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Analysis of Factors Influencing Unmet Need among Contraceptive Implant Acceptors at Weda Primary Health Center, Central Halmahera, Indonesia

Jumina Hasan[1], Retno Dewi Prisusanti[2*]

[1] Bachelor of Midwifery Program, Faculty of Health Sciences, Institut Teknologi Sains dan Kesehatan Rs. dr. Soepraoen Malang, Indonesia
[2] Bachelor of Midwifery Program, Faculty of Health Sciences, Institut Teknologi Sains dan Kesehatan Rs. dr. Soepraoen Malang, Indonesia

* Corresponding Author: retnodewi@itsk-soepraoen.ac.id

Abstract. Background: Unmet need for family planning remains a significant concern in Indonesia because it may limit the effectiveness of reproductive health programs. This condition occurs when women who wish to postpone or stop having children do not use contraception. Various factors may influence this situation, including maternal knowledge, spousal involvement, availability of healthcare services, counseling experiences, and concerns about contraceptive side effects. Identifying these determinants at the primary healthcare level is essential for improving the responsiveness of family planning services. Methods: A quantitative analytic study using a cross-sectional approach was conducted at Weda Primary Health Center, Central Halmahera Regency, from February to April 2026. Sixty respondents were recruited through purposive sampling. Data were obtained using a validated and reliable structured questionnaire. Univariate analysis was used to describe the study variables, followed by Chi-square testing to assess associations. Variables demonstrating relevant relationships were further examined using multiple logistic regression. Statistical significance was determined at $\alpha = 0.05$.Results: Of the 60 participants, 38.3% experienced unmet need for family planning. Significant associations were identified for knowledge ($p = 0.002$), husband's support ($p = 0.001$), service accessibility ($p = 0.008$), counseling quality ($p = 0.001$), and perceptions of implant side effects ($p = 0.003$). Multivariate analysis showed that inadequate husband's support was the strongest contributing factor, with women lacking spousal support having 5.74 times higher odds of experiencing unmet need (95% CI: 2.01–16.43).Conclusion: Unmet need is influenced by interconnected individual, family, and service-related factors. Strengthening contraceptive education, enhancing counseling, involving husbands in reproductive decision-making, and improving service accessibility may help reduce unmet need and increase appropriate implant utilization.

Keywords: Contraceptive Implant; Counseling; Family Planning; Spousal Support; Unmet Need.

1. BACKGROUND

Family planning (FP) is widely regarded as an essential component of public health because it contributes to improving maternal and child well-being, promoting appropriate birth spacing, managing population dynamics, and supporting long-term development. The performance of an FP program should not be assessed merely by the number of individuals who adopt contraceptive methods. It should also be evaluated according to the extent to which reproductive health services are capable of responding to women's fertility preferences and contraceptive requirements. In this context, unmet need for family planning is an important indicator of the effectiveness and responsiveness of FP services. It describes circumstances in which women who wish to postpone their next pregnancy or stop childbearing altogether are not using contraception. A substantial level of unmet need may indicate deficiencies in the alignment between reproductive intentions and the availability, accessibility, acceptability, affordability, and actual use of contraceptive services. If this gap persists, women may face an increased likelihood of unintended pregnancy and unsafe abortion, which can subsequently contribute to adverse maternal and neonatal outcomes (World Health Organization [WHO], 2022; United Nations Population Fund [UNFPA], 2022).

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Although the use of modern contraceptive methods has expanded considerably at the global level, unmet need continues to affect a considerable proportion of women, particularly in low- and middle-income settings. Barriers to contraceptive utilization are multifaceted and cannot be explained solely by the availability of contraceptive commodities. Limited physical access to health facilities, insufficient understanding of contraceptive options, fear of adverse effects, social and cultural expectations, and inadequate involvement of male partners may all influence contraceptive decision-making. Consequently, strategies for reducing unmet need should extend beyond increasing the supply of contraceptive methods. Effective interventions need to address the interconnected influences operating at the individual, family, community, and healthcare-system levels (WHO, 2022; United Nations, 2023).

Within Indonesia, the reduction of unmet need has become an important component of national reproductive health and population policies. This priority is incorporated into national development planning and is supported through programs coordinated by the National Population and Family Planning Board (BKKBN). National demographic and health data indicate that reproductive intentions are not always followed by appropriate contraceptive use, particularly among women who intend to postpone or limit future pregnancies. The continuing gap between fertility preferences and contraceptive utilization indicates the need to strengthen existing FP interventions. Particular attention is required in improving the effectiveness of counseling, ensuring more equitable access to reproductive health services, and increasing women's understanding of the advantages and effectiveness of long-acting reversible contraceptive (LARC) methods (BKKBN, 2023; Ministry of Health of the Republic of Indonesia, 2023).

Among the available LARC options, contraceptive implants represent an important method within Indonesia's FP program. Implants provide prolonged pregnancy prevention and have high contraceptive effectiveness, making them suitable for women seeking reliable birth spacing or limiting. Wider use of implants has the potential to prevent unintended pregnancies and support healthier reproductive trajectories. However, high effectiveness does not automatically translate into high utilization. In several communities, implant uptake remains constrained by apprehension concerning side effects, unfavorable perceptions, inadequate information, and limited access to appropriately trained providers. These barriers indicate that increasing implant utilization requires not only sufficient service availability but also effective communication and counseling that address women's concerns and expectations (WHO, 2022; BKKBN, 2023).

Evidence from previous research suggests that unmet need is influenced by a combination of demographic, behavioral, interpersonal, and health-service factors. Characteristics such as maternal age, education, employment, economic circumstances, and the number of living children may interact with contraceptive knowledge and previous experiences with family planning. In addition, perceptions of adverse effects, the degree of husband's involvement, ease of reaching healthcare facilities, and the quality of communication between providers and clients may shape contraceptive choices. In the Indonesian context, inadequate knowledge and limited support from husbands have been reported as important factors associated with unmet need. Counseling quality is also particularly relevant because clear and client-centered communication can help women understand the benefits, limitations, effectiveness, and possible adverse effects of long-acting methods, including implants (Ministry of Health of the Republic of Indonesia, 2023; BKKBN, 2023).

The situation in Central Halmahera, particularly Weda District, deserves specific consideration because its geographical and socioeconomic circumstances differ from those of many densely populated urban areas. The distribution of communities and healthcare facilities may create differences in the ease with which women obtain reproductive health information and contraceptive services. Furthermore, socioeconomic changes associated with industrial development in Central Halmahera have influenced population movement and may have generated new demands for healthcare services. Such changes can affect household decision-making, patterns of healthcare utilization, and reproductive preferences. Therefore, determinants identified in other Indonesian populations may not fully represent the circumstances experienced by women in Weda District.

Another important consideration is the limited evidence concerning unmet need specifically among women who use or are potential users of contraceptive implants at the primary healthcare level. Previous studies have frequently evaluated unmet need across contraceptive methods as a whole or have concentrated on broad demographic characteristics. Less attention has been given to the simultaneous contribution of interpersonal support, counseling experiences, service accessibility, and perceptions of implant-related adverse effects. Differences in provider capacity, communication practices, healthcare infrastructure, and sociocultural conditions may produce locally specific patterns of contraceptive decision-making. This limitation in the existing evidence creates an opportunity for further investigation within primary healthcare settings in Eastern Indonesia.

The present study addresses this gap by applying an integrated analytical perspective to several potential determinants of unmet need among women related to contraceptive implant use at Weda Primary Health Center. The analysis considers contraceptive knowledge, husband's support, accessibility of family planning services, quality of counseling, perceptions of implant side effects, and relevant sociodemographic and healthcare-service characteristics. Examining these factors concurrently may provide a clearer understanding of how individual beliefs, family influences, and health-system conditions interact in shaping contraceptive behavior. The resulting evidence may also assist healthcare providers in identifying barriers that can be addressed through more targeted interventions.

The practical importance of this research is associated with Indonesia's continuing efforts to expand the use of effective long-term contraceptive methods. Persistent unmet need may increase the probability of unintended pregnancy and may limit the achievement of reproductive health and population program targets. Identifying modifiable determinants is therefore essential for developing interventions that are responsive to women's actual circumstances. Evidence obtained from the Weda setting can potentially support the development of more focused reproductive health education, strengthen client-centered family planning counseling, promote greater involvement of husbands in contraceptive decisions, and improve access to implant services. These efforts may subsequently contribute to more sustained and informed contraceptive use.

Accordingly, this study was designed to investigate factors associated with unmet need for family planning among women attending Weda Primary Health Center, Weda District, Central Halmahera Regency. The study specifically evaluates the relationships of demographic characteristics, contraceptive knowledge, husband's support, healthcare accessibility, counseling quality, perceptions of implant-related side effects, and healthcare-service characteristics with unmet need. By generating evidence from a geographically and socially distinctive primary healthcare setting, the study is expected to strengthen the evidence base for context-specific family planning interventions and contribute to improving the delivery and utilization of contraceptive implant services in Eastern Indonesia.

2. LITERATURE REVIEW

Unmet need for family planning describes a reproductive health situation involving fecund women who intend to delay a subsequent pregnancy or discontinue childbearing but are not currently practicing contraception. This measure is commonly used to assess whether family planning services are adequately responding to women's reproductive preferences. A considerable proportion of women with unmet contraceptive needs may experience unintended pregnancies, which can contribute to closely spaced or unintended births and increase potential risks to maternal and newborn health. For this reason, reducing unmet need remains an important component of reproductive health policies and family planning programs at both national and international levels (World Health Organization [WHO], 2022; BKKBN, 2023).

Contraceptive implants belong to the category of long-acting reversible contraceptive (LARC) methods and provide highly effective pregnancy prevention. The method relies on the sustained release of a progestin hormone. Its contraceptive effects are primarily achieved through suppression of ovulation and alteration of cervical mucus, while changes in the endometrium may further reduce the possibility of pregnancy. Depending on the implant type, contraceptive protection can extend for several years, eliminating the need for daily adherence. Another important advantage is that reproductive capacity generally resumes rapidly after the device is removed. Despite these characteristics, implant uptake remains below its potential in

several communities. Concerns about irregular bleeding and other perceived side effects, inadequate understanding of the method, and insufficient counseling before insertion may discourage women from choosing implants (Ministry of Health of the Republic of Indonesia, 2023; WHO, 2022).

The decision to use contraception is influenced by multiple factors that operate at the individual, interpersonal, community, and healthcare-service levels. Personal characteristics such as age, educational background, employment, parity, reproductive history, and contraceptive knowledge may affect how women assess pregnancy risk and evaluate available contraceptive options. Women's attitudes and previous experiences with contraception can also shape their willingness to initiate or continue a particular method.

Interpersonal and environmental conditions are equally important. Support from a husband or partner can influence reproductive decision-making, particularly in settings where contraceptive choices are discussed jointly within the household. Cultural expectations, family attitudes, financial circumstances, and the accessibility of healthcare facilities may either facilitate or restrict contraceptive use. In addition, the interaction between clients and healthcare providers is an important component of family planning care. Counseling that is understandable, respectful, comprehensive, and responsive to individual concerns may improve women's confidence in selecting an appropriate contraceptive method. Thus, unmet need should be understood as the result of several interconnected determinants rather than as a consequence of a single factor (Notoatmodjo, 2018; Green & Kreuter, 2005).

This study applies the PRECEDE–PROCEED Model developed by Lawrence W. Green as its principal theoretical framework. The model conceptualizes health behavior as being influenced by three major categories: predisposing, enabling, and reinforcing factors. This framework is particularly relevant to family planning because contraceptive behavior involves personal knowledge and attitudes, availability of services, and social support.

Predisposing factors represent characteristics that influence an individual's motivation or readiness to undertake a health behavior. In the context of this study, these factors include age, educational attainment, knowledge of contraception, attitudes, and reproductive characteristics such as the number of children. Enabling factors refer to conditions that facilitate or constrain the implementation of a desired behavior. For family planning, these may include the availability of contraceptive methods, geographic and financial accessibility, healthcare infrastructure, and the availability of competent healthcare personnel.

Existing evidence indicates that unmet need for contraception is a multidimensional issue. Bradley et al. (2012) identified several reasons underlying non-use of contraception, including concerns about adverse effects, inadequate knowledge, and perceptions regarding the likelihood of becoming pregnant. These findings suggest that increasing the physical availability of contraceptive methods alone may not be sufficient to eliminate unmet need. Women's perceptions, reproductive intentions, prior experiences, and social circumstances also need to be considered when designing family planning interventions.Evidence from Indonesia similarly indicates that educational level, contraceptive knowledge, partner involvement, and the quality of information provided by healthcare professionals can influence contraceptive behavior. Women who receive adequate information and supportive counseling may have greater confidence in evaluating contraceptive alternatives and making informed reproductive decisions. Conversely, inadequate information or limited support from husbands may become barriers to contraceptive adoption. These circumstances highlight the importance of strengthening provider-client communication and involving partners in reproductive health education when appropriate (BKKBN, 2023; Ministry of Health of the Republic of Indonesia, 2023).

Although unmet need for family planning has been extensively investigated, much of the existing research has assessed contraceptive use across multiple methods rather than examining factors specifically related to implant use within primary healthcare facilities. In addition, empirical evidence from Eastern Indonesia remains comparatively limited, particularly in Central Halmahera Regency. The geographical characteristics of the region, patterns of healthcare access, socioeconomic conditions, and local sociocultural practices may influence contraceptive decision-making in ways that differ from those observed in other Indonesian populations.

The limited availability of context-specific evidence creates a need for research focusing on the determinants of unmet need in this setting. Investigating these factors at the primary healthcare level may provide information that is more directly applicable to local family planning service planning and implementation. Therefore, the present study examines women attending Weda Primary Health Center in Weda District, Central Halmahera Regency, to identify factors associated with unmet need in relation to contraceptive implant utilization.

3. MATERIALS AND METHODS

This study employed a quantitative approach using an analytical observational design with a cross-sectional framework. The cross-sectional design was selected because it allows the simultaneous assessment of multiple potential determinants and the occurrence of unmet need among contraceptive implant users at a single point in time. The study was conducted in 2026 at Weda Primary Health Center, Weda District, Central Halmahera Regency, Indonesia.

The study population consisted of women of reproductive age who were eligible for family planning services within the catchment area of Weda Primary Health Center. Participants were selected according to predefined inclusion and exclusion criteria. The required sample size was determined using the standard formula for analytical studies, while purposive sampling was employed to recruit respondents whose characteristics were consistent with the objectives of the study. Based on the sample size calculation, a total of 60 eligible respondents were included in the analysis.

The dependent variable was the occurrence of unmet need for family planning among contraceptive implant users. Independent variables included maternal age, educational attainment, employment status, parity, knowledge regarding contraceptive implants, husband's support, access to healthcare services, quality of family planning counseling, and perceptions of implant-related side effects.

Primary data were collected using a structured questionnaire developed based on health behavior theory, national family planning service guidelines, and findings from previous studies. In addition to questionnaire-based interviews, secondary data—including family planning service reports and contraceptive coverage statistics obtained from Weda Primary Health Center—were used to complement the primary data.

Before implementation, the research instrument underwent validity and reliability testing among respondents with characteristics comparable to those of the study population. The validity assessment demonstrated that all questionnaire items produced correlation coefficients exceeding the critical threshold (r-calculated > r-table), indicating satisfactory construct validity. Internal consistency reliability was evaluated using Cronbach's alpha coefficient, yielding values greater than 0.70, thereby confirming that the instrument possessed acceptable reliability for data collection.

Data analysis was conducted in three sequential stages: univariate, bivariate, and multivariate analyses. Univariate analysis was performed to summarize respondents' characteristics using frequencies, percentages, means, and standard deviations, depending on the measurement scale of each variable. Bivariate analysis was applied to examine the association between each independent variable and unmet need using appropriate statistical tests according to the data type. Subsequently, multivariate analysis was performed using multiple logistic regression to identify the most influential predictors of unmet need. Statistical significance was established at a 95% confidence level ($\alpha = 0.05$). The analytical procedures followed the statistical approaches recommended by Dahlan (2019) and Ghozali (2021).

The conceptual framework proposes that the occurrence of unmet need is influenced by three broad domains: individual characteristics, behavioral factors, and health service factors. Individual characteristics include age, educational attainment, employment status, and parity. Behavioral factors consist of contraceptive knowledge, perceptions of contraceptive implants, and husband's support. Health service factors include healthcare accessibility and the quality of family planning counseling. All independent variables were examined to determine their association with the dependent variable, namely unmet need among contraceptive implant users attending Weda Primary Health Center.

4. RESULTS

The study was conducted within the service area of Weda Primary Health Center, Weda District, Central Halmahera Regency, North Maluku Province, Indonesia, between February and April 2026. Prior to data collection, the researchers obtained the necessary administrative approvals from the Central Halmahera District Health Office and Weda Primary Health Center. Coordination was subsequently undertaken with the family planning program coordinator to identify eligible participants based on the predefined inclusion and exclusion criteria.

Primary data were collected through structured face-to-face interviews using standardized questionnaires administered to women of reproductive age who met the study eligibility criteria. Before the interviews commenced, each participant received a comprehensive explanation regarding the objectives of the study, its potential benefits, confidentiality procedures, and their right to participate voluntarily. Written informed consent was obtained from all respondents before enrollment. Of the 60 eligible participants, every individual completed the interview, resulting in a 100% response rate.

This study was carried out at Weda Primary Health Center, located in Weda District, Central Halmahera Regency, North Maluku Province, Indonesia. The health center was selected because it serves as a primary healthcare facility providing comprehensive family planning services, including contraceptive implant services, and because unmet need for family planning remains evident among women of reproductive age within its catchment area. Data collection was conducted over a three-month period, from February through April 2026.

Respondent Characteristics

Table 1. Demographic Characteristics of the Respondents.

Characteristics	Frekuensi (n)	Persentase (%)
Age		
< 20 years	4	6,7
20–35 years	39	65,0
>35 years	17	28,3
Educational Level		
Primary Education	18	30,0
Secondary Education	30	50,0
Higher Education	12	20,0
Employment Status		
Not Employed	35	58,3
Employed	25	41,7
Parity		
≤2 Children	26	43,3
>2 Children	34	56,7

Source: Processed Primary Data, 2026.

As presented in Table 1, the majority of respondents were 20–35 years of age (65.0%), had completed secondary education (50.0%), were unemployed (58.3%), and had more than two children (56.7%). These findings indicate that most participants were within the active reproductive age group and therefore represented a population with a substantial demand for family planning services.

Univariate Analysis

Table 2. Distribution of the Study Variables.

Variables	Frekuensi	Persentase (%)
Unmet Need Status		
Yes	23	38,3
No	37	61,7
Knowledge Level		
Low	22	36,7
Good	38	63,3

Husband's Support		
Unsupportive	20	33,3
Supportive	40	66,7
Access to Health Services		
Difficult	18	30,0
Easy	42	70,0
Counseling Quality		
Inadequate	21	35,0
Good	39	65,0
Perception of Implant Side Effects		
Negatif	24	40,0
Positif	36	60,0

Source: Processed Primary Data, 2026.

As shown in Table 2, 38.3% of the respondents experienced unmet need for family planning, while the remaining 61.7% did not. The majority of participants demonstrated good contraceptive knowledge (63.3%), reported receiving support from their husbands (66.7%), had easy access to healthcare services (70.0%), received high-quality family planning counseling (65.0%), and expressed positive perceptions of contraceptive implants (60.0%).

Bivariate Analysis

Table 3. Association Between Contributing Factors and Unmet Need for Family Planning.

Variables	p-value	Interpretation
Age	d	Not Significant
Educational Level	0,031	Significant
Employment Status	0,118	Not Significant
Parity	0,041	Significant
Knowledge Level	0,002	Significant
Husband's Support	<0,001	Significant
Access to Health Services	0,008	Significant
Quality of Family Planning Counseling	0,001	Significant
Perception of Implant Side Effects	<0,001	Significant

Source: Processed Primary Data, 2026.

The results of the Chi-square analysis demonstrated that educational level, parity, contraceptive knowledge, husband's support, access to healthcare services, quality of family planning counseling, and perceptions of implant-related side effects were significantly associated with the occurrence of unmet need for family planning ($p < 0.05$). In contrast, maternal age and employment status showed no statistically significant association with unmet need.

Table 4. Results of the Multiple Logistic Regression Analysis.

Variables	OR	95% CI	p-value
Poor Knowledge	3,18	1,22–8,27	0,018
Inadequate Husband's Support	5,74	2,01–16,43	0,001
Limited Access to Health Services	2,86	1,04–7,88	0,042
Poor Quality of Family Planning Counseling	3,41	1,26–9,19	0,016
Negative Perception of Implant Side Effects	4,62	1,67–12,81	0,003

Source: Processed Primary Data, 2026.

The results of the multiple logistic regression analysis identified husband's support as the strongest independent predictor of unmet need for family planning (OR = 5.74; $p = 0.001$). Women who did not receive support from their husbands were approximately 5.7 times more likely to experience unmet need than those who received adequate support, after adjusting for the other variables included in the regression model.

Furthermore, limited contraceptive knowledge, poor access to healthcare services, inadequate quality of family planning counseling, and negative perceptions of contraceptive implants also remained significantly associated with unmet need after controlling for potential confounding variables. Negative perceptions of contraceptive implants were also identified as a significant predictor of unmet need for family planning.

5. DISCUSSION

The findings of this study revealed that 38.3% of the respondents experienced an unmet need for family planning, indicating that a considerable proportion of women of reproductive age who intended to delay or limit future pregnancies were not using an appropriate contraceptive method. This finding suggests that the availability of family planning services alone does not guarantee optimal utilization of contraceptive methods. Instead, unmet need appears to be influenced by a complex interaction of individual characteristics, family support, and healthcare service factors. Consistent with the concept of unmet need, the gap between reproductive intentions and contraceptive use reflects deficiencies not only in service provision but also in health education, accessibility, and informed decision-making. Therefore, reducing unmet need requires comprehensive interventions that extend beyond increasing contraceptive availability to strengthening education, counseling, and equitable access to reproductive healthcare services (World Health Organization [WHO], 2022; BKKBN, 2023).

The present study demonstrated that contraceptive knowledge was significantly associated with the occurrence of unmet need. Women with limited knowledge regarding contraceptive implants were more likely to experience unmet need than those with adequate knowledge. From the perspective of health behavior theory, knowledge functions as a predisposing factor that shapes health-related decisions by influencing individuals' understanding of the benefits, effectiveness, and potential risks of healthcare interventions. Women who possess accurate information are generally more willing to adopt modern contraceptive methods, whereas inadequate knowledge often contributes to misconceptions concerning contraceptive side effects and reduces acceptance of long-acting reversible contraceptives. These findings are consistent with previous studies reporting that health education and effective family planning counseling significantly improve the acceptance and utilization of modern contraceptive methods among women of reproductive age (Notoatmodjo, 2018; Ministry of Health of the Republic of Indonesia, 2023).

Among all variables examined, husband's support emerged as the strongest predictor of unmet need. Women who lacked support from their husbands were substantially more likely to experience unmet need than those receiving adequate support. Within Lawrence Green's PRECEDE–PROCEED framework, family support represents a reinforcing factor capable of influencing health-related behavior. In the Indonesian sociocultural context, decisions regarding contraceptive use are commonly made jointly by couples, making husbands' approval and participation crucial determinants of contraceptive adoption. Emotional encouragement, shared decision-making, and accurate information provided by husbands may increase women's confidence in choosing long-acting contraceptive methods. These findings reinforce previous evidence demonstrating that partner involvement is one of the most influential determinants of modern contraceptive utilization and family planning program success (Green & Kreuter, 2005; BKKBN, 2023).

Access to healthcare services was also significantly associated with unmet need. Respondents who experienced geographical barriers, transportation limitations, or restricted service availability were more likely to have unmet contraceptive needs despite expressing reproductive intentions to postpone or avoid pregnancy. According to healthcare access theory, the availability, accessibility, and convenience of health services are essential prerequisites for successful utilization. These findings suggest that improving healthcare accessibility through outreach services, strengthening community midwife networks, and expanding the distribution of trained healthcare professionals may represent effective strategies for reducing unmet need, particularly in geographically challenging areas such as Central Halmahera Regency (Penchansky & Thomas, 1981; WHO, 2022).

The quality of family planning counseling was another important determinant identified in this study. Women who received inadequate counseling demonstrated a significantly higher likelihood of experiencing unmet need. Comprehensive counseling enables prospective contraceptive users to understand the advantages, mechanisms of action, potential adverse effects, and appropriate management of contraceptive implants, thereby

facilitating informed decision-making. Conversely, insufficient counseling may increase uncertainty, reinforce misconceptions, and discourage women from selecting long-acting contraceptive methods. These findings underscore the importance of strengthening healthcare providers' communication skills through continuous professional training to improve the quality of contraceptive counseling delivered in primary healthcare settings (Ministry of Health of the Republic of Indonesia, 2023; WHO, 2022).

Negative perceptions regarding the side effects of contraceptive implants were likewise significantly associated with unmet need. Many respondents expressed concerns about menstrual irregularities, weight gain, and other perceived health problems related to implant use. However, most of these concerns can be effectively addressed through evidence-based counseling and accurate health education. According to the Health Belief Model, individuals' perceptions of benefits and barriers strongly influence their willingness to engage in preventive health behaviors. When perceived barriers outweigh perceived benefits, the likelihood of adopting recommended health interventions decreases. Therefore, providing scientifically accurate information regarding the safety and effectiveness of contraceptive implants is essential for correcting misconceptions and improving acceptance of long-acting contraceptive methods (Rosenstock, 1974; Glanz, Rimer, & Viswanath, 2015).

Overall, the findings support Lawrence Green's PRECEDE–PROCEED Model, which proposes that health behavior results from the interaction of predisposing, enabling, and reinforcing factors. In the present study, contraceptive knowledge represented a predisposing factor, healthcare accessibility functioned as an enabling factor, and husband's support served as a reinforcing factor, all of which significantly contributed to the occurrence of unmet need. These findings suggest that improving contraceptive utilization requires multidimensional interventions integrating educational initiatives, enhanced healthcare accessibility, and strengthened family support rather than focusing on a single behavioral determinant (Green & Kreuter, 2005; Notoatmodjo, 2018).

From both theoretical and practical perspectives, this study provides important contributions to family planning research and reproductive health practice. Theoretically, the findings reinforce existing health behavior theories by demonstrating that contraceptive utilization is influenced by the combined effects of individual characteristics, family support, and healthcare service factors. Practically, the results may guide Weda Primary Health Center and the Central Halmahera District Health Office in designing evidence-based strategies to increase contraceptive implant utilization. These strategies should include strengthening family planning counseling, improving reproductive health literacy, promoting male involvement in communication, information, and education programs, and expanding equitable access to family planning services. Implementing these integrated interventions is expected to reduce the prevalence of unmet need while improving the overall quality of reproductive healthcare services at the primary healthcare level (BKKBN, 2023; United Nations Population Fund [UNFPA], 2022).

6. CONCLUSION AND RECOMMENDATIONS

This study demonstrates that unmet need for family planning in the Weda Primary Health Center setting is shaped by interconnected individual, interpersonal, and health-service factors. Contraceptive knowledge, husband's support, accessibility of family planning services, counseling quality, and perceptions of implant-related side effects were significantly associated with unmet need, while maternal age and employment status were not. Notably, inadequate husband's support emerged as the strongest determinant, indicating that contraceptive decision-making extends beyond individual preferences and is strongly influenced by the household context. These findings underscore the importance of moving beyond a service-availability approach toward a more integrated model of family planning that combines accurate contraceptive information, high-quality client-centered counseling, partner engagement, and equitable access to services. Strengthening these components at the primary healthcare level may improve informed contraceptive decision-making and contribute to reducing unmet need.

The findings should be interpreted in light of the cross-sectional design, relatively small sample, single-facility setting, and reliance on self-reported data, which limit causal inference and broader generalization. Nevertheless, the study provides context-specific evidence from Central Halmahera that may inform locally responsive family planning strategies, particularly those aimed at strengthening male involvement and addressing concerns about implant-related effects. Future multicenter studies with larger samples and longitudinal or mixed-methods designs are warranted to clarify temporal relationships and explore the sociocultural and household mechanisms underlying contraceptive decision-making. Such evidence could support the development of targeted, evidence-based interventions to improve the uptake and continuity of appropriate contraceptive methods in geographically and socially diverse populations in Indonesia.

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