

The Effect Of Using MOCA Application On Knowledge And Skills Of Midwifery Students In Monitoring Infant Growth Ages 6-12 Months

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Abstract: This study aims to analyze the effect of MOCA application on the knowledge and skills of midwifery students in monitoring growth and development of infants aged 6-12 months. This study uses a true experiment design with pretest-posttest one group design. The sample in this study was the level III obstetric students totaling 25 respondents. The study was conducted at the Integrated Health Post guided by STIKes Budi Luhur Cimahi. The conclusion of this study is that the application of MOCA can influence the knowledge and skills of students in monitoring the growth and development of infants, so students can be more competent in conducting midwifery care for infants.

Index Terms: MOCA Application, Infant Ages 6-12 months, midwifery students, monitoring growth development

1. INTRODUCTION

Republic of Indonesia Minister of Health Regulation number 66 of 2014 is currently a reference to optimize the growth and development of children through stimulation, detection, and early intervention of growth and development (SDIDTK) and the provision of the MCH handbook (Maternal and Child Health) [1]. The comprehensive and quality development and development activities of children are not yet optimal. The results showed that the implementation of SDIDTK was only limited to early detection of growth irregularities caused by the presence of unsupporting Puskesmas heads, responsible SDIDTK who had not been trained, were not yet socialized, support facilities were inadequate for stimulation and early detection of development. The MCH book that was distributed was never read by parents at home [2]. Based on Riskesdas data, there is a tendency for an increase in the proportion of infants / toddlers aged 6-59 months who have not been weighed in the last 3 years tending to increase. The increase occurred from 23.8% in 2010 to 34.3% in 2013. The increase in this data could result in the number of infants experiencing developmental delays will increase, due to the lack of stimulation that is usually given to infants by health workers or cadres in Posyandu. A child who is in good nutrition and healthy will respond to changes in the environment more actively and further accelerate the child's mental development. Poor nutrition at the age of 0-24 months can cause permanent growth and brain development disorders. 30.8% of children aged 6-18 months experience delayed gross motor development [4]. Growth and development of infants need to be stimulated by parents, especially mothers so that the baby can grow and develop optimally and according to its age stage. [5] The level of mother's knowledge about baby's growth and development is related to fine motor development. Mothers' skills and roles are very useful for the overall growth and development of the baby because parents can immediately recognize the process of developing their babies

and as early as possible stimulate the overall growth and development of babies in physical, mental, and social aspects. [2] Midwifery students as prospective professionals have the obligation to meet midwife competency standards through a formal education process for 3 years. Midwifery students are expectant mothers who must understand the growth and development of infants. One of the midwifery care is care for newborns, neonates, infants, and toddlers. Therefore, students must have the ability to monitor the growth and development of infants in order to be able to assist infants mother in providing stimulation of growth and development to their children.

The development of educational technology cannot be separated from the development of technology in general. Various educational tools and modern educational facilities also support the optimization of the learning process, both at the school level and in everyday life. The development of technology, especially information and communication technology, offers a lot of convenience in learning, which allows a shift in learning orientation from the process of presenting a variety of knowledge to the process of guidance in conducting individual exploration of science. In addition, it is also possible to change the paradigm from the philosophy of teacher-centered learning to student-centered learning (student centered) [24]. The latest data from the Indonesian Cellular Telecommunications Association (ATSI) shows that the number of smartphone customers in Indonesia as of 2011 reached 93% .6 The development of mobile phones is currently increasing productivity and human communication. Applications in a smartphone can also be used to help medical activities, such as monitoring, diagnosis and therapy, and health promotion [7]. The Mother Cares (MOCA) application contains information on monitoring growth and development of infants aged 0-60 months that is equipped with moving animations on each question of development detection and stimulation, WHO standard growth charts, and reminder as a medium to remind parents to stimulate and detect early development in their children in accordance with the allotted time.

2 RESEARCH METHOD

This study used a true experiment design with pretest-posttest one group design. The research sample is midwifery level III semester VI students who have passed Neonatal, Infant, and Toddler Midwifery Care Subjects and Growth and

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Development Monitoring Courses. The research group was first given an initial test (pretest) in the form of questionnaires on growth and development of infants aged 6-12 months, as well as health education for toddler infant growth in general. Furthermore, research respondents were given the application of MOCA applications. Evaluation is carried out for 28 days (4 weeks). The provision of a final test (posttest) is done to find out the increase in students' knowledge and skills in monitoring the growth and development of infants aged 6-12 months. Measurement of student skills is carried out directly on infants aged 6-12 months in Posyandu guided by STIKes Budi Luhur Cimahi using a list of developmental stimulation checklists. This research was carried out in May-August 2019 at STIKes Budi Luhur Cimahi and Posyandu RW 08, RW 10, and RW 14 Work Area Cibeber City Health Center, Cimahi. At the time of the pretest, respondents collected data to assess the level of knowledge and skills of students by distributing questionnaires on the growth and development of infants aged 6-12 months at the STIKes Budi Luhur campus and observasi students' skills in monitoring the growth and development of infants aged 6-12 months in the Posyandu Puskesmas Cibeber. After the pretest activity, students get information about the MOCA application and are required to open the application 5 times a week for 4 weeks. Respondents were reassembled for posttest research after being given the opportunity to learn independently about monitoring the growth and development of infants with MOCA applications. Data analysis for knowledge uses paired t test and data analysis for skills using the Wilcoxon test.

**** Wilcoxon Test**

Based on the table above after the use of the MOCA application it is known that the average knowledge of respondents increased from 88.92 to 91.08 with an increase of 0.02% and the value of $p = 0.006 < 0.05$ which means that the MOCA application affects the increase in knowledge of midwifery students to monitor the growth and development of infants aged 6-12 months. In the skills variable after using the MOCA application an average increase of 50.9%, in the pretest the average skills of students 17.54 to 26.46 after using the MOCA application with a value of $p = 0,000 < 0,05$, which means the MOCA application has an effect on improving the skills of midwifery students in monitoring growth and development of infants aged 6-12 months.



Chart 2. Sample Capture of MOCA Application

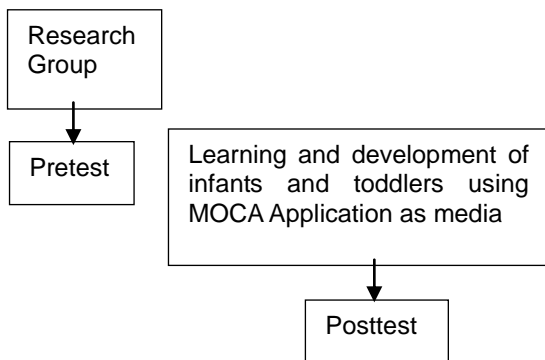


Chart 1. Research Flow Chart

3 RESULT OF RESEARCH

The Effect of MOCA Application on The Knowledge and Skills of Midwifery Students in Monitoring Growth and Development

TABLE 1
of Infants Aged 6-12 Months

Variabel	Aplikasi Mother Cares		t Hitung	Nilai p	
	Pre	Post			
Pengetahuan	X (SD)	88,92 (3,120)	91,08 (2,827)	-3,046	0,006*
	Median	89,00	92,00		
	Rentang	84-94	86-96		
	% Kenaikan	0,02%			
Keterampilan	X (SD)	17,54 (3,671)	26,46 (0,779)	-4,296	0,000**
	Median	17,54	27,00		
	Rentang	10-25	25-27		
	% Kenaikan	50,9%			

*Paired t-Test

4 DISCUSSION

Based on paired t-test it is known that the average respondent's knowledge increased from 88.92 to 91.08 with an increase of 0.02% and the value of $p = 0.006 < 0.05$, which means that the MOCA application affects the increase in knowledge of midwifery students in monitoring growth and the development of infants aged 6-12 months. If seen the percentage increase in knowledge before and after the intervention is only given at 0.02%. A person's knowledge of an object contains two aspects, namely positive aspects and negative aspects. These two aspects will determine a person's attitude. The more positive aspects and objects that are known, the more positive attitude will be towards certain objects. According to WHO (World Health Organization), one form of health object can be translated by knowledge gained from one's own experience [23]. Knowledge is very closely related to education, it is expected that with higher education the person will also be more knowledgeable. However, it needs to be emphasized, it does not mean that someone with low education is absolutely low in knowledge either. This is considering that the increase in knowledge is not absolutely obtained from formal education, but can be obtained through non-formal education [23]. According to the theory of Transtheoretical Model (TTM) known as the stages of model change. This model places individuals in five stages that indicate readiness to seek, make or support changes in behavior, namely: stage 1 Precontemplation (not ready), stage 2 Contemplation (start preparing), stage 3 Preparation (preparation), stage 4 Action, stage 5 Maintenance (maintenance) [22]. Based on TTM theory the respondents in this study were in stage 1 (Precontemplation). Respondents are not ready to make changes in each of them despite knowing and realizing that mastering the competence to carry out growth and development checks on infants is very important and must be mastered by a midwife. The subjects in this study were kindergarten students III semester VI. Based on the D3 Midwifery curriculum students have taken courses

related to Midwifery Care namely Neonatal, Infant, and Toddler Midwifery Care and Growth and Development Monitoring Courses. Students have also taken part in field practices consisting of KDK II, PK I, PK II A, PK II B and Community Midwifery Practices. Based on this experience students have a lot of good knowledge so that they can monitor the growth and development of infants aged 6-12 months. In the skills variable after using the MOCA application an average increase of 50.9%, in the pretest the average skills of students 17.54 to 26.46 after using the MOCA application with a value of $p = 0,000 < 0.05$, which means the MOCA application has an effect on improving the skills of midwifery students in monitoring growth and development of infants aged 6-12 months. According to Notoatmodjo that a person can learn things better if he uses more than one senses. When receiving information from the Mother Cares (MOCA) application system, what is remembered from the contents of the application is 50% of what is heard and seen. The more sensing used in learning, the better, the five senses that channel the most knowledge to the brain are the eyes ($\pm 87\%$), while 13% of human knowledge is obtained or transmitted through other senses [11]. MOCA application is an online mobile that can be directly installed on smartphones that have an internet connection. In the process of using it, some MOCA features are set up online to get respondent data related to research. MOCA operating system has a minimum specification of the Android device version of Gingerbread, with 512 MB RAM, a standard processor. It is hoped that the use of MOCA can increase student skills, and facilitate midwifery students in stimulating and detecting early growth and development disorders in infants and toddlers. In the learning process, the development of teaching materials / materials can be done in various ways, one of which is the development of teaching materials by optimizing the media. One of the media used in learning, and is believed to be able to further excite student interest in lectures is Audio Visual media, because several aspects include: a) easily packaged in the learning process, b) more interesting for learning, and c) can be improved edit (repair) at any time. Through audio-visual learning can be more interactive and more likely to occur two way traffic in the learning process. Audio-visual media can facilitate understanding and strengthen memory, so that in the end students can optimize their abilities and potential [24] In Indonesia, the guidelines for parents in stimulating children's growth and development to date are the maternal and child health book (MCH). Based on research conducted in Thailand the use of integrated modules loaded into smartphones has been proven to improve health services, both pregnant women who are obedient in conducting visits, and also the accuracy of mothers to deliver their children immunized. The use of this smartphone is far more effective than modules without applications, namely the Mother and Child Care Module (MCCM). According to research Priyambodo, et al (2012) at Yogyakarta State University, learning using web-based interactive media can increase student motivation by 3.5%. This can be understood because learning with web-based interactive media can be used as an intermediary, namely increasing student involvement and implementing deeper learning strategies to facilitate learning concepts with the hope of increasing student learning outcomes. This is consistent with the results of research in which the application of MOCA as an interactive media is able to improve student skills in monitoring the growth and

development of infants [25] The Dale experience cone explains that a person's learning outcomes are obtained through direct experience (concrete), to the verbal symbol (abstract). Direct experience will provide information and ideas received by someone, because it involves the sense of sight, hearing, feeling, smell, and touch. Based on the Dale learning cone, students in this study have reached the concrete learning stage (Do the Real Thing) with 90% material understanding level, because students have reached the learning phase in the community. Referring to the theory students have a good understanding of how to carry out checks on growth and development in infants [20, 22].

5 CONCLUSION

The conclusion of this study is that the application of MOCA can influence the knowledge and skills of students in monitoring the growth and development of infants, so students can be more competent in conducting midwifery care for infants. Suggestions in this research are expected that MOCA applications can be used by students in the learning process and by the community to monitor the growth and development of infants.

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