Effectiveness of the GURAKA Application in Enhancing Maternal Preparedness for Childbirth

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ABSTRACT

Birth Preparedness and Complication Readiness (BPCCR) is a strategy aimed at promoting planning for childbirth and emergency preparedness among pregnant women, their families, and communities. The study aimed to determine the effectiveness of the GURAKA application on maternal preparedness for childbirth. The study population consisted of third-trimester pregnant women in the service area of Kota Community Health Center. Sixty participants were selected using consecutive sampling and were allocated into two groups: one group used the GURAKA application, while the control group used the MCH Book. Data were analyzed sequentially using test of normality and homogeneity, Wilcoxon Signed Rank Test, and Mann–Whitney U test. The Mann-Whitney analysis showed that, in the pretest, the intervention group demonstrated a higher mean rank (36.32) than the control group (24.68), with the difference being statistically significant ($p = 0.009$). In the posttest, the intervention group's mean rank increased to 37.10, while the control group decreased to 23.90, with $p = 0.003$ ($p<0.05$). These findings indicate that the GURAKA Application is more effective than the MCH Book in enhancing maternal readiness for childbirth.

INTRODUCTION

Technology has been widely used in almost all areas of life, one of which is the increased functionality of smartphones with various applications that facilitate access to all kinds of information. The use of technology can motivate users to change or maintain behaviours related to health (Ernsting et al., 2017). This system opens up opportunities for developers to create applications that can help mothers with busy schedules to find information related to pregnancy and childbirth (Mayasari and Jayanti, 2020).

Over the period from 2019 to 2024, maternal mortality in Indonesia exhibited a fluctuating pattern, rising from 4,221 cases in 2019 to a peak of 7,389 cases in 2021, followed by a

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marked decline to 3,572 cases in 2022, and subsequently increasing again to 4,150 cases in 2024. In 2024, maternal deaths were predominantly attributed to non-obstetric complications during pregnancy (1,351 cases), while hypertensive disorders occurring during pregnancy, childbirth, and the postpartum period and obstetric hemorrhage accounted for 988 cases and 955 cases, respectively (Ministry of Health of the Republic of Indonesia, 2025).

This occurs partly due to a lack of information about birth planning and handling pregnancy complications. Birth Preparedness and Complication Readiness (BPACR) is a strategy aimed at promoting planning for childbirth and emergency preparedness among pregnant women, their families, and communities (Ijang et al., 2019).

Preparedness for childbirth is related to the knowledge possessed by pregnant women; women who are aware of at least two of the danger signs of childbirth are better prepared for childbirth (Ananche and Wodajo, 2020). Providing accurate and complete information is very important in preparing for childbirth and being aware of pregnancy complications. Currently, there are many applications designed for pregnant women, offering a variety of advantages. One example is a mobile personal health record application for pregnancy monitoring that includes a pregnancy calendar, educational information, healthy lifestyle tips, daily notes, and additional features (Bachiri et al., 2016). A study at the Bengkulu Midwife Independent Practice using the Android-based Bidan-Ku application had a positive effect on mothers' anxiety and readiness for childbirth (Savitri, Baskah and Nugraheni, 2024).

Although many people download health applications, most do not use them regularly, and many stop using them over time. To improve continued use, developers need to address common concerns such as high costs and the effort required to enter data. In addition, clinical studies are needed to prove the effectiveness of health applications and increase public trust (Krebs and Duncan, 2015). Therefore, credible apps related to pregnancy, childbirth, and childcare must be developed and managed by qualified health professionals (Lee and Moon, 2016).

The application used in this study was GURAKA, which provides

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information to support pregnant women in preparing for childbirth. While many existing applications offer pregnancy-related information, the content is generally broad and does not specifically focus on childbirth preparation. Based on this gap, the present study was conducted to evaluate the effectiveness of the GURAKA application in improving maternal preparedness for childbirth. Before this research was conducted, the application had not been subjected to formal suitability testing; therefore, this study also serves as an initial assessment of the application's feasibility and effectiveness.

RESEARCH METHODS

This study employed a quasi-experimental design with a pre-test and post-test control group in the working area of Kota Community Health Centers start from Januari until August 2025. The population were all third-trimester pregnant women. Sixty participants were selected by consecutive sampling and divided into an intervention group (n = 30), which used the GURAKA application, and a control group (n = 30), which used the MCH Book.

The intervention provided childbirth preparation education through the GURAKA application, covering physical, psychological, financial, and cultural readiness, as well as preparation of childbirth supplies. Educational materials were delivered digitally via the GURAKA mobile application and were accessed independently by pregnant women using their mobile phones. The intervention was delivered individually to third-trimester pregnant women in the intervention group. The intervention was facilitated by the researchers with support from community midwives, and the content was developed and reviewed by midwifery experts. An initial briefing was conducted at the community health post, followed by independent application use at participants' homes. Participants had unlimited access to the application for one month and were encouraged to use it regularly. The intervention was implemented over four weeks, from pretest to posttest evaluation. Adherence was supported through initial guidance, periodic reminders, and coordination with community midwives.

The control group received childbirth preparedness education based on the MCH Book in line with national

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maternal care standards. The material was delivered through brief face-to-face explanations and followed by independent learning using the MCH Book. Education was provided individually to third-trimester pregnant women in the control group. The education was delivered by the researcher with support from the community midwife. Initial education took place at the community health post while continued use of the MCH Book was conducted at home. Education was provided once at baseline, and the MCH Book was used for one month. Participants were observed for four weeks, from pretest to posttest. Participants received guidance on relevant MCH Book sections and reminders to review childbirth preparation materials.

Childbirth preparedness was measured using a structured questionnaire encompassing physical, psychological, financial, cultural, and childbirth equipment components. The questionnaire comprised 25 items and underwent validity and reliability testing prior to use. The validity assessment using Pearson correlation produced values ranging from 0.389 to 0.777, indicating acceptable item validity. Reliability analysis showed a tested for normality (Shapiro–Wilk test) and homogeneity, revealing non-normal and non-homogeneous distributions. Therefore, non-parametric tests were applied: Wilcoxon Signed Rank for paired comparisons, and Mann–Whitney U test for between-group differences, at a significance level of 0.05. Ethical approval was granted by the Health Research Ethics Committee of the Tanjungkarang Health Polytechnic (Number: 019 / Perst.E / KEPK-TJK / III / 2025).

RESULTS AND DISCUSSION

RESULTS

Table 1. Characteristics of respondents

Respondent Characteristics	Intervention		Control	
	N	%	N	%
Education				
Primary education	7	23,3	4	13,3
Secondary education	20	66,7	20	66,7
Higher education	3	10,0	6	20,0
Occupation				
Housewife	18	60,0	13	43,3
Private employee	8	26,7	12	40,0
Civil servant	4	13,3	5	16,7
Age				
Not at risk (20-35 years old)	21	70	23	76,7
At risk (<20 and >35 years old)	9	30	7	23,3
Gravida				
Primigravida	14	46,7	10	33,3
Multigravida	16	53,3	20	66,7

Source: Primary Data 2025

Table 2. Preparedness for childbirth in the intervention group and control group

Preparedness for childbirth	Intervention		Control	
	N	%	N	%
Pre-test				

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Preparedness for childbirth	Intervention N	%	Control N	%
Good	25	83,3	23	76,7
Fair	4	13,3	6	20,0
Poor	1	3,3	1	3,3
Post-test				
Good	29	96,7	26	86,7
Fair	1	3,3	4	13,3

Source: Primary Data 2025

Table 3. Statistical Analysis of Maternal Preparedness Between Intervention and Control Groups

Preparedness for childbirth	N	P-value
Pre-test	30	**0,001**
Post-test	30	
Pre-test	30	**<0,001**
Post-test	30	

Source: Primary Data 2025

The analysis indicated that the GURAKA application effectively improved maternal preparedness for childbirth. In the intervention group, the Wilcoxon Signed Rank Test showed a significant difference between pre-test and post-test scores (p = 0,001, p < 0,05), confirming that the intervention enhanced readiness for childbirth.

In the control group, mothers who utilized the Maternal and Child Health (MCH) Book experienced a statistically significant enhancement in preparedness, as evidenced by the Wilcoxon Signed Rank Test (p < 0.001).

Table 4. Mann-Whitney Test Results with Mean and Standard Deviation

Group		N	Mean Rank	Std. dev	P-value
Pre-test	Intervention	30	36,32	3,312	0,009
	Control	30	24,68		
Post-test	Intervention	30	37,10	2,361	0,003
	Control	30	23,90		

Source: Primary Data 2025

The Mann-Whitney test results showed that in the pre-test, the intervention group had a higher mean rank (36.32) than the control group (24.68), with a significant difference (p = 0.009, p < 0.05). In the post-test, the intervention group's mean rank increased to 37.10, while the control group's decreased to 23.90 (p = 0.003, p < 0.05). This study found that the GURAKA application was more effective in enhancing maternal preparedness for childbirth compared to the Maternal and Child Health (MCH) Book, confirming its role in supporting mothers to plan for delivery and manage potential complications.

DISCUSSION

Maternal preparedness for childbirth includes physical, psychological, financial, cultural, and delivery equipment readiness (Smeele et al., 2018). Physical preparation involves monitoring maternal and fetal health, practicing exercises, and maintaining proper nutrition, while psychological, financial, and cultural support helps mothers manage anxiety, access social support, and plan for delivery-related costs (Withers, Kharazmi and Lim,

2018; Mohaghegh et al., 2023; Alizadeh-Dibazari et al., 2024). Adequate delivery equipment ensures safety and comfort during labor (Lassi et al., 2019).

The GURAKA application (Gerakan Hamil dan Bersalin Sejahtera) is a digital innovation that supports maternal readiness by enabling health monitoring, exercise guidance, relaxation techniques, financial planning, and cultural preparation. Its checklist feature helps families organize necessities early to minimize unexpected costs, while automatic contraction recording enhances evidence-based preparation, and healthcare providers can offer real-time support. The application is freely accessible on the Playstore. The name "GURAKA" is inspired by a traditional beverage from North Maluku, symbolizing warmth, cultural closeness, and community acceptance.

Most respondents had secondary education, were of healthy reproductive age, and had adequate pregnancy experience, which likely facilitated the acceptance and effectiveness of interventions, both through GURAKA and the Maternal and Child Health (MCH) Book, in improving maternal preparedness for childbirth.

This study found that the GURAKA application effectively improves maternal preparedness for childbirth, as shown by the Wilcoxon Signed Rank Test ($p = 0.001$), indicating a significant difference between pre- and post-intervention readiness. These results suggest that digital applications can serve as effective educational tools for supporting pregnant women.

Previous studies support these findings. A randomized controlled trial on the Tele-midwifery application reported that continuous support and education reduced fear of childbirth, increased self-efficacy, and lowered cesarean section rates among primiparas ($p<0.001$) (Khademioore et al., 2023). Similarly, the Family-Centered Maternity Care (FCMC) application effectively enhanced preparedness in high-risk pregnant women by addressing physical, psychological, financial, cultural, and household aspects ($p<0.001$) (Mayasari and Jayanti, 2020). Literature reviews also indicate that digital antenatal applications improve knowledge, readiness, and access to health services with high user satisfaction and no

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adverse effects (Mohamed et al., 2023).

Additionally, eHealth literacy—the ability to use digital health applications—positively correlates with maternal preparedness, with self-efficacy as an important mediator (Zhou et al., 2025). Mobile applications also increase adherence to antenatal visits ($p<0.05$) (Souza et al., 2021). However, not all studies are consistent; some applications may trigger anxiety or have limited impact depending on user characteristics, content quality, healthcare guidance, and familiarity with technology, highlighting the need for tailored, evidence-based interventions (Kaur, Upendra and Barde, 2023).

A significant improvement in maternal readiness for childbirth was observed in the control group following the use of the MCH Book, as indicated by the Wilcoxon Signed Rank Test ($p < 0.001$), indicating that printed educational media remain effective in improving knowledge and readiness.

International and national studies demonstrate that the MCH Book enhances maternal knowledge and health behaviors. Research in Japan, Indonesia, Bangladesh, and Mongolia found that it increased understanding of pregnancy, promoted more antenatal visits, and improved deliveries attended by skilled health personnel. The book is also considered user-friendly, practical, and culturally acceptable (Mori et al., 2015; Osaki et al., 2019; Tobe et al., 2022; Nishimura et al., 2023). Meta-analyses and systematic reviews confirm its positive impact on knowledge, attitudes, and behaviors while encouraging optimal use of healthcare services (Bhuiyan et al., 2017; Azam et al., 2023).

Evidence from Indonesia supports these findings, showing improvements in maternal knowledge and confidence in infant care, including low-birth-weight babies (Sugiarti, Rustina and Efendi, 2020). However, effectiveness depends on healthcare worker training, family involvement, and consistent usage. Without proper implementation, improvements in maternal knowledge and behavior may be limited (Aoki et al., 2022; Balogun et al., 2023; Amriani, Fitriani and Maqfirah, 2025).

The Mann–Whitney test revealed a significant difference between the intervention and control groups. The intervention group had a higher mean pre-test rank (36.32) than

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the control group (24.68, p=0.009), and this difference increased further after the intervention (37.10 vs. 23.90, p = 0.003). This confirms that the GURAKA application is more effective than the MCH Book at enhancing maternal preparedness for childbirth.

Randomised trials demonstrate that mobile prenatal applications enhance engagement, knowledge and utilisation of services more effectively than traditional print media (Ledford et al., 2015). Combining digital applications with the MCH Book yields even better outcomes (Abbasi, Mohammad-Alizadeh Charandabi and Mirghafourvand, 2018; Tobe et al., 2022; Triastin, 2022). However, not all studies are consistent: some web-based applications did not outperform passive controls and improvements in self-efficacy were sometimes minimal (Frankham, Thorsteinsson and Bartik, 2024). These results suggest that the effectiveness of prenatal applications depends on the quality of the intervention design, professional guidance and user engagement (Zhou et al., 2025).

While the MCH Book contributed to maternal preparedness, its impact was enhanced when complemented by digital tools such as the GURAKA application, which provided interactive education, health monitoring, contraction tracking, and guidance on physical, psychological, and financial readiness for childbirth. The effectiveness of this approach depends on maternal education, technological skills, and healthcare support. Rather than replacing the MCH Book, GURAKA complements it, and the combination of print and digital media can promote a more comprehensive and sustainable approach to maternal preparedness for childbirth.

This study has several limitations, including a relatively small sample size, a short intervention period, and reliance on self-reported data. Furthermore, as this study represents a preliminary evaluation conducted in a limited setting, the findings may not fully capture long-term effects or be generalizable to wider populations.

CONCLUSIONS

The GURAKA application effectively improves maternal preparedness for childbirth, complementing the MCH Book by providing interactive and accessible

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support. Pregnant women are encouraged to use the app alongside the MCH Book, and health professionals should offer guidance. Developers are advised to enhance digital features that are evidence-based, interactive, and culturally appropriate to further strengthen maternal readiness comprehensively.

LITERATURE

Abbasi, P., Mohammad-Alizadeh Charandabi, S. and Mirghafourvand, M., 2018. Comparing the effect of e-learning and educational booklet on the childbirth self-efficacy: a randomized controlled clinical trial. Journal of Maternal-Fetal and Neonatal Medicine, 31(5), pp.644–650. https://doi.org/10.1080/14767058.2017.1293031.

Alizadeh-Dibazari, Z., Abbasalizadeh, F., Mohammad-Alizadeh-Charandabi, S., Jahanfar, S. and Mirghafourvand, M., 2024. Childbirth preparation and its facilitating and inhibiting factors from the perspectives of pregnant and postpartum women in Tabriz-Iran: a qualitative study. Reproductive Health , 21(1). https://doi.org/10.1186/s12978-024-01844-8.

Amriani, Fitriani and Maqfirah, 2025. Effectiveness of Using KIA Books on Pregnant Women's Knowledge and Family Support in Facing Childbirth in Gowa. Jurnal Midwifery, 7(1), pp.87–94. https://doi.org/10.24252/jmw.v7i1.54293.

Ananche, T.A. and Wodajo, L.T., 2020. Birth preparedness complication readiness and determinants among pregnant women: a community-based survey from Ethiopia. BMC Pregnancy and Childbirth, 20(1). https://doi.org/10.1186/s12884-020-03297-w.

Aoki, A., Mochida, K., Kuramata, M., Sadamori, T., Bhandari, A.K.C., Freitas, H.R., da Cunha, J.D., Francisco, K.R., Sapalalo, P., Tchicondingosse, L., Balogun, O.O., Aiga, H. and Takehara, K., 2022. The RE-AIM framework-based evaluation of the implementation of the Maternal and Child Health Handbook program in Angola: a mixed methods study. BMC Health Services Research, 22(1). https://doi.org/10.1186/s12913-022-08454-9.

Azam, S., Mehrotra, M., Yoshida, N., Dhawan, A., Shalaby, Y., Radwan, E., Orin, M., Al-Chetachi, W., Krivova, A., Tazrin, T., Badran, H., Fathima, N., Bhuiyan, S. and Bhuiyan, S., 2023. A global perspective of the role of the maternal and child health handbook in health promotion: Narrative synthesis Research Paper. IHTP, 3(2), pp.170–187.

Bachiri, M., Idri, A., Fernández-Alemán, J.L. and Toval, A., 2016. Mobile personal health records for pregnancy monitoring functionalities:

Analysis and potential. Computer Methods and Programs in Biomedicine, 134, pp.121–135. https://doi.org/10.1016/j.cmpb.2016.06.008.

Balogun, O.O., Aoki, A., Tomo, C.K., Mochida, K., Fukushima, S., Mikami, M., Sadamori, T., Kuramata, M., Freitas, H.R., Sapalalo, P., Tchicondingosse, L., Mori, R., Aiga, H., Francisco, K.R. and Takehara, K., 2023. Effectiveness of the maternal and child health handbook for improving continuum of care and other maternal and child health indicators: A cluster randomized controlled trial in Angola. Journal of Global Health, 13. https://doi.org/10.7189/jogh.13.04022.

Bhuiyan, S., Hattori, T., Toda, A., Mulati, E., Hermawan, L., Pritasari, K., Bardosono, S. and Kosen, S., 2017. Maternal and Child Health (MCH) Handbook and Its Effect on Maternal and Child Health Care: A Systematic Review and Meta-Analysis. Journal of Community Medicine & Public Health, 1(2). https://doi.org/10.29011/2577-2228.100009.

Ernsting, C., Dombrowski, S.U., Oedekoven, M., O´Sullivan, J.L., Kanzler, M., Kuhlmey, A. and Gellert, P., 2017. Using Smartphones and Health Apps to Change and Manage Health Behaviors: A Population-Based Survey. Journal of Medical Internet Research, 19(4), p.e101. https://doi.org/10.2196/jmir.6838.

Frankham, L.J., Thorsteinsson, E.B. and Bartik, W., 2024. Childbirth self-efficacy and birth related PTSD symptoms: an online childbirth education randomised controlled trial for mothers. BMC Pregnancy and Childbirth, 24(1). https://doi.org/10.1186/s12884-024-06873-6.

Ijang, Y.P., Cumber, S.N.N., Nkfusai, C.N., Venyuy, M.A., Bede, F. and Tebeu, P.M., 2019. Awareness and practice of birth preparedness and complication readiness among pregnant women in the Bamenda Health District, Cameroon. BMC Pregnancy and Childbirth, 19(1). https://doi.org/10.1186/s12884-019-2511-4.

Kaur, J., Upendra, S. and Barde, S., 2023. Effect of Digital applications on maternal as well as neonatal outcomes in Young pregnant girls: A Scope Review. Investigacion y Educacion en Enfermeria, 41(3). https://doi.org/10.17533/udea.iee.v41n3e07.

Khademioore, S., Ebrahimi, E., Khosravi, A. and Movahedi, S., 2023. The effect of an mHealth application based on continuous support and education on fear of childbirth, self-efficacy, and birth mode in primiparous women: A randomized controlled trial. PLoS ONE, 18(11 NOVEMBER). https://doi.org/10.1371/journal.pone.0293815.

Krebs, P. and Duncan, D.T., 2015. Health App Use Among US Mobile Phone Owners: A

National Survey. JMIR mHealth and uHealth, 3(4), p.e101. https://doi.org/10.2196/mhealth.4924.

Lassi, Z.S., Fisher, Z., Andraweera, P., Cummins, A. and Roberts, C.T., 2019. Effectiveness of birthing kits for clean childbirth: A systematic review. International Health, https://doi.org/10.1093/inthealth/ihz022.

Ledford, C.J.W., Canzona, M.R., Cafferty, L.A. and Hodge, J.A., 2015. Mobile application as a prenatal education and engagement tool: A randomized controlled pilot. [online] Available at: <https://www.elsevier.com/open-access/userlicense/1.0/>.

Lee, Y. and Moon, M., 2016. Utilization and Content Evaluation of Mobile Applications for Pregnancy, Birth, and Child Care. Healthcare Informatics Research, 22(2), p.73. https://doi.org/10.4258/hir.2016.22.2.73.

Mayasari, S.I. and Jayanti, N.D., 2020. Family-centered maternity care mobile application to increase the readiness of pregnant women in facing a high-risk childbirth. MEDISAINS, 18(3), p.103. https://doi.org/10.30595/medisains.v18i3.8419.

Ministry of Health of the Republic of Indonesia, 2025. Indonesia Health Profile 2024. Ministry of Health of the Republic of Indonesia.

Mohaghegh, Z., Javadnoori, M., Najafian, M., Abedi, P., Kazemnejad Leyli, E., Montazeri, S. and Bakhtiari, S., 2023. Effect of birth plans integrated into childbirth preparation classes on maternal and neonatal outcomes of Iranian women: A randomized controlled trial. Frontiers in Global Women's Health, 4. https://doi.org/10.3389/fgwh.2023.1120335.

Mohamed, H., Ismail, A., Sutan, R., Rahman, R.A. and Juval, K., 2023. A Scoping Review of Digital Technologies in Antenatal Care: Recent Progress and Applications of Digital Technologies. https://doi.org/10.21203/rs.3.rs-3492596/v1.

Mori, R., Yonemoto, N., Noma, H., Ochirbat, T., Barber, E., Soyolgerel, G., Nakamura, Y. and Lkhagvasuren, O., 2015. The Maternal and Child Health (MCH) handbook in Mongolia:A cluster-randomized, controlled trial. PLoS ONE, 10(4). https://doi.org/10.1371/journal.pone.0119772.

Nishimura, E., Rahman, M.O., Ota, E., Toyama, N. and Nakamura, Y., 2023. Role of Maternal and Child Health Handbook on Improving Maternal, Newborn, and Child Health Outcomes: A Systematic Review and Meta-Analysis. Children, https://doi.org/10.3390/children10030435.

Osaki, K., Hattori, T., Toda, A., Mulati, E., Hermawan, L., Pritasari, K., Bardosono, S. and Kosen, S., 2019. Maternal and Child Health

Handbook use for maternal and child care: A cluster randomized controlled study in rural Java, Indonesia. Journal of Public Health (United Kingdom), 41(1), pp.170–182. https://doi.org/10.1093/pubmed/fdx175.

Savitri, W., Baskah, D.Y. and Nugraheni, D.E., 2024. The Effect of the BIDAN-KU Application on Childbirth Preparation in Third Trimester Pregnant Women Regarding Anxiety in Facing Childbirth at Midwife Practices in Bengkulu City in 2023. Journal of Noursing and Public Health (JNPH), [online] 12(2), pp.359–365. Available at: <https://jurnal.unived.ac.id/index.php/jnph/article/view/7358> [Accessed 9 February 2025].

Smeele, P., Kalisa, R., van Elteren, M., van Roosmalen, J. and van den Akker, T., 2018. Birth preparedness and complication readiness among pregnant women admitted in a rural hospital in Rwanda. BMC Pregnancy and Childbirth, 18(1). https://doi.org/10.1186/s12884-018-1818-x.

Souza, F.M. de L.C., Dos Santos, W.N., da Costa Santos, R.S., da Silva, V.L.M., de Abrantes, R.M., Soares, V.F.R. and da Silva, R.A.R., 2021. Effectiveness of mobile applications in pregnant women's adherence to prenatal consultations: randomized clinical trial. Revista Brasileira de Enfermagem, 74. https://doi.org/10.1590/0034-7167-2019-0599.

Sugiarti, S., Rustina, Y. and Efendi, D., 2020. Increasing the Knowledge and Confidence of Mothers in Caring for Low Birth Weight Babies Through Education from the Maternal and Child Health Handbook. Jurnal Keperawatan Soedirman, 15(2). https://doi.org/10.20884/1.jks.2020.15.2.1160.

Tobe, R.G., Haque, S.E., Mubassara, S., Rahman, R., Ikegami, K. and Mori, R., 2022. Maternal and child health handbook to improve continuum of maternal and child care in rural Bangladesh: Findings of a cluster randomized controlled trial. PLoS ONE, 17(4 April). https://doi.org/10.1371/journal.pone.0266074.

Triastin, S.A., 2022. Pengaruh Media Edukasi Persiapan Persalinan Mattampu'' Terhadap Pengetahuan Ibu Hamil. Hasanuddin University.

Withers, M., Kharazmi, N. and Lim, E., 2018. Traditional beliefs and practices in pregnancy, childbirth and postpartum: A review of the evidence from Asian countries. Midwifery, 56, pp.158–170. https://doi.org/10.1016/j.midw.2017.10.019.

Zhou, N., Wu, D., Liu, M., Hu, S., Zhang, F., Zan, Y. and Sun, F., 2025. The mediating role of self-efficacy in the relationship between eHealth literacy and childbirth readiness among pregnant women: a cross-sectional study. Frontiers in Public Health, 13.

Available Online at https://journal.ibrahimy.ac.id/index.php/oksitosin
p-ISSN: 2354-9653| e-ISSN: 2597-6524

https://doi.org/10.3389/fpubh.20 25.1561855.

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