Fitness Test Equipment Postnatal Digital Observation and Equipment for Determining the Conventional Monitoring Of Stage IV Women

Yona Septina[1*,2], Firman F. Wirakusumah[3], and Achmad Suardi[2]

[1] Midwife Department, STIKes Dharma Husada Bandung, Bandung, Indonesia
[2] Midwife Department, STIKes Kuningan, Kuningan, Indonesia
[3] Hasan Sadikin Hospital Bandung, Bandung, Indonesia

*yonaseptina1993@gmail.com

Abstract. The IV stage of labor is the time after the birth of the placenta until 2 hours thereafter, these two hours are used to monitor the mother, which consists of the first hour of examination done every 15 minutes once, and at the second hour, the examination is done every 30 minutes. The intensive examination is very necessary at this time because this period is a transition period that must be observed properly with a sufficient number of checks so that a tool that has high accuracy and practicality is also very much needed. This study aims to test the suitability of digital postpartum observation devices with conventional tools in determining the results of the IV stage of monitoring. The research design is an analytic study with design cross-sectional. The sample of the study was 53 people who met the inclusion criteria in the Lumbung Health Center (PUSKESMAS) in Ciamis District using a consecutive sampling technique. Retrieval of data on the results of stage IV monitoring in mothers using two tools, namely using digital post-natal observation with conventional tools. Analysis using the conformity Test "Cohen's Kappa". The results of measurements using a digital post-natal observation tool have different levels of conformity with measurements using conventional tools, including blood pressure measurement has conformity value systole of (0.545) and diastole of (0.554) with a category sufficient (Moderate), pulse measurements have a corresponding value (0.573) with sufficient category (moderate), temperature measurement has conformity value (0.961) with Very Strong category (Very Good), contraction measurement has conformity value (0.731) with strong category (good). Only one measurement has a level of compliance with the category of very good (very good), so this tool still needs improvement, so the authors do not recommend the tool to be used before any repairs.

1. Background

Based on the survey results it is obtained that in Ciamis District in 2013 the number of maternal deaths was 17 out of 27,107 number of live births with a cause of death of 23.5% of maternal deaths, 23.5 of maternal deaths and 53% of maternal deaths childbirth, and from 2015 to 2017 43 maternal deaths were dominated during labor and immediately after delivery [2].

One effort to reduce maternal mortality and improve maternal health is to carry out childbirth care properly through optimal postpartum observation because efforts to reduce MMR must be focused on the direct cause of maternal death [1][3]. Also, at present the tools used to monitor stage IV often find this situation difficult for health workers to provide fast and appropriate services.

Therefore, efforts are needed so that postpartum observation can be carried out correctly, in a timely manner and to facilitate midwives in carrying out examinations, namely by making tools that were

originally in the form of manuals made digital and unified, the use of digital postpartum observation tools is expected to facilitate midwives in carrying out the examination quickly and precisely, so that the midwife is correct in carrying out care and is consistent with the time it should carry out the examination.

2. Research Objectives The

The purpose of this study was to analyze the suitability of digital postpartum observation tools with conventional tools in determining the results of the monitoring of IV stage mothers in Lumbung Health Center (PUSKESMAS), Ciamis Regency in 2019.

3. Research Methods

This study uses a test of conformity with research design cross-sectional, where data collection for each sample is done at the one-time unit. Every mother giving birth at the stage is examined twice. One time using a digital device and one-time using conventional equipment by different midwives who help childbirth. The results of the IV stage measurement include blood pressure, pulse, temperature, and contraction will produce the results of examinations in the use of these two devices, the results of the examination using the two devices will determine the suitability of the measurement results using a digital post-natal observation device with conventional tools and the practicality will be known [4][5].

4. Results and discussion

4.1. Results

Table 1. Characteristics of Frequency Distribution of Respondents Based on Age and Gravida

Characteristics of	Frequency	Percentage (%)
Age		
≤ 35 years	28	52.8
> 35 years	25	47.2
Gravida		
≤ 3 times	29	54.7
> 3 times	24	45.3

Based on table 1 most respondents aged ≤ 35 years with a percentage of 52.8% and most respondents had gravidas ≤ 3 times with a percentage of 54.7%.

Table 2. Frequency Distribution Percentage of Practicality Using Digital Post-Observation Observations

Variables	Frequency
Practical	13
Not practical	7
Total	20

Based on table 2 shows that the majority of respondents stated that measuring blood pressure, pulse, temperature, and contraction using a digital post-natal observation tool is more practical.

Table 3. Frequency Distribution Percentage of practicality Using Conventional

Variables	Frequency
Practical	6
Not practical	14
Total	20

Based on table 3 shows that the majority of respondents stated measurement of blood pressure, pulse, temperature, and contraction using conventional tools was not practical this can be seen from the number of midwives who stated that conventional equipment was not practical as many as 14 people.

Table 4. Conformity Test "Cohen's Kappa" Digitizing Tools and Conventional Tools in Determining the Results of Monitoring Blood Pressure, Pulse, Temperature, and Contractions in First Stage IV Maternal

Monitoring of	K-Value	Compliance Level
Blood Pressure		
Systole	0.545	Sufficient (Moderate)
Diastole	0.554	Sufficient (Moderate)
The pulse is	0.573	Enough (Moderate)
Temperature	0.961	Very Strong (Very Good)
Contraction	0.731	Strong (Good)

* Test "Cohen's Kappa"

Based on the results of the statistical analysis for the hypothesis, it can be seen that the value K for monitoring systolic Blood Pressure using digital postpartum observation devices and conventional 0.545 instruments and 0.554 diastoles is included in the category moderate (moderate), the values K for Nadi monitoring using digital postpartum observation tools and tools conventional 0.573 (including category enough (Moderate),the value of K for temperature monitoring using tools of observation of postnatal digital and conventional tools 0.961 included in the category of very strong (very Good), the value of K for monitoring contractions using the tools of observation of postnatal digital and conventional tools 0.731 included in strong category (Good), so the results obtained that the hypothesis can be accepted and tested.

4.2. Practicality of Digital Postpartum Observation Devices and Conventional Devices
Based on the results of the study showed that the majority of respondents stated that digital postpartum observation tools have a good level of practicality, h al this can be seen from the results of respondents' answers to the questionnaire distributed. Factors that influence problems in monitoring using conventional equipment so far are the use of tools that are still manual so that it takes longer than using digital devices, in addition to the shrewdness of a health worker in measuring blood pressure, pulse, temperature, and uterine contractions that are different thus giving different results than expected [6]. To overcome these problems, the development of a digital postpartum observation tool has been made to provide practicality in conducting this IV stage monitoring. With this tool, it will provide relatively faster and more practical measurement or monitoring results.

4.3. The Suitability of Digital Postpartum Observation Equipment with Conventional Tools in Determining the Results of Stage IV Monitoring

Based on the results of statistical analysis to test the hypothesis, it can be seen that the value K of digital post-natal observation devices and conventional tools in monitoring systole blood pressure in IV stage mothers is 0.545 and diastole 0.554 included in the category enough (moderate), for monitoring the pulse compatibility between digital postnatal observation tools with conventional tools is 0.573 Correspondence between 0.41 to 0.60 inclusive enough category (moderate), temperature monitoring has a K value of 0.961 included into the category very strong (very good), and the contraction monitoring value is 0.781 with the strong category (Good).

The conformity test is the consistency between two measurement methods or measuring instruments. In this study, the results obtained are different between examinations. Researchers assume this happens because the tools used can standardize this because the tool components used are still very limited and still of low quality. So researchers have not been able to recommend a digital post-natal observation tool to be used as an inspection tool before repairs are made.

5. Conclusions

Based on the results of the suitability test obtained from the statistical tests at each examination differ in their level and only one measurement has a level of conformity with the category of very good (very good), so this tool still needs improvement. And further research is needed regarding digital post-natal observation tools with qualitative methods of using digital post-natal observation tools with conventional tools so that the results of the research are more in-depth.

References

[1]   Depkes RI. Profil Kesehatan Jawa Barat Tahun 2014. Bandung: Dinas kesehatan Jawa Barat; 2016.

[2]   Dinas Kesehatan Kabupaten Ciamis. Profil kesehatan kabupaten Ciamis 2017. Ciamis: Dinkes; 2018.

[3]   Kementrian Kesehatan RI. Pedoman penyelenggaraan puskesmas mampu poned. Jakarta: Kemenkes RI; 2013.

[4]   Sopiudin DM. Penelitian diagnostic: Dasar- dasar teoritis dan aplikasi dengan program SPSS dan Stata. Jakarta: Salemba Medika; 2009.

[5]   Putri FD. Kondisi pembeda volume perdarahan kala IV. J Bio & Kep. 2014 Des;3(2):120–6.

[6]   Components 101. Hc-sr04 Ultrasonic sensor. Elec Freaks 2018 (diunduh 19 Mei 2019). Tersedia dari https://components101.com/ultrasonic-sensor-working-pinout-datasheet.