

DEVELOPING A BRAILLE-SHAPED DENTAL HEALTH BOOKLET FOR CHILDREN WITH VISUAL IMPAIRMENTS

Suharyono, Siti Sulastri, Furaida Khasanah*

Corresponding author:

Furaida Khasanah

Poltekkes Kemenkes Yogyakarta

Jl. Tatabumi No. 3 Banyuraden, Gamping, Sleman, Yogyakarta

Email : furaida.khasanah@poltekkesjogja.ac.id

ABSTRACT

Background : Braille booklet is categorized as printed learning media. This braille booklet is a quarto-sized book, no more than 30 sheets containing braille writing and picture specified for children with visual impairment. This braille booklet is made in quarto size because a normal braille font needs more space. Blind are children who have disabilities due to losing their visual acuity in such a way that their vision cannot be used to carry out daily activities, including school. Therefore, special education services are needed. Children with visual impairment have difficulties in learning, communicating, and socializing and caring for themselves especially brushing their teeth. They are prone to tooth decay and dental support networks. The OHIS status of children with visual impairment is neglected because the surrounding environment including their busy parents who do not pay attention. The booklet contains ways to care for teeth, especially how to brush teeth. it can be used as a guideline for treating teeth for children with visual impairments in SLB. Because the availability is very minimal, even there is none at all, then, the teacher is still very wide open to developing that booklet.

Long-term goal: The availability of a braille booklet which contains how to brush teeth in SLB N 1 Bantul and SLB Yaketunis in Yogyakarta City as media and a guideline for teachers or parents of children with visual impairment to guide the children to brush their teeth properly.

Research methods: This is Quasi Experiments research with fishbone diagram designs. Pre and Post Test with control design were conducted. The population in this study was children with visual impairment in Yogyakarta. The results of the test were recorded in OHIS format, then it was collected and analyzed by using the T-test statistical test.

Conclusion: Using the parametric sample Paired Sample T-Test, there were significant differences in the OHIS score after using the booklet with $p < 0.05$. Therefore, it can be stated that the booklet can affect dental hygiene (OHIS score) of children with visual impairment in Yogyakarta.

Keywords : Booklet, Children with visual impairment, OHIS Score

- 1) jonsuharjono@yahoo.co.id, Jurusan Keperawatan Gigi Poltekkes Kemenkes Yogyakarta.
Jl. Kyai Mojo No 56 Pingit Yogyakarta, 0274-514306
- 2) Dosen Jurusan Keperawatan Gigi Poltekkes Kemenkes Yogyakarta.

INTRODUCTION

Education media is one of the most important tools in the learning process to improve the quality of education. In recent decades, the rapid development of technology makes educators have to think critically to create a comfortable and quality learning process atmosphere. This technology produces material in the form of printed copies. Two main components in this technology are verbal text and visual material developed based on theory related to visual perception, reading, processing information, and learning theory. As an educator, it is a must and opens the opportunity to create simple, effective, and efficient media to support the learning process¹

The booklet is one of the media that aim to provide information in a pleasant, colorful, interesting, easy to understand and clearer picture. In addition, the booklet is a medium that is easy to carry anywhere. The booklet is very easy to learn without limited space and time. The booklet media present a picture of the front and the back view as well as an attractive color that aims to stimulate the ability of students to express their ideas².

Booklets as learning media are categorized as printed technology media. The booklet is one type of graphic media in the form of picture/photo media. This booklet is a small book (half quarto) and thin, with no more than 30 pieces of back and forth containing writing and pictures. The term booklet comes from books and leaflets meaning that the booklet media is a combination of leaflets and books with a small format (size) such as leaflets. The structure of the booklet's contents resembles a book (introduction, content, cover), it is just that the way of presenting its contents that is much shorter than book³

Blind is a child who has a disability by losing his/her visual acuity in such a way so that his/her vision cannot be used to carry out daily activities, including to go to school. Therefore, special education services are required. Meanwhile, when viewed from the perspective of education, Blinds are those who for some reason are unable to function properly to participate in the education program optimally, without the aid of special tools⁴

Until today, people with special needs are very difficult to get services that are equivalent to "normal" or not disabled ones. Discrimination treatment continues to occur in almost all fields. Furthermore, the community's stigma still places the disabled as less productive groups because of physical limitations, causing them to become marginalized groups⁵.

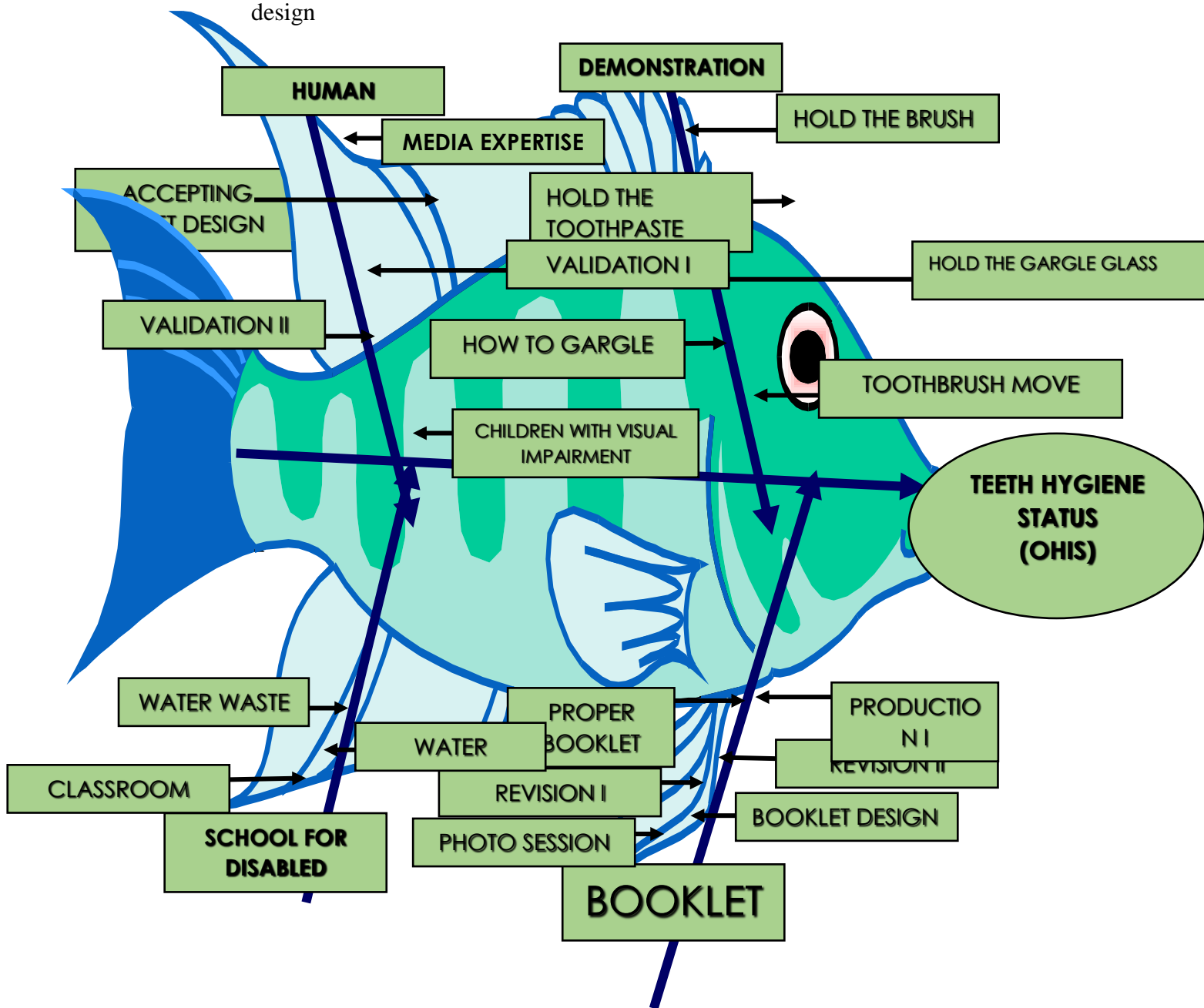
Children with visual impairment in Indonesia (50%) have an average level of dental and oral hygiene of 2.3, and it is in the moderate category (Agnintia et al, 2013). Dental and oral hygiene in people with visual impairment is caused by 3 things namely, cariogenic food, the shape of the teeth position and the lack of knowledge about oral health due to lack of education about how to maintain oral and dental hygiene⁶.

According to the observation of researcher, dental care of the students of SLB Negeri 1 (State School for Disabled) Bantul Yogyakarta, in this case, the level of dental hygiene, has not received attention or can be said to be neglected either from the school teacher or the parents. There should be a way of brushing teeth. Because of media limitations, even it can be said there are no media to be used as a guideline to clean the teeth, then it is necessary to create a media booklet whose contents are ways of guiding toothbrushing for students with visual impairment.

RESEARCH METHODS

A. Research Design

This research is research using cross-sectional design with fishbone diagram design



The model used was a quasi-experimental method by giving a booklet to children with visual impairment. The population in this study was children with visual impairment in Yogyakarta and the entire population was sampled as many as 70 respondents

FINDINGS

A. Research Findings

A study entitled "Developing of a Braille-Shaped Dental Health Booklet for Children with Visual Impairments on dental and oral care in children with visual impairment in SLB Yaketunis Yogyakarta and SLB Negeri I Bantul Yogyakarta has been conducted with 70 respondents consisting of 34 boys and 36 girls. The treatment of respondents was conducted by giving a braille dental health booklet for those 70 respondents.

The results of the study obtained the characteristics of respondents by sex as follows:

Table 5: Distribution Frequency of Respondents by Gender

Gender	Total	(%)
Female	36	50,76
Male	34	49,24
Total	70	100

Based on Table 5, it can be seen that there are more female respondents than male respondents as many as 33 (33.76%).

Table 6: Distribution Frequency of Respondents by Education Level

Education	Total	(%)
Elementary	66	96,9
Junior High	4	3,1
Total	65	100

Based on Table 6, it can be seen that most respondents are in elementary school with 66 (96.9%) respondents.

Table 7: Distribution Frequency of Respondents by Age

Age (years)	Total	(%)
6 - 10	7	10,00
11 - 15	58	82,86
16 - 20	5	7,14
Total	70	100

Based on Table 7, it can be seen that respondents based on age at most are between ages 11-15, as many as 58 (82.86%) respondents.

Based on the results of research that has been carried out, it was obtained data as follows:

1. The mean and standard deviation value

Data on examining OHIS scores on the surface of the teeth were obtained before giving a braille tooth health booklet in order to know the level of initial dental hygiene from each respondent. After examining the initial OHIS, respondents were then given a braille dental health booklet so that respondents opened the booklet to read. They were given the opportunity to read that booklet both at school and home. In the next 3 weeks, the respondents were re-examined to find out the final OHIS score and record it on the OHIS form. The following are mean and standard deviation values of respondents before and after given a booklet.

Table 8: Average OHIS Before and After Given a Booklet

Variable	Category	Mean	SD
OHIS	Before	2,65	1,02
	After	1,51	2,14
	Average	1.14	2.84

Based on Table 8, it can be seen that 65 children as respondents before being given a booklet were shown an average OHIS score of 2.65 and after being given a booklet of 1.51. The average score before and after given a booklet is 1.14.

Based on the presentation and processing of these data, it can be concluded that the quasi-experimental form realized by giving a booklet containing dental and oral care, specifically on how to brush teeth properly and correctly, resulted in a decrease in the average of OHIS score by 1.14. Based on the data, it can be interpreted that by giving respondents a booklet, it turns out the level of dental hygiene as indicated by the decrease of OHIS score compared to the initial and the final OHIS score.

2. Results of Paired sample T-Test

After testing a data distribution, it is proven that the data tested are homogeneous. Therefore, the data can be tested in the parametric statistical method, namely paired sample T-Test

Table 10: Paired T-Test Results for OHIS Scores Before and After Booklet

	Mean	t	df	Sig. (2-tailed)
Before-After	1.14	3.85	64	.000

Based on Table 10, it can be seen that the t value is 3.85 with a significant value of 0,000. Because sig is <0.05, it can be concluded that Ho is rejected, meaning that the average OHIS score before and after being given a booklet is not the same (different). Therefore, it can be stated that the booklet can affect dental and oral care (OHIS score).

B. Discussion

The results of the study (see Table 1) obtained data on the characteristics of respondents by sex that there were more female than the male respondents, as many as 33 respondents (50, 76%)

The provision of braille form of dental health booklet as a guide to caring for teeth, especially how to brush teeth properly and nicely to children with visual impairment after checking the level of dental hygiene, in this case to see OHIS scores on the surface of respondents' teeth, turned out to have an effect (see Table 10). This condition may be caused by respondents in reading braille booklet media to understand more quickly because indeed for children with visual impairment, their intelligence is no different from normal children. However, if reading is done repeatedly even though in its process there are difficulties, children with visual impairment can understand. This is in accordance with the results of Putri's study (2012) which states that children with visual impairment have intelligence between 70-50. The impact of visual impairment causes them to experience disturbances in the academic field. However, children with visual impairments can still be developed.

This condition might be caused by the respondent's frequency in reading the braille booklet, even though this is their first time reading about dental health. In the booklet, there are pictures of teeth that are made in the form of braille as natural as possible according to the actual situation through printing. Children with visual impairments can still be increased in their abilities or potential. This is in line with the results of research by Ratulangi, et al (2016) which stated that children with visual impairments have good thinking skills, good attention and memory. Their concentration is easy to switch. They are difficult to think abstractly and convoluted. They tend to deal with concrete things. Children have rapid development and can be forced to achieve targets in accordance with normal children's curriculum.

It is also possible that children with visual impairment, in brushing their teeth at home, are accompanied by parents or one of the family members. As a result, in brushing teeth, they are directed not to just move and according to the stages of how to brush their teeth in a braille booklet. Because the nature of this braille booklet is not heavy (very light) to carry everywhere, especially at home, parents are interested in reading and paying attention to the pictures in the braille booklet so that there is a desire or motivation to care for their children teeth. This is different from the results of Anggraini's research (2013) which states that it can be seen from the parents' attitude that they do not care or pay less attention to their children at home.

It is also possible in schools that the teacher, through reading the booklet and paying attention to the stages of brushing teeth, will arise motivation to care the children so that regular brushing is held together because it is possible that how busy the teacher is, the condition of the respondent's oral cavity is well-monitored its cleanliness.

The research entitled "the development of a braille form dental health booklet for blind children in Yogyakarta has been carried out. There were 70 respondents consisted of 12 male and 23 female respondents. Treatment of respondents was by giving a booklet for 35 respondents

The results of the study (see Table 1) obtained data on the characteristics of respondents by sex that male respondents were more than female respondents, as many as 20 (57.15%)

The provision of braille form of dental health booklet as a guide to caring for teeth, especially how to brush teeth properly and nicely to children with visual impairment after checking the level of dental hygiene, in this case to see OHIS scores on the surface of respondents' teeth, turned out to have an effect (see Table 10). This condition may be caused by respondents in reading braille booklet media to understand more quickly because indeed for children with visual impairment, their intelligence is no different from normal children. However, if reading is done repeatedly even though in its process there are difficulties, children with visual impairment can understand.

It is also possible if brushing teeth at home, children are accompanied by their parents or one of the family members so that the brush movement has been directed not to just move and according to the stages of how to brush teeth in the booklet. Because the booklet is not heavy (very light) to carry around, parents are interested in reading and paying attention to the pictures in the booklet so that there is a desire or motivation to take care of their children's teeth. This is different from the results of the study⁸ which states that it can be seen from the attitude of parents who do not care or pay less attention to their children at home. There are also parents who ignore their children due to being busy to work so that they leave their children like there is no love and attention from them.

It is also possible in schools that the teacher, through reading the booklet and paying attention to the stages of brushing teeth, will arise motivation to care the children so that regular brushing is held together because it is possible that how busy the teacher is, the condition of the respondent's oral cavity is well-monitored its cleanliness.

REFERENCES

1. Arsyad, Azhar. (2013). *Media Pembelajaran*. Jakarta: Grafindo Persada
2. Sadiman. Arief S. (2012). *Media Pendidikan Pengertian, Pengembangan dan Pemanfaatannya*. Depok: PT. Raja Grafindo Permai
3. Simamora Roymond S.. (2009). *Buku Ajar Pendidikan dalam Keperawatan*
4. Amin Moh. (1996). *Ortopedagogik Anak Tunagrahita*. Jakarta: Depdikbud
5. Rahayu dkk, 2013
6. Sheehy, N., 2004. Volume 59 Number 5 May 2004. *American Foundation for the Blind. All rights reserved*
7. Agnintia dkk, 2013

8. Anggraini Rima Rizki, 2013, Persepsi Orangtua Terhadap Anak Berkebutuhan Khusus (Deskriptif Kuantitatif di SDLB N.20 Nan Balimo Kota Solok), *E-JUPEKhu* <http://ejournal.unp.ac.id/index.php/jupekhu>, 1 Nomor Januari 2013