



## Effectiveness of E-MCH Information Media on Increasing Knowledge of Pregnant Women

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### ABSTRACT

**Introduction:** Information media is an intermediary in the delivery of information or a tool to support the communication process. The E MCH book is used as a record book for the development of maternal health starting from pregnancy, postpartum and breastfeeding, and infants to toddlers.

**Objective:** The purpose of this study was to determine the effectiveness of E MCH information media in improving the knowledge of pregnant women.

**Method:** The type of research used is quasi experimental research with a one group pre test-post test design. The population in this study were 40 pregnant women in the Sumberjaya Cihaurbeuti Poskesdes Working Area obtained from the total sample technique. Data analysis used the Wilcoxon Signed Rank Test statistical technique with a questionnaire research instrument. The results of the study are presented in tabular form.

**Result:** There was an increase in the knowledge of pregnant women about maternal and child health in the good category by 2.5% during the pre-test and by 42.5% during the post-test after the intervention using E MCH information media. The results of the Wilcoxon Signed Rank Test test obtained a p-value of 0,000 ( $p < 0,05$ ).

**Conclusion:** E MCH information media is effective in increasing the knowledge of pregnant women in the working area of Poskesdes Sumberjaya Cihaurbeuti.

**Keywords:** information, media, pregnant

## Introduction

Information media is an intermediary in the delivery of information or a tool to support the communication process. The communication process will run effectively if there are elements in it in the form of communicators, communicants, data and media used, one of the media that can be used is books. There are many health promotion media that can be chosen so that the message is more easily accepted by the community. (Ernawati 2022). Books are widely used visual communication tools and are made according to the needs of the target (Indriyastuti et al. 2023). The Ministry of Health of the Republic of Indonesia in collaboration with JICA (Japan International Cooperation Agency) designing Maternal and Child Health (MCH) books to increase family knowledge and skills (Indonesia 2003). The MCH book is a book that must be owned by pregnant women as a notebook from the results of monitoring by health workers and information media to support maternal knowledge. In line with the results of the study which explains that part of the maternal and child health programme in evaluating the quality of health services can be obtained from the use of Maternal and Child Health (MCH) books as a medium of communication, education and health information. (Ayu 2019).

The E MCH book is used as a record book for the development of maternal health starting from pregnancy, postpartum and breastfeeding, and infants to toddlers. Another explanation says that the media or tools used in the practice of health professional collaboration are documentation through the Integrated Patient Progress Record (CPPT), which aims to optimise the implementation of interprofessional collaboration. (Kusumaningrum, Dharmana, and Sulisno 2019). Therefore, it is important for pregnant women to have and understand the contents of the book. The effectiveness of using the MCH book by health workers and mothers can help reduce maternal mortality rates (MMR) and infant mortality rates (IMR), prevent risky pregnancies, prevent the incidence of low birth weight babies (LBW), prevent the emergence of comorbidities such as anaemia and malnutrition. In line with the results of the study which explains that providing education by utilising the MCH book is effective in increasing the knowledge of pregnant women and can improve maternal and child health standards and can reduce maternal and child morbidity and mortality rates (Murniasih, Wardhani, and Muthiasari 2023).

The development of information and communication technology is very influential on various fields of life, including the health sector. The use of electronic information media to provide health education to pregnant women is an innovation in health services, including the development of electronic-based information media sourced from KIA books or E MCH (Electronic MCH). Pregnancy is an important phase in the life cycle that requires special attention to ensure the welfare of the mother and fetus, during pregnancy it is very important to get a proper and accurate understanding of prenatal care. In accordance with the verse of Al-Quran letter Al-Baqarah verse 42(Kementrian Agama RI 2017) :

وَلَا تَلْبِسُوا الْحَقَّ بِالْبَاطِلِ وَتَكْتُمُوا الْحَقَّ وَأَنْتُمْ تَعْلَمُونَ

*Meaning: And do not confuse the right with the false and do not hide the right while you know.*

Based on this verse, it is very important that information is conveyed precisely and accurately so as not to cause misunderstanding. Other explanations convey that Islam pays very great attention to information, so that all issues related to information must be accounted for by humans both vertically to Allah SWT and horizontally between fellow humans. (Utomo 2020).

E MCH made it easier for pregnant women to get health information related to their pregnancy, this study provides an explanation of the effectiveness of E MCH on increasing maternal knowledge.

### Objective

The purpose of this study was to determine the effectiveness of the information media Elektronik Maternal and Child Health (E MCH) in improving the knowledge of pregnant women.

### Method

The type of research used is quasi experimental research with a one group pre test-post test design. The population in this study were 40 pregnant women in the Sumberjaya Cihaurbeuti Poskesdes Working Area obtained from the total sample technique. Data analysis used the Wilcoxon Signed Rank Test statistical technique with a questionnaire research instrument. The results of the study are presented in tabular form.

### Result

This study on the effectiveness of E MCH information media on increasing the knowledge of pregnant women was conducted on 40 pregnant women and each subject was measured using a questionnaire with the results:

Tabel 1. Frequency Distribution of Respondents' Characteristics

No	Characteristics	N	%
1	<b>Age</b>		
	< 20 year	1	2.5
	20-35 year	34	85.0
	>35 year	5	12.5
2	<b>Pregnancy Age</b>		
	< 13 week	8	20.0
	13-27 week	22	55.0
	28-40 wek	10	25.0

Table 1 explains that the respondents in this study were pregnant women with the majority aged 20-35 years and most of the respondents were in the trimester 2 category with a gestational age of 13-27 weeks.

Tabel 2. Frequency Distribution of Respondents Based on the Level of Knowledge of Pregnant Women

No	Knowledge	Pretest		Posttest	
		F	%	F	%
1	High	1	2.5	17	42.5
2	Moderate	29	72.5	23	57.5
3	Poor	10	25	-	-

Table 2 explains that the use of E MCHinformation media can improve mothers' knowledge about maternal and child health. The pretest results were categorised as good by 2.5%. After the intervention using E MCHinformation media, it increased by 42.5%.

Based on the results of statistical tests using the Wilcoxon Signed Rank Test, the following results were obtained:

Tabel 3. Test Results of the Effectiveness of E MCHInformation Media on Increasing Knowledge of Pregnant Women

Effect	Z	Asymp.Sig (2-tailed)
Posttest -Pretest Knowledge	-5,534 <sup>a</sup>	.000

The results of the difference test (wilcoxon) pretest and posttest data on the knowledge of pregnant women before and after using the E MCHinformation media with a p-value of 0,000 ( $p < 0,05$ ) which means that E MCHinformation media is very effective for increasing mothers' knowledge in the working area of Poskesdes Sumberjaya Cihaurbeuti.

## Discussion

Information media is the ultimate endeavour to gain knowledge. Information on various topics, from world news to advances in technology and knowledge, including health information can be accessed easily through articles and information programmes. In line with the results of the study which explains that the m-health application can improve antenatal services, one of which is as a health education media for pregnant women to find out the condition of their pregnancy and how to care about pregnancy which is accessed anywhere and anytime. (Puspitasari 2019). Another study explained that the use of nutrition education media electronic diary food application (edifo) and counselling methods significantly increased the knowledge of most respondents. (Mey et al. 2020). The same explanation regarding nutrition education using pocket books is quite effective in increasing knowledge. (Munawaroh, Nugraheni, and Rahfiludin 2019). It can be concluded that information media helps public education so that there is an increase in public knowledge and understanding of various things such as health knowledge.

Information media is an important tool in public communication, people can use this media to convey ideas or events that are considered important. In health services, information media creates space for discussion or communication between health workers and pregnant women. In accordance with the explanation in the book, the media used in the communication process is electronic media. (Purwanti and Cholifah 2019).

MCH books are essential for monitoring the health of mothers and children (Kementerian Kesehatan RI 2020). In line with the explanation of the E MCHbook that is

effectively used as an educational tool (Najmah, Suryani, and Imelda 2022). Electronic E MCH is made to make it easier for pregnant women to understand all the health information contained in the MCH book. In accordance with the results of the study which explain that electronic media that are often used by informants to find out pregnancy information are through the internet and pregnancy applications. (Lathifah and Dewi 2021).

The results of the study explained that most of the pregnant women who used E MCH were 20-35 years old, at this age the mother's condition is very good for reproduction. (Atmojo et al. 2022). Other studies explain that the optimal productive age for healthy reproduction is 20-35 years old. (Wahyuni and Riyanti 2018). Women aged 20-35 years old are an age group that grew up in an era where the internet and technology became an important part of everyday life, so they tend to be more comfortable using electronic media than other information media. The transformation from print media to electronic media allows for easier and more efficient information exchange. (Jayanti, Hermayanti, and Solehati 2021)

Pregnant women who use E MCH are mostly in the 2nd trimester category, namely at 13-27 weeks of pregnancy, in the second trimester most pregnant women experience improvements in some symptoms that usually appear during the first trimester of pregnancy. In the second trimester many pregnant women feel better than the previous trimester, this is marked by an increase in appetite, the presence of fetal movements so that mothers begin to want to find out health information that suits their needs. In line with the explanation in the related book, pregnant women will begin to feel comfortable and accept their pregnancy very well when the gestational age enters the second trimester. (Mufdlilah et al. 2023).

The use of E MCH in pregnant women is a new thing in getting health information in the MCH book, so pregnant women are more interested and curious to see the contents of this information media. This is evidenced by an increase in knowledge both in pregnant women before and after being given information using E MCH media. In line with the results of the study, it was explained that there was an increase in knowledge and attitudes of mothers before and after being given interventions with the help of media. (F, Nuryani, and Elviyanti 2019). Another study explained that there was an increase in knowledge which was characterised by a difference in knowledge before and after health promotion with the help of media. (Afriyani and Salafas 2019).

Based on this explanation, E MCH information media is very effective for increasing maternal knowledge in the working area of Poskesdes Sumberjaya Cihaurbeuti. In line with the explanation that says that the MCH E-Book is more effective than the MCH printed book (Zulmi et al. 2021). The results of other studies related to information media explain that audiovisual media is effective in increasing the knowledge of pregnant women. (Kuswanti and Rochmawati 2021). Another suitable explanation is that there is an effect of using the digital pregnancy record application on increasing maternal knowledge. (Hartiningrum and Fitriani 2021).

## **Conclusion**

E MCH information media effectively increases the knowledge of pregnant women in the working area of Poskesdes Sumberjaya Cihaurbeuti. E MCH information media can be developed and complemented with other health information that supports maternal and child health.

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### **Conflict of interest**

There is no conflict of interest.

### **Ethical approval**

This research has received ethical approval from the Health Research Ethic Commission of the STIKes Muhammadiyah Ciamis number 018/KEPK-STIKESMUCIS/XII/2022.

### **Authors' contribution**

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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