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Children's Midwifery Learning Media Application about Early Detection of Android-Based Growth in Improving Midwifery Students Skills

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Abstract---*Monitoring the growth and disruption of infant and toddler growth is part of health services that improve the health status of children in basic service facilities. Early detection of child growth needs to be done as early as possible using anthropometric parameters. With the number of cases of growth disorders that occur later and still high infant and toddler mortality, it is necessary breakthroughs, innovations, and interventions that are mature to improve human resources. This study aims to analyze the influence of the use of learning media of midwifery care toddlers about Growth age 6-12 months based on android to the skills of midwifery students. This Research is pre-experimental research using methods (one group pretest and posttest design). The sample in this study was 31 students of midwifery academy using purposive sampling technique at Tahira Al Baeti Midwifery Academy Bulukumba Regency. The data in this study are primary data and secondary data. The statistical test used is the McNamer test. The statistical test results were obtained that there are differences in early detection skills growth in students before and after being given android-based learning media (p-value= 0.000<0.05.).*
Keywords---*android, disruption, growth, health services, learning media.*

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Introduction

Growth is a physiological change of the maturation process of normal physical functions in healthy children and in normal times. Although different but growth and development are interconnected and can not be separated. The growth and development of early childhood begin from conception and development in the womb and then born and until the age of five years. This period is an important period or golden age in determining the growth of the next child because at this time there is an acceleration or slowing of growth so that it requires special attention from various parties, especially families and the environment. Early childhood growth is a sustainable process until the child grows into an adult influenced by complex factors, therefore it is necessary to identify as early as possible in recognizing the factors related to such growth so that wherever possible prevent and minimize abnormalities of growth and development of permanent children (Syahda & Kasumayanti, 2020; Zhang et al., 2017; Setyaningsih et al., 2017).

The pattern of foster care, support from the family, adequate nutrition, good health, quality human resources, adequate health services, and a healthy environment, will determine the quality of child growth both physical, mental, social, and emotional as well as appropriate intelligence (Martin et al., 2000; Owens et al., 2002). Somatic growth in toddlers is the basis for determining the health status of the child himself. Monitoring the growth and disruption of infants' and toddlers' growth is part of the health services carried out to improve the quality of growth and health status of children in basic service facilities as a whole and integrated into creating a healthy and productive generation. Early detection of child growth needs to be done as early as possible by using Anthropometric parameters such as Height, Weight, Head Circumference, and Body Mass Index to prevent disturbances or irregularities. Growth disorders that often occur in all countries in the world are due to malnutrition and is a global problem that needs to be addressed and handled with the good invention by involving various parties (Hendrawati & Zidni, 2017; Karim & Qaisar, 2020).

Based on data from the International Health Organization (WHO) and UNICEF in 2019 there were 149 million (21.9%) toddlers experience growth disorders around the world, and the highest prevalence in Asia (55%). Infant and toddler deaths in the world each year are caused by malnutrition or malnutrition by 45%, consisting of stunting 24.7%, malnutrition 15.1%, and skinny 7.8%. One in four children or an estimated 250 million toddlers in all countries around the world is at risk of growth delays while in South Asia it is found that two out of five toddlers experience growth disorders due to malnutrition resulting in pain and infant and toddler mortality (Eshete et al., 2017; Hanley-Cook et al., 2020).

Several other studies conducted in several countries in Asia revealed that growth disorders that occur in infants and toddlers caused by malnutrition such as in Banglades 41% in 2017, India 38% in 2016, Pakistan 40.2% in 2018, Nepal 36% in 2016 and Indonesia by 30.8% in 2018. Indonesia is included in 17 countries that have 3 nutritional problems, and based on the results of Basic Health Research found the prevalence of growth disorders due to malnutrition in recent years has increased (Wang et al., 2007; Minggu et al., 2019). While the death rate of infants and toddlers in Indonesia is still very high. With the number of cases of growth disorders that occur later and still high infant and toddler mortality, it is necessary breakthroughs, innovations, and interventions that are mature to improve Human Resources in conducting activities Of Detection Stimulation, Early Intervention of Child Development to prevent sedentary disorders in infants and toddlers (Sarma et al., 2017; Varghese & Stein, 2019; Ponum et al., 2020; Angdembe et al., 2019).

Learning media can affect the quality and student learning outcomes, the use of interesting and appropriate media can increase student attention and activity (Budi et al., 2020; Basniati et al., 2020). Based on that description, researchers will research with the influence of the learning media of infant midwifery care about early detection Android-based growth in improving the skills of midwifery students. This study aims to improve the skills of midwifery students in detecting early growth of age 6-12 months (Hussain et al., 2018; Milosevic et al., 2017).

Research Methods

Research is pre-experimental research using pre-experimental methods (one group pretest and posttest design). conducted at the Tahirah Al BaetiBulukumba Midwifery Academy. Research instruments are used, namely the application of learning media about the growth of android-based midwifery and Tilik List. The sample in this study was Student of Midwifery Academy Tahirah Al BaetiBulukumba level III (three) which amounted to 31 people with an eclectic sampling purposive sampling (Non-probability Sampling) by setting inclusion and exclusion criteria. Analysis of respondents' skill data used a non-parametric statistic test 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, and If the probability (Asymp.Sig) > 0.05 then there is no difference.

Results

The influence using media of learning midwifery care toddlers about Growth age 6-12 months based on android to the skills of midwifery students before and after using the GoMent application by pre-experimental research design (one group pretest and posttest design. In the first stage, a pretest of student skills test was conducted before being given a learning media about the early detection of android-based growth (Kobayashi, 1993; Hofstede & Bond, 1988). After the pretest was carried out by providing GoMent application and intervened 4 times within 2 weeks, then continued with the post-test conducted by lecturers who studied with their research observations.

This research has been conducted at Tahira Al BaetiBulukumba Midwifery Academy in October - November 2020, after obtaining approval through a letter of recommendation from the Ethics Commission number: 8393/UN4.14.1/TP.02.02/2020 with protocol number 121020092298 issued by the ethics commission of the Faculty of Public Health, Hasanuddin University Makassar. To see the difference between pre-test and post-test to respondents with two categories skilled or not skilled using Mcnamer formula. The results obtained are seen in the table below:

Table 1
Differences in infant midwifery care skills on the growth of 6-12 months of age in midwifery students before and after the provision of learning media (n=31)

Pre skills	Post Skills		*p-value**
	Not skilled	Skilled	
Not skilled	0 (0.0)	31 (100.0)	
Skilled	0 (0.0)	0 (0.0)	<0.000
Total	0 (0.0)	31 (100.0)	

**Test McNemar*

Statistical test results in table 3.1 showed significant differences in respondents' skills before and after the use of learning media ($p<\alpha$) p-value=0.000<0.05. There was a 100% increase in skills, it was seen that there were no skilled students before being given the learning media but after being given the learning media, all students became skilled. The results showed that H_0 was rejected which meant there was an influence using media of midwifery learning about Android-based 6-12-month-old growth on the skills of midwifery students.

Discussion

The skills of midwifery academy student Tahira Al Baeti Bulukumba about early detection of infant growth aged 6 - 12 months showed that before being given intervention no one is skilled (0%), this is because the time of material exposure and practicum guidance to students is very limited due to the situation and conditions of the covid 19 pandemic so that it does not allow students to practice optimally. In the provision of materials given in face-to-face lectures but the meeting time is limited after the lecturer who is teaching the course provides the material with lecture methods, group discussions, and assignments to students, then the lecturer assesses students to see the extent of student knowledge about neonatal midwifery care courses, infants and toddlers, especially early detection of child growth.

The results of the knowledge assessment obtained by 25 people (80.64 %) good while 6 people (19.35%) Less. After the knowledge test is carried out continued by practicum. Practicum guidance is provided by lecturers who master courses in the form of demonstrations, group formation, and simulation. Demonstration conducted by lecturers who master the course is only done 1 time in a meeting for 1 material, after which students are divided into 3 groups to conduct practicum following the demonstration that has been given by the lecturer. After the formation of the group, one of the students was appointed from each group to simulate but assisted by reading the guide by her

friend because of the limited time. This illustrates that the limited time during the current covid pandemic allows students not the maximum to do practicum because it is time-limited, which is expected to be all students get their turn to do simulation, but the reality is in 1 group only 1 person who represents his group to do the simulation was helped by her friend to read the instructions for implementation to shorten the time so that students do not linger together.

The implementation of the practicum is also done only by using phantoms or props without using infants or toddlers in real-time. Thus when dealing with real infants and toddlers students have not been able to perform the procedure or steps following the practicum instructions given. Based on the information obtained from students, they said that although they were given materials and demonstrations and simulations conducted by group representatives they often forget because of the material provided. They are lazy to open and read so in a practicum they sometimes cannot do well. And usually, students do not prepare themselves in advance to do a practicum, the time provided is also limited so that they cannot do the simulation properly.

Looking at the problems that occur and experienced by students during the current COVID pandemic with limited time and less interesting methods. Thus, an attractive and innovative learning media design is needed for students to increase learning motivation, knowledge, and skills in performing actions following the procedures properly and correctly. GoMent app is a learning application designed to improve students' skills in detecting early growth. After providing intervention to students for approximately 2 weeks, there was a very significant increase from the unskilled to the skilled. This is an illustration that the learning media of toddler midwifery based on android is in great demand by students because of its ease, practicality and can be used anytime and anywhere with no limited time.

Skills to detect early growth in infants aged 6 - 12 months are divided into 3 parts of the assessment consisting of: 1) weighing weight, 2) measuring height, and 3) measuring head circumference. The results of the assessment showed that after the intervention there was a difference from un-skilled to skilled. To be skilled, a series of training and learning processes are carried out continuously and continuously so that a broad understanding will emerge so that it can be implemented. This android-based learning media design can be used effectively and efficiently to learn how to detect early in warning student's skills.

This study found a difference in early detection skills growth age 6 - 12 months before and after being given a learning media of android-based infant midwifery care about early detection of growth age 6 - 12 months increased by 100% with a p-value of 0.000<0.05. It can be concluded that learning methods using android-based learning media are very effective in improving student skills in detecting early growth of infants aged 6-12 months because in the application in addition to materials about growth there is also a practical learning guide to train the student's skills. So that students will be easier to practice using the learning guide contained in the application. Each item or procedure in the learning guide is a procedure or step used for skill assessment. So that students will be helped in practicing in improving early detection skills growth.

This research is in line with the research conducted by Putra et al. (2020), who explained that android-based learning media is very effective in improving skills, with the help of android-based learning media, the delivery of materials is more effective and efficient so that it will affect training one's skills. Thus, android-based learning media is one of the innovations that can provide results in improving the knowledge and skills of midwives in providing services to infants and toddlers (Putra et al., 2020).

The results of this study are in line with research conducted by Marwasariaty et al, the influence of health education by using the application of family independence in monitoring growth is very good in the intervention group compared to families who are not given interventions. Learning media using the android application is very influential in improving family skills in monitoring. With android-based learning, media can increase knowledge so that skills by themselves will improve (Marwasariaty et al., 2019).

Learning outcomes related to skills or ability to act after a person receives a certain learning experience appear after a person has gone through stages of knowledge and attitude. Good knowledge and attitude will make one's skills better. Improving skills in students regarding foster care procedures during childbirth with a value of $p = 0.000$, $p<0.05$ is the result of research conducted on web-based learning media in improving the skills of these students. With the web-based learning media, students will more easily understand the materials provided and can motivate students to learn more actively so that by themselves will improve their skills (Wiriyanti et al., 2020).

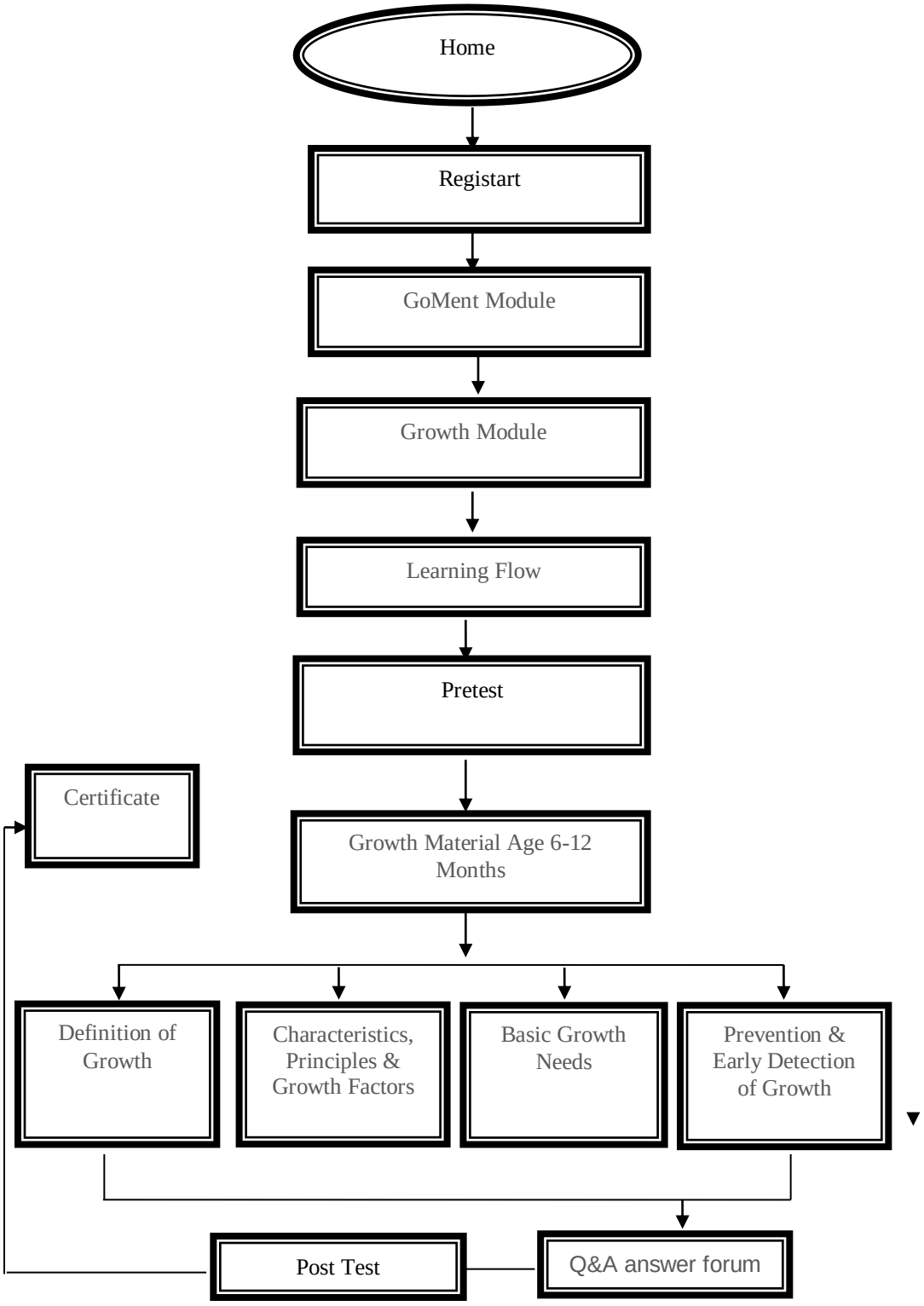

Figure 1. User flow of android-based infant midwifery learning media (GoMent)

Conclusion

Based on the results of the analysis obtained that the application of android-based midwifery learning media has a significant influence on improving student skills on early detection of growth age 6 - 12 months.

Advice

It is expected that this android-based learning media (GoMent application) can be used and used as an alternative to practicum learning as an effort to improve students' skills in detecting early growth so that students are more skilled in demonstrating irregularities in infants and toddlers.

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