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## **The effect of using pregnancy exercise e-books on pregnant women's knowledge and skills in independent midwife practice**

(Experimental study in independent midwife practice in Bengkulu City in 2023)

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**Abstract**--The purpose of this study was to analyze the effect of E-book media on pregnancy exercise on increasing knowledge and skills of pregnant women regarding pregnancy exercise at the Independent Practice of Midwife S in Bengkulu City. The quantitative research method used a quasi-experimental design with a pretest posttest two group design. The study was conducted at PMB S in Bengkulu City, in July 2023. Sampling used purposive sampling with a sample size of 37 respondents in the experimental group using the E-book pregnancy exercise and 37 respondents in the control group using the pregnancy exercise book. Data analysis used an independent T test for differences between groups and a paired sample T test for differences between groups with SPSS. The results of the study on the knowledge of pregnant women in the group given the E-book showed a greater mean rank than those given the book. The results of the Mann Whitney statistical test obtained a  $\rho$  value of 0.000 ( $p < 0.05$ ). This means that the use of the e-book pregnancy exercise increases knowledge of pregnancy exercise at the independent practice of midwife S in Bengkulu City. The skills of pregnant women in the E-book group showed a greater mean rank than the book group. The results of the Mann Whitney statistical test obtained a  $\rho$  value of 0.000 ( $p < 0.05$ ). This means that the use of the E-book on pregnancy

exercises improves pregnancy exercise skills in the independent practice of Midwife S in Bengkulu City.

**Keywords**---Pregnant gymnasticse-book, pregnant women, skills, knowledge, pregnant gymnastics.

## Introduction

Pregnancy brings so many changes to a woman's body, women experience various discomforts during pregnancy, one of the discomforts that often arises is back pain. Back pain is common in pregnancy with incidence reported to vary by approximately 50%. Low back pain (LBP) due to pregnancy is a syndrome clinically characterized by the main symptom of discomfort in the back of the body from the last rib or vertebral thoracic 12 to the buttocks or anus due to the influence of hormones which cause disturbances in the basic substance of the supporting parts and connective tissue, resulting in elasticity and flexibility of the muscles decrease.<sup>1</sup>

Back pain during pregnancy can also be caused by mechanical factors that affect the curvature of the spine due to changes in posture and increased load during pregnancy.<sup>2</sup> In America, England, Sweden, and Norway 70–86% of pregnant women experience lower back pain.<sup>3</sup> At 14–22 weeks of pregnancy week approximately 62% of pregnant women report lower back pain, predisposing factors for back pain include uterine growth causing changes in posture, weight gain, the effect of the hormone relaxin on ligaments, history of previous back pain, parity, and activity.

The growth of the uterus in line with the development of pregnancy causes the supporting ligaments stretched which is usually felt by the mother as a very painful stabbing spasm called ligament pain.<sup>4</sup> This is what causes back pain. In line with weight which increases persistently during pregnancy changes the body posture so that the body's center of gravity shifts forward. There is a tendency for the back muscles to shorten if the abdominal muscles are stretched so that it can cause muscle imbalance around the pelvis and additional tension may be felt above the ligament. Therefore, it is necessary abdominal muscle training through gymnastics pregnant.<sup>5</sup>

Efforts that can be made are to provide health education about preventing and treating back pain in pregnant women., that is Prenatal exercise. Prenatal exercise is exercise to prepare and train muscles so that they function optimally in normal delivery. Regular prenatal exercise is good in place exercise or at home in free time can lead pregnant women towards physiological labor as long as there are no pathological conditions accompanying the pregnancy.<sup>6</sup> Pregnant women who do pregnancy exercises regularly during their pregnancy can provide benefits during labor., namely the second stage is shorter, preventing breech position, and reducing caesarean sections.<sup>7</sup>

Prenatal gymnastics is a movement exercise therapy given to pregnant women to prepare themselves, both physically and mentally, to face and prepare for a fast,

safe and easy delivery spontaneous. The pregnancy exercises that are applied are not exercises that are oriented only towards physical fitness., but rather strengthens muscles, stretch joints, and most importantly train concentration so that can divert mind so that you forget the pain of giving birth and strengthen breathing.<sup>8</sup> This method has proven to be quite successful in helping to ease the labor process. In addition, the pain during the labor process can also be minimized so that by itself stress during childbirth can be reduced so that the delivery process can run more smoothly and quickly.<sup>9</sup>

Prenatal exercise will provide a better pregnancy and childbirth product. Mother Pregnant women who do prenatal exercises during pregnancy are reported to be able to reduce stress before giving birth, reduce pain during the labor process, the babies born have a normal weight, and can reduce the risk of preeclampsia compared to with pregnant women who do not do pregnancy exercises.<sup>10</sup> The labor process requires physical and mental preparation of the mother in order to have a safe and smooth delivery. Various methods are used to ensure a safe and smooth delivery among them preparations since pregnancy. To smooth the delivery process, preparations made since pregnancy include: do pregnancy exercises.<sup>11</sup>

Pregnancy exercise has been done by only relying on instructions from pregnancy exercise instructors without repetition and explanation of the benefits of the pregnancy exercise movements. This will affect the effectiveness of the movements in overcoming muscle pain and lower back pain in mothers and help ease the labor process. Pregnancy exercise is mostly done in midwife's independent practice by relying on instructions from the exercise instructor only so that pregnant women cannot do pregnancy exercises regularly because sometimes they are unable to attend. Pregnant women do not have practical guidance on pregnancy exercises so they have difficulty doing pregnancy exercises independently.<sup>12</sup>

The more often pregnant women do pregnancy exercises, the less anxiety they have in facing childbirth and on the contrary, if you never do prenatal exercise, the anxiety of pregnant women will increase. In prenatal exercise, there are relaxation techniques that can reduce anxiety, when individuals experience tension and anxiety, the nervous system works sympathetic, while when relaxing, the parasympathetic nervous system works sympathetic.<sup>11</sup>

Knowledge is very important for shaping a person's actions (overt behavior) because from experience and research it turns out that behavior based on knowledge will be more lasting rather than behavior that is not based on knowledge.<sup>13</sup> Pregnant women's knowledge about prenatal exercise is the result of a pregnant woman's knowledge of the benefits of prenatal exercise. If a pregnant woman already knows the importance of the benefits of prenatal exercise, then the pregnant woman will be interested in following it. Therefore, a real role is needed from midwives to provide information about the importance of prenatal exercise for pregnant women.<sup>14</sup>

Technological developments in this day and age have brought many changes and developments to computers, laptops, and smartphones, but currently there are still many sales physical books and digital books E-books (Electronic Books).

Physical books if stored for a long time can experience degradation in paper quality resulting in paper weathering which results in damaged books or even eaten by termites. If the book is damaged then the book records containing knowledge, history, art, and so on will be lost in time.<sup>11</sup>

In line with technological developments, the interest of E-book readers has grown significantly and is in high demand due to...by many laptop, computer, and smartphone users. Smartphone sales have increased from year to year, so many publishers and book writers compete to create digital books E-books (Electronic Books) because they have the advantage of being able to...combined with sound, video and images rather than ordinary books which can only be read with text and images. E-Book has benefits, namely that readers easily do not need to buy printed books, save costs, can be accessed quickly, is practical, time efficient, and information is easily disseminated.<sup>15</sup>

Providing information regarding method leaflet which is usually given in the form of leaflets or stickers that are stuck on the mother's place often see. Leaflet is a communication tool in the form of a paper leaflet that can be folded and emphasizes sight or visuals to be more easily remembered and understood by all levels of society.<sup>16</sup> This media usually consists of a number of words, pictures or photos in a color scheme so that it affects understanding and can increase the passion for learning. However, this media has shortcomings, namely easily damaged and does not display video.<sup>16</sup>

Research by Zulmi et al.<sup>17</sup> shows that the results of pregnant women's knowledge in understanding the contents of the KIA using E-books are more effective than with printed books because the number of those who understand the KIA E-book is 51.2%, while those who understand the KIA printed book are 48.7%. A small portion (16.6%) of pregnant women at the Karang Anyar Health Center do not understand the KIA E-book and those who do not understand the KIA printed book are 20.8%.<sup>17</sup> Other research that supports, namely the research of Rosalina et al.<sup>14</sup> it is known that before (pretest) it has a middle value of 10 with the lowest 5 and the highest 14, while after (posttest) 12 with the lowest value of 9 and the highest 15. There is an influence of health education using E-book media on the knowledge of pregnant women about pregnancy examination services during the COVID-19 pandemic at the Putri Ayu Health Center in Jambi City.<sup>18</sup>

Profile of the Bengkulu Provincial Health Office in 2020, pregnant women in Bengkulu Province were 41,173 with K.4 visits of 35,945 pregnant women (87%). The highest K.4 coverage was in Kaur Regency (95%) and the lowest was in Seluma Regency (48%), while in Bengkulu City itself it was 79%.<sup>20</sup> Health profile of Bengkulu City, coverage of visits by pregnant women (K.4) 2020 as many as 6,170 people (83.30%). Based on the report of 20 health centers in Bengkulu Province, the highest K.4 coverage was at the Basuki Rahmad Health Center, which was 608 people and the lowest is at Bentiring Health Center 89 people, while in The number of 232 people in the Turunan Health Center. The initial survey conducted on pregnancy exercises at the Bengkulu City Health Center, only in the Turunan Health Center area that routinely conducts pregnancy exercises.<sup>21</sup>

The initial survey was conducted in the work area of the Bengkulu City Health Center which carried out prenatal gymnastics, namely in the work area of the Basuki Rahmad Health Center in the Independent Midwife Practices "I" and "F," Prenatal gymnastics. In the Independent Midwife Practice, this is not done routinely, whereas in the working area of the Turunan Health Center, the Independent Midwife Practice "S" routinely carries out pregnancy exercise activities twice a week.

Theme The central research is that pregnancy exercise is one of the efforts to deal with problems in pregnant women. Currently, the implementation of pregnancy exercise is not optimal, this will affect the effectiveness of the movement in overcoming muscle pain and lower back pain and helping to ease the labor process. Pregnancy exercise which is mostly done in midwife's independent practice relies on instructions from gymnastics instructors using pregnancy exercise guidebooks so that pregnant women cannot do pregnancy exercise routinely. Pregnant women do not have practical pregnancy exercise guides so that they have difficulty in doing pregnancy exercise independently. Factors related to the implementation of pregnancy exercise are competent instructors/resource persons, implementation methods, and facilities and infrastructure. The development of technology to facilitate the implementation of pregnancy exercise, one of which is by utilizing pregnancy exercise E-books.<sup>22</sup> E-books are one alternative in the efficiency of pregnancy exercise implementation time that can be done independently by pregnant women. E-books can be opened using a cellphone. Very different from hardcopy having to use paper media. By using E-books, it is hoped that the knowledge and skills of pregnant women in carrying out pregnancy exercise will increase.

Based on these phenomena and data, the author is interested in conducting research with the title "Effectiveness of Using Pregnancy Exercise E-books on the Knowledge and Skills of Pregnant Women in Independent Practice of Midwives S City of Bengkulu July Period Year 2023".

## **Method**

This research method is quantitative which uses a quasi-experimental design with the design used being a pretest-posttest two group design. Total up to research, that is 74 people were divided into two groups: an intervention sample of 37 people who were given an E-book of pregnancy exercises and a control sample of 37 people who were given a book. The sampling technique used purposive sampling.

## **Results and Discussion**

### **Results**

Research results regarding the characteristics of pregnant women in Independent Practice of Midwife S City of Bengkulu July Period Year 2023 can be seen in Table 4.1.

Table 1. Characteristics of Pregnant Women in Independent Practice of Midwife S City of Bengkulu July Period Year 2023

No	Variables	<i>E-book</i>		Book	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Parity				
	Grand multipara	3	8.1	2	5.4
	Multipara	17	45.9	21	56.8
	Primipara	17	45.9	14	37.8
2.	Education				
	Basic education	5	13.5	4	10.8
	Secondary education	29	78.4	29	78.4
	Higher education	3	8.1	4	10.8
3.	Age				
	<20 and >35 years	12	32.4	6	16.2
	20-35 year	25	67.6	31	83.8

Source: Processed 2023 Research Data

Based on table 1 in the e-book group, most of the parity is multiparous as many as 17 people (45.9%), mothers have a secondary education level of 29 people (78.4%) and are aged 20-35 years as many as 25 people (67.6%). Then, in the book group, most of the parity is multiparous as many as 21 people (56.8%), mothers have a secondary education level of 29 people (78.4%) and are aged 20-35 years as many as 31 people (83.8%).

Pregnant women's knowledge about pregnancy exercises in the Independent Practice of Midwife S, Bengkulu City, July 2023 period regarding pregnancy exercises can be seen in Table 2 below:

Table 2. Pregnant Women's Knowledge about Pregnancy exercise in the Independent Practice of Midwife S, Bengkulu City, July 2023 period regarding pregnancy exercises

Knowledge	Before		After	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
<b>E-Book</b>				
Not enough	29	78.4	9	24.3
Enough	8	21.6	0	0
Good	0	0	28	75.7
<b>Book</b>				
Not enough	27	73.0	20	54.1
Enough	7	18.9	9	24.3
Good	3	8.1	8	21.6

Source: Processed 2023 Research Data

Based on Table 2, the knowledge of pregnant women about pregnancy exercises before being given the pregnancy exercise e-book, most of them were in the poor category, as many as 29 people (78.4%). The knowledge of pregnant women after being given the pregnancy exercise e-book, the majority had good category knowledge, as many as 28 people (54%) and a small portion was in the poor category, as many as 5 people (11%). The knowledge of pregnant women about pregnancy exercises before being given the pregnancy exercise book, most of them were in the poor category, as many as 27 people (73%). The knowledge of pregnant women after being given the pregnancy exercise book, the majority had poor category knowledge, as many as 20 people (54.1%). Pregnant women's skills regarding pregnancy exercises in the Independent Practice of Midwife S, Bengkulu City, July 2023 period regarding pregnancy exercises can be seen in Table 3.

Table 3. Pregnant Women's Skills about Pregnancy Exercises in the Independent Practice of Midwife S, Bengkulu City, July 2023 period regarding pregnancy exercises

Skills	Before		After	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
<b>E-Book</b>				
Unskilled	22	59.5	7	18.9
Skilled	15	40.5	30	81.1
<b>Book</b>				
Unskilled	19	51.4	30	81.1
Skilled	18	48.6	7	18.9

Based on Table 3, the mother's skills about prenatal exercise before being given the prenatal exercise e-book, most of the categories were unskilled, as many as 22 people (59.5%). The skills of pregnant women after being given the prenatal exercise e-book were mostly skilled, as many as 30 people (81.1%).

Statistical test results The effectiveness of using the E-book on pregnancy exercise on the knowledge and skills of pregnant women in the independent practice of midwives in Bengkulu City for the period July 2023 regarding pregnancy exercise can be seen in Table 4.

Table 4. The effectiveness of using the E-book on pregnancy exercise on the knowledge and skills of pregnant women in the independent practice of midwives in Bengkulu City for the period July 2023 regarding pregnancy exercise

Variables	Mean Rank	Z	p-value
1. Knowledge			
E-Book	48.50	4.455	0,000
Book	26.50		
2. Skills			
E-Book	52.59	6,059	0,000
Book	22.41		

Source: Processed 2023 Research Data

The knowledge of pregnant women in the group given the E-book showed a greater mean rank compared to the book. The results of the Mann Whitney statistical test obtained a  $\rho$  value of 0.000, this shows that  $\rho < \alpha$  ( $0.000 < 0.05$ ). Thus, it can be concluded that the use of e-books on pregnancy exercises can increase knowledge.pregnancy exercise independent practice of midwife S in Bengkulu City. Furthermore, the skills of pregnant women inThe group given the E-book showed a greater mean rank compared to the book. The results of the Mann Whitney statistical test obtained a  $\rho$  value of 0.000, this shows that  $\rho < \alpha$  ( $0.000 < 0.05$ ). Thus, it can be concluded that the use of E-books for pregnancy exercises can improve skillspregnancy exercise independent practice of midwife S in Bengkulu City.

Table 5. The Influence of Parity, Age and Education on the Skills of Pregnant Women in Independent Midwife S Practice in Bengkulu City

Variables	Knowledge p-value	Skill p Value
Parity	0.589	0.256
Education	0.434	0.588
Age	0.070	0.851

The results of table 5 show that there is noThe influence of parity, age and education on the skills of pregnant women in the Independent Practice of Midwife S, Bengkulu City

## Discussion

### 1. Knowledge of pregnant women doing pregnancy exercises

The research results showed thatThe knowledge of pregnant women in the group given the E-book showed a greater mean rank compared to the book.*E-book*can improve knowledge, attitudes and behavior because in this e-book the material can be read anytime using mobile media so that each respondent has more time. Then, in this e-book also included interesting pictures.

In accordance with research (Rehusisman, 2017) which states that e-book media used in learning has a level of practicality, is easy to understand with the addition of attractive color displays and clear images on the learning media provided, so that it can make students more active and enthusiastic in participating in learning activities, and also images make it easier for students to understand the material significantly so that the theory or concept becomes more meaningful in the cognitive structure of students.

The use of e-books as a learning medium for pregnant women will make it easier for the target to understand the information conveyed compared to conveying information only verbally, because the target of education can directly observe the images and writings that are explanations of the images in the media. The content of the e-book information in this study is a combination of interesting images and easy-to-understand sentences, so it will be easier to capture the material. Interesting images in e-books will increase

interest in reading and focus on the information conveyed because they do not get bored quickly.

This study is supported by Hidayah's research (2019) which found that there was an influence of the implementation of e-book-based couples classes on the knowledge and attitudes of couples regarding pregnancy care. Other supporting research is that The results of the statistical test of the level of knowledge and readiness obtained a p value = 0.000 before and after the intervention was given, indicating the influence of antenatal education using e-booklets on the knowledge and readiness of pregnant women under the age of 20 in facing pregnancy.

*E-book* in this study has the advantage of providing information and explanations related to the health of pregnant women with a more complete, more detailed, clear and educational discussion and the arrangement of e-book materials is made in such a way as to attract the attention of pregnant women. In addition, e-books allow respondents to study repeatedly after counseling so that someone will remember it more easily. Someone can study e-books according to their abilities and in a relaxed state so that the information received can be received more easily compared to information received only from listening during counseling with the lecture method.

These results are supported by Lestari's research (2021) where the distribution of knowledge levels before and after being given booklet media experienced an increase in the average value, middle value, lowest value and highest value, namely 15.09 to 17.52 at the average value, the middle value increased from 15.00 to 18.00 there was a lowest value of 11 scores to 14 scores and for the highest value increased from 17 scores to 20 scores. in the booklet intervention, the average pregnant woman experienced an increase in knowledge scores about health management

Booklet media is chosen as a media for counseling because it is able to disseminate information briefly, concisely, and clearly. A booklet is a small book that has at least five pages but no more than forty-eight pages excluding the cover. Booklets contain important information. The contents of the booklet must be clear, firm, easy to understand and will be more interesting if the booklet is accompanied by pictures. Booklets have various forms and are not too large. The physical form is thin but presents complete information so that it is possible to carry anywhere.

The results of this study are also in line with Sulistyani (2018) that anemia booklets can provide increased knowledge for pregnant women. Nutrition education will run well if supported by the right media and methods of delivering material. Print media is an effective tool in conveying new information because it is static, contains text, images, and photos which, if presented well, will increase the reader's interest and interest in reading, thereby facilitating the process of receiving new information. This is in line with research from Riyanti (2018) which states that there is an increase in knowledge in adolescents after being given nutrition education using Booklets.

The capture of knowledge provided through booklet media utilizes one sense, namely the sense of sight (capture of knowledge through the sense of sight is 75-87%), and flip chart media utilizes more than one sense, namely the sense of sight and hearing (the sense of hearing is 13% and the sense of sight 75-87%). This research is supported by Suyatna's research (2018) that there are differences learning outcomes caused by electronic interactive physics textbooks and printed physics. The results of this study are not in line with the study conducted by Yanuarti (2019) with the title: Differences in nutritional health education with booklet and e-booklet media on changes in knowledge of anemia in adolescent girls. There is no difference in nutritional health education with booklet and e-booklet media on changes in knowledge of anemia in adolescent girls ( $p = 0.924$ ).

This is in line with the research of Sormin and Puri (2019), which stated that there was no difference between the knowledge and attitudes of mothers who received counseling using the android application media and through Booklets ( $p > 0.05$ ). It is explained that the attitudes that arise are not only determined by the state of the object faced but also other influential factors including past experiences, current situations, and future expectations (Sormin & Puri, 2019).

## 2. Pregnant women's skills in doing pregnancy exercises

The skills of pregnant women in the group given the E-book showed a greater mean rank compared to the book. The results of the Mann Whitney statistical test obtained a  $\rho$  value of 0.000, this shows that  $\rho < \alpha$  ( $0.000 < 0.05$ ). Thus, it can be concluded that the use of E-books for pregnancy exercises can improve skills. pregnancy exercise independent practice of midwife S in Bengkulu City.

One of the learning media that can be used to increase the knowledge of pregnant women, that is by implementing technological and communication developments with ongoing user interaction developed Currently, it is a digital book or known as an E-book. A digital book or also called an E-book is a publication consisting of text, images, or sound in digital form that can be read on a computer or other electronic devices such as android or tablet. E-book or electronic book (or also digital book) is an evolution of the printed books that we usually read every day.<sup>23</sup>

The use of E-books is considered more effective compared to printed books because printed books are not can read in the dark, requires space/place; heavy to carry (especially when traveling), environmentally questionable as they use large amounts of hardcopy large. The waiting time is longer because the price is determined by the interests of the publisher and the state. Printing and distributing the publication of books I print high cost sometimes impossible or difficult in mission.<sup>24</sup>

The media that can be used to improve mothers' knowledge and skills regarding pregnancy exercises, one of which is through E-books because they have the advantage of being combined with sound, video and images. It's an ordinary book that can only be read with text and pictures. *E-Book* has

benefits, namely the provision can be easily accessed, no need to buy printed books, save costs, easy to access quickly, practical, time efficient, and distribution easy information.<sup>25</sup>

## **Conclusion**

Based on research that has been conducted regarding the Effectiveness of Using Pregnancy Exercise E-books on the Knowledge and Skills of Pregnant Women in Independent Practice of Midwives S City of Bengkulu July Period Year 2023, the following conclusions can be drawn.

1. Using e-books on pregnancy exercises can increase knowledge pregnancy exercise in independent practice of midwife S in Bengkulu City.
2. Using pregnancy exercise e-books can improve skills in independent exercise in independent practice of midwife S in Bengkulu City.

### *Conflict of interest statement*

The authors declared that they have no competing interests.

### *Statement of authorship*

The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

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## **References**

1. Kistner et al. Therapeutic exercise. Vol. 18, Clinical calcium. 2017. 1611–1615 p.
2. Yuriah S, Ananti Y, Nurjayanti D. Dynamics of the experience of sexual violence and its impact on girls in Ogan Komering Ulu Regency. *Int J Health Sci.* 2024 Apr 23;8(S1):579–92.
3. Gutke A, Boissonnault J, Brook G, Stuge B. The Severity and Impact of Pelvic Girdle Pain and Low-Back Pain in Pregnancy: A Multinational Study. *J Womens Health* 2002. 2018 Apr;27(4):510–7.
4. Muthoharoh BL, Yuriah S, Gustiani R, Agustina YR, Indrawati I, Muftlilah M. Efficacy of early initiation of breastfeeding (EIB) for preventing hypothermia in newborns. *J Health Technol Assess Midwifery.* 2022 Dec 10;5(2):82–95.
5. Purnamasari KD. Nyeri Punggung Bawah Pada Ibu Hamil Trimester Ii Dan Iii. *J Midwifery Public Health.* 2019;1(1):9.
6. Sepriani P, Yuriah S, Juniarti S. Empowerment of women of fertilizing age regarding health education for early detection of neccical cancer using method visual inspection of acetic acid (Iva Test). *International Journal of Economic Perspectives.* 2024;18(1).
7. Ashmat I. *Hamil Sehat dengan Beragam Olahraga Ibu Hamil.* Jakarta: Buku Biru; 2015.

8. Yuriah S, Kartini F, Isnaeni Y. Experiences of women with preeclampsia. *Int J Health Med Sci.* 2022 Jun 26;5(3):201–10.
9. Rosa L, Sinaga V, Siregar RN, Munthe SA, Malinda J, Bedagai KS. Pelaksanaan Senam Hamil Sebagai Upaya Mempersiapkan Fisik Dan Psikologis Dalam Menghadapi Persalinan Di Bpm Mariana Kecamatan Sunggal Kabupaten Deli Serdang Tahun 2019 Implementation Of Pregnant Gymnastic As An Effort To Prepare Physical And Psychological. *J Health Technol Med.* 2020;6(1):95–100.
10. Mufdlilah. *Panduan Asuhan Kebidanan Ibu Hamil.* Yogyakarta: Nuha Medika; 2016.
11. Andriana. *Melahirkan Tanpa Rasa Sakit dengan Metode Relaksasi Hypnobirthing.* PT Bhuana Ilmu Populer; 2016.
12. Suryaningsih M. Pengaruh Senam Hamil Terhadap Penurunan Nyeri Punggung Pada Ibu Hamil Trimester Ketiga Di Puskesmas Bangkalan. *Nurs UPDATE J Ilm Ilmu Keperawatan P-ISSN 2085-5931 E-ISSN 2623-2871.* 2019;1(2):37–45.
13. Notoadmodjo S. *Metode Penelitian Kesehatan.* Jakarta: Rineka Cipta; 2018.
14. Jahirin SP. Pengaruh Pendidikan Kesehatan Tentang Senam Hamil Terhadap Pengetahuan Dan Motivasi Ibu Untuk Melakukan Senam Hamil Di Desa Malakasari. *J Ilm Kesehat Ilmu Keperawatan.* 2019;VII(1):22–9.
15. Utami D, Sutiadiningsih A, Purwidiani N, Gita, Miranti MG. Pengembangan E-Modul Berbasis Aplikasi Sigil Pada Sarjana Terapan Tata Boga. 2020;11(2):147–54.
16. Yuriah S, Kartini F. Factors Affecting With The Prevalence Of Hypertension In Pregnancy: Scoping Review. *PLACENTUM J Ilm Kesehat Dan Apl.* 2022 Feb 28;10(1):1.
17. Hasriani St, Nurjanna N. Pengaruh Media Leaflet dan Kelas Ibu Hamil Virtual Terhadap Perilaku Pencegehan Resiko Tinggi Kehamilan. *Jik J Ilmu Kesehat.* 2021;5(2):360.
18. Zulmi D, Suhartini A, Dayana SD, Mufarrohah, Awaliyah A, Refita C. *Jurnal Obstretika Scientia.* *J Obstretika Sci.* 2021;2(2):192–211.
19. Dina Rosalina, Suryani\*, Enny Susilawati R. Pengaruh Pendidikan Kesehatan Menggunakan Media E-Book Terhadap Pengetahuan Ibu Hamil Tentang Pelayanan Pemeriksaan Kehamilan Pada masa Pandemi Covid-19. *J Ilm Obsgyn.* 2022;Vol 14 no:161–9.
20. Dinas Kesehatan Provinsi Bengkulu. *Profil Kesehatan Provinsi Bengkulu.* Bengkulu; 2021.
21. Dinas Kesehatan Provinsi Bengkulu. *Profil Kesehatan Provinsi Bengkulu.* Bengkulu; 2021.
22. Yuriah S, Juniarti S, Sepriani P. Midwifery care for Mrs “Y” at BPM Soraya Palembang. *Int J Health Sci.* 2023 Nov 18;7(S1):2966–84.
23. Qibtiya M, Kustijono R. Keefektifan Penggunaan E-Book Untuk Melatihkan Keterampilan Berpikir Kritis. *Pros Semin Nas Fis SNF.* 2018;2(1):49–54.
24. Supiani S, Yusuf NN, Yanti EM. Pengaruh Senam Hamil Menggunakan Audio Visual Terhadap Keterampilan Ibu Hamil di Wilayah Kerja Puskesmas Sesela Kabupaten Lombok Barat. *J Kewarganegaraan.* 2022;6(2).
25. Handayani F, Yuliyati A, Zaenudin C, Azzahra S. E-Book as Educational Media ‘Aku dan Kehamilan Sehat-Ku’: Narrative Review. *J Ners Dan Kebidanan J Ners Midwifery.* 2021;8(1):121–9.