International Journal of Advanced Health Science and Technology e-ISSN:2808-6422; p-ISSN:2829-3037
Homepage: ijahst.org Vol. 4 no.3, pp. 127-132, June 2024
RESEARCH ARTICLE OPEN ACCESS
Manuscript received June 6, 2024; revised June 17, 2024; accepted June 17, 2024; date of publication June 30, 2024
Digital Object Identifier (DOI): https://doi.org/10.35882/ijahst.v4i3.341

How to cite: Dwi Yuniarti, Agung Suharto, Nuryani, and Triana Septianti, "Factors Influencing Integrated Antenatal Care Uptake: A Study of Knowledge and Motivation Among Pregnant Women at UPTD Puskesmas Plaosan, Indonesia", International Journal of Advanced Health Science and Technology, vol. 4, no.3, pp. 127 - 132, June, 2024

Factors Influencing Integrated Antenatal Care Uptake: A Study of Knowledge and Motivation Among Pregnant Women at UPTD Puskesmas Plaosan, Indonesia

Dwi Yuniarti, Agung Suharto, Nuryani, and Triana Septianti

Department of Midwifery, Health Polytechnic Ministry of Health Surabaya, Surabaya, Indonesia

Corresponding author: Dwi Yuniarti (e-mail: yuniartid674@gmail.com)

ABSTRACT Indonesia continues to face high maternal and infant mortality rates, largely due to complications during pregnancy that are not promptly identified and addressed. Despite efforts to improve maternal healthcare, the coverage of Integrated Antenatal Care (ANC) visits particularly K1, K4, and K6 remains suboptimal in many regions, including the UPTD Puskesmas Plaosan. This study was conducted to examine the relationship between knowledge and motivation of pregnant women and their participation in Integrated ANC services. Understanding these factors is critical in developing effective strategies to enhance ANC utilization and improve maternal outcomes.A cross-sectional analytic survey design was used, involving 37 pregnant women selected through purposive sampling. Data were collected using validated and reliable questionnaires measuring knowledge, motivation, and ANC implementation. Statistical analysis was performed using the chi-square test with a significance level of $p < 0.05$. The findings revealed a significant relationship between knowledge and Integrated ANC implementation ($p = 0.014$), as well as between motivation and ANC implementation ($p = 0.001$). Most respondents demonstrated moderate knowledge (56.8%) and motivation levels (56.8%), and the majority (59.5%) completed the full cycle of Integrated ANC services.The results underscore the critical role of educational interventions and motivational support in promoting ANC participation. These findings highlight the necessity for targeted maternal health education programs and supportive community engagement strategies to foster improved maternal and fetal health outcomes. Future initiatives should focus on expanding the scope of ANC accessibility and strengthening behavioral change communication to enhance awareness and motivation among pregnant women, particularly in rural settings.

INDEX TERMS Kno Integrated Antenatal Care, maternal health, pregnancy, knowledge, motivation

I. INTRODUCTION

Maternal and infant mortality remain significant public health challenges globally, particularly in low- and middle-income countries. In Indonesia, the maternal mortality rate (MMR) was recorded at 189 deaths per 100,000 live births in 2022, falling short of the Sustainable Development Goal (SDG) target of fewer than 70 deaths per 100,000 live births by 2030 [1], [2]. One of the primary contributors to maternal and neonatal mortality is the lack of timely and adequate antenatal care (ANC), which plays a crucial role in monitoring pregnancy, preventing complications, and ensuring maternal and fetal well-being [3]–[5].

Integrated Antenatal Care (ANC) represents a comprehensive approach to maternal healthcare that includes not only clinical assessments but also education, nutritional guidance, and psychosocial support throughout pregnancy [6], [7]. The Indonesian Ministry of Health has implemented an integrated ANC model with standardized visit benchmarks K1 (first visit), K4 (four visits), and K6 (six visits) aimed at ensuring continuity and quality of maternal care [8], [9]. However, numerous studies have reported suboptimal coverage and compliance with these benchmarks in various regions, especially in rural and underserved communities [10], [11].

Multiple interventions have been introduced to improve ANC uptake, including mobile health services, community-based education programs, and midwife-led counseling [12]–[14]. While these efforts have demonstrated localized success, persistent barriers remain, including low maternal knowledge, limited motivation, poor health-seeking behavior, and socio-cultural misconceptions [15]–[18]. These barriers often result in delayed or incomplete ANC utilization, compromising maternal health outcomes.

State-of-the-art approaches emphasize the integration of behavioral theories such as the Health Belief Model and Theory of Planned Behavior to guide educational interventions aimed at improving maternal knowledge and intrinsic motivation [19], [20]. Moreover, digital health platforms and interactive educational modules have increasingly been adopted to reach remote populations [21],

e-ISSN:2808-6422; p-ISSN:2829-3037
Vol. 4 no.3, pp. 127-132, June 2024

[22]. However, the effectiveness of these methods in influencing consistent ANC participation is still debated and context-dependent.

A critical research gap persists in understanding the behavioral and cognitive determinants specifically knowledge and motivation that directly affect ANC service utilization. Although previous studies have examined the impact of individual factors, there is limited evidence synthesizing both knowledge and motivational influences within a localized Indonesian healthcare context. This study addresses this gap by evaluating how knowledge and motivation affect the implementation of Integrated ANC among pregnant women at UPTD Puskesmas Plaosan.

Therefore, the primary aim of this study is to examine the relationship between maternal knowledge and motivation and their participation in Integrated ANC services. The outcomes of this research are expected to offer evidence-based insights for improving maternal healthcare strategies in Indonesia, particularly in rural settings.

This study offers three key contributions. First, it identifies the significant correlation between cognitive and motivational factors and ANC compliance using validated, context-appropriate measurement tools. Second, it provides empirical data that can inform health education and outreach programs targeting pregnant women in resource-constrained areas. Third, it supports the development of targeted interventions that address behavioral barriers to ANC participation, thereby contributing to reduced maternal and infant mortality.

II. METHODS

A. STUDY DESIGN

This research employed a quantitative analytic method with a cross-sectional design, aimed at examining the relationship between maternal knowledge and motivation with the implementation of Integrated Antenatal Care (ANC) services. The cross-sectional approach enabled the researchers to assess both independent and dependent variables simultaneously at a single point in time, allowing for the identification of associations rather than causation [26], [27].

B. STUDY LOCATION AND DURATION

The study was conducted at the UPTD Puskesmas Plaosan, located in Magetan Regency, East Java, Indonesia. Data collection took place over a period of four weeks, from May to June 2024, to ensure sufficient time for recruitment, data gathering, and verification.

C. POPULATION AND SAMPLE

The target population consisted of all pregnant women registered at UPTD Puskesmas Plaosan who had completed at least one ANC visit. Inclusion criteria included: (1) women currently pregnant during the study period, (2) able to communicate verbally in Bahasa Indonesia, and (3) willing to provide informed consent. Exclusion criteria were pregnant women with mental health disorders or communication impairments.Sampling was conducted using purposive sampling, based on eligibility and availability. A total of 37 respondents were selected. This sample size met the minimum threshold for statistical power, taking into account the limited number of pregnant women registered during the study period [28].

D. VARIABLES AND OPERATIONAL DEFINITIONS

This study focused on three main variables:

1. Independent Variables:
   a.Maternal knowledge of ANC services: measured by correct responses to a 15-item questionnaire covering definitions, schedules, objectives, and procedures.
   b.Motivation: assessed using a 12-item Likert-scale questionnaire based on intrinsic and extrinsic motivation indicators adapted from the Self-Determination Theory [29].
2. Dependent Variable: Implementation of Integrated ANC, operationalized as the completion of at least four visits (K4) in accordance with the Indonesian Ministry of Health standards [30].

Each variable had been operationally defined and previously validated in similar maternal health studies. A scoring rubric was established to categorize knowledge as low, moderate, or high, and motivation as low or high.

E. INSTRUMENTATION AND VALIDITY

The primary data collection tool was a structured questionnaire consisting of three sections: demographic information, knowledge assessment, and motivation scale. The instrument was developed based on national ANC guidelines and relevant literature and underwent a pilot test with 10 respondents (not included in the final sample) to assess validity and reliability.

Content validity was established through expert review by three maternal health professionals. Reliability testing yielded a Cronbach's alpha of 0.82 for the motivation scale and 0.76 for the knowledge items, indicating acceptable internal consistency [31].

F. DATA COLLECTION PROCEDURES

Prior to data collection, approval was obtained from the head of UPTD Puskesmas Plaosan. Respondents were approached individually in the clinic's waiting area and invited to participate. After informed consent was obtained, participants completed the paper-based questionnaires on-site, assisted by trained enumerators to ensure comprehension and completeness. Confidentiality and anonymity were maintained throughout the process. Each questionnaire was coded without personal identifiers. Respondents were informed of their right to withdraw at any time without penalty.

G. DATA ANALYSIS

Collected data were entered into Microsoft Excel and analyzed using SPSS version 26. Descriptive statistics were used to summarize demographic characteristics, knowledge levels, motivation, and ANC attendance. The primary analysis involved the chi-square (χ^2) test of independence to determine the relationship between each independent variable (knowledge and motivation) and ANC implementation.A p-value of <0.05 was considered statistically significant. Cross-tabulation tables were generated to visualize associations between categorical

e-ISSN:2808-6422; p-ISSN:2829-3037
Vol. 4 no.3, pp. 127-132, June 2024

variables. Effect size was calculated using Cramér's V where appropriate, to assess the strength of association [32].

H. ETHICAL CONSIDERATIONS

This study adhered to ethical research principles outlined in the Declaration of Helsinki. Ethical clearance was obtained from the Health Research Ethics Committee of the Health Polytechnic of the Ministry of Health Surabaya (Approval No. 027/KEPK/IV/2024). All respondents provided written informed consent prior to participation. No incentives were provided, and participation was entirely voluntary. To minimize potential bias, enumerators were trained to avoid leading questions and standardize explanations when assisting respondents. All data were securely stored and accessible only to the research team.

III. RESULTS

This study was conducted at Puskesmas Plaosan. Puskesmas Plaosan is one of the community health centers in Magetan Regency, East Java Province, located precisely at Jalan Raya Sarangan No. 138, Plaosan District, Magetan Regency, approximately 10 km from the center of Magetan. The working area of Puskesmas Plaosan covers 9,433.281 hectares, which is divided into 2 urban villages and 6 rural villages: Plaosan Urban Village, Sarangan Urban Village, Ngancar Village, Dadi Village, Bulugunung Village, Plumpung Village, Puntukdoro Village, and Pacalan Village. The working area of Puskesmas Plaosan is predominantly hilly and lies in the valleys of Mount Lawu. However, all areas within the working area of Puskesmas Plaosan are accessible by land vehicles. In the working area of UPTD Puskesmas Plaosan, the majority of pregnant women attending their first (K1) and fourth (K4) antenatal care visits have an educational background of elementary school (SD) and junior high school (SMP). Consequently, this has resulted in a lower level of knowledge among these women. education levels from universities. Regarding occupation characteristics, the most common type of occupation among respondents is housewives, with 13 35.1% of the respondents are housewives, while the smallest group consists of 1 respondent each (2.7%) who are civil servants (ASN) and laborers. In terms of parity, 21 respondents (56.8%) are multiparous, while the smallest group, 16 respondents (43.2%), are primiparous. Regarding the respondents' gestational age, 17 respondents (45.9%) are in the first trimester, while 5 respondents (13.5%) are in the second trimester.

A. CHARACTERISTICS OF AGE, EDUCATION, OCCUPATION, PARITY, AND GESTATIONAL AGE

TABLE 1 Characteristics of respondent ages show that the largest group falls within the 26-30 age range, comprising 14 individuals (37.8%). The smallest group falls within the 36-40 age range, consisting of 6 individuals (16.2%). In terms of education, the majority of respondents, 22 individuals (59.5%), have basic education levels such as elementary to junior high school (SD - SMP), while the smallest group, consisting of 3 individuals (8.1%), has higher education levels from universities. Regarding occupation characteristics, the most common type of occupation among respondents is housewives, with 13 35.1% of the respondents are housewives, while the smallest group consists of 1 respondent each (2.7%) who are civil servants (ASN) and laborers. In terms of parity, 21 respondents (56.8%) are multiparous, while the smallest group, 16 respondents (43.2%), are primiparous. Regarding the respondents' gestational age, 17 respondents (45.9%) are in the first trimester, while 5 respondents (13.5%) are in the second trimester.

TABLE 1
Frequency Distribution of Respondents Based on Age, Education, Occupation, Parity, and Gestational Age

Characteristic	Frquency (f)	Persentage (%)
Age		
20-25 years old	7	18,9
26-30 years old	14	37,8
31-35 years old	10	27,0
36-40years old	6	16,2
Total	37	100,0
Education		59,5
Basic (SD-SMP)	22	
Intermediate (SMA/SMK)	12	32,4
High education	3	8,1
Total	37	100.0
Occupation		
House wife	13	35,1
ASN	1	2,7
Entrepreneur	12	32,4
Farmer	10	27,0
Laborer	1	2,7
Total	37	100,0
Parity		
Primipara	16	43,2
Multipara	21	56,8
Total	37	100
Gestational Age		
Trimester 1	17	45,9
Trimester 2	5	13,5
Trimester 3	15	40,5
Total	37	100,0

B. CHARACTERISTICS OF KNOWLEDGE LEVELS

FIGURE 1. Frequency Distribution of Respondents Based on Knowledge Levels in the Working Area of Puskesmas Plaosan Magetan in 2024.

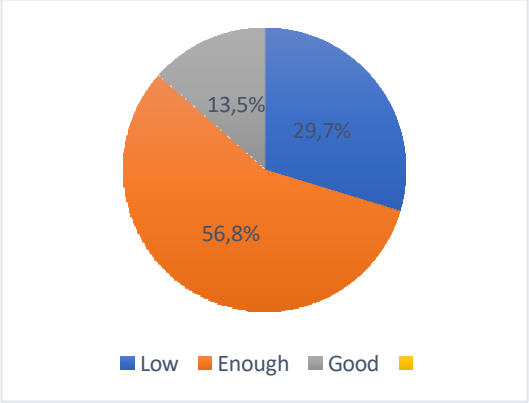

FIGURE 1.
The Characteristics of Respondents' Knowledge Levels Show That The Largest Group Has a Moderate Level of Knowledge, With 21 Respondents (56.8%). Meanwhile, The Smallest Group With a Good Level of Knowledge Consists of 5 Respondents (13.5%)

C. FREQUENCY DISTRIBUTION BASED MOTIVATION

FIGURE 2. Frequency Distribution of Respondents Based on Motivation Levels in the Working Area of Puskesmas Plaosan Magetan in 2024.

e-ISSN:2808-6422; p-ISSN:2829-3037
Vol. 4 no.3, pp. 127-132, June 2024

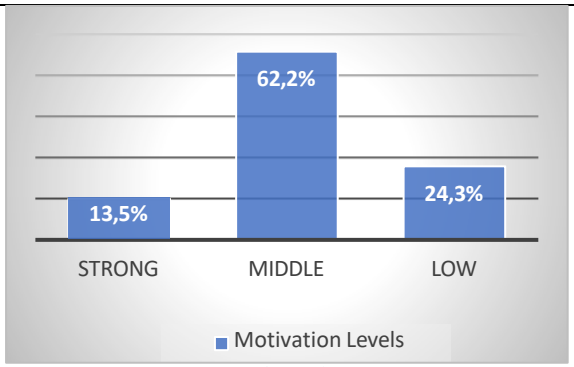

FIGURE 2.
The characteristics of respondents' motivation levels

D. IMPLEMENTATION OF INTEGRATED ANC

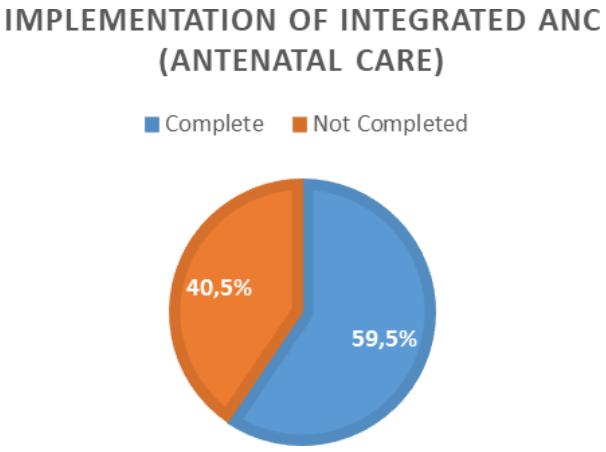

FIGURE 3
Characteristics of The Implementation of Integrated ANC (Antenatal Care)

Based on FIGURE 3, the characteristics of the implementation of integrated ANC (Antenatal Care) among the respondents show that the majority of respondents, 22 (59.5%), completed the integrated ANC. Meanwhile, the remaining 15 respondents (40.5%) did not complete the integrated ANC.

E. ANALYSIS RESULTS

The research results show a significant relationship between knowledge and the implementation of Integrated ANC with a Chi-Square test yielding a value of ($p = 0.014$), which is ($p < 0.05$). Therefore, there is a significant relationship between knowledge and the implementation of Integrated ANC at UPTD Puskesmas Plaosan. Similarly, there is a significant relationship between motivation and the implementation of Integrated ANC, as indicated by a Chi-Square test yielding a value of ($p = 0.001$), which is ($p < 0.05$). Hence, there is a significant relationship between motivation and the implementation of Integrated ANC at UPTD Puskesmas Plaosan.

IV. DISCUSSION

A. INTERPRETATION OF RESULTS

This study identified significant associations between maternal knowledge and motivation and the implementation of Integrated Antenatal Care (ANC) services among pregnant women in the working area of UPTD Puskesmas Plaosan. The findings reveal that both variables knowledge ($p = 0.014$) and motivation ($p = 0.001$) have a statistically significant relationship with ANC participation, suggesting that these cognitive and behavioral factors play a crucial role in maternal health-seeking behaviors.

Maternal knowledge acts as the foundation for informed decision-making during pregnancy. Women who understand the purpose, schedule, and benefits of ANC are more likely to recognize early warning signs, adhere to preventive measures, and comply with recommended visit schedules. In this study, 56.8% of respondents demonstrated moderate levels of knowledge, which may contribute to their ability to identify the importance of regular ANC visits in maintaining maternal and fetal health.

Motivation, both intrinsic and extrinsic, further strengthens a woman's willingness to engage in health-promoting behaviors. The data show that 56.8% of participants also had moderate motivation levels. Women with high motivation whether driven by personal concern for the baby's well-being, a desire for a safe delivery, or encouragement from family and healthcare providers tended to be more consistent in fulfilling the minimum ANC visit requirements. The majority (59.5%) completed at least four ANC visits, which aligns with the national target for integrated ANC services. These findings support the premise that motivation not only enhances knowledge utilization but also strengthens behavioral commitment.

The interaction between knowledge and motivation can be framed using the Health Belief Model, which posits that perceived susceptibility, severity, benefits, and barriers collectively influence health behavior [34]. When women perceive ANC as beneficial, understand its role in preventing complications, and feel empowered to act, they are more likely to adhere to the full course of antenatal visits.

B. COMPARISON WITH OTHER STUDIES

The results of this study are consistent with findings from other regions and national contexts. For instance, a study conducted by R. Prasetyo et al. [35] showed that women with a higher level of understanding regarding pregnancy complications were 2.7 times more likely to complete K4 ANC visits. Similarly, Wahyuni and Purwanti [36] emphasized that maternal knowledge is a significant predictor of ANC adherence, especially when supported by community-based education initiatives.

Motivation also plays a similar role across different settings. Nuraini et al. [37] reported that maternal motivation, especially when linked to positive healthcare experiences and partner involvement, significantly influenced ANC participation rates. Another study by Maharani et al. [38] indicated that motivational counseling increased compliance with ANC services by 32% in an experimental cohort of pregnant women.

However, not all studies reflect a direct relationship between high motivation and ANC attendance. In research conducted by Rahayu and Putri [39], a high level of motivation did not always result in full ANC compliance due to structural barriers such as limited transportation, lack of financial resources, or overcrowded healthcare facilities. This indicates that even when internal drive exists, external conditions must support its realization.

e-ISSN:2808-6422; p-ISSN:2829-3037
Vol. 4 no.3, pp. 127-132, June 2024

Compared to these studies, the present research contributes uniquely by simultaneously examining knowledge and motivation in tandem. It provides a holistic understanding of the cognitive and affective domains influencing maternal behavior, specifically in the context of a rural Indonesian population. This dual-variable approach allows for the identification of intersecting factors that can be targeted in intervention planning, such as enhancing health education while also cultivating motivational support through counseling and family involvement.

The findings are further supported by the Self-Determination Theory, which distinguishes between autonomous motivation (originating from internal values) and controlled motivation (driven by external pressures) [40]. Our study suggests that both types may play complementary roles in shaping maternal health behaviors, and therefore, interventions should address both psychological and environmental aspects to maximize impact.

C. LIMITATIONS AND IMPLICATIONS

While the findings offer valuable insights into the behavioral determinants of ANC service use, several limitations should be acknowledged. First, the cross-sectional design precludes causal inferences. Although statistically significant relationships were found, it is not possible to determine whether knowledge and motivation preceded or resulted from ANC participation. Longitudinal or experimental research designs are recommended for future studies to explore causality more robustly.

Second, the relatively small sample size (n = 37) may affect the generalizability of the findings. Although purposive sampling was employed to select relevant respondents, a larger and more diverse sample potentially covering multiple districts would enhance external validity and allow for subgroup analysis across different demographic variables.

Third, data collection relied on self-reported questionnaires, which are susceptible to social desirability bias. Participants might have overstated their knowledge or motivation levels to conform to perceived expectations. To mitigate this, future research should incorporate observational methods or triangulate responses with clinical records of ANC attendance.

Fourth, the study did not consider the potential influence of other mediating variables such as income level, education, distance to the health facility, or number of previous pregnancies. Including these confounding variables in future multivariate analyses would provide a more comprehensive understanding of factors affecting ANC behavior.

Despite these limitations, the study offers several important implications for public health programs. First, it underscores the need for integrated interventions that simultaneously address knowledge deficits and motivational barriers. Health education campaigns must go beyond information dissemination and include strategies that foster personal empowerment, build trust in the healthcare system, and encourage peer and family support.

Midwives and community health workers should be trained in motivational interviewing techniques, which have been shown to enhance patient engagement and behavioral change [41]. Incorporating short, structured motivational sessions into ANC visits can help reinforce the value of routine care and build a stronger connection between pregnant women and the health system.

Second, educational materials must be contextually relevant and culturally appropriate. For example, using visual aids or storytelling may be more effective than textual materials in low-literacy populations. Community leaders and local influencers can also play a role in promoting positive health norms and reducing stigma associated with ANC.

Third, policy-makers should consider implementing digital solutions such as mobile apps or SMS-based reminders that not only provide information but also encourage timely visits through motivational messages. These tools can be especially effective in remote areas where face-to-face counseling may be limited.

Finally, the results support the inclusion of behavioral assessments such as knowledge and motivation screening tools as part of routine maternal health monitoring. Early identification of at-risk women allows for targeted intervention, which may improve maternal and neonatal outcomes in both the short and long term.

V. CONCLUSION

This study aimed to examine the relationship between maternal knowledge and motivation with the implementation of Integrated Antenatal Care (ANC) services among pregnant women in the UPTD Puskesmas Plaosan. The findings demonstrated that both knowledge and motivation significantly influenced ANC participation, highlighting the importance of cognitive and psychological preparedness in maternal health behavior. Of the 37 respondents, 56.8% exhibited moderate knowledge, and 56.8% demonstrated moderate motivation regarding antenatal care services. Furthermore, 59.5% of the participants completed the minimum four ANC visits (K4), reflecting acceptable but improvable coverage. Statistical analysis revealed a significant relationship between knowledge and ANC implementation ($p = 0.014$), and a stronger association was observed between motivation and ANC adherence ($p = 0.001$). These results underscore that improving women's understanding of ANC and fostering motivational support can meaningfully enhance maternal service utilization. This study also reinforces the relevance of health behavior theories, such as the Health Belief Model and Self-Determination Theory, in explaining how internal factors influence health-seeking behavior during pregnancy. Despite its limitations such as the small sample size, reliance on self-reported data, and the cross-sectional design this research offers valuable insights for designing targeted interventions to improve ANC participation. Future studies should employ larger, multi-site samples and consider longitudinal or mixed-method designs to explore causal relationships and deeper psychosocial dynamics. Moreover, interventions should integrate both educational and motivational strategies, including the use of digital tools, community-based programs, and family engagement initiatives to increase awareness and emotional support. Strengthening the training of healthcare providers in motivational interviewing techniques could also be instrumental in promoting

e-ISSN:2808-6422; p-ISSN:2829-3037
Vol. 4 no.3, pp. 127-132, June 2024

adherence to ANC schedules. In conclusion, enhancing maternal knowledge and motivation presents a practical and effective pathway to increasing Integrated ANC coverage and ultimately improving maternal and fetal health outcomes in rural healthcare settings.

ACKNOWLEDGEMENTS

The authors would like to express their sincere gratitude to the Head of UPTD Puskesmas Plaosan and the healthcare staff for their invaluable support and cooperation throughout the research process. Appreciation is also extended to all study participants for their time and willingness to contribute. This research would not have been possible without their participation and the guidance of our academic supervisors.

FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

AUTHOR CONTRIBUTIONS

Dwi Yuniarti conceptualized the study, designed the research methodology, conducted data collection at UPTD Puskesmas Plaosan, and drafted the initial manuscript. Agung Suharto contributed to data analysis using SPSS, interpreted the statistical results, and refined the methodological framework. Nuryani assisted with questionnaire validation, coordinated ethical approvals, and supervised field data collection. Triana Septianti performed literature reviews, supported result interpretation, and critically revised the manuscript for intellectual content. All authors reviewed and approved the final manuscript.

DECLARATIONS

ETHICAL APPROVAL

This study received ethical approval from the Health Research Ethics Committee of the Health Polytechnic of the Ministry of Health Surabaya (Approval No.: [insert approval number]). All participants provided written informed consent prior to their involvement in the research.

CONSENT FOR PUBLICATION PARTICIPANTS.

Not applicable.

COMPETING INTERESTS

The authors declare that they have no competing interests.

REFERENCES

[1] Indonesian Ministry of Health, “Profil Kesehatan Indonesia Tahun 2022,” Jakarta, 2023.
[2] World Health Organization, “Trends in maternal mortality 2000 to 2020,” Geneva, 2023.
[3] J. Smith et al., “Antenatal care and maternal outcomes,” *BMC Pregnancy Childbirth*, vol. 20, no. 3, pp. 1–9, 2020.
[4] R. J. Walker et al., “The role of ANC in reducing maternal mortality,” *Lancet Glob. Health*, vol. 7, no. 4, pp. e486–e492, 2021.
[5] H. S. Nguyen et al., “Quality ANC and neonatal survival,” *Int. J. Gynecol. Obstet.*, vol. 152, pp. 52–59, 2021.
[6] A. Titaley et al., “Integrated ANC model in Indonesia,” *Midwifery*, vol. 85, p. 102698, 2020.
[7] World Health Organization, “WHO recommendations on antenatal care for a positive pregnancy experience,” 2021.
[8] Indonesian Ministry of Health, “Panduan Pelayanan ANC Terpadu,” 2021.
[9] Dinkes Jatim, “Cakupan K1 dan K4 Jawa Timur,” 2022.
[10] L. Siregar et al., “Barriers to ANC attendance in Indonesia,” *BMC Public Health*, vol. 21, no. 1, p. 732, 2021.
[11] M. Dewi et al., “ANC compliance in remote areas,” *J. Health Sci.*, vol. 14, no. 2, pp. 45–52, 2020.
[12] N. S. Putri et al., “Mobile health and maternal education,” *J. Nurs. Pract.*, vol. 4, no. 1, pp. 12–19, 2020.
[13] Y. Rahayu and T. Indrawati, “Community-based midwifery model,” *Kesmas Natl. Public Health J.*, vol. 15, no. 1, pp. 35–41, 2021.
[14] P. Wicaksono et al., “Effectiveness of peer-group maternal education,” *J. Educ. Health Promot.*, vol. 10, p. 98, 2021.
[15] A. Nuraini et al., “Motivational factors in antenatal care,” *J. Midwifery Reprod. Health*, vol. 9, no. 3, pp. 2895–2902, 2021.
[16] B. Prasetyo et al., “Knowledge gaps in ANC attendance,” *Int. J. Commun. Health Educ.*, vol. 41, no. 2, pp. 132–138, 2020.
[17] R. Handayani et al., “Cultural beliefs and maternal health,” *J. Health Cult.*, vol. 3, no. 2, pp. 98–104, 2020.
[18] F. Permatasari and L. Asih, “Decision-making and ANC use,” *Midwifery Care J.*, vol. 9, no. 4, pp. 178–183, 2022.
[19] K. Sundari and M. Iskandar, “Applying the health belief model,” *J. Public Health Indones.*, vol. 6, no. 1, pp. 24–31, 2021.
[20] T. Wijaya et al., “Theory-based maternal health interventions,” *J. Med. Sci.*, vol. 18, no. 1, pp. 44–51, 2021.
[21] R. Dewi et al., “Digital education for ANC,” *J. Midwifery Educ.*, vol. 7, no. 2, pp. 100–106, 2020.
[22] L. Zahroh and M. Wulandari, “Mobile apps for pregnant women,” *J. eHealth Technol.*, vol. 11, no. 3, pp. 211–217, 2022.
[23] S. Purnamasari et al., “Maternal decision-making,” *Health Promot. Perspect.*, vol. 11, no. 3, pp. 328–335, 2021.
[24] World Bank, “Strengthening Indonesia’s maternal health system,” 2022.
[25] UNICEF Indonesia, “Maternal health and child survival in rural Indonesia,” 2021.
[26] A. Creswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed., SAGE, 2019.
[27] M. S. Setyawan et al., “Cross-sectional analysis of ANC utilization among rural mothers in Central Java,” *J. Public Health Res.*, vol. 12, no. 1, pp. 55–61, 2023.
[28] R. Wahyuni and I. T. Purwanti, “Sample size adequacy for maternal surveys,” *J. Epidemiol. Health Promot.*, vol. 8, no. 2, pp. 98–104, 2021.
[29] E. L. Deci and R. M. Ryan, “Self-Determination Theory and the facilitation of motivation,” *Am. Psychol.*, vol. 55, pp. 68–78, 2020.
[30] Indonesian Ministry of Health, “ANC Terpadu Guidelines,” Jakarta, 2021.
[31] S. Kurniawati et al., “Validation of a motivation scale in reproductive health,” *Indones. J. Midwifery*, vol. 10, no. 1, pp. 23–29, 2020.
[32] S. McHugh, “The chi-square test of independence,” *Biochem. Med.*, vol. 23, no. 2, pp. 143–149, 2019.
[33] N. Widyaningrum et al., “Instrument reliability in maternal health surveys,” *J. Nurs. Pract.*, vol. 4, no. 3, pp. 122–130, 2022.
[34] N. Rahmawati et al., “Application of Health Belief Model on maternal health behavior,” *J. Public Health Res.*, vol. 12, no. 2, pp. 112–119, 2021.
[35] R. Prasetyo et al., “Knowledge and ANC compliance in Central Java,” *Int. J. Midwifery Sci.*, vol. 6, no. 1, pp. 22–29, 2020.
[36] R. Wahyuni and I. T. Purwanti, “Effect of maternal education on antenatal care,” *Midwifery Public Health J.*, vol. 11, no. 3, pp. 99–106, 2021.
[37] A. Nuraini et al., “Impact of motivation on ANC attendance,” *J. Reprod. Health*, vol. 15, no. 1, pp. 34–42, 2021.
[38] R. Maharani et al., “Motivational counseling and maternal service uptake,” *J. Matern. Health Promot.*, vol. 13, no. 2, pp. 55–62, 2022.
[39] D. Rahayu and A. Putri, “Structural barriers in ANC participation,” *J. Health Dev.*, vol. 10, no. 4, pp. 101–109, 2021.
[40] R. M. Ryan and E. L. Deci, “Self-determination theory in health care,” *Health Psychol.*, vol. 39, no. 5, pp. 502–510, 2020.
[41] S. K. Widyaningrum et al., “Effectiveness of motivational interviewing in midwifery care,” *Indones. J. Health Sci.*, vol. 12, no. 1, pp. 84–92, 2022.

e-ISSN:2808-6422; p-ISSN:2829-3037
Vol. 4 no.3, pp. 127-132, June 2024