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# **Children's Midwifery Learning Media Application about Android-Based Rough Motor Development in Improving Midwifery Student Skills**

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**Abstract**---Rough motor development is one of the important aspects of early childhood development. But some children have less optimal rough motor development. Therefore, it is necessary to provide stimuli from educators to be able to optimize the development of rough motor in children. The purpose of this study is to find out the improvement of students' skills in detecting early development of rough motor age 6-12 months in AKBID Tahirah Al Baeti Bulukumba Makassar city. This is a quantitative research using pre-experimental methods (one group pretest and posttest design) with purposive sampling (Non-probability Sampling) techniques that determine the criteria of inclusion and exclusion with the number of respondents 31 students level III. Analysis of respondents' skill data used non-parametric statistics with the McNemar formula to test the difference between two paired samples between pretest and posttest scores in the intervention group. The results of the study are  $0.00 < 0.05$  then statistically there is a difference in meaningful skills between before and after being given interference for 2 weeks. This research ensured that the learning media of android-based infant midwifery (GoMent) can improve students' skills in the early detection of developmental abnormalities.

**Keywords**---educator, infant midwifery, learning media design, rough motor, student skills.

## Introduction

The child is a unique individual, as a unique individual, the child needs to get attention from all aspects of life. One of the things that should be considered is the development that takes place in children. Development is the increasing ability of the function of all organ systems, reversible and quantitative including: the ability to move rough, hearing, vision, communication, speech, emotional-social, self-reliance, intelligence, and moral development. Development is expected to run holistically meaning that every development in human beings develops well (Febrialismanto, 2017).

Rough motor development is a motor activity that includes the skills of large muscles so that the development of rough motor can be seen from the ability of the child's movements which include locomotor motion, non-locomotor motion, and manipulative motion. These three motions have different characteristics of locomotor motion is the ability of the individual to move from the original position to another position or other place. Non-locomotor motion is a motion that does not move places or foundations or can also be called as stabilization motion of an individual. While manipulative motion is a movement that gives force to the object or accepts the force of the object such as capturing, throwing, and hitting. The rough motor development of children can help prepare children's readiness to face life problems that will face in the future, especially those related to balance and coordination (Novitasari et al., 2019).

Frequent delays in the development of rough motor can be functional or there is damage to the central composition of the nerves, such as cerebral palsy, brain hemorrhage, asphyxia, severe head impact, as well as the presence of spinal cord abnormalities and peripheral nerve disorders. Several symptoms are a sign of disorders in the child's rough motor development, including being too stiff or weak, abnormal baby's head size, having seizures, making strange movements, late speech, and the delivery process is not smooth. It is explained that 54% of the causes of developmental and developmental disorders of infants and toddlers are caused by poor nutritional conditions of children. Six-point seven (6.7) million toddlers (27.3% of all toddlers in Indonesia are suffering from malnutrition (Utaminingtyas, 2019).

The World Health Organization (WHO) reports preschool-age children to suffer from minor brain dysfunction from 5-25%, intended for rough motor developmental disorders. According to Statistic Global, about 5 to 16% of children have developmental abnormalities. About 30-50% of these disorders are not identified until school age. In Indonesia, the number of toddlers 0-2 years old is 14,333,515 people, while the age interval of 1-4 years amounts to 19,189,866 people (Katharina & Lit, 2018).

Research shows, the disruption of child development that occurs is quite high. Quoted from the Indonesian Pediatric Society (IDAI), Basic Health Research 2013 mentions the incidence of short children due to nutritional problems in Indonesia of 37.2 percent, and of course, this developmental disorder will interfere with its development and based on the results of Basic Health Research (Riskesdas, 2013) shows that the percentage of children experiencing severe motor development disorders in Indonesia is 12.4%. Therefore, it is important for parents to monitor the growth of children, especially under the age of 2 years. In the first 1,000 days since birth, monitoring child development is important to do (Regulation of the Minister of Health. (Permenkes, 2014; Rosmiyati et al., 2017).

To improve student skills, various methods are needed, for example, the use of learning methods, one of which is problem-based learning (Ahmar et al., 2020; Raybould & Wilkins, 2006), or the use of learning media, the results show that the use of teaching modules can improve student skills (Budi et al., 2020; Aryani & Rahayuni, 2016). Based on that description above, research will be conducted with the influence of learning media of infant midwifery care about the development of android-based rough motor in improving the skills of midwifery students. This study aims to improve the skills of midwifery students in early detection of rough motor development aged 6-12 months.

## Research Methods

This research was conducted at the Tahrah Al Baeti Bulukumba Midwifery Academy in November 2020. The research instrument has used the application of learning media for infant midwifery care about the development of the android-based rough motor (Plass et al., 2014; Mayer, 2003). This study used the pre-experimental method (one group pretest and posttest design), sample in this study was Midwifery Student of The Academy of Midwifery Tahirah Al Baeti Bulukumba level III (two) which amounted to 31 people. The sampling technique in this study is Non-probability Sampling. With purposive sampling techniques where the sample is not random but the researchers themselves determine the sample to be taken according to the criteria of inclusion and exclusion. Researchers computerized data processing using the Statistical Product and Solution (SPSS) program with IBM SPSS Statistic 25. Where data analysis with univariate analysis to find out the frequency distribution table, using the bivariate

analysis to find out the results of the development of android-based learning media to improve students' skills in detecting early development of rough motor age 6-12 months. The results of the analysis displayed in the form of tables and narratives. Analysis of respondents' skill data used non-parametric statistics with the McNemar formula to test the difference between two paired samples between pretest and posttest scores in the intervention group. The basis of decision making is: If the probability (Asymp.Sig) < 0.05 then there is a difference, If the probability (Asymp.Sig) > 0.05 then there is no difference.

## Results

The influence of the media of infant midwifery education in improving students' skills to detect early development of rough motor age 6-12 months before and after the use of GoMent application using pre-experimental research design (one group pretest and posttest design). In the first stage of the GoMent application, students fill out the pre-test both the knowledge and skills of the student, after the student fills the pre-test followed by the provision of interference for 2 weeks of giving material about the growth of toddlers aged 6-12 months after 2 weeks have passed the filling of post-tests both knowledge and skills of students.

This research was carried out at the Tahirah Al Baeti Midwifery Academy Bulukumba Jln. Abd. Azis No.70 B Bulukumba Makassar City period October-November. After obtaining a letter of recommendation for research approval by the ethics committee of the Faculty of Public Health, Hasanuddin University Makassar with protocol number 8394/UN4.14.1/TP.02.02/2020 with protocol number 121020092297.

Obtained data on rough motor skills research toddlers aged 6-12 months obtained the average pretest value of students There was an increase in skills by 96.7%, it was seen that no students were skilled before being given learning media but after being given learning media, almost all students became skilled. The results showed that  $H_0$  was rejected which meant there was an influence of the use of the teaching media of midwifery care for toddlers about the development of rough motor age 6-12 months based on android to the skills of midwifery students. To find out the improvement of pretest and posttest can be tested using McNemar test.

Table 1  
Differences in infant midwifery care skills on rough motor development aged 6-12 months in midwifery students before and after the provision of learning media (n=31).

Skill pre	Skill post		p-value*
	Not Skilled	Skilled	
Not skilled	(3.3)	0 (96.7)	<0.00
Skilled	0 (0.0)	31 (96.7)	
Total	(3.3)	0 (96.7)	

### Test McNemar

Statistical test results in table 1 showed significant differences in respondents' skills before and after the use of learning media ( $p < 0.00 < \alpha < 0.05$ ). There was a 96.7% increase in skills, it was seen that there were no skilled students before being given learning media but after being given learning media, almost all students became skilled. The results showed that  $H_0$  was rejected which meant there was an influence of the use of the teaching media of midwifery care for toddlers about the development of rough motor age 6-12 months based on android to the skills of midwifery students.

## Discussion

In this study showed a significant difference in respondents' skills before and after the use of learning media (GoMent). There was a 96.7% increase in skills, it was seen that there were no skilled students before being given learning media (GoMent) but after being given the learning media, almost all students became skilled. This research is in line with research conducted by [Stathopoulou et al. \(2018\)](#), that uses Technology has the potential to improve many aspects of our daily lives, including learning this is proven to increase student involvement in learning

including the concept of learning more effectively, encouraging more participation, increasing learning satisfaction, and developing student skills (Karabatzaki et al., 2018).

In this study obtained students who participated in the pretest both pretest knowledge and pretest skills stated from the test results there is nothing to lead skilled students, from field studies conducted by researchers who are the cause factor because of the teaching and learning process carried out in the courses of ASKEB Neonatus Infants and Toddlers using lecture methods make students pay less attention to lecturers explaining to courses of askeb and the absence of discussion process in students so as to make students become bored and less attentive to the process of lectures, that make students less attentive to lecturers explaining to courses askeb and the absence of discussion process in students so as to make students become bored and less attentive to the process of lectures teaching and learning where students are busy with their busyness each one playing mobile phone, joking with other friends and doing their busy each without regard to lecturers who are good courses, and in the learning process in clinical laboratory students are asked to learn for themselves about the practice of growth and development without any direction from the lecturers, they only get the material in class without being guided completely in clinical laboratory.

Because students lack skills at the time of filling pretest, so we do a modification learning method where we use a method of learning m-Learning, we make students more interested in learning ASKEB Neonate infants and toddlers introduce an application that can at any time they want to see the material in the GoMent application and more interestingly in this application there are certificates that students can get if they graduate in the eyes of the askeb neonatal baby and toddler, thus making students more interested and motivating students in learning. And this is where we guide students for 2 weeks of meetings conducted 1 week 2 times meetings and students who find difficulties in the material contained in the GoMent application and face-to-face learning they can directly visit the discussion on the application (Gilbert & Womack, 2012; Weidman, 2013).

After 2 weeks of intervention, a posttest was carried out on students who were assisted by lecturers who taught the courses. And obtained excellent results from posttest, where at the time of pretest no students are skilled and graduated in filling pretests in applications and laboratory practice in testing student skills, but after the intervention and learning using the GoMent application experienced a very significant increase were obtained a score of 96.7% skilled students.

Rebecca said in 2019 that m-learning in laboratory programs where medical students participated in this study were divided into two groups n (14) and control n (14) Then students demonstrated in the laboratory and recorded what actions they did use m-learning methods, on the contrary with the control of using only face-to-face learning without any laboraterium action or without the help instructure of m-learning, From this study, the results suggest that medical students who participate in the format / m-learning have better test scores and final grades compared to the test scores of the control group (Donkin et al., 2019).

Learning media is an application that can help students access wherever and whenever they want such as research conducted by Anna In 2016 who said that, behind the lack of interest in learning students in improving the ability to reason, design, and evaluate ability where teachers only convey materials that use lecture methods so that the situation and conditions make students passive in the teaching and learning process so that the need for the latest innovations in the learning process requires an interesting learning media that is Mobile Learning or m-learning. And there are very significant results in increasing students' learning interest in the teaching and learning process. (Melania, 2019).

Although this study found that students' skills in pretests are not very skilled in detecting the growth of toddlers early, this is due to the lack of knowledge and skills of students in the course of ASKEB Neonatus or ASKEB IV, and less interesting in exposing the course where learning methods are still using lecture methods. With digital technology or m-learning, students can find new learning models and it is very useful to use where and whenever they want to read them to produce information and gain better knowledge. Thus, learning media in midwifery education provides the potential to continue to be developed in the future. Innovation provides results that can improve students' knowledge and skills in providing midwifery care services later after they graduate (Peyre et al., 2006; Hope et al., 2011).

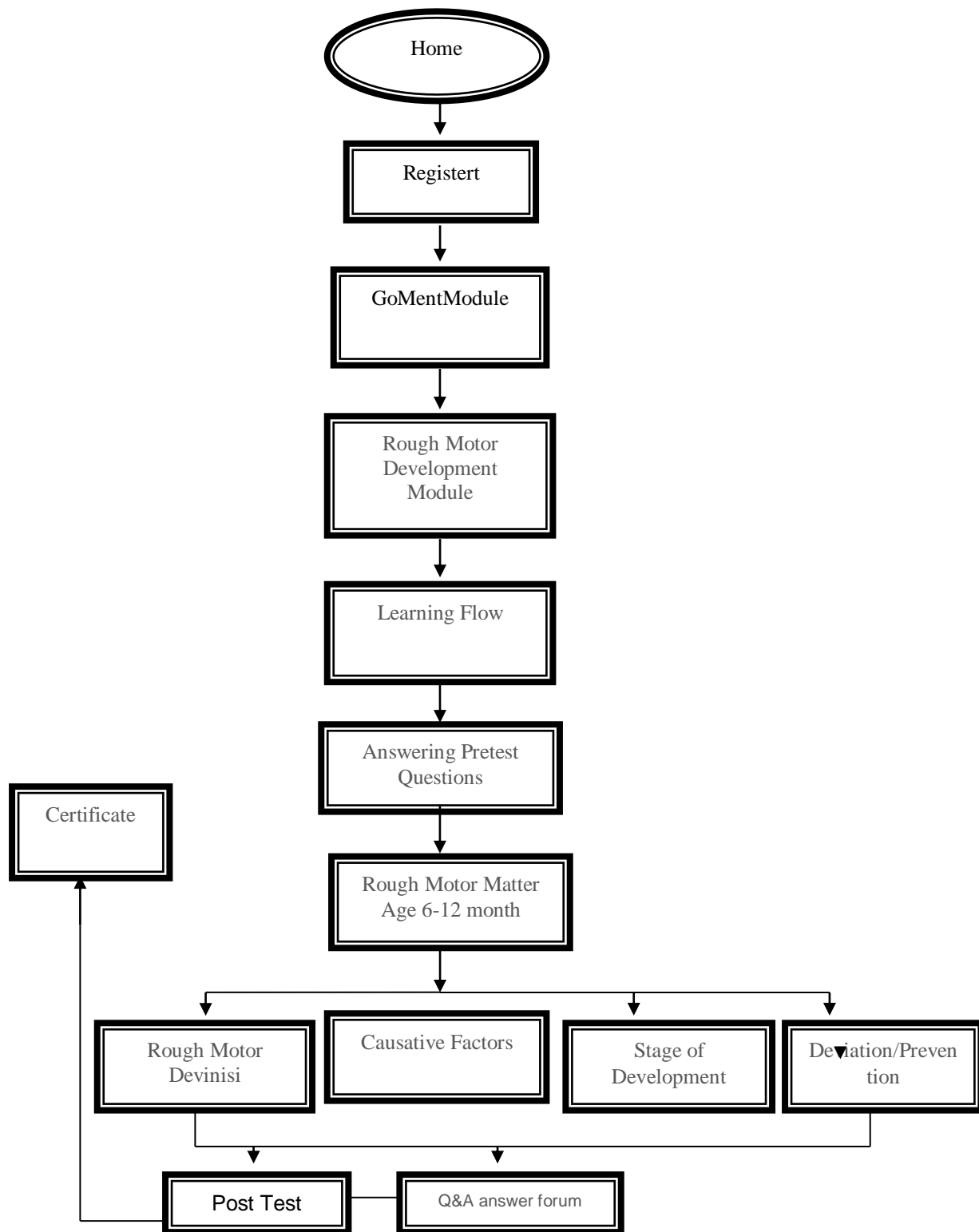


Figure 1. The flow of use of android-based infant midwifery learning media (GoMent)

## Conclusion

This study concluded that the android-based midwifery learning media is designed to improve students' skills in detecting the development of rough motor aged 6-12 months is stated to be very feasible to be used as a learning media for midwifery students in the ASKEB neonates course. This research ensures that the learning media of android-based toddler midwifery care (GoMent) can improve students' skills in the early detection of developmental abnormalities.

## Advice

It is expected that this android-based learning media can be used and used as one of the alternative learning in the laboratories as an effort to improve student skills so that students are more comprehensive in detecting the early development of toddlers.

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