Analysis of Motivation and Behavior of Midwives in Using Digital Partographs

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Corresponding Author [a]	**Abstract**

The correct use of partograph is a form of active and open behavior in the labor process between responses to stimuli through real action. One factor that influences a person's actions is the motivation that requires particular interventions that can motivate midwives to complete partograph filling. Because completeness of the partograph is essential for the safety of mothers in labor and their babies, especially if the patient experiences labor congestion, this research is a mixed methods (R&D and quantitative) research. Assessment of application feasibility was carried out using the Technological Acceptance Model (TAM) approach; this research was conducted at RKDIA Pertiwi Makassar City, from March 8 to March 29, 2021, total sampling technique, namely all midwives on duty at RSKDIA Pertiwi Makassar (60 midwives). In this study, data is not paired with two different variables, so that data analysis uses the Independent Sample T-Test. The results of the independent t-test analysis show that the Sig. (2-table) value is 0.000 <of 0.05, so it can be concluded that there are significant differences in the behavior and motivation of midwives before and after using the digital partograph.

Contents

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1 Introduction

A partograph is a tool to monitor the progress of labor observation, making it easy for birth attendants to detect difficult labor early so that delays in making clinical decisions or referrals to mothers and babies can be avoided. The use of partograph by health personnel during delivery assistance is essential. The World Health Organization (WHO) highly recommends using partograph in the delivery room; 15% of complications in labor cannot be detected early due to negligence of partograph filling. The impact of neglecting to fill in an undetected partograph causes abnormalities that may occur during delivery, such as fetal distress, hypertension, prolonged labor, and bleeding (Sarmauli, FS. et al, 2017, Manojkumar J. Bhatt, et.al. 2018, Harvey et al, 2014).

The correct use of partograph is a form of active and open behavior in the labor process between responses to stimuli through real action. One factor that influences a person's actions is the motivation that requires particular interventions that can motivate midwives to complete partograph filling. Because completeness of the partograph is essential for the safety of mothers in labor and their babies, especially if the patient experiences labor congestion, with high motivation, midwives will try to complete the partograph filling so that it can reduce the risk caused by labor congestion (Setyaningsih,2014, Pappa et al, 2015).

Following the third goal of the Sustainable Development Goals (SDGs), namely ensuring a healthy life and encouraging the welfare of all people of all ages in 2030, precisely on indicators related to mothers and children, namely reducing the Maternal Mortality Rate (MMR) to below 70 per 100,000 KH and end preventable infant and under-five mortality, by reducing neonatal mortality to 12 per 1,000 KH and under-five mortality to 25 per 1,000 KH. Wahyuni et al., 2018, Pusdatin, 2017, JNPKR, 2012).

Based on the competence of Indonesian midwives in the Ministry of Health No. 369 / MENKES / SK / III / 2007, one of the basic skills of a midwife in the 4th competency is to monitor childbirth using a partograph to monitor the progress of labor. If the midwife does not complete the partograph, there will be no written record showing that the midwife has monitored the progress of labor and the condition of the mother and fetus, which can be used for further information if they have to make clinical decisions. (Nita, 2020; Udayanti et al., 2018; Smart et al., 2020; Ammenwerth, 2019; Bedwell et al., 2017; Car et al., 2019).

In developing countries, there is an MMR of around 289,000 per 100,000 live waters. The World Health Organization (WHO) recommends the partograph as an excellent visual resource analyzing cervical opening, uterine contractions, and fetal presentation. The partograph can also transform the subjective evaluation and workforce management into more objective exercises with trained skills. So WHO recommends the partograph as a tool to identify progress and mothers who may need further intervention. One of the technologies that can be used to reduce complications in childbirth is the partograph. However, although partograph has been introduced since 1970, it is not very popular in the community; many hospitals and private practice midwives have not implemented partographs. (Markos & Bogale, 2016, Mandiwa et.al. 2017, Ngasa et.al. 2017; Yisma et al., 2016).

Based on research conducted by Lindmark 2018, it is said that obedience and compliance in filling in partographs have an impact on the risk of death both for mother and baby. Moreover, there are several previous studies conducted in Bangladesh (2017) that say that technology-based partographs (computer/ digital) are better than conventional partographs in terms of shorter time speed, namely 6-8 hours, aspects of ease and completeness of data in filling in the partograph with a level of truth that is 100%. (Harvey et al., 2017; Yisma Engida et al, 2016; Yadav et al., 2016).

Based on several studies, there are several obstacles in the partograph filling problem. The research was conducted in Boyolali district, Ngemplak. Most of the respondents have a low level of motivation, and incomplete partograph filling, namely as many as 16 respondents (53.33%), and most of the respondents have poor attitudes and incomplete partograph filling, namely as many as 15 respondents (50%) (Asilah, 2014; Chandhiok et al., 2015; Chaudhuri, 2020; Chen, 2019; Cooper, 2009). In addition, research conducted at the Bhayangkara Poliknik in Surakarta through interviews and direct observation found problems at the KB/KIA Poli where 90 cases of expected delivery were incomplete in writing Partograph documentation. From the

observations made on seven midwives in the KB/KIA Poly, only 2 (28.5%) filled in the partograph completely, and five other people (71.5%) either filled the front part only or did not fill it in at all, and a statement from a midwife, that some have filled out a partograph for the insurance claim requirements. Then the research was conducted at the hospital. PKU Muhamidiyah Gombong in June-July (2017) said that the number of maternal patients from March-May 2017 was 420 people, nine patients from the Maternity Room who were referred to labor cases, were not accompanied by a partograph sheet because the midwife did not bring a partograph sheet because they did not have time to fill and hurried to serve other patients. While the research conducted at Update Hospital, Palu City, said that there were still some midwives who carried out labor progress checks (Opening), not directly filling in the partograph sheet but on the observation paper or in the patient's status so that when the labor process was finished the midwife forgot to fill back in at partograph sheet resulting in incomplete recording and reporting documents. (Lauren, 2019; Lavender et al., 2013; Dwiantoro & Kusumandari, 2016; Fullerton & Ingle, 2003).

A preliminary study conducted on several midwives in the delivery room of RSDKIA Pertiwi Makassar in 2020 encountered a problem where the problem was a delay in filling out the partograph, which means that when the midwife in the labor observation process, the midwife did not fill the results of the observation on the partograph sheet indirectly but on the paper or the patient's status book so that after the delivery process, the midwife forgets to complete the partograph sheet. Then there was also one midwife who said that she had the same obstacle, namely filling out the partograph sheet at the end after the labor process was complete because filling in the partograph manually took longer to fill in so that the midwife preferred to handle other patients first rather than having to fill in the partograph sheet at the beginning of the observation. As for another reason, one of the midwives also said that filling out the partograph sheet was only a condition for filing health insurance claims.

In connection with some of these problems, it is necessary to hold in-service training (in-service) on the importance of partograph documentation, development, recording, and reporting of technology-based partographs, which are helpful to simplify and speed up time in providing care and overcoming problems in the labor process (Dulla et al., 2017; Ashish et al., 2016; Okokon et al., 2017). This is supported by research conducted at Odi Puskesmas Bara-Baraya Makassar, which says that from the observation results, there is a technology-based partograph (computer/digital) which has a faster time in the data filling process so that clinical decision making is also faster provide care in overcoming problems with the delivery process (Yayu 2018; Herman, 2019; Hyll & Manninen, 2019; Januarisman & Ghufron, 2016; Car et al., 2019).

Filling in the partograph becomes one of the obstacles in taking action following the procedure. With the development of technology, there are several studies related to information technology that can make it easier for midwives to accelerate recording and reporting, especially in terms of decision making which can reduce the risk of obstetric emergencies and can help overcome 3 T problems (late in making decisions, late in referring and late in getting treatment). Technology-based partographs provide convenience, speed and generate relevant data to help identify problems and assist in clinical decision-making in the delivery process. In monitoring the labor process, it is necessary to motivate and behave midwives in filling out partographs quickly and precisely so that the choice to use partographs can help identify problems more quickly and reduce complications that occur during early labor (Rahman., 2019; Underwood., 2015; Wahyuni et al, 2018).

This study is a follow-up study that several previous midwifery students have conducted. Digital partograph was designed using a computer system by Nila Trisna et al. in 2017 then. This partograph with a computer system was redeveloped by Deviant et al. in 2018 to become a web-based partograph, after which the web-based partograph was developed into a learning medium for ordinary childbirth care (Amelia et al., 2019). In this study, it has a difference from the research that has been done by previous researchers related to the web-based partograph application, in previous research that has been conducted by Kiki Amelia et al. This partograph application is used as a learning medium aimed only at students, lecturers, and CI land. However, as a researcher, they have reviewed the application, and they found flaws in the application, so they want to redevelop the partograph application as a learning medium that can also be accessed/used by midwives in the field, so they added a midwife feature so that midwives in the field can access or use digital partographs in monitoring labor. Then they tried to improve by fixing the numbers on the FHR examination (inverted numbers in the previous researcher), the numbers on the lowering of the fetal head (inverted numbers in the previous researcher), the numbers on the examination of vital signs (inverted numbers in the previous researcher), adding an edit feature so that When the midwife wants to change the results of the

examination, there is no need to repeat the filling in from the beginning then the results of the examination output are in pdf form and can be printed out to be used as a documentation where we are researching at RSKDIA Pertiwi Makassar.

2 Materials and Methods

This research is a mixed methods research, a research step by combining two forms of research approaches, namely R & D and Quantitative. Mixed research is a research approach that combines qualitative research with quantitative research (Creswell, 2010; Anita et al., 2018; Kurniawati et al., 2017; Lavender et al., 2019). Meanwhile, according to Sugiyono 2011 mixed methods are research methods that combine two research methods at once in research activity so that that data will be obtained which is more comprehensive, valid, reliable, and objective.

01--------------X------------02

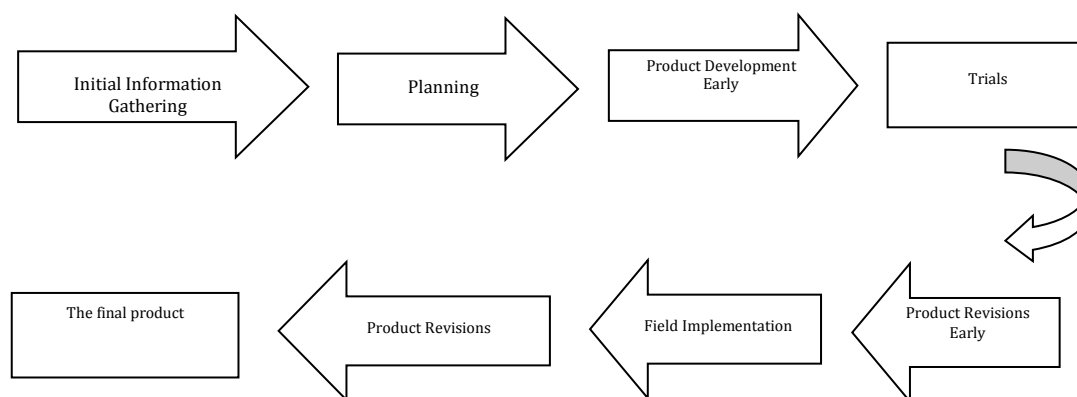Figure 2.1. Research design

Information:
01: pretest
02: posttest
X: Treatment

Following are the Development Research Procedures:

This research was conducted at RSKD Mother and Child Pertiwi Makassar on March 8 - March 29, 2021. The sample in this study were all midwives who served in RSKDIA Pertiwi Makassar for 2021 and were willing to be respondents, totaling 60 midwives. The sampling technique that will be carried out in this research uses the total sampling technique, where the researcher takes all population members to be the sample. Based on the type of data, the data in this study are unpaired data with two different variables so that if it is usually distributed and is homogeneous, then the hypothesis is drawn using the Independent Sample T-Test.

3 Results and Discussions

Assessment of the Feasibility of Learning Media Products

The feasibility of the digital partograph product being developed was assessed through a validity test questionnaire. The following is the implementation and presentation of data on the validation of digital partograph learning media products:

Media expert validation

One media expert carried out product validation in this study, and the results of the media expert's assessment are shows the percentage of feasibility in terms of display aspects with a percentage value of 82.00%, based on programming aspects with a percentage value of 93.33% and aspects of media presentation with 90.00%. In comparison, the total percentage of all aspects obtained from media experts is 88.44%, so that it can be it was concluded that the product of the digital partograph learning model as a learning medium for ordinary childbirth care was categorized as very feasible to use.

Material expert validation

The validation test results by material experts are in the form of responses and judgments from material experts, then the data obtained are analyzed, and the product revisions are carried out according to suggestions and input from material experts. The results of the material expert's assessment are shows that the percentage of feasibility in terms of the content aspect with an average value of 96.25%, based on the presentation aspect with an average value of 96.67%, the language aspect with an average of 97.14%, and the contextual aspect with an average of 90.00%, as for the total percentage From all aspects obtained from material experts is 95.01%, so it can be concluded that the product of the digital partograph learning model as a learning medium for ordinary childbirth care is categorized as very feasible to use (Embo et al., 2015; Budu et al., 2019; Brady et al., 2015).

Implementing midwife validation

Furthermore, media products were tested on the implementing midwife starting from small group trials then proceeding to large group trials. The following is the appendix of the results of product trials for small groups and large group trials:

Small group trials

Ten midwives carried out the small group trial at a particular hospital for mothers and children pertiwi Makassar. The results of the small group trial are shows that the percentage of feasibility in terms of the Ease To Use aspect with an average value of 87.33%, the Perceived Usefulness aspect with an average value of 88.80%, the Attitude Toward aspect with an average of 89.90%, the Behavioral Intention aspect with an average of 90.80%, the Actual Usage aspect with an average value of 81.13% while the total percentage of all aspects obtained by the large group trial was 8.45%, so it can be concluded that the digital partograph development product as a medium for monitoring normal labor is categorized as feasible to use (Lavender & Bernitz, 2020; Blundell & MaCurdy, 1999).

Large group trials

Sixty midwives carried out a large group trial at a particular hospital for mothers and children in Makassar. The results of the small group trial are shows that the percentage of feasibility in terms of the Ease To Use aspect with an average value of 86.61%, the Perceived Usefulness aspect with an average value of 84.33%, the Attitude Toward aspect with an average of 86.83%, the Behavioral Intention aspect with an average of 83.53%, the Actual Usage aspect with an average value of 78.78%. In comparison, the total percentage of all

aspects obtained by the large group trial was 84.02%, so it can be concluded that the digital partograph development product as a medium for monitoring ordinary childbirth care is categorized as feasible to use (Moran et al., 2008; Amerta et al., 2018; Venkatanarayana, 2016).

Attitude Analysis and Motivation

Data Normality
The normality of the data tested is determined by reading the Sig (P-Value) value in the SPSS output, provided that the data is normally distributed if the P-Value obtained from the calculation is greater than the 5% alpha level or P-Value> 0, 05. This normality test uses the Kolmogorov Smirnov method (K-S test) with the following output:

Table 1
Data normality test results

Data	Statistic	*P-Value*	Conclusion
Residual	0.201	0.073	p > 0,05 (Distributed normal)

Based on the results of the normality test of motivation and behavior data, it is known that the data has a p-value of 0.073. Thus, because the p-value is> 0.05, it can be concluded that the data is usually distributed.

Homogeneity Test
This test is carried out to see whether the regression model finds a correlation between the independent variables. If there is a strong correlation, it can be said that there has been a multicollinearity problem in the regression model. The following is a multicollinearity test table.

Table 2
Homogeneity test results

Data	*Levene Statistic*	*Sig*
Motivation	1.216	0.272
Attitude	0.312	0.578

Independen Sampel T Test
The t test was conducted to see whether there were changes in the independent variables (attitudes and motivation) to the dependent variable (digital partograph) partially. Following are the results of the T test table:

Tabel 3
Independent test result of T-test

	Independent Samples Test				
	Pre		Post		Sig. (2- tailed)
	Mean	Sig. (2-tailed)	Mean	Sig. (2-tailed)	
Motivation	48.32	3.476	51.93	2.810	0.00
Attitude	48.55	2.954	51.17	2.682	0.00

From the table above, it can be seen that there is an increase in motivation in midwives before and after monitoring using a digital pantograph where the motivation value before using a digital pantograph is 48.32 and increases to 51.93 after using a digital pantograph, as well as the behavior of midwives where before using a digital pantograph is 48.55 and has increased after using the digital partograph of 51.17 so that from the results of the analysis of the independent t-test in the table above, it is known that the Sig. (2-tailed) value

is 0.000 <from 0.05, so it can be concluded that there are significant differences in the behavior and motivation of midwives before and after using digital partograph where the behavior and motivation of midwives increased after using digital partographs so that it can be said that digital pantographs are suitable for use as a means of monitoring labor progress, in line with research on the effectiveness of computer-based partographs on clinical decision making in labor, with the results of research on the value of effectiveness from aspects of ease, speed and relevance data, namely 0.017 (p-Value <0.05) means that there is a significant difference in effectiveness from the aspects of ease, speed and relevance of data on conventional (manual) partographs and computer-based partographs on clinical decision making in the labor process (Yayu, 2018; Litwin et al., 2018; Nugraheni, 2012; Priyambodo et al., 2012). Digital partograph research as a learning media for ordinary childbirth care with the results of the study where the results of the Wilcoxon test with a p-value of 0.000 <0.05 show that the digital partograph learning media is statistically significant in improving the filling skills. Cartography in college students. (Amelia, 2020; Hadi et al., 2017; Ren et al., 2017; Sanghvi et al., 2017).

4 Conclusion

Based on the assessment of the material expert test based on the content, presentation, language, and contextual aspects, the digital partograph is very suitable to be used as a monitoring tool for bondage. Based on the assessment of media experts based on display, programming, and media presentation, the digital partograph is very suitable to be used as a monitoring tool of association. Based on the assessment of the implementing midwife in large group trials using the TAM questionnaire, the digital partograph is suitable for use as a monitoring tool for breeding. Based on the results of statistical analysis, there is a change between the motivation of midwives and the attitudes of midwives towards the use of digital partographs. It is hoped that the development of a digital partograph application that does not only include monitoring in labor but all aspects of services related to health services for pregnant women, which include ANC, INC, Neonates and Family Planning so that it can become an application that has a complete and of course. Can make it easier for midwives to provide health services to pregnant women and babies.

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