand antiseptics for children with disabilities that had been held at the Special School of Kemala Bayangkari Gresik. The activity is held offline with the consideration that Gresik in the yellow zone and comply with health protocol. "A guide to the application of the WHO multimodal hand hygiene improvement strategy (Kumar, 2016). Participants are parents and teachers of children with disabilities. The World Health Organisation (WHO) recommends alcohol-based hand sanitizer in line with the proven advantages of their rapid offering of protection against bacteria and viruses (Seto et al., 2003). The formulation of hand sanitizer from Cymbopogon citrus essential oil and other materials according to WHO standards effectively reduce germs (Desiyanto & Djannah, 2013).

The session starts with the objectives of the training parents, teachers, and student's Participants will be able to discuss the importance of hand hygiene practices in school and demonstrate practicing hands hygiene. Session 1: introduction to the training, preparations/ materials needed, who are we?, and why are we here?. Session 2: delivery of material from facilitator: (1)"The importance of the immune power of children with disabilitiesat the new normal stage of the Covid-19 pandemic", (2) "Taxonomy, structure, and morphology of Covid-19", the name derived from corona like crown when observed under electron microscope and belong to subfamily Coronavirinae in the family Coronaviridae in order Nidovirales and subclass in four genera: Alpha-CoV, Beta-CoV, Gamma-CoV, and Delta-CoV (Hassan et al., 2020; Park, 2020), (3) "Transmission and spreading Covid-19", transmitted human to human via exposure to contaminated respiratory droplets produced by the infected individual when sneezing, coughing, and even respiring, indirect or direct contact and spreads mostly through droplet and direct contact (Desiyanto et al., 2013; La Rosa et al., 2013) (4) "Mechanisms of inactivation of Covid-19 by soap or hand sanitizer", based on a general principle of chemistry are membrane rupture mechanism, simple elution, and viral entrapment mechanism (Goel & Chandrashekar, 2020). Session 3: Demonstration of how to wash hands and use hand sanitizer correctly, one volunteer to demonstrate correct handwashing with soap and use hand sanitizer. Hand hygiene demonstration by qualified public health dentists using audio-visual aids has significantly contributed to improving their hand hygiene practice. Session 4: practices correct hand washing and use hand sanitizer based on WHO standard, how to select and use soap and or hand sanitizer by modeling base on physical and verbal prompts (Piccini et al., 2018) step how to hygiene your hands precisely to save yourself from Covid-19, step by step visual guidelines to hand washing/ hand hygiene available from https://www.unwater.org/water-facts/handhygiene. Alcohol-based hand rub (ABHR) is more commonly used in Europe than the term hand sanitizer, according to WHO ABHR is an alcohol-containing preparation designed for application to the hands to inactive microorganism and/ or temporarily suppress their growth (Todd et al., 2010). Preparation ABHR may contain one or more types of alcohol other active ingredients with excipients, and humectants (Berardi et al., 2020). In conclusion, trainings were run smoothly and parents gave positive feedbacks on the tutorial video.

Evaluation of knowledge and skill on implementing hand hygiene for parents and teachers

The results of training for parents and teachers through offline to accompany children with disabilities apply hand washing and using hand sanitizer are measured using indicators pre-test and post-test, performance, and responses. The mean of the results of pre-test among 10 parents is 3.9 while the mean score after the training is is 7 (maximum score 10) see table 1.

This result is in line with the study by Campbell et al (2015) which reported that the video modelling could enhanced the understanding among participants. Moreover, it is evidence that parents were also engaged during the traning in which they showed these several attributes: attendance, completeness of practice, politely dressed and wearing a mask, seriousness, ability to respond, activeness, participation, discipline, and participation in each session showed optimal scores for all participants.

Tabel 1. Results of Pre-Test and Post-Test among Parents

Parents	Pre-Test Score	Post-Test Score1
1	4	8
2	4	7
3	3	7
4	5	6
5	4	7
6	4	7
7	4	7
8	4	6
9	4	8
10	3	7

Conclusions

This study has developed the tutorial for parents of children with total blindess in guiding their children to wash their hands using water and hand sanitizer standards as an effort to prevent spreading COVID-19 and to maintain hands hygiene for children with total blindness. The tutorial video is available through the Google Drive at https://drive.google.com/file/d/1opngXN3FDQTh9gi9SqtxDwwJ9mWLbEua/view?usp=sharing. During, the training parents were also shown an improvement on their understanding and skill in assiting their children washing their hands, and also very enthusiastic during the training. Therefore, the audio visual tutorial can be applied for other parents of children with disabilities to assist them in washing hands and maintain hygiene during the pandemic.

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