e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

International Research of Multidisciplinary Analysis
IRMA JOURNAL
Vol. 3, No. 11, November 2025 hal. 1212-1220
Journal Page is available at http://irma.nindikayla.com/index.php/home

Unmet Family Planning Needs and the Role of Village Midwives in Contraceptive Services in the Community

Siti Maisaroh[1], Dessi Juwita[2]
[1]Universitas Salakanagara,Tangerang, Indonesia
[2]Universitas Bhakti Asih Tangerang, Indonesia
Email: siti.maisaroh@unsaka.ac.id

Abstrak

Background: Midwives are the primary providers of contraceptive services in the community, but *the unmet need* for family planning in Indonesia is declining slowly. **Objective:** To describe national trends in *unmet need*, the role of midwives in contraceptive services, and variations in the prevalence of family planning users across provinces and their relationship with the midwife-to-population ratio. **Methods:** An ecological study using open-access secondary data: the 1991–2017 SDKI series (World Bank), the 2022 Indonesia Health Profile (contraceptive users by method, service location, and province), and the 2020 midwife-to-population ratio per 100,000. Associations were assessed using Spearman's correlation (95% CI via Fisher's z-test), the Kruskal–Walli's test, and the Mann–Whitney test. **Results:** *Unmet need* decreased from 17.0% (1991) to 10.6% (2017), with the rate of decline slowing. In 2022, 59.9% of PUS were family planning participants; 61.6% of modern method users were served at midwife clinics; 61.9% received injections and 22.3% used IUDs. The median prevalence of family planning participants across 33 provinces was 56.7% (IQR 49.5–63.6), with nine provinces below 50%. The midwife-to-population ratio was negatively correlated with the prevalence of family planning participants (ρ = −0.32; 95% CI −0.61 to 0.03; p = 0.066; excluding Papua and West Papua, ρ = −0.45; p = 0.011). **Conclusion:** The availability of midwives per capita does not guarantee the utilization of family planning services; strengthening counseling and comprehensive family planning services by village midwives, as well as indicators of geographic access, are necessary.

Keywords: unmet need; family planning; village midwives; contraception; community midwifery care

Introduction

Contraceptive services are one of the most effective maternal health interventions. An analysis of 172 countries estimates that contraceptive use has reduced maternal mortality by approximately 44% compared to a scenario without contraception, primarily due to a reduction in unintended and high-risk pregnancies (Ahmed et al., 2012). Nevertheless, many women who do not wish to become pregnant still do not use contraception. This group is known as women with unmet contraceptive need—that is, married, fertile, and sexually active women who do not want to have more children or wish to delay childbirth but are not using any form of contraception. The main reasons include concerns about side effects, limited access to and poor quality of services, and opposition from partners or their social environment (Cleeland et al., 2006).

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

In Indonesia, *the unmet need* has been declining slowly. According to the Indonesia Demographic and Health Survey (IDHS), the rate fell from 17.0% in 1991 to 13.1% in 2007, 11.4% in 2012, and 10.6% in 2017 (World Bank, 2025). Analysis of the 2017 SDKI data shows that approximately 11.7% of married women aged 15–49 still have unmet family planning needs, consisting of 4.9% for birth spacing and 6.8% for birth limitation, and is influenced by the quality of family planning services, socioeconomic status, women's autonomy, and the ideal number of children (Larasanti & Ayuningtyas, 2022). Other studies emphasize that the dominant contributing factors vary across groups of women and regions, making uniform interventions less effective (Nuryana et al., 2023).

At the community level, midwives are the primary providers of contraceptive services. Village midwives and independent midwives reach women near their homes, provide counseling, insert implants and intrauterine devices (IUDs), and administer hormonal contraceptive injections. The quality framework for maternal and neonatal care from *The Lancet* series on midwifery positions midwives as providers of woman-centered care—including family planning—when they are educated, regulated, and integrated into the health system (Renfrew et al., 2014; ten Hoope-Bender et al., 2014). However, the numerical availability of midwives does not necessarily translate to equitable access. A provincial-level study using 2012 SDKI data found that the ratio of health workers to population size was not associated with *unmet need*, whereas the ratio relative to geographic area was associated with lower *unmet need* (Ariyanti et al., 2017).

It remains unclear whether similar patterns are evident in the most recent service data. This study aims to (1) describe trends in *unmet need* for family planning in Indonesia based on the 1991–2017 SDKI, (2) describe the role of midwives and the composition of contraceptive methods in national family planning services in 2022, and (3) analyze variations in the prevalence of family planning participants across provinces and their relationship with the ratio of midwives to population, as a basis for strengthening the role of village midwives in community midwifery care.

Methods

Study Design. This study is a descriptive-analytical ecological study with provinces as the unit of analysis, using publicly available aggregated secondary data. An ecological approach was chosen because access to individual SDKI data requires authorization, and *unmet need* figures by province are not available in verifiable open-access publications; therefore, associations were analyzed using the prevalence of family planning users as a measure of contraceptive service utilization.

Data Sources. National trends *in unmet need* from 1991 to 2017 were drawn from the World Development Indicators (SP.UWT.TFRT), sourced from the SDKI (World Bank, 2025); values from non-SDKI surveys in 2015 and 2016 were excluded to ensure the time series remained comparable. The number and composition of couples of reproductive ages (CRA) using family planning by method and place of service, as well as the percentage of CRA using family planning by province in 2022, were taken from Appendix 29 of the 2022 Indonesia Health Profile (Ministry of Health of the Republic of Indonesia, 2023). The ratio of midwives per 100,000 population by province is taken

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

from the 2020 Indonesia Health Profile (Ministry of Health of the Republic of Indonesia, 2021). A summary of data sources is presented in Table 1.

Table 1. Research Data Sources

Variable	Year	Coverage	Source
Unmet need for family planning, married women aged 15–49 (%)	1991–2017	National, 7 rounds of SDKI	World Bank (2025)
Family Planning Participants by Method and Place of Service	2022	National	Ministry of Health (2023)
Family Planning Participants by Province (%)	2022	33 provinces	Ministry of Health (2023)
Midwives per 100,000 population	2020	34 provinces	Ministry of Health (2021)

Operational definition. *Unmet need* is the percentage of married women aged 15–49 who do not want to become pregnant or wish to delay pregnancy but are not using contraception. Family planning prevalence is the percentage of women of reproductive age currently using modern or traditional methods in 2022. Long-acting contraceptive methods (LACMs) are calculated as the combined total of intrauterine devices (IUDs), implants, female sterilization, and male sterilization. Midwives include service providers in private midwifery practices as well as those at village health posts, auxiliary community health centers, mobile community health centers, and village midwives, as categorized in the source.

Selection of units of analysis. DKI Jakarta lacked family planning participant data in the source and was therefore excluded; the analysis covers 33 provinces (the territorial boundaries of the 34 provinces prior to the 2022 administrative reorganization in Papua). Papua and West Papua showed significantly lower prevalence than other provinces; therefore, the analysis was repeated excluding these two provinces as a sensitivity analysis.

Data analysis. Provincial prevalence was summarized using the median and interquartile range (IQR). The relationship between the midwife-to-population ratio and family planning participant prevalence was assessed using Spearman's rank correlation; 95% confidence intervals were calculated using Fisher's z-transformation and the Bonett–Wright standard error. Provinces were divided into three groups (tertiles) based on the midwife-to-population ratio and family planning participant prevalence using the Kruskal–Walli's test. Differences between the Java–Bali provinces (West Java, Central Java, Yogyakarta Special Region, East Java, Banten, and Bali) and other provinces were tested using the Mann–Whitney U test. Tests were two-tailed with $\alpha = 0.05$, and analyses were performed using Python 3 (SciPy library).

Design limitations. The 2022 family planning participant data and the 2020 midwife-to-population ratio data were collected in different years. Ecological studies cannot draw

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

conclusions at the individual level, and the midwife-to-population ratio does not account for distance, village distribution, or workload. This study used publicly available aggregate data without individual identifiers; therefore, no ethical approval was required.

Results

National trends in *unmet need*. *Unmet need* declined from 17.0% in 1991 to 10.6% in 2017, but the rate of decline slowed: from 2003 to 2007, it remained virtually unchanged (13.2% to 13.1%), then fell by 1.7 percentage points to 11.4% in 2012 and by 0.8 percentage points to 10.6% in 2017 (Table 2).

Table 2. *Unmet need* for family planning among married women aged 15–49 by SDKI round, 1991–2017

DSKI Year	1991	1994	1997	2003	2007	2012	2017
Unmet need (%)	17.0	15.3	13.6	13.2	13.1	11.4	10.6

Note: Source: World Bank (2025), SP.UWT.TFRT indicator based on SDKI.

The role of midwives and contraceptive method composition in 2022. In 2022, there were 46.0 million women of reproductive age, and 59.9% of them were using contraception (modern methods: 59.4%; traditional methods: 0.5%). Injectable methods dominated modern contraceptive use (61.9%), followed by pills (13.5%), implants (10.6%), IUDs (7.7%), MOW (3.8%), condoms (2.3%), and MOP (0.2%); MKJP accounted for only 22.3% of all modern contraceptive users. Of the 27.3 million users of modern methods, 35.4% were served at midwife private practices and 26.2% at village health posts, auxiliary community health centers, mobile community health centers, or by village midwives; thus, midwife-provided services accounted for 61.6% of modern method users (Table 3). Community health centers and military/police facilities serve 13.1%, while drugstores or pharmacies serve 8.2%.

Table 3. Composition of modern contraceptive users by method and service location, Indonesia 2022

Method	%	Service Location	%
Injectable	61.9	Independent midwife practices	35.4
Pills	13.5	Community health centers, satellite clinics, or village midwives	26.2
Implants	10.6	Community Health Centers and TNI/Polri Clinics	13.1
IUD	7.7	Drugstores or pharmacies	8.2
MOW	3.8	Private clinic	5.9
Condoms	2.3	Public and private hospitals	7.9
MOP	0.2	Doctor’s offices, family planning clinics, others	3.3

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

Note: Percentages are based on 27,330,289 users of modern methods; MAL (<0.1%) is not shown. Source: Ministry of Health of the Republic of Indonesia (2023).

Variation across provinces. The median prevalence of family planning participants across the 33 provinces was 56.7% (IQR 49.5–63.6; range 10.9–71.1). The highest prevalence was recorded in South Kalimantan (71.1%), the Bangka Belitung Islands (67.4%), and Bengkulu (66.8%), while the lowest was in Papua (10.9%), West Papua (28.6%), and Maluku (34.2%). Nine provinces had a prevalence below 50%, and six provinces reached ≥65% (Figure 1).

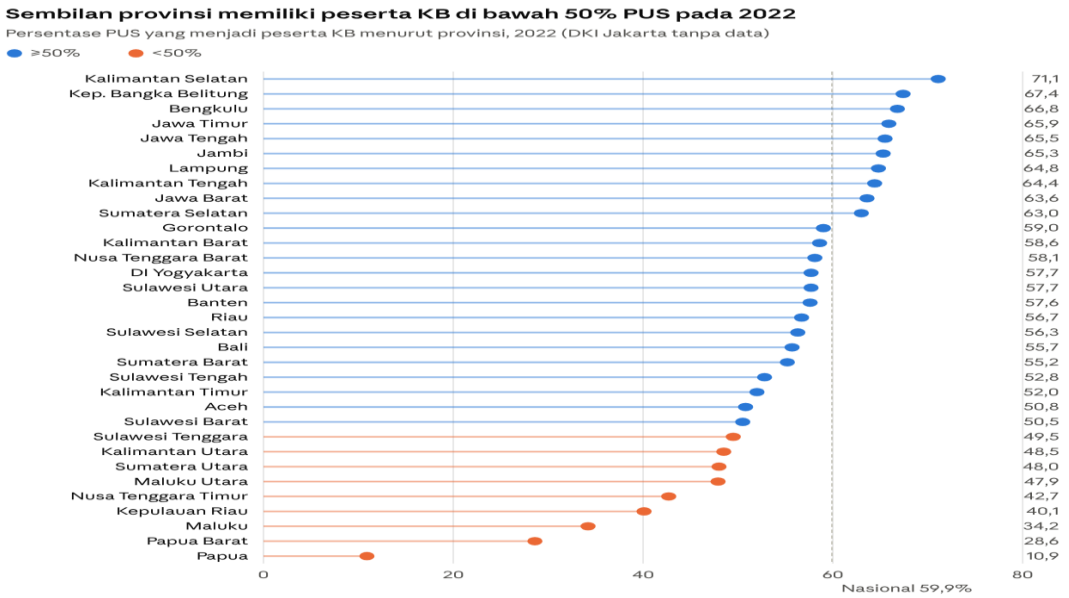


Figure 1. Nine provinces had family planning participants below 50% of the target population in 2022. Source: Ministry of Health of the Republic of Indonesia (2023), processed by the author

Association with the midwife-to-population ratio. The ratio of midwives per 100,000 population showed a weak negative correlation with the prevalence of family planning participants (ρ = −0.32; 95% CI −0.61 to 0.03; p = 0.066; n = 33). After excluding Papua and West Papua, the negative correlation became more pronounced (ρ = −0.45; 95% CI −0.70 to −0.10; p = 0.011; n = 31). Grouping by tertile showed the same pattern: provinces with the lowest midwife-to-population ratio (median 163.8 per 100,000) had a median prevalence of 58.6%, while the middle (270.5) and highest (369.3) tertiles had prevalences of 52.0% and 52.8%, respectively; however, these differences were not statistically significant (Kruskal–Wallis p = 0.14) (Table 4). The Java–Bali provinces had a significantly lower midwife-to-population ratio (median 139.7) than other provinces (282.9), with a prevalence that tended to be higher (60.7% vs. 55.2%; Mann–Whitney p = 0.11).

Table 4. Prevalence of family planning participants in 2022 by tertile of the midwife-to-population ratio per 100,000 in 2020 (n = 33 provinces)

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

Midwife-to-population ratio tertile	Median midwife-to-population ratio	Median family planning prevalence (%)
Lowest (n = 11)	163.8	58.6
Medium (n = 11)	270.5	52.0
Highest (n = 11)	369.3	52.8

Note: Kruskal–Wallis p = 0.14. Source: Ministry of Health of the Republic of Indonesia (2021, 2023), processed by the author.

Discussion

A slowing decline in *unmet need*. The SDKI series shows that *unmet need* fell from 17.0% to 10.6% over 26 years, but remained virtually unchanged between 2003 and 2007 and declined by less than 1 percentage point in the most recent round. Indonesia's position falls within the range of neighboring countries for which data is available from the World Bank (2025), specifically lower than the Philippines (12.4% in 2022) and Cambodia (11.5% in 2022), similar to Vietnam (10.1% in 2021), but higher than Thailand (8.9% in 2022); differences in survey years make these comparisons merely indicative. Since the remaining *unmet need* group tends to become increasingly difficult to reach, strategies that merely increase service provision are no longer sufficient. This pattern aligns with the findings of Nuryana et al. (2023), who noted that *unmet need* in Indonesia has remained relatively stable within the 10–12% range and is driven by a combination of health concerns or side effects, service barriers, and social stigma, which vary by group of women and region. Cleland et al. (2006) also emphasize that concerns about side effects and inadequate counseling are the primary reasons for contraceptive non-use in various countries; therefore, further reduction requires high-quality counseling, not merely the availability of contraceptives.

Midwives are at the forefront of contraceptive services. The finding that 61.6% of users of modern methods were served at midwife clinics indicates that the quality of midwives' counseling and clinical skills determines the experience of the majority of contraceptive users. This aligns with the midwifery care framework, which positions family planning as part of woman-centered care and requires midwives who are educated, regulated, and supported by a referral system (Renfrew et al., 2014; ten Hoope-Bender et al., 2014). The predominance of injectable methods (61.9%) and the low rate of MKJP (22.3%) indicate that method choice remains centered on short-acting methods that require periodic follow-up visits. Larasanti and Ayuningtyas (2022) found that the quality of family planning services influences the incidence of *unmet need* for birth spacing and birth limitation; therefore, strengthening method-choice counseling—including long-acting reversible contraception (LARC) for women seeking to limit births—presents a clear area of focus for village midwives. These findings are descriptive; the data used do not demonstrate a direct effect of midwife counseling on method selection.

The availability of midwives does not automatically mean that services are utilized. The correlation between the midwife-to-population ratio and the prevalence of

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

family planning participants is negative, not positive. Provinces with high midwife-to-population ratios, such as Aceh (541.9), Southeast Sulawesi (427.0), and North Maluku (399.5), have family planning participant prevalence rates below the national average, whereas West Java, East Java, and Central Java—which have low ratios (119–135)—achieve prevalence rates of 63.6–65.9%. These findings are consistent with the provincial-level analysis by Ariyanti et al. (2017), which found that the ratio of personnel per capita is not associated with *unmet need*, whereas the ratio per area is associated with it. A plausible explanation—though not tested here—is that the per-capita ratio obscures distance: archipelagic or sparsely populated provinces require more midwives per capita simply to reach scattered hamlets, so a high ratio reflects geographic need rather than a surplus of personnel. Therefore, midwife workforce planning should utilize access indicators—such as travel time to a midwife or the number of villages without a midwife—in addition to the per-capita ratio.

Interprovincial disparities. The nine provinces with a prevalence below 50% are mostly located in the eastern region or are archipelagic in nature, with Papua (10.9%) and West Papua (28.6%) representing the extremes. These two figures must be interpreted with caution because they may be influenced by the completeness of reporting and geographical conditions; for this reason, sensitivity analyses were conducted excluding these two factors. The difference in prevalence between Java–Bali and other provinces is not statistically significant ($p = 0.11$), indicating that variation also occurs within regions, for example, between South Kalimantan (71.1%) and North Kalimantan (48.5%). This pattern supports recommendations for interventions tailored to the local context (Nuryana et al., 2023). The health benefits are clear: contraception prevents maternal deaths by reducing unwanted and high-risk pregnancies (Ahmed et al., 2012), making provinces with low prevalence a priority for midwives and family planning programs.

Implications for community midwifery care. First, village midwives need to strengthen counseling that addresses concerns about side effects and offers the full range of method options, including long-acting reversible contraception (LARC). Second, home visits and collaboration with community health workers and community leaders are necessary to reach women in hard-to-reach areas. Third, the distribution of midwives should be evaluated using geographic access indicators. Fourth, the public release of *unmet need* data by province and district will enable more targeted evaluations.

Limitations. This study is ecological in nature and therefore does not establish a cause-and-effect relationship. *Unmet need* figures by province are not publicly available; thus, family planning prevalence was used as a measure of service utilization, even though the two are not identical. The midwife-to-population ratio (2020) and family planning prevalence (2022) are from different years, and data for DKI Jakarta could not be analyzed. The midwife-to-population ratio does not account for distance, competence, or workload, and the small number of provinces ($n = 33$) limits the study's power. Future research should use individual SDKI data or district-level data that includes measures of geographic access.

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

Conclusion

Unmet need for family planning in Indonesia decreased from 17.0% (1991) to 10.6% (2017) at a gradually slowing rate. Midwives served 61.6% of modern contraceptive users in 2022, but use was still dominated by injectables (61.9%), while long-acting reversible contraception (LARC) accounted for only 22.3%. The prevalence of family planning participants varies widely across provinces (median 56.7%; range 10.9–71.1%), with nine provinces below 50%. The ratio of midwives per capita is not positively correlated with the prevalence of family planning participants ($\rho = -0.32$; $p = 0.066$), indicating that the mere numerical availability of midwives does not guarantee access. Village midwives need to strengthen counseling and IUD services, and midwife workforce planning should incorporate geographic access indicators as well as publicly available provincial and district-level data on *unmet need*.

References

Ahmed, S., Li, Q., Liu, L., & Tsui, A. O. (2012). Maternal deaths averted by contraceptive use: An analysis of 172 countries. *The Lancet, 380*(9837), 111–125. https://doi.org/10.1016/S0140-6736(12)60478-4

Ariyanti, L., Dasuki, D., & Wilopo, S. A. (2017). Availability of health resources and unmet family planning needs: A provincial-level analysis. *Community Medicine News, 33*(1), 49–54. https://journal.ugm.ac.id/bkm/article/view/9868

Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., & Innis, J. (2006). Family planning: The unfinished agenda. *The Lancet, 368*(9549), 1810–1827. https://doi.org/10.1016/S0140-6736(06)69480-4

Ministry of Health of the Republic of Indonesia. (2021). *Indonesia Health Profile 2020*. Ministry of Health of the Republic of Indonesia. https://layanandata.kemkes.go.id/file/profil-kesehatan/2020/bab-5.pdf

Ministry of Health of the Republic of Indonesia. (2023). *Indonesia Health Profile 2022*. Ministry of Health of the Republic of Indonesia. https://layanandata.kemkes.go.id/file/profil-kesehatan/2023/bab-5.pdf

Larasanti, A., & Ayuningtyas, D. (2022). Effects of family planning service utilization determinants on unmet need incidents using generalized structural equation modeling. *AJOG Global Reports, 2*(4), Article 100088. https://doi.org/10.1016/j.xagr.2022.100088

Nuryana, D., Cahyani, R. A., Rahayu, S., Romadlona, N. A., Liyanto, E., Daisy, L., Hartiti, W., Ratnawati, M. E., Utomo, B., & Magnani, R. J. (2023). Unmet need for family planning in Indonesia and its associated factors. *Makara Journal of Health Research, 27*(1). https://doi.org/10.7454/msk.v27i1.1403

Renfrew, M. J., McFadden, A., Bastos, M. H., Campbell, J., Channon, A. A., Cheung, N. F., Silva, D. R. A. D., Downe, S., Kennedy, H. P., Malata, A., McCormick, F., Wick, L., & Declercq, E. (2014). Midwifery and quality care: Findings from a new

e-ISSN: 2985-4415
DOI: 10.57254/irma.v3i11.100

evidence-informed framework for maternal and newborn care. *The Lancet, 384*(9948), 1129–1145. https://doi.org/10.1016/S0140-6736(14)60789-3

ten Hoope-Bender, P., de Bernis, L., Campbell, J., Downe, S., Fauveau, V., Fogstad, H., Homer, C. S. E., Kennedy, H. P., Matthews, Z., McFadden, A., Renfrew, M. J., & Van Lerberghe, W. (2014). Improvement of maternal and newborn health through midwifery. *The Lancet, 384*(9949), 1226–1235. https://doi.org/10.1016/S0140-6736(14)60930-2

World Bank. (2025). *World Development Indicators: Unmet Need for Contraception (% of Married Women Aged 15–49)* [Data set]. World Bank. https://api.worldbank.org/v2/country/IDN;KHM;PHL;THA;VNM/indicator/SP.UWT.TFRT