



"KBVIDS" Model as Education for Changes in Dental and Oral Care Behavior in Pregnant Women

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ABSTRACT: Oral health is part of the general health of the body that must be considered, because when oral teeth have problems, the body is said to be unhealthy. Poorly maintained teeth and mouth can cause several problems or diseases in the oral cavity. Pregnant women have a high risk of developing tooth decay, because there are physiological and hormonal changes where there are fluctuations in the hormones estrogen and progesterone which may affect cervical fluid, serum, saliva, and gingival tissue, as well as changes in diet, lack of oral hygiene, nausea and vomiting can cause primylolysis or erosion of the teeth. The use of video media as a means of health counseling is now beginning to be developed in line with current technological advances. Health counseling through video media is increasingly known to the public. The purpose of this study is to produce an educational model to change the behavior of seeing teeth and mouth in pregnant women. This study uses the R&D. method and the model test uses a quasy experiment (pre-test post-test control group design). The data were tested using the wilcoxon and mann-whitney tests. The "KBVids" model is feasible as an educational model for changing dental and oral maintenance behavior of pregnant women with the results of expert validation of p-value 0.014 and its application is effective in increasing knowledge and attitudes (p=0.000). The Kbvids model is feasible and its application is effective as an educational model for changing dental and oral maintenance behavior of pregnant women

KEYWORDS: Knowledge, Attitude, Dental Health

I. INTRODUCTION

Health is one of the important things in human life because a person's good growth and development can be achieved with a healthy body. Oral health is part of the general health of the body that must be considered, because when oral teeth have problems, the body is said to be unhealthy. Oral dental health is affected by local conditions in the mouth. Teeth and mouth that are poorly

maintained in hygiene can cause several problems or diseases in the oral cavity[1].

The health of the oral cavity really needs attention because it is part of the overall health of the body. The oral cavity, which includes hard and soft tissues, plays an important role, including for chewing and speech functions. Hard tissues such as teeth or bones and soft tissues such as the cheeks, lips, gums and tongue work together to perform these functions. If diseases are found in the teeth and or soft tissues of the mouth, it can cause humans to experience dysfunction, so their health must be maintained and considered [2].

Based on data from Basic Health Research (RISKESDAS) in 2018, it is stated that as many as 57.6% of Indonesia people have dental and oral health problems. The largest proportion of dental problems inIndonesia is 45.3% damaged/cavities/diseased teeth. Meanwhile, the majority of oral health problems experienced by the population of Indonesia are swollen gums and/or ulcers (abscesses) by 14%.3 Then the proportion of dental and oral health problems in South Sulawesi province has the most damaged or cavities as much as 55.5% and only 4.9% who provide counseling for dental and oral hygiene and health care[3].

Dental and oral health is an important part of overall body health because oral health will affect the health condition of the body.

Maintenance of dental and oral health is one of the efforts to improve oral health Dental and oral health problems can affect general health such as teeth that are missing a lot and are not replaced can cause a person to experience eating disorders[2].

Counseling is part of the promotion which is one of the efforts to increase knowledge and change people's behavior. In order for children to feel interested and can easily understand the information conveyed through counseling, it is necessary to carry out interesting counseling, one of which is by using media during counseling. Health promotion media is essentially a learning tool used to facilitate the delivery and receipt of health messages to the target. The promotional



media in question is health promotion media that can be seen, heard, touched, felt or smelled, to facilitate communication and data dissemination. There are various counseling media, such as: cartoon videos, animation videos, flip charts, booklets, comics, illustrated stories, snake and ladder games, posters, and others.

Dental hygienists need more innovative ideas in developing health promotion, namely by conducting counseling and sharing knowledge on how to maintain effective dental and oral health. Ways that can be done in an effort to improve dental and oral health in children, namely by demonstrating, modeling, and conducting training, video media has a number of advantages and disadvantages. The advantage of video media is that video media can be archived for a longer period of time and is not easily damaged. Video media can be played back if necessary to clarify information and produce stimuli that are in accordance with the goals and expected responses in children[4].

Using video as a means of health counseling is now starting to be developed in line with current technological advances. Health counseling through video media is increasingly known to the public. Video media has the advantage of being able to observe more closely what is moving, saving time and recording can be played over and over again, thus facilitating the process of knowledge absorption. Video is included in audio-visual media because it involves the sense of hearing as well as the sense of sight. This audio-visual media is able to produce better learning outcomes for tasks such as remembering, recognizing, recalling and connecting facts and concepts[3].

Therefore, the author chose a video educational media called Kesyabalqisvids which is a trend of the author's independent dental practice which is very popular among the surrounding community so that it is very easy for the public to know and know it.

Cadres as is known are a group of people who are trained and educated and have skills about something to carry out a certain program in order to succeed successfully and in accordance with expectations. Community empowerment in the field of

Dental and oral health is one way to support the implementation of health development, one of which is by empowering health cadres. The role of cadres is very important in every implementation of Integrated Service Post activities, so if the role of Integrated Service Post cadres as implementers and managers does not function properly, it will greatly affect the

Integrated Service Post activities that are carried out every month. Cadre skills are also one of the keys to success in the service system at Integrated Service Post, therefore it is not known what the role of cadres in dental and oral health marketing, especially cadres[5].

Integrated Service Post or Integrated Service Center, is a service center that serves various basic health services. Integrated Service Post cadres are a group of people who provide services at the Integrated Service Post voluntarily. Integrated Service Post cadres have an important role as a driving force for rural communities in getting health services. In addition, Integrated Service Post cadres are also part of the community in the village itself which can help improve health status through promotive and preventive efforts. The existence of Integrated Service Post cadres in the village is one of the strategic steps in assisting the community, especially pregnant women to improve their health status. Cadres have an important role in knowledge transfer or education for pregnant women. The role of this important cadre should be supported by good mastery of material by cadres.

One of the government's programs in an effort to improve the quality and competence of health cadres is to conduct cadre training with several materials that can improve the oral and dental health of the community, especially in pregnant women. The role of cadres is very important in every implementation of Integrated Service Post activities, Cadre skills in counseling are also one of the keys to success in the service system at Integrated Service Post [6]. Conditions during pregnancy undergo a number of physical and physiological changes. These changes can affect the systems in the body which will also have an impact on the physiology of body parts including the oral cavity. Most complaints in the oral cavity of pregnant women are caused by hormonal changes. Pregnancy significantly affects the occurrence of pain in the periodontal tissue and also affects the onset of gingivitis. Pregnant women who experience chronic toothache are at risk of giving birth to low birth weight babies (BBLR) because their growth is impaired [7]. Pregnant women have a high risk of developing tooth decay, because there are physiological and hormonal changes where there are fluctuations in the hormones estrogen and progesterone which may affect cervical fluid, serum, saliva, and gingival tissue, as well as changes in diet, lack of oral hygiene, nausea and vomiting can cause primylolysis or erosion of teeth. Oral and dental health of pregnant women should receive serious



attention, even before marriage. This is considering that the impact can affect pregnancy. One of the concerns about the dental health of pregnant women is to disseminate information on how to take care of teeth properly from before pregnancy and during pregnancy[8].

Pregnant women who came for treatment had serious dental and oral diseases. They came to the hospital complaining of toothache and inflamed gums due to poor dental and oral hygiene. This is due to many factors, especially during cravings that show poor dental hygiene due to laziness in brushing your teeth due to vomiting in the first trimester.

II. METHOD

This type of research is a combination of descriptive and analytical research. This research uses the Research and Development (R&D) development method. The R&D procedures in this study include information collection, product design, expert validation and revision, product testing and product results.

Information collection was carried out by observation methods and interviews with samples, namely the head of the health center, dental and oral therapists, village heads, and pregnant women. Validation test samples of health service experts, dental and oral health experts, and information technology experts. Meanwhile, the product trial sample is in pregnant women.

The effectiveness test of the model was carried out using the Quasy experiment Pretest-Posttest Control Group Design.

III. RESULT

A. Information Collection

Information was collected through the interview method with the Head of the Health Center, Dental and Oral Therapists, Pregnant Women and Village Heads.

The results of the interview with the respondents to the first question: How active is the Integrated Service Post in improving dental and oral health activities at the Integrated Service Post so far? The conclusion of the respondent's answer was that the Integrated Service Post improved dental and oral health according to the predetermined schedule but no one had been trained in terms of dental and oral health services so that dental and oral health services had not been implemented at the Integrated Service Post.

The results of interviews with respondents to the third question: How do people get information about dental and oral health services? The conclusion of the answer to the problem of lack of understanding of dental and oral health is due to never getting training so that they do not understand what will be conveyed to pregnant women and other targets.

The results of interviews with respondents to the fourth question: the obstacles obtained in the service of pregnant women at the Integrated Service Post, especially in terms of dental and oral health services? The conclusion of the respondents' answer was that dental and oral health services received several obstacles, including insufficient and inadequate budget allocation, as well as a lack of support from the government, and a lack of capacity in the use of technology.

The results of the interview with the respondents to the fifth question: What do you think about the model of conveying information about dental and oral health that should be applied? The conclusion of respondents' answers to the information delivery model about dental and oral health that should be applied is technology-based such as creating a website that contains a menu of information about dental and oral health services that is commonly accessed by all levels of society using Android.

B. Design and Build Models

The menu in the "Kbvids" dental and oral health education model system at dental polyclinics is designed with the following display:

1. The main page display with the title "Kbvids" in which there is a dashboard menu as the homepage serves to see the main topics on a website.
2. Video menu on how to take care of teeth and mouth in pregnant women complete with how to brush teeth and mouth. This video is accompanied by sound and movement, making it interesting to watch.
3. Menu of information about dental and oral health In this menu we can get some interesting information about dental and oral health, especially how to take care of teeth and mouth in pregnant women

C. Expert Validation

Validation tests are carried out on experts in the field of health services, dental and oral health experts, and information technology experts.

Table 1. Expert Validation Results



Average	p-Value*	Module	p-Value*
92,22	0,014	94,75%	0,037

The results of the feasibility assessment of the system from the expert validator are known that the feasibility value is 92.22 with a very high category, the result of expert validity at a p-value of 0.014 shows that the "Kbvids" education model is feasible as an educational model for changing the behavior of dental and oral maintenance of pregnant women. The results of the module feasibility assessment from expert validators are known to be 94.75%. The results of expert validity on the p-value of 0.037 show that the web-based application module "Kbvids" is feasible as a

medium for providing dental and oral health information to pregnant women.

D. Product Trial

The measurement of the effectiveness and efficiency of the "Kbvids" education model was carried out after the intervention, namely the application of the "Kbvids" education model in the model of disseminating dental and oral health information.

Table 2. Test of the Effectiveness of Knowledge of Pregnant Women in the Intervention and Control Groups

Variable	Group	Mean±SD Pre test	Mean±SD Post test	p-value
Pairing Test				
Knowledge	Intervention	59.18±9.28	82.82±13.96	0,000*
	Control	58.22±10.51	81.38±13.44	0,000*
	Unpaired Test Change Value (Δ)			
	Delta±SD (Δ)			
	Intervention	23.64±13.92		0,899**
	Control	23.15±17.41		

*Wilcoxon

**Mann-Whitney

Based on the table above, the results of the effectiveness test of the paired data of the knowledge variable in the intervention group showed a p-value of 0.000 ($p < 0.05$), meaning that there was a difference between the intervention group and the post-test, meaning that the intervention group experienced an increase in

knowledge of dental and oral care of pregnant women.

The results of the data effectiveness test did not pair the change value (Δ) with the p-value 0.899 ($p > 0.05$) which means that there was no significant change, meaning that both affected the increase in the knowledge of pregnant women.

Table 3. Results of Debris Index Measurement Before and After the Intervention

Variable	Group	Mean±SD Pre test	Mean±SD Post test	p-value
Pairing Test				
Attitude	Intervention	60.77±11.11	80.26±12.49	0,000*
	Control	60.77±11.11	81.31±13.89	0,000*
	Unpaired Test Change Value (Δ)			
	Delta±SD (Δ)			
	Intervention	19.5±18.7		0,815**
	Control	20.54±19.72		

*Wilcoxon

**Mann-Whitney

Based on the table above, the results of the effectiveness test of paired data of attitude variables in the intervention group showed a p-value of 0.000 ($p < 0.05$), meaning that there was a

difference between the intervention group and post-test, meaning that the intervention group experienced an increase in attitudes to maintain the teeth and mouth of pregnant women.



The results of the data effectiveness test did not pair the change value (Δ) with the p-value 0.815 ($p > 0.05$) which means that there was no significant change, meaning that both affected the increase in the attitude of pregnant women

E. Product

The resulting product is one of the innovations to overcome the problems faced by health workers, especially Dental and Oral Therapists in providing information about dental and oral health to the community.

IV. DISCUSSION

A. Identification of the "Kbvids" Education Model as Dental and Oral Health Education for Pregnant Women

The information collection stage was carried out by in-depth interview method with 4 respondents, namely the head of the health center, dental and oral therapists, pregnant women and village heads. After obtaining information, the researcher identified the problem so that several problems were found as follows:

1. The activeness of Integrated Service Post cadres in each Integrated Service Post schedule in their respective places is still relatively low. Some Integrated Service Post cadres did not come due to busyness.
2. The community oral health efforts program is not running optimally so that dental and oral health services for pregnant women are very lacking because Integrated Service Post cadres are not trained so that they are unable to provide information and education on dental and oral health services to the target including pregnant women and other Integrated Service Post visitors
3. Pregnant women do not get enough information about education on dental and oral health services for pregnant women both at Integrated Service Post and at health centers so that the knowledge, attitudes and actions of pregnant women in maintaining their dental and oral health are not good.
4. The problem of cadres' lack of understanding of dental and oral health is due to never receiving training for Integrated Service Post cadres so that they do not understand what will be conveyed to pregnant women and other targets.
5. The model of delivering information about dental and oral health that should be applied is technology-based such as creating a website that contains a menu of information about dental and oral health services that are

commonly accessed by all levels of society using Android cellphones.

The problems identified are the lack of running of the community oral health efforts program due to the absence of trained cadres and media that will be used by cadres in providing dental and oral health services to pregnant women and other Integrated Service Post visitors.

B. Application of the 'Kbvids' Education Model as Dental and Oral Health Education for Pregnant Women

On the "Kbvids" menu there are several options for dental and oral health materials. The menu in the "Kbvids education model" for dental and oral health at dental polyclinics is designed with the following display:

1. The main page display with the title "Kbvids" in which there is a dashboard menu as the homepage serves to see the main topics on a website.
2. Video menu on how to take care of teeth and mouth in pregnant women complete with how to brush teeth and mouth. This video is accompanied by sound and movement, making it interesting to watch.
3. Information menu about dental and oral health In this menu we can get some interesting information about dental and oral health, especially how to take care of teeth and mouth in pregnant women.

Dental and oral health in pregnant women can occur including gingivitis, periodontitis, cavities, pulpitis and tartar. Therefore, it is necessary to make efforts to overcome these problems by forming behaviors that can prevent dental and oral diseases in pregnant women, namely by using the right media. The selection of media and the method provided must also be in accordance with the goal so that it is easy to understand the material conveyed in the media in order to stimulate the interest of the target[9].

The results of the expert validation test showed that the results of 3 experts showed results with feasible criteria. This is evidenced by the results of the feasibility assessment of the system from expert validators that the feasibility value is 92.22 with a very high category, the results of the validity of the expert at the p-Value of 0.014 show that the "Kbvids" education model is feasible as an educational model for changes in dental and oral maintenance of pregnant women. The results of the module feasibility assessment from expert validators are known to be 94.75%. The results of



expert validity on the p-Value of 0.037 show that the web-based application module "Kbvids" is feasible as a medium for providing dental and oral health information.

This is considered important in the development of an educational model in assessing the feasibility of the theory, the concept developed and the feasibility of the model so that the resulting model can also be useful for its users.

C. Menu Test Analysis on the "Kbvids" Education Model

The results of the respondents' assessment on the menu in the "Kbvids" education model showed that the respondents' assessment of the dashboard menu which stated strongly agreed was 15 respondents (30.00%), agreed as many as 30 respondents (60.00%), while those who disagreed as many as 5 people (10.00%). The respondents' assessment of the video material menu stated that they strongly agreed with 8 respondents (16.00%), agreed with 35 respondents (70.00%), while disagreed with 7 respondents (14.00%). In the material menu, 10 respondents strongly agreed (20.00%), agreed with 25 respondents (50.00%), while disagreed with 15 respondents (30.00%).

In this menu, there is material on how to take care of teeth and mouth in pregnant women accompanied by interesting and audible videos so that it is very easy for respondents to understand. So that the respondents' comments about the menu on "Kbvids" showed that they strongly agreed with the education model. It is hoped that this method can be an educational model in improving behavior in maintaining dental health and mulu in pregnant women.

Meanwhile, the evaluation of respondents on all "Kbvids" menus stated that there were 30 respondents (60.00%), 15 respondents (30.00%) who were moderately feasible and 8 respondents (10.00%) who were not eligible. This shows that it is worthy of being used as an educational model.

D. Statistical Analysis of the "Kbvids" Education Model on Pregnant Women's Knowledge

This analysis was carried out in two groups, namely the intervention group and the control group. In these two groups, the same treatment was carried out to see changes in knowledge in the maintenance of dental and oral health, namely treatment in pretest and posttest.

The results of the data effectiveness test on the paired variables of knowledge data using the Wilcoxon test showed that the p-value in the intervention group showed a p-value of 0.000

($p < 0.05$), meaning that there was a difference in knowledge between before and after using the KBVids model. Meanwhile, in the control group, there was also a difference in knowledge before and after using poster media. But from the results between the use of the two models between KBVids and posters there was no difference with $p = 0.899$. The use of the KBVids model and poster media can both improve dental and oral care knowledge in pregnant women, characterized by a higher post-test score than the pre-test score. However, the use of the KBVids model increases the knowledge of dental and oral care in pregnant women more than poster media.

The increase in knowledge that occurred in the intervention group was due to the model developed based on the needs of the target and the existing material was very interactive and easy to understand in which there was an understanding, cause, and way for pregnant women to avoid dental and oral diseases. The materials and videos packaged in the application are very useful and add to the education of pregnant women in avoiding dental and oral diseases. This is in line with previous research that says that video is effective because the message conveyed is more engaging and accelerates understanding[10].

Knowledge is the basis for helping to overcome and solve problems and one of the factors that affect knowledge is the reception of information that can shape a person's behavior[11].

E. Statistical Analysis of the "Kbvids" Education Model on the Attitude of Pregnant Women

The results of the data effectiveness test on the paired variables of attitude data using the Wilcoxon test showed that the p-value in the intervention group experienced an increase in attitude with a value of $p = 0.000$ ($p < 0.05$), meaning that there was a difference in attitude between before and after using the KBVids model. Meanwhile, in the control group, there were also differences in attitudes before and after using poster media. But from the results between the use of the two models between KBVids and posters there is no difference with $p = 0.815$. The use of the KBVids model and poster media can both improve dental and oral maintenance attitudes in pregnant women, characterized by a higher post-test score than the pre-test score. However, the post-test value of the KBVids model is higher than the post-test value of the poster media use.

The increase in attitudes in pregnant women occurs because the Kbvids model is presented in the form of videos and interactive



materials about maintaining dental and oral health in pregnant women so that users do not feel bored with the material in the model. The change in attitude is caused by factors that affect the attitude of the target, namely the media developed is a media that can convey information and material in an interesting and easy-to-understand manner[12].

The reaction of an individual to a stimulus can cause opinions and emotions, thus causing a stimulus to known objects by showing both positive and negative attitudes[13]. An increase in a person's attitude is due to an increase in knowledge from the unknown to knowing, then understanding and making attitudes change. Attitude includes an evaluative predisposition that largely determines how a person acts[14].

V. CONCLUSION

The "KBVids" education model is feasible and its application is effective in changing the behavior of dental and oral care of pregnant women.

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