



Factors Associated with the Choice of Female Sterilization as Contraception: A Scoping Review

Juwita Amalia Saputri^{1*}, Ni Komang Yuni Rahyani², Ni Nyoman Suindri³

¹⁻³Poltekkes Kemenkes Denpasar, Jl. Sanitasi No. 1, Sidakarya, Denpasar Selatan, Kota Denpasar, Bali, Indonesia

¹juwitaamaliasaputri@gmail.com*; ²yunirahyani@yahoo.co.id; ³ninyomansuindri@yahoo.com

ABSTRACT

Female sterilization or tubectomy (Metode Operasi Wanita/MOW) is a highly effective permanent contraceptive method; however, its utilization remains relatively low, suggesting the influence of various non-medical factors on women's decision-making. This study was conducted as a scoping review to identify and map factors associated with the selection of MOW among women of reproductive age. A systematic search of national and international databases was conducted based on predefined inclusion and exclusion criteria. Eleven eligible articles were analyzed through the stages of identification, screening, data charting, and synthesis. Seven key factors were identified: age, education, employment status, parity, knowledge, attitude, and husband's support. Age ≥ 30 years and higher parity consistently emerged as dominant determinants. Adequate knowledge and positive attitudes toward permanent contraception significantly increased women's willingness to choose MOW, while husband's support was the strongest reinforcing factor. Overall, the selection of MOW is influenced not only by medical considerations but also by social, psychological, and cultural factors. Strengthening contraceptive education and promoting couple-centered counseling are essential to improve informed decision-making and increase acceptance of female sterilization.

Keywords: *Female sterilization; Tubectomy; Permanent contraception; Associated factors; Scoping review*

1. INTRODUCTION

Female sterilization (tubectomy), known in Indonesia as Metode Operasi Wanita (MOW), is a highly effective permanent contraceptive method (Kalangona et al., 2025). Male sterilization (vasectomy) and female sterilization (tubectomy) are permanent contraceptive methods intended to prevent future pregnancies and are distinct from abortion, which refers to the termination of an existing pregnancy (Ramli et al., 2020). Despite its high efficacy, MOW uptake remains substantially lower than that of reversible contraceptive methods, particularly in developing countries, including Indonesia. This low utilization stems not only from medical factors but also from social, psychological, and cultural influences on women's reproductive decision-making. Consequently, limited acceptance of MOW may exacerbate unmet family planning needs and elevate the risk of unintended pregnancies among women who have achieved their desired family size.

* Juwita Amalia Saputri.

Tel.: -

Email: juwitaamaliasaputri@gmail.com

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Previous studies have shown that the decision to choose MOW is influenced by various factors (Hasan et al., 2022; Nindiyastuti, 2021; Febriana & Wibowo, 2022; Tambunsaribu et al., 2023). Among these factors, non-medical determinants particularly husband's support and women's knowledge are consistently reported as key elements in strengthening women's confidence to choose permanent contraception. However, findings across studies remain inconsistent, especially regarding the roles of education and employment status, indicating the need for a comprehensive synthesis of existing evidence.

Based on these considerations, the research question of this study is: What factors are associated with the selection of female sterilization (MOW) among women of reproductive age. Therefore, this study aims not only to identify and map factors associated with the selection of female sterilization (MOW), but also to provide an integrated conceptual understanding of how these determinants interact in influencing women's reproductive decision-making. This review is relevant to midwifery and reproductive health by offering a structured synthesis of medical and non-medical determinants affecting the acceptance of permanent contraception. By systematically mapping the existing evidence, it bridges gaps in fragmented prior findings and supports the development of evidence-based counseling strategies. Ultimately, the findings are anticipated to assist healthcare providers particularly midwives in designing more effective, couple-centered contraceptive education and counseling interventions.

Although several studies have examined determinants of female sterilization, existing evidence remains fragmented across different populations and settings. Previous studies have primarily focused on identifying individual factors without adequately integrating how these determinants interact within broader social and relational contexts. Furthermore, limited attention has been given to synthesizing these findings within a comprehensive conceptual framework, particularly in the context of permanent contraception.

From a theoretical perspective, women's reproductive decision-making can be understood through a socio-ecological framework, which emphasizes that health behaviors are influenced by multiple levels, including individual, interpersonal, and structural factors. In the context of female sterilization, individual characteristics such as age, parity, and knowledge interact with interpersonal dynamics such as husband support, as well as broader socio-structural factors including education and occupation.

2. METHODS

2.1 Review Design and Reporting Framework

This study employed a scoping review design to identify, map, and synthesize available evidence regarding factors associated with the selection of Female Sterilization (Metode Operasi Wanita/MOW) as a permanent contraceptive method among women of reproductive age. A scoping review approach was selected because the objective of this study was not only to summarize existing findings but also to explore the breadth of evidence, identify key influencing factors, and recognize research gaps related to MOW decision-making.

The review process followed the methodological framework proposed by Arksey and O'Malley, which consists of five sequential stages: (1) identifying the research question, (2) identifying relevant studies, (3) selecting eligible studies, (4) charting the extracted data, and (5) collating, summarizing, and reporting the results. To improve methodological transparency and reporting quality, this review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guideline. The scoping review framework was considered appropriate because the available literature on MOW selection includes heterogeneous study designs, populations, and investigated factors, requiring evidence mapping rather than quantitative effect estimation (M. C. Utami et al., 2021).

2.2 Research Question and Framework Development

The research question was developed to guide the identification, selection, and synthesis of relevant studies. The main research question of this scoping review was: "What factors are associated with the

selection of Female Sterilization (Metode Operasi Wanita/MOW) among women of reproductive age?”. The research question and eligibility criteria were structured using the PICOS framework, consisting of Population, Intervention/Exposure, Comparison, Outcome, and Study Design.

Table 1. PICOS Framework for the Scoping Review

P	“Women of reproductive age who are current users of the Metode Operasi Wanita (MOW) contraceptive method (tubectomy/ female sterilization).”
I	“Sociodemographic factors (age, education, occupation, socioeconomic status/economic status).”
C	“Women from the same population who do not choose or use MOW.”
O	“Selection/uptake of MOW contrace-ption (tubectomy/female sterilization), measured as current user status or history of having undergone MOW.”
S	“Eligible studies were analytical observational studies, with cross-sectional design being the type most commonly identified and ultimately included in the final review.”

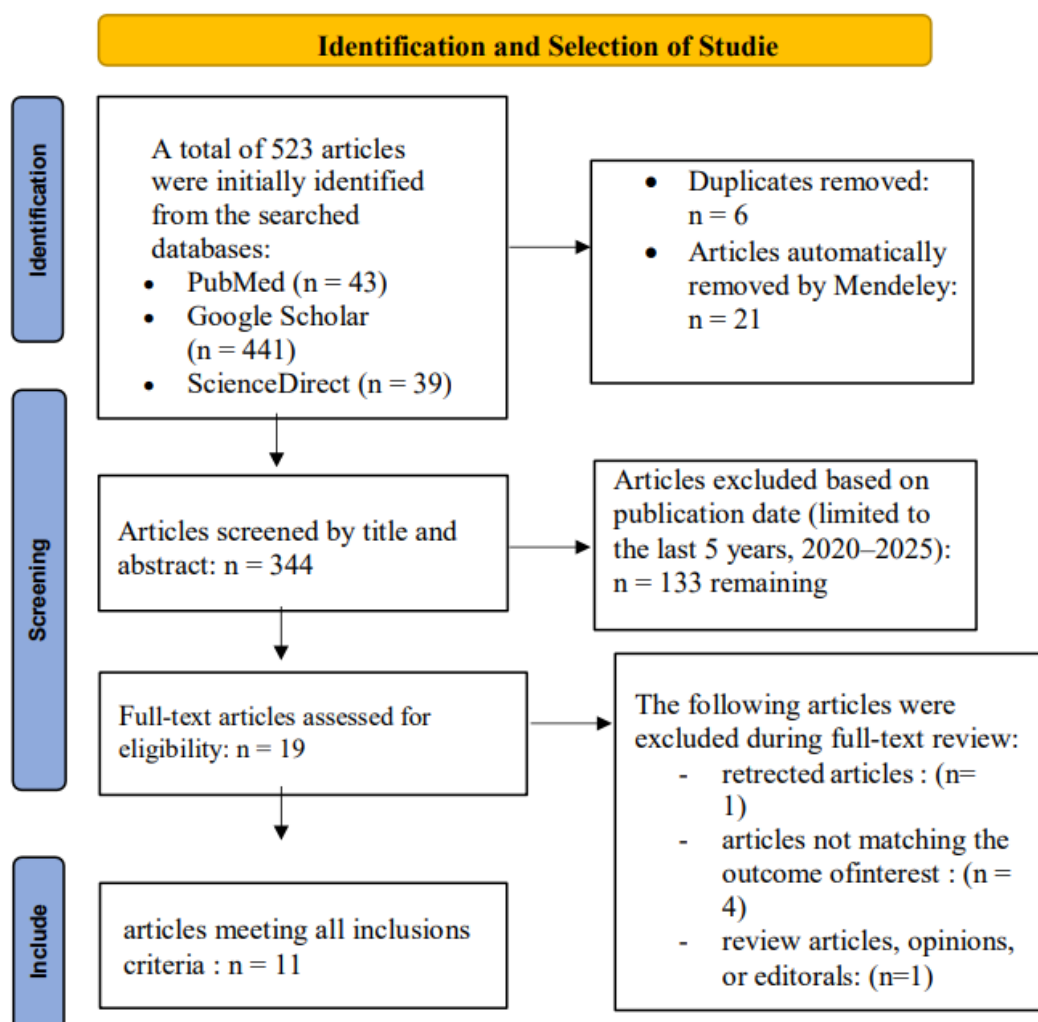


Fig 1. PRISMA Flow Diagram

The search utilized keywords: ("Tubal Sterilization" OR "Tubectomy" OR "Female Sterilization" OR "Metode Operasi Wanita" OR "MOW") AND ("factors" OR "determinants" OR "associated factors" OR "choice"), with Boolean operators, truncation, and MeSH terms. Following the PRISMA-ScR

guidelines, 523 records were identified (PubMed: 43, ScienceDirect: 39, Google Scholar: 441). After duplicate removal, 344 articles were screened by title and abstract, and 19 full-text articles were reviewed. Finally, 11 studies met the inclusion criteria. Data were charted and analyzed using qualitative thematic synthesis, identifying three main themes: sociodemographic factors, knowledge and attitude, and partner support. No meta-analysis was conducted. Formal critical appraisal was not performed, consistent with scoping review methodology (Arksey & O'Malley; PRISMA-ScR), as the focus was on mapping evidence rather than assessing study quality.

3. RESULTS AND DISCUSSION

To strengthen the synthesis, the findings were additionally organized into a structured comparative evidence table summarizing the characteristics of the included studies, the variables examined, and the reported statistical findings, including effect sizes or significance indicators where available. Due to heterogeneity in study settings, variable definitions, and statistical reporting, direct pooling or formal comparison of effect sizes across studies was not feasible. A total of 11 studies met the eligibility criteria, and all of the included studies used a cross-sectional design. The included studies were published between 2019 and 2025. (3 in 2020, 2 in 2021, 2 in 2022, 1 in 2023, 1 in 2024, 1 in 2025, and 1 in 2019). Data charting systematically mapped the factors influencing the selection of Metode Operasi Wanita (MOW) or tubectomy (female sterilization) among women of reproductive age, namely: age, education, occupation, parity, knowledge, attitude, and husband support, [Krisdayanti et al., 2022](#); [Maghfiroh, 2023](#); [Utami & Trimuryani, 2020](#); [Anita et al., 2020](#); [Olakunde et al., 2025](#); [Fuadsanah et al., 2020](#); [Aurora et al., 2019](#); [Husban et al., 2022](#); [Zaveri et al., 2025](#)).

The explanations for each factor are as follows:

a. Age

Age was a dominant and consistent factor. Women over 30–35 years were significantly more likely to choose tubectomy, often due to completed family size, increased pregnancy risks with age, and desire for permanent contraception. This was supported by most studies. However, some indicated parity and knowledge were more influential than age alone.

b. Education

Higher education levels were associated with greater acceptance of tubectomy, as educated women better understood benefits, risks, and effectiveness, and had improved access to information. Findings varied; education influenced indirectly through knowledge, but was less dominant than parity, knowledge, or husband support in some studies.

c. Occupation

Results on occupation were inconsistent and generally weak. Some studies found no significant association, while others suggested formal employment improved access to health services and information, indirectly supporting choice of permanent methods. Overall, occupation was less influential than knowledge, parity, or partner support.

d. Parity

Parity showed the strongest and most consistent association. Women with ≥ 2 –3 children (higher parity) were far more likely to select tubectomy, as they felt family size was complete and sought to prevent further. This factor often interacted with age and husband support.

e. Knowledge

Adequate knowledge about tubectomy's benefits (high effectiveness, low failure rate), risks, and procedure strongly promoted selection, reducing fear and hesitation. Poor knowledge led to preference for temporary methods. Education and counseling were emphasized as key to improving uptake.

f. Attitude

Positive attitudes toward tubectomy (shaped by knowledge, cultural perceptions, and partner support) increased willingness to choose it. Negative attitudes, driven by misconceptions, fear, stigma, or irreversibility concerns, hindered selection. Husband support reinforced positive attitudes.

g. Husband/Partner Support

Husband support was one of the most dominant and consistent factors. Emotional, informational, and approval support from husbands significantly increased women's readiness and confidence to undergo tubectomy (I. Utami & Trimuryani, 2020; Olakunde et al., 2025; Anita et al., 2020; Krisdayanti et al., 2022). Lack of support or opposition created major barriers. Involving couples in counseling was recommended to enhance acceptance. In summary, age, parity, knowledge, and husband support were the most consistently significant factors across studies, while education and occupation showed variable influence. Positive attitude further strengthened decisions. These findings highlight the need for comprehensive education, couple-inclusive counseling, and improved access to services to boost informed uptake of this highly effective permanent method.

4. DISCUSSION

Conceptual Integration of Determinants

Beyond identifying individual determinants, this review highlights the complex interactions between factors influencing women's decisions to undergo female sterilization. When interpreted through a socio-ecological framework, these determinants operate across multiple levels. At the individual level, age and parity reflect reproductive readiness and the desire to limit fertility. Knowledge and attitudes represent cognitive factors that shape women's perceptions and acceptance of permanent contraception.

At the interpersonal level, husband or partner support plays a critical role in reinforcing women's decisions, indicating that reproductive choices are not made independently but are influenced by relational dynamics. Structural factors such as education and occupation influence access to information and healthcare services, although their effects vary across contexts. These findings demonstrate that the decision to choose female sterilization is influenced by the interaction of multiple factors rather than a single determinant.

Unlike previous studies that primarily report individual determinants, this review provides an integrated conceptual synthesis by applying a socio-ecological perspective. This approach offers a more comprehensive understanding of reproductive decision-making and contributes to the development of more effective and context-sensitive family planning interventions.

Contextual Variations and Heterogeneity in Determinants

This scoping review reveals substantial heterogeneity in factors associated with the choice of female sterilization as contraception across contexts. Socioeconomic and healthcare disparities influence contraceptive choices, with high-income settings favoring non-hormonal permanent methods, while in low- and middle-income countries, limited access to reversible methods, cost barriers, and completed family size contribute to higher uptake (Abdi et al., 2025). Cultural and stigma-related influences further vary, with stronger effects from religious norms, gender roles, and family pressures in Asian contexts compared to more individualistic patterns in Western ones. Methodological differences qualitative vs. quantitative approaches or clinical vs. community samples also contribute to varying emphases on individual versus structural determinants. These variations highlight the need for context-specific, culturally tailored counseling rather than uniform approaches.

CONCLUSION

This scoping review demonstrates that the selection of female sterilization is influenced by a complex interplay of individual, interpersonal, and structural factors. Age and parity indicate reproductive

readiness, while knowledge and attitudes shape acceptance of permanent contraception. Husband support plays a critical reinforcing role, reflecting the importance of relational dynamics in decision-making. These findings highlight that reproductive decisions are not solely based on medical considerations but are also shaped by social and contextual influences. Therefore, comprehensive and couple-centered approaches are essential in improving the acceptance of female sterilization.

Recommendations

This scoping review demonstrates that the selection of female sterilization (MOW) is shaped by demographic, socioeconomic, and psychosocial determinants, particularly age, parity, knowledge, attitudes, and husband support. These findings underscore that decisions regarding permanent contraception extend beyond clinical considerations and are strongly influenced by relational and contextual factors.

Strengthening evidence-based counseling is therefore essential. Healthcare providers should deliver structured and individualized counseling that clearly explains the benefits, risks, and long-term implications of MOW, particularly for women aged ≥ 30 years and those who have completed their desired family size. Given the substantial influence of partner involvement, couple-based counseling strategies should be prioritized to support shared and informed decision-making.

At the policy level, improving reproductive health literacy through collaboration with national institutions such as the Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN) and the Ministry of Health of the Republic of Indonesia may enhance the acceptance of permanent contraception. Future research employing qualitative or mixed-method approaches is warranted to further elucidate the sociocultural dynamics underlying contraceptive decision-making.

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Declaration of Generative AI

During the preparation of this manuscript, the author used Grok (xAI) for assistance in structuring and organizing the Methods section, summarizing lengthy paragraphs, improving academic writing clarity, and drafting the Acknowledgements section. After utilizing this tool, the author thoroughly reviewed, edited, and refined all content as necessary and takes full responsibility for the accuracy and integrity of the final version of the published article.

REFERENCES

- Abdi, Y. H., Abdi, M. S., Bashir, S. G., & Ahmed, N. I. (2025). Understanding Global Health Inequality And Inequity : Causes , Consequences , And The Path Toward Justice In Healthcare. *Public Health Challenges*, 1–11. [10.1002/puh2.70156](https://doi.org/10.1002/puh2.70156)
- Anita, P., Nzabona, A., & Tuyiragize, R. (2020). Determinants Of Female Sterilization Method Uptake Among Women Of Reproductive Age Group In Uganda. *Contraception And Reproductive Medicine*, 8, 1–10.
- Aurora, N. F., Multazam, M. A., & Fachrin, S. A. (2019). Penerimaan Tubektomi Sebagai Metode Kontrasepsi Di Kabupaten Pangkep. *Bina Generasi : Jurnal Kesehatan*, 1(11).
- Febriana, Y., & Wibowo, A. (2022). The Correlation Between Socio-Demographic Characteristics And Tubectomy Utilization In Women With Contraception. *Jurnal Kesehatan Komunitas (Journal Of Community Health)*, 8(1), 66–72. <https://doi.org/10.25311/keskom.Vol8.Iss1.1063>
- Fuadsanah, E., Sulistiyansih, S. H., & Irnawati, Y. (2020). Analisis Faktor-Faktor Yang Berhubungan Dengan. *Jurnal Ilmiah Ilmu Kebidanan Dan Kesehatan*, 11(1), 36–39.

- Hasan, D. S., Suriyanti, & Rusli. (2022). Gambaran Faktor Penghambat Pasangan Usia Subur Memilih Tubektomi Di Rumah Sakit Khusus Daerah Ibu Dan Anak Siti Fatimah Makassar. *SCIENTIA: Journal Of Multi Disciplinary Sciences*, 01(2), 119–130.
- Husban, N. Al, Kaadan, D., Foudeh, J., Ghazi, T., Sijari, Y., & Maaita, M. (2022). Factors Affecting The Use Of Long Term And Permanent Contraceptive Methods : A Facebook - Focused Cross - Sectional Study. *BMC Women's Health*, 1–15. <https://doi.org/10.1186/s12905-022-01784-0>
- Kalangona, V. T., Takaeb, A. E. L., Limbu, R., & Romeo, P. (2025). Determinan Pemilihan Metode Operasi Wanita (MOW) Di Puskesmas Lewoleba Kecamatan Nubatukan Kabupaten Lembata. *SEHATRAKYAT (Jurnal Kesehatan Masyarakat)*, 4(3), 625–638. <https://doi.org/10.54259/sehatrakyat.v4i3.5295>
- Krisdayanti, Datjing, T., & Misdaryanti. (2022). Faktor – Faktor Yang Mempengaruhi Pemilihan Kontrasepsi Metode Operasi Wanita (Mow) Pada Pasangan Usia Subur D I Rumah Sakit Umum Dewi Sartika Kota Kendari Tahun 2021. *JURNAL AVICENA : Penelitian Sains Dan Kesehatan*, 1(1), 9–18.
- Maghfiroh, A. (2023). Hubungan Pengetahuan Terhadap Pemakaian Kontrasepsi Tubektomi. *Jurnal Ilmiah Permas : Jurnal Ilmiah STIKES Kendal*, 13(3), 951–956.
- Nindiyastuti, N. A. I. (2021). Determinan Penggunaan Kontrasepsi Sterilisasi Wanita Di Provinsi Jawa Tengah In Central Java Tinggi . Secara Umum Terjadi Penurunan Kematian Ibu Selama Periode 1991-2015 Dari Penggunaan Kontrasepsi Sterilisasi (MOW). Faktor Yang Dianalisis Berupa Umur ., *Prosiding Seminar Nasional UNIMUS*, 4, 1724–1730.
- Olakunde, B. O., Itanyi, I. U., Ogidi, A. G., Uparegh, I., Oko, J. O., Onoka, C. A., & Ezeanolue, E. E. (2025). Willingness To Use Female Permanent Contraception Among Married Women And Male Partners' Support In Benue, Nigeria. *The Pan African Medical Journal*, 50, 96. <https://doi.org/10.11604/pamj.2025.50.96.35622>
- Ramli, R., Basry, N. A., & Fidmatan, M. (2020). Sterilization Study: Vasectomy And Tubectomy Risnawati. *Journal La Medihealtico*, 01(01), 34–38.
- Tambunsaribu, M., Nadapdap, T. P., & Fitria, A. (2023). Faktor Yangmemengaruhi Wanita Pasangan Usia Subur Terhadap Pemilihanmetode Kontrasepsi Tubektomi Di Dinas Pengendalian Penduduk Dan Keluarga Berencanawilayah Kerja Kecamatan Siantar Sitalasari Pematangsiantar Monika. *Exxcelent Midwifery Journal*, 6(2).
- Utami, I., & Trimuryani, E. (2020a). Faktor Yang Berhubungan Dengan Pemilihan Kontrasepsi Tubektomi Wanita Usia Subur. *Jurnal Keperawatan Silampari*, 3(2), 717–726.
- Utami, I., & Trimuryani, E. (2020b). Faktor Yang Berhubungan Dengan Pemilihan Kontrasepsi Tubektomi Wanita Usia Subur. *Jurnal Keperawatan Silampari*, 3(2018), 717–726.
- Utami, M. C., Jahar, A. S., & Zulkifli. (2021). Tinjauan Scoping Review Dan Studi Kasus. *Radial : Jurnal Peradaban Sains, Rekayasa Dan Teknologi*, 9(2), 152–172.
- Zaveri, N. H., Patel, G., Gohel, A., Damor, A., Patel, R., & Tahilramani, R. (2025). Original Article A Cross - Sectional Study To Assess Choice Of Tubal Ligation Over Vasectomy In Tribal Women Of Eastern Gujarat. *Original Article*, 4130–4136. <https://doi.org/10.4103/jfmpe.jfmpe>