International Journal Of Health, Engineering And Technology (IJHET) E-ISSN 2829 - 8683
Volume 5, Number 1, May 2026, *Page. 128 - 137*
Email : editorijhess@gmail.com

Student Knowledge Of Antenatal Care Services For Third-Trimester Pregnant Women

Andi Husna[1)], Dwi Noerjoedianto[2)], Budi Aswin[3)], M. Ridwan[4)], Ashar Nuzulul Putra[5]**
[1)] Public Health Study Program, Faculty of Medicine and Health Sciences, Universitas Jambi, Indonesia
[2,3,4,5)] Faculty of Medicine and Health Sciences, Universitas Jambi, Indonesia

*Corresponding Author
Email : andihusna10@gmail.com

Abstract

Antenatal care (ANC) is a key maternal health service that supports monitoring of maternal and fetal conditions, early detection of complications, health education, and preparation for safe delivery. The third trimester is a critical period because the need for monitoring increases near childbirth. This study aimed to describe the knowledge of public health students regarding ANC services for third-trimester pregnant women. A quantitative descriptive study with a cross-sectional approach was conducted at Universitas Jambi from February to March 2026. A total of 100 public health students were selected using purposive sampling. Data were collected using a validated 17-item questionnaire covering ANC definition, aims and benefits, visit frequency, service components, and danger signs. The instrument showed acceptable reliability with Cronbach's Alpha of 0.724. Data were analyzed using univariate analysis. Most respondents had good knowledge (65.0%), followed by moderate knowledge (31.0%) and poor knowledge (4.0%). The highest correct responses were found in aims and benefits, while the lowest were related to visit frequency. Strengthening technical and applied learning is needed to improve student competence.

Keywords: Antenatal Care, Knowledge, Public Health Students, Third Trimester, Maternal Health.

INTRODUCTION

Maternal health remains an important public health priority because pregnancy and childbirth may be accompanied by risks that threaten the wellbeing of mothers and infants. Globally, maternal mortality remains a concern, and regional maternal health data also show that continued prevention and early detection are needed in Jambi Province (World Health Organization, 2025; Dinas Kesehatan Provinsi Jambi, 2024). Although pregnancy is a physiological process, changes in the body during pregnancy require regular monitoring so that risk factors can be detected early and managed appropriately. Antenatal care (ANC) is therefore essential as a promotive, preventive, and monitoring service during pregnancy (World Health Organization, 2016; Kementerian Kesehatan Republik Indonesia, 2021).

The World Health Organization emphasizes that antenatal care should help women achieve a positive pregnancy experience. This means that ANC should support survival and health while also respecting dignity, providing relevant information, and building trust between pregnant women and health providers. The WHO model recommends more frequent contacts during pregnancy to improve communication, risk detection, and continuity of care (World Health Organization, 2016; Tunçalp et al., 2017).

In Indonesia, maternal health services are regulated through national policies that require a minimum number of pregnancy visits. The Ministry of Health states that antenatal services should be carried out at least six times during pregnancy, with one visit in the first trimester, one visit in the second trimester, and four visits in the third trimester. This policy shows that the third trimester requires closer attention because childbirth is approaching and complications may occur (Kementerian Kesehatan Republik Indonesia, 2021).

The third trimester is a period in which the mother approaches childbirth and the fetus experiences rapid growth. During this stage, pregnant women may experience physiological discomfort such as back pain, frequent urination, edema, and fatigue. However, some symptoms may also indicate serious complications, including bleeding, severe headache, visual disturbances,

decreased fetal movement, or premature rupture of membranes. The Maternal and Child Health Book emphasizes the importance of recognizing danger signs and seeking care immediately when warning symptoms appear (Kementerian Kesehatan Republik Indonesia, 2024).

Public health students are a relevant group to study in relation to ANC knowledge. They are expected to understand basic maternal and child health issues and may later participate in health education, health promotion, community empowerment, and program planning. In families and communities, students can also function as informal sources of health information, especially when they have adequate knowledge and communication skills (Setyoko, 2020; Veriza et al., 2024).

Knowledge is an essential domain in the formation of attitudes and behavior. In the context of maternal health, knowledge of ANC includes understanding the definition, objectives, benefits, visit schedules, service components, and danger signs in pregnancy. Conceptual knowledge helps students understand why ANC is important, while technical knowledge helps them explain how services should be used according to current guidance (Notoatmodjo, 2018).

Preliminary evidence from the present study shows that students tend to have high conceptual knowledge but lower technical understanding, especially regarding ANC visit frequency in the third trimester. This gap is important because technical details are needed for accurate health education. If future health educators do not understand visit schedules and service standards, the health messages delivered to the community may be incomplete (Inayah & Fitriahadi, 2019; Nugrawati et al., 2023).

The novelty of this study lies in its specific focus on public health students' knowledge of ANC for third-trimester pregnant women and the comparison between conceptual and technical indicators of knowledge. Many studies on ANC focus on pregnant women, husbands, or health service coverage. This study places students as the subject of analysis because they represent a future public health workforce and a potential channel for community education. By identifying which indicators are strong and which are weak, this study provides practical input for curriculum improvement, learning methods, and maternal health promotion activities on campus.

Based on the background above, this study aimed to describe the knowledge of public health students regarding antenatal care services for third-trimester pregnant women. The study also aimed to identify knowledge indicators that require strengthening so that students can develop a more comprehensive and applicable understanding of maternal health services.

RESEARCH METHODS

This study used a quantitative descriptive design with a cross-sectional approach. A descriptive design was selected because the objective of the study was to describe the distribution of students' knowledge regarding ANC services for third-trimester pregnant women, not to test causal relationships among variables. The cross-sectional approach was appropriate because data were collected at one point in time (Notoatmodjo, 2018; Sugiyono, 2019).

The research was conducted at the Public Health Study Program, Faculty of Medicine and Health Sciences, Universitas Jambi, from February to March 2026. The population in this study was public health students at Universitas Jambi. The sample consisted of 100 students who met the inclusion criteria and agreed to participate. Respondents were selected using purposive sampling, which is suitable when participants are chosen based on characteristics relevant to the research objective (Nursalam, 2020; Sugiyono, 2019).

The research variable was students' knowledge of antenatal care services for third-trimester pregnant women. Knowledge was measured using a structured questionnaire consisting of 17 items. The questionnaire covered five main indicators: the definition of ANC, aims and benefits of ANC, visit schedule or frequency, service components, and danger signs in third-trimester pregnancy. These indicators were chosen because they represent both conceptual and technical aspects of ANC

knowledge. Conceptual indicators describe general understanding, while technical indicators describe practical knowledge needed for correct health education.

Before data collection, the instrument was tested for validity and reliability. The reliability test produced a Cronbach's Alpha value of 0.724, indicating acceptable internal consistency. The questionnaire was administered to respondents after they received information about the purpose of the study. Participation was voluntary and data were used only for research purposes.

Data processing involved editing, coding, data entry, and cleaning to ensure completeness and accuracy. Data were analyzed using univariate analysis. The results were presented in frequency distributions and percentages. Knowledge levels were categorized into good, moderate, and poor based on the respondents' scores. Indicator-based analysis was also conducted to identify which parts of ANC knowledge were well understood and which parts required further strengthening.

Ethical principles were applied throughout the study. Respondents were informed about the objectives of the research before completing the questionnaire. Participation was voluntary, and respondents' identities were kept confidential. The collected data were used only for research purposes.

RESULTS AND DISCUSSION

The study involved 100 public health students as respondents. The findings showed that most respondents had good knowledge of antenatal care services for third-trimester pregnant women. This result suggests that students generally understand the basic importance of ANC in supporting maternal and fetal health. However, the distribution of knowledge levels also shows that not all students have the same level of understanding. A proportion of students still had moderate and poor knowledge, indicating that educational strengthening remains necessary.

The distribution of respondents based on knowledge level is presented in Table 1. The table shows that good knowledge was the most frequent category, followed by moderate knowledge and poor knowledge. Although the percentage of poor knowledge was small, it should not be ignored because students are expected to have adequate understanding of maternal health services. In public health education, even a small knowledge gap can affect the quality of information delivered to the community if students later become educators or program implementers.

Table 1. Distribution of Student Knowledge Levels

Knowledge category	Frequency	Percentage
Good	65	65.0%
Moderate	31	31.0%
Poor	4	4.0%
Total	100	100.0%

Source: Primary data analysis, 2026

The finding that most students were in the good knowledge category reflects the contribution of academic exposure and access to health information. Students in a public health study program are familiar with health promotion concepts, prevention strategies, and the importance of maternal and child health. These learning experiences may help explain why many respondents were able to answer questions about the definition, objectives, and benefits of ANC correctly. In addition, students have access to information from lectures, textbooks, scientific articles, online media, and discussions with peers or lecturers.

Nevertheless, the presence of moderate and poor knowledge categories suggests that learning outcomes are not uniform. Differences in individual interest, learning habits, exposure to maternal health topics, and practical experience may influence knowledge. Students who have not taken specific maternal and child health courses, or who have limited exposure to field practice, may have less detailed understanding of ANC. Therefore, knowledge improvement should not only focus on

delivering information, but also on ensuring that students can connect information with practical situations.

Indicator-based analysis provides a clearer picture of the strengths and weaknesses of student knowledge. The highest correct-answer percentages were found in the aims and benefits of ANC and the definition of ANC. This means that students generally understand ANC as a service intended to monitor pregnancy, prevent complications, and support safe delivery. These conceptual aspects are commonly emphasized in lectures and general health education materials, making them easier for students to recall.

The lowest percentage was found in the visit frequency indicator. This result indicates that technical knowledge about the number and timing of ANC visits remains limited. Technical knowledge is often more difficult to remember because it involves specific guidelines and numerical details. However, this information is essential because ANC recommendations are used to guide pregnant women and families in planning regular visits. If students do not understand visit schedules correctly, they may be unable to provide accurate advice when asked by community members.

Table 2. Correct Answers Based on Knowledge Indicators

Indicator	Correct answer percentage	Interpretation
Definition of ANC	98.0%	Very high conceptual understanding
Aims and benefits of ANC	99.7%	Very high conceptual understanding
Visit frequency	44.7%	Low technical understanding
Service components	86.9%	High understanding
Danger signs	71.7%	Moderate to high understanding

Source: Primary data analysis, 2026

The contrast between high conceptual knowledge and lower technical knowledge is an important finding. Conceptual knowledge answers the question of why ANC is needed, while technical knowledge answers the question of how ANC should be carried out according to guidelines. Public health students require both forms of knowledge because community health education should be accurate, practical, and consistent with official recommendations (World Health Organization, 2016; Kementerian Kesehatan Republik Indonesia, 2021).

The low score on visit frequency may be related to changes or differences in ANC recommendations. International guidance and national policy may use different terms such as contacts, visits, K4, and K6. Students may understand that ANC should be performed regularly, but may be confused about the exact number and distribution of visits. This interpretation is consistent with previous studies showing that knowledge about ANC visit schedules and regularity of ANC visits is often lower than general knowledge about ANC benefits (Junga et al., 2017; Inayah & Fitriahadi, 2019; Nugrawati et al., 2023).

Knowledge of service components was relatively high. This indicates that many students are able to recognize the elements included in ANC services, such as measurement of body weight, blood pressure, nutritional status assessment, fundal height measurement, fetal presentation and fetal heart rate examination, tetanus immunization status screening, iron supplementation, laboratory examination, case management, and counseling. These components are important because ANC quality depends not only on the number of visits, but also on the completeness of services provided (Aisyah et al., 2017; Widyastuti & Dafroyati, 2021).

The danger sign indicator showed a moderate to high percentage of correct answers. This result is encouraging, but still needs improvement because danger signs are closely related to emergency decision-making. In third-trimester pregnancy, symptoms such as bleeding, severe headache, blurred

vision, swelling of the face or hands, fever, and reduced fetal movement should be understood as warning signs that require immediate attention (Kementerian Kesehatan Republik Indonesia, 2024).

The findings of this study are consistent with the idea that students often master information that is frequently repeated in class but may have difficulty remembering practical details that require application. Maternal health learning should therefore move beyond lectures. Case-based learning can help students apply ANC guidelines to realistic situations, such as determining whether a pregnant woman has completed the recommended number of visits or identifying danger signs that require referral (Lattof et al., 2020).

Field exposure is another important strategy. When students interact with health workers or observe maternal health services at community health centers, they can connect theoretical concepts with service realities. This experience may improve retention of technical information because students see how visit schedules, counseling, danger sign screening, and 10T components are applied in actual services (Harfiani et al., 2019).

The role of students as potential health educators also needs emphasis. Public health students may later work in health promotion, epidemiology, community empowerment, health administration, or maternal and child health programs. In all of these roles, clear communication of health information is essential. ANC knowledge is not only useful for clinical settings but also for community education, campaign planning, development of educational media, and support for pregnant women in families or neighborhoods. Therefore, strengthening ANC knowledge among students has broader public health value.

The study also has implications for curriculum development. Maternal and child health topics should be designed to balance conceptual learning and technical competence. Lecturers can use short quizzes on current ANC guidelines, structured case discussions, role-play counseling, and field assignments to help students master technical details. Such learning strategies are important because health education in the community requires both correct information and the ability to communicate it clearly (Setyoko, 2020; Veriza et al., 2024).

Another implication is the importance of integrating evidence-based guidelines into student learning. Students should be encouraged to read official sources from WHO and the Ministry of Health, not only secondary summaries. This will help them understand the rationale behind ANC recommendations and reduce confusion between different standards. Guideline literacy is an important competence for public health students because they will need to interpret policies, adapt messages to community needs, and ensure that health education remains accurate.

A small proportion of respondents had poor knowledge. Although the number was limited, educational institutions should identify whether these students have limited exposure to maternal health topics or other learning barriers. Remedial learning, peer tutoring, and accessible learning modules may help reduce knowledge gaps and ensure that all students achieve basic competency in maternal health education (Notoatmodjo, 2018).

The results also highlight the importance of measuring knowledge by indicators rather than only by total scores. A total score may suggest that knowledge is generally good, but indicator analysis can reveal hidden weaknesses. In this study, the overall result was good, but the visit frequency indicator was low. Without indicator analysis, this weakness might be overlooked. Therefore, future evaluations of student knowledge should include detailed indicator-based reporting so that educational interventions can be more targeted.

Practically, the findings suggest that maternal health learning should not only emphasize definitions and benefits of ANC, but also strengthen students' ability to explain visit schedules, service standards, and danger signs. This is important because public health students may later become health educators in community-based maternal health programs.

This study has several limitations. First, the design was descriptive and cross-sectional, so it cannot explain causal relationships between factors and knowledge levels. Second, the sample was limited to public health students at one university, so the findings may not represent students from other institutions or study programs. Third, data were collected using a questionnaire, which measures knowledge but does not directly assess behavior, counseling ability, or practical skills. Despite these limitations, the study provides useful information about specific ANC knowledge gaps among students.

Future research can develop this study by using analytical designs to examine factors associated with knowledge, such as semester level, course exposure, access to information, or field practice experience. Intervention studies can also be conducted to test whether simulation, case-based learning, or guideline-based modules improve technical knowledge of ANC. In addition, qualitative research may explore why students find visit frequency difficult to understand and what learning strategies they consider most helpful. These future directions can support more effective maternal health education in higher education settings.

Overall, the results show that public health students have a promising foundation for understanding ANC, particularly in conceptual aspects. However, technical knowledge must be strengthened to ensure that students can provide accurate and practical health information. The main educational challenge is not only to increase the overall score, but also to close the gap between general understanding and mastery of guideline-based information (World Health Organization, 2016; Kementerian Kesehatan Republik Indonesia, 2021).

Student knowledge regarding ANC must also be interpreted in relation to the broader goal of maternal health promotion. Public health education does not prepare students to conduct clinical examinations in the same way as midwives or physicians, but it prepares them to communicate risks, encourage appropriate health-seeking behavior, and support preventive actions. For that reason, students need to understand the content of ANC services sufficiently to explain why pregnant women should attend visits, what services should be expected, and what signs require urgent referral. This ability is particularly important in communities where family members and peers influence decisions about pregnancy care.

The finding on ANC aims and benefits shows that respondents had a strong understanding of the purpose of ANC. This can be considered a positive result because knowledge of benefits is often the first step toward developing supportive attitudes. If students understand that ANC can reduce preventable complications through early detection and counseling, they are more likely to value maternal health programs. Nevertheless, benefit-oriented knowledge should be linked with actionable messages. Students should be able to translate the general statement that ANC is important into more concrete advice, such as attending visits according to trimester, bringing the maternal health book, and following recommendations from health workers.

The high score on the definition of ANC indicates that most students can identify ANC as a service delivered during pregnancy. However, a definition alone is not enough to guarantee meaningful understanding. In health education practice, the definition must be connected with the continuum of care, including pregnancy, delivery, postpartum, and newborn care. Students should be trained to see ANC as an entry point for comprehensive maternal and child health services. This perspective will help them understand that ANC is not an isolated activity but part of a larger system of prevention, referral, and family preparedness.

The visit frequency indicator is the most important weakness found in this study. The low result may reflect limited emphasis on numerical service standards in the learning process. Students may remember that ANC should be regular, but may not remember how many times it should be carried out and how the visits are distributed across trimesters. This is important because Indonesian

policy requires at least six visits, including four visits in the third trimester (Kementerian Kesehatan Republik Indonesia, 2021).

Another possible explanation for the low visit frequency score is the existence of multiple terms used in maternal health programs. Students may encounter terms such as ANC contact, K1, K4, K6, complete ANC, and trimester visits. Without clear explanation, these terms may be confusing. Therefore, teaching materials should explicitly define each term and explain how it is used in policy and practice. For example, K1 refers to the first pregnancy visit, while K4 and K6 refer to coverage indicators with specific minimum visit requirements. Understanding these terms is essential for public health students who may later read program reports or monitor service coverage.

The service component indicator was relatively strong, suggesting that respondents were familiar with the elements of ANC. This is important because the quality of ANC depends on the completeness of services. A pregnant woman may attend the required number of visits, but if important components are not provided, the protective function of ANC becomes weaker. Therefore, knowledge of the 10T standard remains essential in maternal health education (Aisyah et al., 2017; Widyastuti & Dafroyati, 2021).

Counseling is one component of ANC that is highly relevant to public health students. Through counseling, health workers provide information about nutrition, danger signs, birth preparedness, breastfeeding, family support, and postpartum care. Students who understand the counseling component can help reinforce these messages in community settings. They can also contribute to the development of educational media, such as leaflets, posters, social media content, and group discussion materials. Therefore, ANC knowledge should be linked with communication skills and health promotion methods.

The danger signs indicator requires special attention because it is directly related to emergency response. In many maternal health problems, delays may occur at the level of recognizing danger, deciding to seek care, reaching a facility, or receiving adequate treatment. Students can help address the first delay by improving community awareness of warning signs in late pregnancy (Kementerian Kesehatan Republik Indonesia, 2024).

The study findings also show the importance of family and community context in ANC utilization. Although this research measured student knowledge, the ultimate public health relevance lies in how knowledge may be transferred to the community. Pregnant women often rely on support from husbands, parents, in-laws, or other family members to attend health services. Students who understand ANC can become advocates within their own families and social networks. This is especially useful in settings where misconceptions, fear, transportation barriers, or low perceived risk may reduce ANC attendance.

From the perspective of educational evaluation, the questionnaire results provide useful feedback for lecturers and curriculum planners. Topics with high correct responses may require maintenance, while topics with low correct responses require reinforcement. For instance, learning sessions on ANC can begin with conceptual foundations and then move to technical guidelines using interactive methods. Lecturers can ask students to arrange ANC visit schedules by trimester, identify missing components in a simulated ANC record, or respond to a case of a pregnant woman with danger signs. These activities encourage application rather than passive memorization.

Case-based learning is particularly suitable for addressing the knowledge gap identified in this study. A case scenario might describe a pregnant woman at 32 weeks of gestation who has attended only two visits and reports swelling and headache. Students can be asked to identify whether the visit schedule is adequate, what danger signs are present, what advice should be given, and what referral action is needed. Through this process, students practice integrating visit frequency, service components, and danger signs. This type of learning can make technical knowledge more meaningful.

Simulation-based learning can also be used to improve student confidence in delivering health education. Even if students are not performing clinical procedures, they can simulate counseling sessions. One student can act as a health educator and another as a pregnant woman or family member. The educator must explain the importance of third-trimester ANC, the number of recommended visits, the services received, and danger signs. Feedback from lecturers and peers can improve accuracy, clarity, and empathy in communication. This approach is consistent with the goal of preparing students as future health promoters.

Digital learning resources may further support the improvement of technical knowledge. Short videos, infographics, and online quizzes can be designed to summarize ANC standards. Because students frequently use digital platforms, these resources can increase engagement and repetition. However, digital materials should be based on official guidelines to prevent misinformation. Public health programs can also encourage students to critically evaluate online maternal health information, distinguishing between credible sources and unsupported claims. This skill is important because community members may ask questions based on information obtained from social media.

The implications of this study extend to community service programs conducted by universities. Maternal health education can be included in student community service activities, especially in villages or urban neighborhoods with pregnant women groups. Before conducting education, students should receive briefing on ANC standards and danger signs. This ensures that messages delivered to the public are accurate. Community service can then become a two-way learning process: communities receive useful information, while students strengthen their applied understanding through real interaction.

The study also highlights the value of collaboration between academic institutions and health facilities. Community health centers, midwives, and maternal health program managers can provide practical input to students. Guest lectures or field visits can expose students to real ANC service flows, documentation, and challenges in reaching pregnant women. Such collaboration may help students understand that maternal health programs involve coordination between individuals, families, health workers, and health systems. This broader understanding is important for public health practice.

In terms of research contribution, this study provides a student-centered perspective on ANC knowledge. Many maternal health studies focus on pregnant women as service users, which is essential. However, studying students is also important because they represent a future workforce and a group with potential influence in health communication. This study therefore contributes to maternal health education by highlighting the need to strengthen technical knowledge among public health students (Inayah & Fitriahadi, 2019; Nugrawati et al., 2023).

The interpretation of good knowledge should therefore be cautious. A good total score does not mean that every component has been mastered. In the present study, the high overall knowledge level coexisted with a low visit frequency score. This suggests that educational decisions should be based on detailed findings, not only on total categories. If curriculum planners only see that most students are in the good category, they may assume that no intervention is needed. Indicator analysis shows that targeted strengthening remains necessary.

The practical recommendation from this study is that ANC learning should be structured around competencies. Students should be expected to explain the concept of ANC, identify the recommended visit schedule, mention essential service components, recognize danger signs, and communicate appropriate advice. These competencies can be assessed through written tests, oral presentations, case analysis, and health education simulations. A competency-based approach can ensure that students are not only able to answer theoretical questions but also able to use knowledge in realistic situations.

Finally, maternal health knowledge among students should be maintained through continuous exposure. Knowledge may decline if it is not used or updated. Therefore, maternal health topics should

not appear only once in the curriculum. They can be integrated into courses on health promotion, epidemiology, health policy, community diagnosis, and program planning. Repeated exposure from different perspectives can help students develop stronger and more durable understanding. This approach is particularly important for ANC because recommendations involve both clinical and public health dimensions.

CONCLUSION

Public health students at Universitas Jambi generally had good knowledge of antenatal care services for third-trimester pregnant women, especially in conceptual aspects such as the definition, aims, and benefits of ANC. However, technical knowledge related to visit frequency and practical implementation still needs strengthening. The findings indicate that learning strategies should place greater emphasis on guideline-based understanding, case-based discussion, simulation, and field exposure. Strengthening these aspects is expected to improve students' ability to communicate accurate maternal health information and contribute to ANC promotion in the community.

REFERENCES

Aisyah, R.D., Suparni, & Susiatmi, S.A. (2017). Evaluasi Pelaksanaan Standar 10T Dalam Pelayanan Antenatal Terpadu. Jurnal Kebidanan. 9(1):74-81.

Dinas Kesehatan Provinsi Jambi. (2024). Laporan Kinerja Dinas Kesehatan Provinsi Jambi Tahun 2023. Jambi: Dinas Kesehatan Provinsi Jambi.

Harfiani, E., Amalia, M. & Chairani, A. (2019). Peningkatan Peran Antenatal Care (ANC) Dan Pemanfaatan TOGA Dalam Kehamilan Di Puskesmas Sawangan Depok. Jurnal Pengabdian Pada Masyarakat. 4(4):501-508.

Inayah, N. & Fitriahadi, E. (2019). Hubungan Pendidikan, Pekerjaan Dan Dukungan Suami Terhadap Keteraturan Kunjungan ANC Pada Ibu Hamil Trimester III. JHeS (Journal of Health Studies). 3(1):64-70.

Junga, M.R., Pondaag, L. & Kundre, R. (2017). Faktor-Faktor Yang Berhubungan Dengan Keteraturan Pemeriksaan Antenatal Care (ANC) Ibu Hamil Trimester III Di Puskesmas Ranotana Weru Kota Manado. Jurnal Keperawatan. 5(1):1-9.

Kementerian Kesehatan Republik Indonesia. (2021). Peraturan Menteri Kesehatan Republik Indonesia Nomor 21 Tahun 2021 Tentang Penyelenggaraan Pelayanan Kesehatan Masa Sebelum Hamil, Masa Hamil, Persalinan, Dan Masa Sesudah Melahirkan, Pelayanan Kontrasepsi, Dan Pelayanan Kesehatan Seksual. Jakarta: Kementerian Kesehatan Republik Indonesia.

Kementerian Kesehatan Republik Indonesia. (2024). Buku KIA 2024. Jakarta: Kementerian Kesehatan Republik Indonesia.

Lattof, S.R., Moran, A.C., Kidula, N., Moller, A.B., Jayathilaka, C.A., Diaz, T. & Tunçalp, O. (2020). Implementation of The New WHO Antenatal Care Model For A Positive Pregnancy Experience: A Monitoring Framework. BMJ Global Health. 5(6):e002605.

Notoatmodjo, S. (2018). Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta.

Nugrawati, L., Harismayanti, & Retni, A. (2023). Hubungan Pengetahuan Ibu Hamil Tentang Tanda Bahaya Kehamilan Dengan Jumlah Kunjungan Pemeriksaan Antenatal Care (ANC) Di Puskesmas Limboto Kabupaten Gorontalo. Journal of Educational Innovation and Public Health. 1(2):34-43.

Nursalam. (2020). Metodologi Penelitian Ilmu Keperawatan: Pendekatan Praktis. Jakarta: Salemba Medika.

Setyoko, J. (2020). Gerakan Mahasiswa Sebagai Agen Perubahan Sosial Di Kabupaten Bungo. Jurnal Politik dan Pemerintahan Daerah. 2(1):12-24.

Sugiyono. (2019). Metode Penelitian Kuantitatif, Kualitatif, Dan R&D. Bandung: Alfabeta.

Tunçalp, Ö., Pena-Rosas, J.P., Lawrie, T., Bucagu, M., Oladapo, O.T., Portela, A. & Metin Gülmezoglu, A. (2017). WHO Recommendations On Antenatal Care For A Positive Pregnancy Experience-Going Beyond Survival. BJOG: An International Journal of Obstetrics and Gynaecology. 124(6):860-862.

Veriza, E., Oktiningrum, M. & Vallen, N. (2024). Pengetahuan Dan Keterampilan Siswa Dalam Mendeteksi Risiko Tanda Dan Gejala Kanker Payudara Di SMA Se-Kota Jambi. Jurnal Riset Ilmu Kesehatan Umum. 2(1):1-12.

Widyastuti, R. & Dafroyati, Y. (2021). Penerapan Komponen Pelayanan Antenatal Care (10T) Dengan Kunjungan Ibu Hamil (K4) Di Puskesmas. Jurnal Kesehatan Primer. 6(2):54-62.

World Health Organization. (2016). WHO Recommendations On Antenatal Care For A Positive Pregnancy Experience. Geneva: World Health Organization.

World Health Organization. (2025). Maternal Mortality. Geneva: World Health Organization.