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THE EFFECT OF USING TUTORIAL VIDEO LEARNING MEDIA ON MOTHERS' KNOWLEDGE AND SKILLS IN GIVING PRENATAL STIMULATION

Santi Wahyuni*, Badriah

Department of Tasikmalaya Health Polytechnics, Ministry of Health Republic of Indonesia, Indonesia

*Correspondence Author's Email: ajiya_mj@yahoo.co.uk

ABSTRACT

Pregnancy is a reproductive event of women's life. Preparations are done by mothers to welcome the pregnancy including preparations for the unborn baby in the womb namely prenatal stimulation. Various studies prove prenatal stimulation is very beneficial for the children' growth and development in the future. However, prenatal stimulation programs specifically in Indonesia are not included to the service standard of pregnancy checkup. Thus, it needs to be socialized through a social media that is video tutorial. This study aims to determine the effect of the use of video tutorial learning media on prenatal stimulation in Puskesmas (community health center) of Cirebon District. The research uses Quasi-experimental design with pretest-posttest group approach. The samples were chosen using purposive sampling technique. The samples consist of 40 respondents divided into two groups i.e. 20 respondents in the intervention group and 20 respondents in the control group. The data were analyzed using parametric statistical tests namely Paired *t*-test and independent t-test. Statistical test results show that the use of video tutorial learning media in the intervention group has better effect than the control group (*p*-value = 0,000) ($p < 0.05$). The research concludes that the use of video tutorials increase pregnant women' knowledge and skills in giving prenatal stimulation. It is recommended for pregnant women to regularly continue giving prenatal stimulation during pregnancy, so that the mother and the fetus get the optimal benefits.

Keywords: Tutorial Video Learning Media, Prenatal Stimulation

INTRODUCTION

Pregnancy is generally most awaited moment for married couples and also their extended families. The birth of child or the presence of a grandchild as the next generation is every parent's hope. This expectation can be realized by through maintaining good physical and psychological health during pregnancy. The health condition of pregnant woman can directly affect the fetus in the womb (Indrijati, 2016).

Having a healthy, intelligent, and noble child becomes the hope of pregnant women and their families. Besides genetic factor, children intelligence is also influenced by stimulation factor. Prenatal stimulation as an important stimulation is very influential on fetal growth and development. Furthermore, prenatal stimulation can strengthen the bond between parents and unborn baby and also other family members and the unborn baby through interactive communication. Family involved in giving prenatal stimulation forms a positive shared parenting. It can continue to postnatal (Van de Carr& Lehrer,1998).

Various preparations are done by mother to welcome the pregnancy including prenatal education. Prenatal education can be done by providing stimulation since the fetus in the mother's womb. The purpose of prenatal educations covers helping parents and family members to provide more comfortable environment for the fetus, providing opportunities for early learning, and encouraging the development of good relationships between parents and fetus in the womb (Van de Carr & Lehrer, 2001).

Some studies prove that prenatal stimulation programs are very beneficial for children's growth and development in the future (Van de Carr & Lehrer, 2001). Prenatal stimulation can improve children's cognitive intelligence (Manrique, *et.al.*, 1998),

physical development ability (Manrique, *et.al.*, 1998; Lafuente, *et.al.*, 1997), and also language and psychosocial skills (Panthuraamphorn, 1998). In addition, prenatal stimulation can help to make babies calm (Pierre, 1997 cited in Chamberlain, 2006) and influence postnatal auditory preferences (De Casper & Spence, 1986).

Parents generally get prenatal stimulation information from books and participation in prenatal programs (Chamberlain, 1995). In Indonesia, prenatal stimulation programs or prenatal education are not included to the service standard for pregnant women who visit antenatal care. Antenatal care standards include: measuring weight, measuring blood pressure, measuring upper arm circumference, measuring the height of the fundus uteri, determining fetal presentation, administration of TT immunization, Fe tablets, and pregnancy tests, procedures for handling cases according to their authority, and counseling (Kementerian Kesehatan Republik Indonesia, 2014).

In line with the results of qualitative study conducted by (Wahyuni, Rustina & Afiyanti, 2010) in Cirebon, it shows that all participants needed information and education counseling related to prenatal stimulation programs. Meanwhile, based on their experience, they did not get the prenatal stimulation information from the health care where they did the pregnancy checkup. Prenatal stimulation education programs are highly needed by parents to help them to realize their hope of having an intelligent child. However, people in Indonesia have limited access to the information of prenatal stimulation programs. Thus, this research is conducted to overcome the problems and facilitate the society by developing a learning media that is easily accessible namely giving prenatal stimulation tutorial video.

Tutorial video is an alternative media learning that can be used to support learning activity and also improve learning interest and motivation. Information related to prenatal stimulation program is designed and made in the form of video. Then, the file of tutorial video is saved in a memory card and it is inserted to respondents' hand phone so they can access the file easily through the phone.

Various techniques of giving prenatal stimulation can be learned by parents through video tutorial learning media. Pregnant women and their partners can apply prenatal stimulation forms directly to the fetus in their daily lives. This study aims to determine the effect of using tutorial video learning media onmothers' knowledge and skills in giving prenatal stimulation in Cirebon.

METHODOLOGY

The study was a quasi-experimental research using pretest-posttest group approach. The population of this study were all mothers that do pregnancy check in Puskesmas (community health center) in Cirebon district. The sample of the study were chosen using purposive sampling technique. The criteria of the sample were physiological pregnant women who are willing to be respondents, pregnant women with gestational age 28-37 mg, have a mobile phone that has specified specification determined by the researchers. The respondents involved in this study were 40 people consisting of 20 respondents in intervention group and 20 people in the control group.

The research procedures begun with explanation of purposes, objectives, plans and time contract of the research. Prospective respondents who met the inclusion criteria made informed consent as a form of agreement to be involved in this study. Then, research respondents were divided into two groups with different data collection times. The intervention group got prenatal stimulation learning in form of tutorial video while the control group got module. All the respondents got pre-test to find out the level of their knowledge regarding prenatal stimulation programs (cognitive domain).

The intervention group respondents watched prenatal stimulation tutorial video together then the respondents tried to demonstrate the prenatal stimulation forms showed in the video. The equipment needed by the respondents such as megaphones, flashlight, warm and cold drink, music boxes, tutorial video files stored in a memory card were facilitated by the researchers. After the presentation of prenatal stimulation, the respondents were trained to demonstrate the prenatal stimulation forms. After that, the respondents were asked to re-practice doing prenatal stimulation to the fetus directly (psychomotor domain).

The respondents were asked to do prenatal stimulation to the fetus at home regularly. The stimulation can involve the husband (spouse) or other family members.

The respondents were taught the way to fill out the checklist of prenatal stimulation implementation that must be filled every day. They needed to check "yes" column when the prenatal stimulation form was done and check "no" column when the form of stimulation was not done. The enumerator involved in this study did home visit to collect the data and ensure the respondents implement the prenatal stimulation program. Some respondents were unable to be visited. Thus, the monitoring and data collection was done by phone in which the respondents were asked to send video recording when the respondents performed the prenatal stimulation.

After the prenatal stimulation implementation lasted for two weeks, at the end of the second week, a meeting was held to know the respondents' experiences in implementing prenatal stimulation forms. The researchers also conducted post-test data collection related to cognitive domain. After that,the researchers and respondents did a discussion again about the way of prenatal stimulation implementation. At this meeting, each respondent also got pregnancy check and motivation to continue giving prenatal stimulation to the fetus regularly. Then, the second stage of prenatal stimulation implementation lasted for two weeks and it ismonitored by the enumerator.

After a month of implementation, the respondents were collected again. The researchers and respondents discussed about the respondents' experience in implementing prenatal stimulation. Next, evaluation was conducted to see the respondents' ability in doing prenatal stimulation to the fetus (post-test of psychomotor domain). The evaluation used observation technique. In this stage, again, each respondent got pregnancy check and motivation to continue giving prenatal stimulation to the fetus regularly. Through the Whatsapp group created by the researcher team, the respondents' implementation of prenatal stimulation still can be followed up. Some respondents even gave the information on the perceived benefits of prenatal stimulation both during the pregnancy and during labor.

The research data were analyzed using univariate and bivariate analysis. Univariate analysis was conducted to see the frequency distributor while bivariate analysis using parametric statistical tests namely Paired t-test were applied to determine the effect of using tutorial video on giving prenatal stimulations. In addition, independent t-test were administered to find out the different of tutorial video and module effects on mothers' knowledge and skills in giving prenatal stimulations.

RESULTS

Respondents involved in this study were dominated by the 20-35 years' age group (75%). This age group belongs to the low risk category. It means that it is relatively safe for women in this age to get pregnant and give birth. Most of the respondents were housewives (85%). Some respondents had basic or primary education (47.5%) and 45% of them had secondary education. In addition, most of respondents (75%) had good nutritional status.

The normality test results using Shapiro-Wilk (2-tailed) test showed that the data of this study were normally distributed which is all the variable were > 0.05. The data analysis used parametric statistical test i.e. paired t-test and independent *t*-test.

The analysis results of the effect of using prenatal stimulation tutorial video onmothers' knowledge and skills in giving prenatal stimulation are demonstrated in the following table:

Table 1: The Effect of Using Prenatal Stimulation Tutorial Video on Mothers' Knowledge and Skills in Giving Prenatal Stimulation

Treatment		Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference		*t*	df	Sig. (2-tailed)
					Lower	Upper			
Tutorial video	Knowledge	-9.15000	2.15883	0.48273	-10.16036	-8.13964	-18.955	19	0.000
	Skills	-7.50000	3.15394	0.70524	-8.97609	-6.02391	-10.635	19	0.000
Module	Knowledge	-0.85000	0.74516	0.16662	-1.19875	-0.50125	-5.101	19	0.000
	Skills	-0.70000	0.65695	0.14690	-1.00746	-0.39254	-4.765	19	0.000

Based on the table above, it can be concluded that the use of tutorial video and modules affect the changes of knowledge and skills in giving prenatal stimulation to the fetus in the womb (p value or Sig. 0.000 < 0.05). The use of tutorial video has a greater effect on increasing knowledge (2.16) and skills (3.15) in giving prenatal stimulation than module has on increasing knowledge (0.74) and skills (0.66).

The analysis results using independent t-test of the effect of using prenatal stimulation tutorial video and module onmothers' knowledge and skills in giving prenatal stimulation are presented in the following table:

Table 2. The Differences of the Effect of Using Prenatal Stimulation Tutorial Video on Mothers' Knowledge and Skills in Giving Prenatal Stimulation

Variable	*t*	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
knowledge pre-test	-1.891	38	0.066	-0.95000	0.50249	-1.96725	0.06725
skills pre-test	0.303	38	0.764	0.15000	0.49511	-0.85229	1.15229
knowledge post-test	15.564	38	0.000	7.35000	0.47226	6.39397	8.30603
skills post-test	10.884	38	0.000	6.95000	0.63856	5.65730	8.24270

The table 2 showed that there was no significant difference between the use of tutorial video and module in terms of giving prenatal stimulation before the treatment both in knowledge (α=0,066) and skills (α=0,764). However, there was a significant difference between the use of tutorial video and module in terms of giving prenatal stimulation after the treatment both in **knowledge (α=0,000) and skills (α=0,000).**

DISCUSSION

The results of the study indicated knowledge changing of pregnant women before and after got the information about prenatal stimulation using learning media both in the intervention group (tutorial video) and the control group (module). The use of learning media namely prenatal stimulation programs tutorial video and module were statistically able to increase pregnant women's knowledge. Pregnant women who initially had limited information about prenatal stimulation programs had better knowledge and skills after getting the material about the programs. Information related to the forms of prenatal stimulation was the new knowledge for the pregnant women involved in this study. The changing knowledge and skills of pregnant women showed the success of the learning process.

Learning outcomes are the abilities of students after having learning experiences (Wahyuni, Rustina & Afiyanti, 2010). It is something achieved by students for the efforts or thoughts expressed in the forms of assignment, knowledge, and basic skills in various aspects of life so that it appears qualitative changes in individual behavior (Siagian, Flora & Saputri, 2012). The benchmarks of learning outcomes cover the changes of knowledge, attitude, and skills. In this study, the learning process assessment was conducted to see the development achieved by the participants both in cognitive aspects or their skills in doing various prenatal stimulation forms. Pre-test and Post-test questionnaires were applied to assess the participants' knowledge about prenatal stimulation programs. Meanwhile, pre-test and post-test observation were conducted to assess the participants' ability or skills in doing prenatal stimulation.

The achievement of knowledge and skills can be compared between the intervention group treated using tutorial video and the control group treated using prenatal stimulation module. The results of the study showed that the use of tutorial video learning media have a greater effect on knowledge and skills compared to the module. It is in line with the results study conducted by (Salina, *et.al.*, 2012) which proved that the participants who watch learning video are more able to apply patient mobilization technique by 6.19 points compared to the group who only get written information.

The use of appropriate technology can improve learning outcomes. Several studies proved that video can be a highly effective learning media(Brame, 2016). It can be an effective media if educators take into account three elements which cover managing cognitive aspects into the content of the video, maximizing the students' involvement with the video, and promoting active learning using the video (Mayer & Moreno, 2003).

Audio visual media is media that have sound and picture elements. Video as learning media uses audio and visual media approaches to deliver information to students. This type of media has better capabilities since it includes both types of audio and visual media

(Djaramah & Zain, 2010). The use of the two senses simultaneously i.e. hearing (audio) and sight (visual) can accelerate the ability of students to understand the learning materials. The use of both senses to convey appropriate and complimentary information had been proved to increase students' retention and abilities to transfer the information (Mayer & Moreno, 2003). Human memory system are able to process verbal and non-verbal symbols so the learning process involving the senses of sight and other sense will provide more optimal benefits.

Video tutorial about prenatal stimulation used in this study was designed by an expert's team as attractive as possible. The feasibility of the video had been tested before it is used by the research respondents. The video can be accessed easily by the respondents' handphone. Thus, the respondents can learn and practice the prenatal stimulation forms any time. It is accordance with the opinion of (Thomson, *et al.*, 2014) that the use of video can increase students' involvement.

Multimedia or educational media strongly supports the success of teaching and learning process. Multimedia can be used to teach new learning experience to the students (Laurillard, 1995). Multimedia-based learning media utilizes a combination of images, sounds or audio, and video. An educator can deliver the material through learning media that has been determined so that learning objectives can be achieved. Video is one of multimedia-based learning media that can be used to deliver learning materials. The materials are delivered through moving pictures with sound. The video is made based on story concept or planned-storyboard.

According to (Arsyad, 2010), there are four functions of visual video which cover attention, affective, cognitive and compensatory. The attention function is the core. It is to attract students' attention to concentrate on the learning material related to the visual meaning displayed or accompanying the learning text. The affective function of visual media can be seen from the level of students' satisfaction when studying illustrated text. The cognitive function can be seen from visual symbols that can facilitate the goals achievement to understand and remember the information or messagescontained in images. The compensatory function shows that media visual provides context for understanding text. It helps students who are less interested in reading to organize information in the text and easy recall it.

Video, images about how to do prenatal stimulation can arouse pregnant women' emotion and attitude. Pregnant women as the participants can feel the reality of the fetus, realize that the fetus in the womb is alive and developing, admire God for the pregnancy, realize the importance of giving prenatal stimulation and have a willing to provide prenatal stimulation to stimulate children intelligence.

The result of the study indicated that there was no significant difference between the use of tutorial video and module of prenatal stimulation before the treatment both in knowledge (α=0,066) and skills (α=0,764). It demonstrated that pregnant women did not have sufficient information regarding prenatal stimulation programs. Not all pregnant women knew and carried out prenatal stimulation programs. Generally, pregnant women got the prenatal stimulation information if they took prenatal classes. However, not all the pregnant women were able to access prenatal classroom service. The phenomenon in society showed the large number of pregnant women who paid little attention to prenatal stimulation. They considered the educational stimulation process was done after the children are born. Other perception said that giving prenatal stimulation is a thing that is done spontaneously as a mother's instinct of the unborn baby (Wahyuni, *et al.*, 2010).

The result of the study showed that there was a significant difference between the use of tutorial video and module of giving prenatal stimulation after the treatment both in knowledge (α=0,000) and skills (α=0,000). The provision of prenatal stimulation information through tutorial video and module was proven to increase participants' knowledge and skills in providing prenatal stimulation to the unborn baby. These two learning media basically can be used to deliver prenatal stimulation materials. There are some criteria that should take into account in choosing an appropriate media i.e. : 1) it is suitable with the objectives, 2) it is appropriate to support the content of the learning which is factual, conceptual, processes, or generalizations, 3) it is practical, flexible, and durable, 4) the educator are able and skilled in using the media, 5) target grouping, and 6) technical quality (Arsyad, 2010).

Audio-visual media requires an important work in

writing scripts and storyboards. The texts that were used as the narrative materials was filtered from the content of the lesson then it was synthesized into the things that want to be shown and said. The narration was a guide for the production team to think about the video process regarding describing or visualizing the subject matter. The use of print-based media such as modules requires six elements to consider when designing it namely consistency, format, organization, attractiveness, font size, and the use of blank spaces (Arsyad, 2010).

The success of prenatal stimulation cannot be separated from the mothers' condition during pregnancy. The mothers' condition both physically and psychologically are very influential on the quality of the prenatal fetus and will continue to after birth life. The physical health of pregnant women is supported by the following three things: first, nutritional intake which is complete and balanced and also the increased consumption of folic acid which optimize the growth and the development process of the fetus including brain function growth (Wu, et al., 2004). Second, the application of a healthy lifestyle especially during pregnancy by regulating activity patterns, fulfilling the resting needs, and avoiding the environmental hazards of cigarettes, alcohol, and drugs. Third, regular pregnancy checks. In addition to the three things above, the psychological condition of the mother also determines the fetus condition such as mother's emotional acceptance and response to the pregnancy. A good psychological condition is the key to have a sincere, calm, and happy pregnancy.

CONSLUSION

Based on the result of the study, it can be concluded that:

a. The use of tutorial video and modules affected the changes in knowledge and skills in giving prenatal stimulation.

b. The use of tutorial video had a greater effect on increasing knowledge and skills in giving prenatal stimulation than module.

c. There was no significant difference between the use of tutorial video and module in terms of giving prenatal stimulation before the treatment.

d. There was a significant difference between the use of tutorial video and module in terms of giving prenatal stimulation after the treatment.

Conflict of Interest

The authors declare that they have no conflict of interest.

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