

# The Effectiveness of Web-Based Monitoring on Local Area-Mother and Child Health as a Tool for Midwife Recording and Reporting

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**Abstract:** *This study aims to describe the effectiveness of the Web-Based Monitoring on Local Area (PWS) Mother and Child Health (KIA) as a tool for recording and reporting midwives based on aspects of ease, safety, speed, and relevance of data. The method used in this study is one group of posttest design. This research was conducted in Massenga Health Center, Pekkabata Health Center, Matakali Health Center, Anreapi Health Center, and Polewali Mandar Public Health Office in January 2019. Sampling was done by purposive sampling technique of 34 respondents. The data analysis used was descriptive statistics. The results of the study show that the use of web-based PWS KIA has effectiveness with a value range of 53-83. The aspect of convenience has a value range of 13-19, aspect of speed and security have a value range of 11-19, aspect of relevance of data has a value range of 18-28.*

**Keywords:** Monitoring on Local Area (PWS), Mother and Child Health (KIA), Web

## 1. Introduction

Monitoring on Local Area (PWS) Mother and Child Health (KIA) is a recording and reporting management tool to monitor mother and child health programs [1]. The monitoring is carried out continuously so that rapid and appropriate follow-up can be carried out on work areas that have low KIA service coverage [2].

World health organization (WHO) states that the right step to obtain maternal mortality is to follow up on maternal cohorts [3]. Thus, the PWS KIA can be used to calculate estimates of mother and child mortality [4].

Research conducted by Sutaip (2012) shows that 42% of respondents in their study had poor data reports [5]. Rani (2014) in his research showed the completeness of PWS KIA report data for only 61.09% [6].

The results of the interviewer's interviews with a number of midwives indicate that many problems experienced by midwives when recording and reporting, among others, are mistakes when recording reports and late collection of reports because many other tasks must be performed by midwives.

Data from the Polewali Mandar Public Health Office, West Sulawesi, shows that in August 2018, 42% of midwives did not collect their reports on time, 30% were mistaken in

recording, 60% of records were incomplete, 90% did not make graphs.

Recording and reporting of data that is timely, accurate, reliable, and complete are needed in an effort to improve health status [7]. Dolu (2015) suggested that web-based information systems can overcome the delay in reporting data [8]. Septiani (2010) also suggested that web services can facilitate and speed up data processing [9]. Web service is very helpful in the process of exchanging data between information systems [10].

Based on preliminary studies and the results of analysis of various journals, the problems examined in this study are whether web-based PWS KIA is effectively used as a tool for recording and reporting data. By evaluating the effectiveness of PWS KIA web-based clubs to answer these problems. Therefore, this study aims to assess the picture of the effectiveness of web-based PWS KIA as a tool for recording and reporting midwives in terms of aspects of ease, safety, speed, and relevance data.

## 2. Review of Literature

### 2.1 PWS KIA

PWS KIA is a management tool used to monitor KIA programs in a work area so that rapid and appropriate follow-up can be carried out to improve health status [11].

PWS KIA is used to increase the coverage of services by reaching all targets in a region so that all cases with risk factors or complications can be detected and received immediate handling [12].

## 2.2 Web

The website is an application that can contain information with a broad scope, can be accessed 24 hours by the public, and the information contained in it can be updated quickly [13].

Kathleen's study (2015) shows that the use of the web is preferred by respondents in collecting data [14]. The web can serve as a tool for identifying data group variants [15]. In the field of sales, one can attract customers by utilizing a website [16].

## 2.3 Effectiveness

Effectiveness is a measure that shows the extent to which goals are achieved. Some effectiveness indicators are ease, speed, security, and relevance [17].

## 3. Research Methods

The method used in this study is one group of posttest design. This research was conducted in Massenga Health Center, Pekkabata Health Center, Matakali Health Center, Anreapi Health Center, and Polewali Mandar Health Service in January 2019. Sampling was done by purposive sampling technique of 34 respondents. Data analysis in the form of descriptive statistics.

## 4. Results

### 4.1 Characteristics of Respondents

Characteristics of respondents were used to determine the diversity of respondents based on age and length of work. This characteristic is expected to provide an overview of the condition of the respondent and its relationship to the problem and purpose of the study

**Table 1:** Characteristics of Web-based PWS KIA Respondents in Polewali Mandar, 2019

No	Characteristics	Min	Max	Mean	Std. Deviation
1	Age	22	45	29.12	5.531
2	Length of work	1	25	6.62	5.286

Based on Table 1, it shows that the highest age of respondents is 45 years with the age range of respondents being at the age of 23-35 years. The highest duration of respondents is 25 years with a total length of work that is 2-12 years.

### 4.2 The Effectiveness of PWS KIA

**Table 2:** The Effectiveness of Web-based PWS KIA as a tool for recording and reporting midwives in Polewali Mandar, 2019

No	Aspect	Min	Max	Mean	Std. Deviation
1	Convenience	8	20	15.56	3.277
2	Speed	8	20	14.76	4.075
3	Security	8	20	15.29	3.889
4	Relevance of Data	13	30	22.76	4.566
5	<b>Total effectiveness</b>	45	90	68.38	14.789

Based on Table 2, it shows that the use of web-based PWS KIA has effectiveness with a range of values from 53 to 83. The aspect of convenience has a value range of 13-19, aspect of speed and security have a value range of 11-19, aspect of relevance of data has a value range of 18-28.

## 5. Discussion

Web-based PWS for Maternal and Child Health is used by midwives in recording and reporting data. Based on the analysis, PWS web-based maternal and child health shows the highest effectiveness value of 90 with data relevance aspects that have the highest value range of 18-28. The high mean value on aspects of data relevance shows that PWS KIA is web-based in accordance with the needs of midwives for recording and reporting data because the features displayed are very clear and data are displayed according to the data needed by midwives.

The results of this study are in line with a number of studies that the utilization of website-based information systems can overcome problems related to data processing because websites facilitate and accelerate data integration so that the processed data becomes more accurate. Research conducted by Usman (2016) shows that the material delivered through online media is very effective [18].

Data processing results of health services provide great benefits because they are able to meet the needs of health workers quickly. The results of this study are in line with the research conducted by Yumarlin (2016) which shows that the use of websites has taken into account usability or usable factors, in their research, usability factors include the effectiveness of using the website [19].

Environmental changes indirectly give rise to new needs as well, such as speed, accuracy, process integration, and data processing of service results. By considering aspects of usability, a service system will be increasingly needed in activity including recording and reporting data.

## 6. Conclusion

PWS Mother and Child Health (KIA) is effectively used as a tool for recording and reporting data by taking into account the ease, security, speed and relevance of data aspects.

Recording and reporting of data on service results can be done quickly and accurately using web-based PWS KIA.

## References

- [1] Matrutry D, Montolalu A, "Hubungan Pengetahuan, Sikap Dan Pendidikan Bidan dengan Sistem Pencatatan Dan Pelaporan Pemantauan Wilayah Setempat Kesehatan Ibu dan Anak di Puskesmas Kota Manado," Jurnal Ilmiah Bidan. 2014;2(02):57–63.
- [2] Kurniawan W, Purnami CT, Wulan LRK, "Faktor-faktor yang Berhubungan dengan Kinerja Bidan Desa dalam Pelembagaan Pemantauan Wilayah Setempat Kesehatan Ibu dan Anak ( PWS- KIA ) di Wilayah Kabupaten Majalengka Provinsi Jawa Barat," 2014;02(03).
- [3] Senewe FP, Wiryawan Y, "Manajemen Pemantauan Wilayah Setempat Kesehatan Ibu dan Anak (PWS-KIA) Kabupaten Sukabumi Jawa Barat," 2010;13(01):1–11.
- [4] Wijayanti B, "Deskripsi Pemantauan Kesehatan Anak pada Sistem PWS-KIA di Puskesmas Ranuyoso Lumajang," 2016;4(02):151–63.
- [5] Sutaip, Mawarni A, Dharmawan Y, "Faktor-Faktor Yang Berhubungan dengan Kinerja Pelaporan Data Pelayanan KIA Oleh Bidan Praktek Swasta di Kota Semarang Tahun 2012," Jurnal Kesehatan Masyarakat. 2012;1(02):206–17.
- [6] Rani IA, Hargono A, "Deskripsi Pencatatan dan Pelaporan Pemantauan Kesehatan Ibu pada PWS-KIA Berdasarkan Atribut Surveilans," Jurnal Berkala Epidemiologi. 2014;02(01):34–47.
- [7] Harnaningrum L, Anggoro S, Prayitno A, Dewi SK, "Sistem Informas Bergerak Untuk Peningkatan pelayanan Keseatan Bagi Bidan Desa," 2014;
- [8] Dolu YO, Susanto HS, Mawarni A, "Pengembangan Sistem Informasi Pelaporan Rutin Pneumonia Berbasis Web pada Program Pengendalian Penyakit Infeksi Saluran Pernapasan Akut ( P2 ISPA ) di Dinas Kesehatan Kabupaten Semarang," J Manajemen Kesehatan Indonesia. 2015;03(02).
- [9] Septiani AK., Wiryana IM, "Strategi Pemetaan Web Service untuk Menyediakan Layanan Global Biodiversity Information Facility," 2010.
- [10] Marwiyanto J, Sumaryono S, "Model Integrasi Data Sistem Informasi Pelayanan Publik Berbasis Service Oriented Architecture (Soa) untuk Optimalisasi Pendapatan Asli Daerah di Pemerintah Kota Yogyakarta," 2014;121–6.
- [11] Senewe FP, Wiryawan Y, "Pencatatan dan Pelaporan Sistem Pemantauan Wilayah Setempat- Kesehatan Ibu dan Anak oleh Bidan di Desa di Puskesmas Sepatan Kabupaten Tangerang 2008," J Ekologi Kesehatan [Internet]. 2011;10(03):156–67.
- [12] Winarni S, Mawarni A, Dharmawan Y, Purnami CT, "IbM Refreshing Bidan Desa Dalam Pencatatan dan Pelaporan PWS KIA Dalam Mendukung MDG'S ke 4-5 di Kabupaten Wonosobo," 2015;(01):33–43.
- [13] Jayanti S, Nelisa M, "Perancangan Web Sebagai Media Promosi Koleksi Naskah Kuno Minangkabau di Museum Adityawarman Sumatera Barat," J Ilmu Informasi Perpustakaan dan Kearsipan. 2012;(September):295–304.
- [14] Parks KA, Pardi AM, Bradizza CM, "Collecting data on alcohol use and alcohol-related victimization: a comparison of telephone and Web-based survey methods," Jurnal Studies on Alcohol. 2015;
- [15] Lee Y, Kozar KA, "Understanding of website usability: Specifying and measuring constructs and their relationships.," Decis Support Syst. 2012;
- [16] Green DT, Pearson JM, "Integrating website usability with the electronic commerce acceptance model. Behav Inf Technol," 2011;
- [17] Fajri, Ratu, "Kamus Lengkap Bahasa Indonesia," Jakarta: Diva Publisher; 2010.
- [18] Usman F, "Efektivitas Penggunaan Media Online Sebagai Sarana Dakwah," Jurnal Ekonomi dan Dakwah Islam. 2016;
- [19] Yumarlin, Mz, "Evaluasi Penggunaan Website Universitas Janabadra dengan Menggunakan Metode Usability Testing.," Jurnal Informasi Interaktif. 2016;

### Author Profile



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