

# Recording Data Labour With Documentation Midwifery Partograph Based on Word Electric Browser (WEB)

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## Abstract

**Introduction:** Midwifery documentation is a proof of recording and reporting possessed by midwives in carrying out records in documenting care provided.

**Material and Methods:** The research method used was the comparative study with the comparative descriptive design. The total subjects of 30 mothers in labor were chosen using the purposive sampling technique. The subjects were divided into two groups: 15 of the mothers used the conventional midwifery documentation and 15 of them used the WEB-based. The data were analyzed using the univariate analysis in order to look at the median value, and the bivariate analysis with Mann-Whitney test.

**Results:** The study results indicated the the highest frequency was found in the WEB-based partograph, namely he filling speed was 26 (86.7%), the highest frequency of partograph filling truth was that of the WEB-based partograph = 25 (83.3%), while the highest Relevance of the data frequency was found in the WEB-based partograph with the data Relevance = 27 (90%). The result of the statistical test had the p value of 0.000, 0.000, and 0.000 ( $< \alpha = 0.05$ ) meaning there was a difference of the WEB-based midwifery documentation compared to the conventional midwifery documentation.

**Conclusion:** Thus it can be concluded that web-based midwifery documentation is more effective than conventional midwifery documentation. There are differences in the aspects of ease, speed, security and relevance of data to recording labor history data so that it needs to be applied in documenting midwifery care.

**Keywords:** WEB-based midwifery documentation, conventional

## 1. Introduction

Midwifery documentation is a proof of recording and reporting possessed by midwives in carrying out records in documenting care provided. According to WHO, the use of partographs will reduce long labor 6.4% to 3.4% of cases of caesarea 44% to 21%. Some of the things that affect the low recording in partographs are the level of knowledge of midwives about partographs which is not very influential in monitoring labor, recording documents and reporting partographs, making clinical decisions and planning future actions. During this time reporting and documentation by midwives was based on recording in partographs on paper, however, based on several studies said that there were still many midwives who did not complete the data in the partograph well and systematically, therefore a recording system, faster reporting and documentation of partographs in a computer and web-based data storage to facilitate the work of midwives in storing and re-accessing current and past labor history so as to prevent the accumulation of partograph files (Baillie, Chadwick, Mann, & Brooke-Read, 2013; Kitila, Gmariam, Molla, & Nemera, 2014; Asibong et al., 2014; Okokon, Oku, Agan, Asibong, Essien, & Monjok, 2014; Anita, 2016; Andrianto, 2017; Balikuddembe, Tumwesigye, Wakholi, & Tylleskär, 2017; Bedwell, Levin, Pett, & Lavender,

2017; Erawantini et al., 2017; Mandiwa & Zamawe, 2017; Fatusi, Makinde, Adeyemi, Orji, & Onwudiegwu, 2008; Nugroho, Fitriasih, & Widada, 2015; Ramdhani, Isnanto, & Windasari, 2015; Sovia & Febio, 2011; Sundari, 2016; Widyaningsih & Astutingsih, 2016; Fahdhy & Chongsuvivatwong, 2005; Yisma, Dessalegn, Astatkie, & Fesseha, 2013a, 2013b; Baillie et al., 2013; Gans-Lartey, O'Brien, Gyekye, & Schopflocher, 2013; Ollerhead and Osrin, 2014; Aliona Masika, Peter Katongole, & Govule, 2015; Mathews, Rajaratnam, George, & Mathai, 2007; JNPK-KR, 2012; Bailey, Wilson, & Yoong, 2015; Opoku & Nguah, 2015; Fatouh, 2015; Vidyashri & Nagarathna, 2015; Nugroho, Fitriasih, & Widada, 2015; Byukusenge et al., 2016; Kwast, 1994; Yisma et al., 2013a; Opoku & Nguah, 2015; Sinaga, 2016; Susilowati & Sulistiyaningsih, 2011; Tayade & Jadhao, 2012; WHO, 2011; 2014).

The study obtained a total of 1070 partograph reviewed, 58.6% of the partograph had no record of maternal blood pressure, 65.3% had no documentation of temperature, 25.4% Molding was not recorded, 14.9% of fetal heart rate was not recorded and 12.0% of the decrease in fetal head is not recorded so that there are still many shortcomings in systematic recording and documentation (Balikuddembe et al., 2017; Mandiwa & Zamawe, 2017; Nurmiyati, 2011).

Based on the description above, the author was motivated to develop a web-based partograph midwifery documentation database research system. This is intended to streamline the process of recording, reporting and documenting partograph in aspects of speed, convenience, security, and convenience by using the Subjective, Objective, Analysis and Management (SOAP) methods. And in accessing again and seeing the recording of labor history and actions taken by the midwife so that it can accelerate clinical decisions, plan actions taken and streamline reporting, documentation in midwifery and prevent the accumulation of partograph files (Bhatt, Kar, Shashank, & Somarajan, 2004; Chaturvedi et al., 2015; Erawantini et al., 2017; Hadi et al., 2017; Hasan, Hossain, Arafat, Khan, Ahmed, & Shabnam, 2017; Underwood, Sterling, & Bennett, 2012; Schweers, Khalid, Underwood, Bishnoi, & Chhugani, 2016; Jennifer, 2012; Souza et al., 2015; Lavender, Hart, & Smyth, 2013; Mathibe-Neke, Lebeke, & Motupa, 2013; Kitila et al., 2014; Kamath, Nagarathna, & Sharanya, 2015; Mandiwa & Zamawe, 2017; Lew & Ghassemzadeh, 2018; Nursing and Midwifery Council 2010a; 2010b; Sama et al., 2017; Seo et al., 2016; Sinha, S. Shrivastava, & S. Shrivastava, 2016; Sudarti, 2011; Varney, 2008).

## 2. Materials and Methods

### 2.1 Design of the Study and Sample Population

The research design used was quasi-experimental using a treatment group on web-based partograph midwifery documentation and control groups in conventional partograph midwifery documentation. This research was conducted at the Bara-Barayya Health Center, Antang Community Health Center and Makassar City Health Office, Makassar, South Sulawesi, Indonesia from November 2018 to January 2019. The research tools here are hardware components and software used as tools in supporting research conducted, this tool will be used as a data processing tool and the making of the system to be designed. The research method used is a comparative study with a descriptive comparative design. The total subjects of 30 mothers in labor were selected using purposive sampling technique. Subjects were divided into two groups: 15 mothers of labor records using conventional midwifery documentation and 15 mothers of labor records using WEB-based midwifery documentation. Data were analyzed using univariate analysis to see the median value and bivariate analysis with the Mann-Whitney test. Sampling from the study population was carried out by purposive sampling, where populations that met the inclusion criteria were included as sample members. The number of subjects was 30 patient data, 30 labor patients were documented using conventional partograph midwifery documentation and web-based partograph midwifery documentation. Samples were divided into 2 groups of data, 15 patient data filled using conventional partograph (manual) and 15 patient data filled using computer-based partograph. Further more, 30 mothers in the delivery process will be filled by 9 midwives in the delivery room of Antang Perumnas Health Center, 8 midwives in the delivery room of the Bara-Baraya Makassar Health Center and 1 midwife at the Makassar City Health Office will see partograph documentation as data reporting, 17 of these midwives will fill 30 data patients used conventional partograph midwifery documentation (manual) and patient data was filled using web-based partograph midwifery documentation. Midwives from the Public Health Center who are used as subjects are categorized by age, length of work, training that has been attended. The results of the filling will be assessed using an observation sheet that contains a column of the number of speeds in seconds with measurements using a stopwatch, the correctness of filling with the standard midwifery documentation format reference, and the relevance of the appropriate data from the results of the examination and the results inputted on the website. The primary data obtained directly on the data source is when conducting interviews with midwives and maternity mothers, making observations on filling partograph documentation carried out by midwives about the progress of labor, care provided and results obtained.

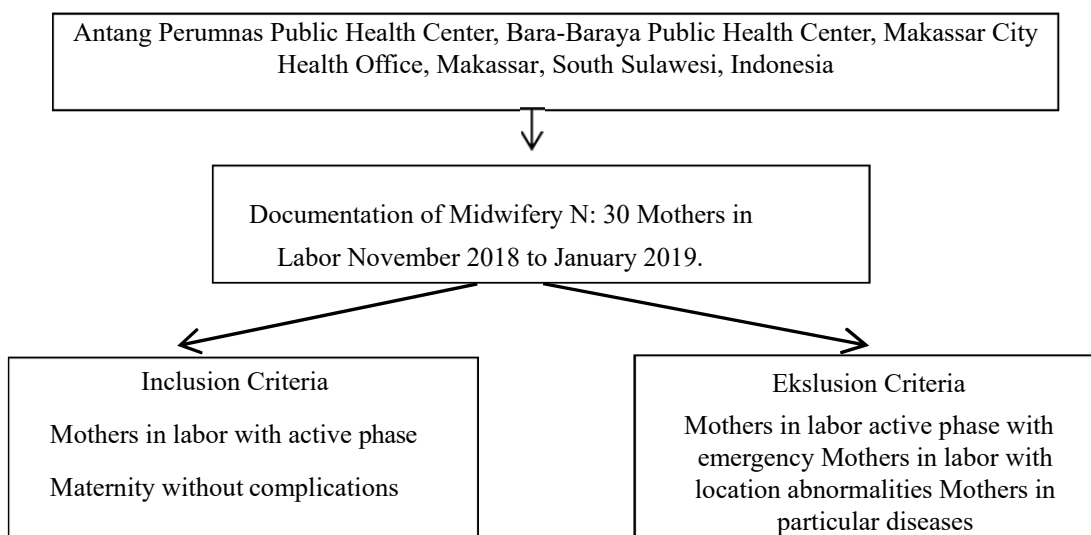


Figure 1. The Flowchart of the Study

## 2.2 Data Collection

The primary data obtained directly on the data source is when observing the actions taken by the midwife and the results recorded, namely at the Antang Perumnas Health Center, Makassar Bara-Barayya Health Center and Makassar City Health Office Makassar, South Sulawesi, Indonesia. Secondary data obtained indirectly to support writing in this study through documents or records of medical records of mothers who have given birth at the research site, The total subjects of 30 mothers in labor mothers were chosen using the purposive sampling technique. The subjects were divided into two groups: 15 of the mothers used the conventional midwifery documentation and 15 of them used the WEB-based midwifery documentation namely at the Antang Perumnas Public Health Center, Makassar Bara-Barayya Public Health Center and Makassar City Health Office, South Sulawesi, Indonesia.

## 2.3 Ethical Considerations

This study received ethical clearance from the Research and Ethics Committee of Faculty of Medicine, Hasanuddin University and was registered in 972/h4.8.4.5.31/PP36-KOMETIK/2018. And protocol number: UH18100691.

## 2.4 Data Management and Analysis

Descriptive analyses were presented as mean  $\pm$  standard deviation and frequencies for categorical variables. Bivariate analyses were analyzed and processed using independent t-test in pairs, Mann-Whitney to determine the differences between all groups at 5% level of significance. Spearman's correlation was used to determine further correlations. Data were analyzed using the Statistical Package for Social Science (SPSS) version 24 for Windows.

## 3. Results

Sampling from the study population was carried out by purposive sampling, where the population that met the inclusion criteria was included as sample members. The number of subjects was 30 patient data, 30 deliveries were documented using conventional partograph midwifery documentation and web-based partograph midwifery documentation. Samples are divided into 2 groups of data, 15 patient data filled using conventional partograph (manual) and 15 patient data filled using computer-based partograph.

### 3.1 Univariate Analysis

Midwifery Documentation Comparison From Time Speed Aspects, Truths Charging, Data Security and Data Relevance Midwifery Documentation Website-Based Partographs.

Table 1. Characteristics of filling in website system partograph midwifery documentation and conventional partograph midwifery documentation from aspects of ease of filling, time speed, data security, data relevance

| Characteristics   | Midwifery Documentation |              |
|-------------------|-------------------------|--------------|
|                   | Website Based           | Conventional |
|                   | F %                     | F %          |
| Time Speed        |                         |              |
| Hurry up          | 26 (86.7)               |              |
| Long              | 4 ( 13.3)               | 30 (100)     |
| Truth of Charging |                         |              |
| Right             | 25 (83.3)               | 9 (30)       |
| Not exactly       | 5 (16.7)                | 21 (70)      |
| Data Relevance    |                         |              |
| Right             | 27 ( 90)                | 9 (30)       |
| Not right         | 3 (10)                  | 21 (70)      |
| Total             | 100                     | 100          |

Source : Primary Data, Paired t test.

Table 2. Average scores for filling website-based partograph documentation and conventional partographs from the speed aspect of charging time

| Characteristics                           | Mean | SD | Min – Maks |
|---|------|----|------------|
| Charging time                             |      |    |            |
| Website-based partograph documentation    | 21.7 | 1  | 19-24      |
| Conventional Partographical Documentation | 31.1 | 1  | 29-34      |

Source: Primary Data, Paired t test.

### 3.2 Bivariate Analysis

Analysis of differences in website-based partograph midwifery documentation and conventional partograph midwifery documentation against.

Table 3. Differences in midwifery partographies of websites based on websites and midwifery documentation of conventional partographs on recording of childbirth history data

| Test Statistics <sup>a</sup> |            |                |                |
|------------------------------|------------|----------------|----------------|
|                              | Truth Time | Speed Charging | Data Relevance |
| Mann-Whitney U               | 60.000     | 210.000        | 180.000        |
| Wilcoxon W                   | 525.000    | 675.000        | 645.000        |
| Z                            | -6.717     | -4.134         | -4.704         |
| Asymp. Sig. (2-tailed)       | .000       | .000           | .000           |

Source: Primary Data, <sup>a</sup>Mann-Withney Test.

## 4. Discussion

Table 1 The results obtained the speed of time needed for filling Website-based partograph and conventional partograph, the highest frequency was found on web-based partograph, namely fast charging 26 (86.7%), while the

truth of the highest frequency partograph filling was website-based partograph, 25 (83.3%) . Data security obtained the highest frequency, namely on website-based partograph, which is 30 (100%), while the highest frequency data relevance is website-based partograph with data relevance of 27 (90%). The results of this study indicate that the use of website-based partograph midwifery documentation will make it easier for midwives to process the recording, reporting and recording of labor history data, website-based partograph midwifery documentation will minimize errors and have a good level of truth. This is in line with the research conducted by Heather et al., 2012, Heather et al., 2014 which found that the use of electronic partograph was more effective and efficient with the use of hardware and software as a documentation and recording of labor history that could be used as a tool to train labor health about how to use the correct partograph with limited human resources so that it has an impact on the completeness of partograph filling, reducing the error rate (Qureshi, Sekadde-Kigonda, & Mutiso, 2010; Pirie, 2011; Ontario, 2013; Maureen D, et al., 2015; Muslihatun et al., 2013; Ollerhead & Osrin, 2014; Sharma, Deka, & Das, 2015).

Table 2 gaining from the speed of filling the website-based partograph midwifery documentation and conventional midwifery documentation, the average time required for filling in website-based partograph midwifery documentation was 21.7 minutes, with a standard deviation of  $\pm 1$  second, while documentation of conventional partograph midwifery time needed to fill more that is 31.1 minutes with a standard deviation of  $\pm 1$  second.

The results of research conducted by Yulianti et al. (2018) got the use of electronic partograms in recording and reporting partograph documentation with incoming data speeds of 82% with an error rate of 18%, in the process of recording and reporting the time used for charging is relatively shorter 8.6 hours, so it can be concluded that the use of electronic partograms allows data to enter faster with a lower error rate than conventional partograms

Table 3 shows the analysis of data using Test, obtaining a p value of 0.000 ( $<0.05$ ) means that there are differences in website-based partograph midwifery documentation and conventional partograph midwifery documentation on recording delivery history data from aspects of filling filling truth, data security and data relevance (Sugiyono, 2014; Wildan dan Hidayat, 2009).

The statistical test results require an average time of 21.7 minutes, ease of filling is also seen in the correct level of charging that is true 83.3%. The ease of filling will have an effect on the time needed to be shorter, the human resources needed are more simple and the quality of midwifery services is more optimal. This is in accordance with the research conducted stating that for facilitation aspects in the process of documenting midwifery and care provided, it gives information to officers on what has been recorded so that it makes it easier in the process of managing subsequent actions (Lavender, Hart, & Smyth, 2013; Fatouh & Ramadan, 2015; Ontario, C. of M. of 2013; Toemandoek, Wagey, & Loho, 2015).

## 5. Conclusion

Website-based partograph midwifery documentation is better than conventional midwifery documentation seen from the aspect of a short time velocity of 21.7 minutes using web-based partograph midwifery documentation and obtaining a 31.1 minute filling time speed in using conventional partograph midwifery documentation, the correct aspect of filling with columns filled with complete, systematic and appropriate, and relevant data relevance because it is stored in digital form. A web-based partograph midwifery documentation database effectively re-accesses labor history records and actions that have been given.

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## Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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