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Factors Influencing the Decision to Use Sterilization Contraception Among Reproductive-Age Couples

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ABSTRACT

Background: Although permanent contraception is one of the most efficacious contraceptive methods, its adoption remains minimal in rural Indonesia, particularly in Madiun Regency. This situation underscores a paradox: demographic eligibility is present, yet adoption remains constrained, indicating underlying psychosocial obstacles. Prior research has infrequently examined the concurrent influence of motivation and attitude, resulting in a deficiency in comprehending the behavioural determinants of sterilisation choices. **Methods:** A cross-sectional quantitative study was performed with 138 couples of reproductive age in the jurisdiction of Bangunsari Health Centre. Data were gathered with a validated Likert-scale questionnaire that evaluated motivation and attitude. Statistical study encompassed chi-square tests and logistic regression to investigate correlations and identify primary factors. **Results:** The study revealed that 43% of participants shown little motivation, and 69% displayed negative attitudes towards permanent contraception. A substantial association was identified between motivation and attitude levels ($p < 0.05$), indicating that highly motivated individuals were markedly more inclined to possess positive attitudes. Principal obstacles comprised apprehension of irreversible adverse consequences, societal stigma, and insufficient spousal communication. Elevated motivation correlated with a sense of security, perceived efficacy of contraception, and fulfilment of intended family size. **Conclusion:** Motivation and attitude are critical behavioural factors influencing the decision to take permanent contraception. This study addresses a significant research gap by combining both dimensions within a specific rural context. To enhance adoption, family planning initiatives must include behaviour change communication (BCC), encourage partner-based counselling, and tackle emotional obstacles that prevent informed, voluntary contraceptive decisions.

Keywords: Fertile couple; fertility rate; factor; contraception

1. INTRODUCTION

Family Planning is a main pillar in the efforts to control population growth and improve the quality of life for the community. One of the most effective contraceptive methods, yet still underutilized, is permanent contraception or sterilization. Decision-making around reproductive interventions is often influenced by anxiety and perception of irreversible outcomes, especially when future fertility is at stake.[1] Sterilization includes the Female Sterilization Method such as tubal ligation, and the Male Sterilization Method such as vasectomy. Both methods have very high effectiveness with a failure rate of less than 1% per year of use.[2]

However, its utilization is still very low, especially in developing countries like Indonesia.[3] Sterilization is often avoided by couples of reproductive ages because it is considered final, irreversible, and associated with various negative perceptions. These perceptions include fear of long-term side effects, social stigma, and the belief that sterilization contradicts cultural and religious norms.[4,5] On the other hand, research shows that couples with a high motivation not to have more children tend to have a more positive attitude towards this method.[6]

Motivation is an internal drive that influences a person's decisions, while attitude reflects the affective and cognitive evaluation of an action. In the context of contraception, these two variables play a significant role in determining the choice of method to be used.[7] The Theory of Planned Behavior states that the intention to act is influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control.[7] However, many studies in Indonesia still separate the analysis of motivation and attitude, so not many have explored the relationship between the two simultaneously.[8–10]

Globally, countries like India, Zambia, Nigeria and Bangladesh show that high levels of women's education, previous experience with contraceptive use, and partner support significantly contribute to the increased adoption of sterilization.[4,11–13] In Indonesia, the prevalence of permanent contraception remains stagnant, with Female Sterilization Method/tubal ligation dominating compared to Male Sterilization Method/vasectomy, indicating a gender role imbalance in contraceptive decision-making.[8–10]

At the local level, such as in Madiun Regency, based on the latest report, the adoption rate of tubal ligation is only 5.5% and vasectomy is almost non-existent.[14] For example, in Bangunsari Village, no new permanent family planning participants have been found in the last five years despite the presence of 210 eligible couples of childbearing ages. These findings indicate the presence of serious barriers that are not only related to informational aspects but also emotional and sociocultural in nature. Study of Miller et al. shows that communication between partners plays an important role in joint decision-making regarding sterilization.[15] The absence of healthy communication has the potential to make decisions dominated by one party and often avoids vasectomy as an option.[12] Despite high levels of awareness about contraception, many couples still hesitate to adopt permanent methods due to inadequate motivational and attitudinal support.[16]

This study aims to explore the relationship between motivation and attitudes of couples of reproductive ages in choosing permanent contraceptive methods. Unlike previous studies that focused on only one variable, this research simultaneously integrates two main psychological aspects in the local context, namely the working area of Bangunsari Health Center, Madiun Regency. With this approach, the study is expected to fill the gap in the literature and provide a foundation for formulating more targeted and contextual behavior change communication (BCC)-based family planning education interventions.

2. METHODS

2.1 Research Design and Location

This study uses a quantitative approach with a cross-sectional design. This design allows for data collection at a single point in time to identify the relationship between individual characteristics, motivation, and attitudes towards permanent contraceptive choices. The research location is within the working area of Bangunsari Health Center, Madiun Regency, East Java, chosen because of the very low adoption rate of sterilization despite having a high number of fertile couples.

2.2 Population and Sample

The population in this study consists of all couples of reproductive ages in the working area of Bangunsari Health center. The sample was determined through purposive sampling techniques with inclusion criteria: married couples aged 15–49 years, not currently pregnant, willing to be respondents, and able to understand the information provided. Exclusion criteria include PUS who experience cognitive impairments or cannot fully participate in the interview. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in a minimum of 100 respondents. The researcher set 138 pairs as the sample to enhance the analytical power. The Slovin formula is widely used in homogeneous population research for sample size estimation.[17]

2.3 Data Collection

Data were collected using a structured questionnaire that had its content validity tested by three

experts in the fields of midwifery and public health. The instrument consists of four parts: (1) demographic characteristics, (2) knowledge and access to contraception, (3) motivational aspects, and (4) attitude scale towards permanent contraception. The attitude scale uses a 5-point Likert model from "strongly disagree" to "strongly agree." Interviews are conducted face-to-face by trained enumerators to minimize response bias. Before the implementation, socialization was conducted with the community and informed consent was signed. Reliability testing was conducted using Cronbach's Alpha, where the values on the motivation and attitude subscales reached ≥ 0.70, indicating adequate internal consistency.[18]

2.4 Data Analysis

Data were analyzed using SPSS software version 25. Univariate analysis is used to describe the characteristics of the respondents. Bivariate tests using chi-square were conducted to evaluate the relationship between independent variables (motivation, attitude, age, education, number of children) and the dependent variable (sterilization choice). Multivariate tests were performed using logistic regression to identify the dominant determinants of permanent contraceptive preferences. This analysis model refers to Ajzen's approach in the Theory of Planned Behavior (TPB), which explains that behavioral intentions are influenced by attitudes, subjective norms, and perceived behavioral control.[7]

2.5 Ethical Practice

This research has received ethical approval from the Health Research Ethics Committee of Muhammadiyah University Madiun with the number: 012/KEPK/FIKES/I/2025. All respondents were given oral and written explanations about the purpose, benefits, and their rights, including the right to withdraw from participation without any consequences. This research adheres to bioethical principles: respect for persons, beneficence, and justice.

3. RESULTS

This research encompassed 138 fertile couples within the jurisdiction of the Bangunsari Health Centre, Madiun Regency. This locality was selected due to the inadequate use of permanent contraceptive procedures, including tubal ligation and vasectomy, despite a sufficient population of couples of reproductive ages. The respondents' characteristics reveal that the majority are women (68.1%), predominantly aged between 30 and 39 years (56.5%), and most possess a secondary education (high school, 40.6%). Most respondents are housewives (61.6%) and possess two or more children (73.9%). The data is elaborated upon in Table 1 below.

Table 1. Sociodemographic characteristics of respondents

Characteristics		N	%
Gender			
	Female	94	68.1
	Male	44	31.9
Age group			
	30–39 years	78	56.5
	< 30 or ≥ 40 years	60	43.5
Education			
	High school	56	40.6
	Others	82	59.4
Occupation			
	Housewives	85	61.6
	Others	53	38.4
Parity			
	≥ 2 children	102	73.9
	0–1 child	36	26.1

Figure 1 illustrates that 57% of respondents exhibit high and moderate motivation levels regarding permanent contraception, while the remainder is classified as having low motivation. Concurrently, concerning sentiments, the distribution of respondents exhibiting positive and negative attitudes about sterilization is pretty equitable, at 31% and 69%, respectively. The results suggest a necessity for enhanced adoption of sterilization, contingent upon the implementation of suitable interventions to bolster motivation and cultivate favorable attitudes.

The correlation between sociodemographic variables and motivation and attitudes about the utilization of permanent contraceptive techniques was examined by the chi-square test. The analysis indicates that education and number of children strongly correlate with motivation levels ($p<0.05$), however occupation does not exert a significant influence on motivation. However, occupation and education have a strong correlation with attitudes ($p<0.05$), although the number of children does not. Access to knowledge regarding permanent contraception demonstrates the most consistent and substantial impact on both primary variables, motivation and attitude ($p<0.01$).

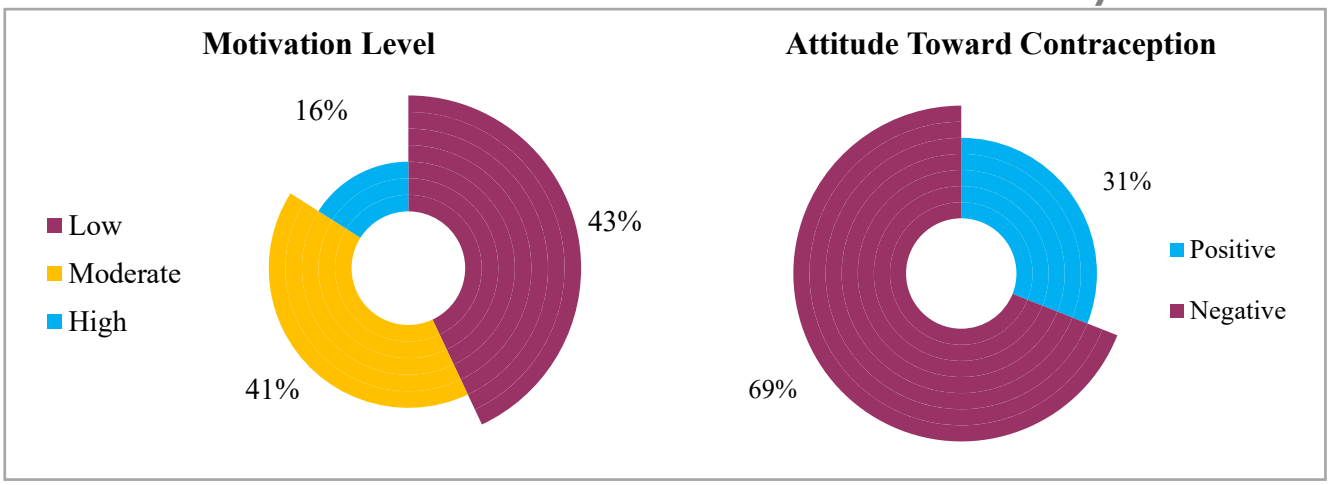

Figure 1. Distribution of respondents based on their attitudes towards contraceptive choice

The depiction of the significant relationship between these variables is also visualized in Figure 2. The graph shows that access to information has the largest contribution to motivation and attitudes, emphasizing the importance of an educational approach in family planning programs.

Table 2. The relationship between sociodemographic characteristics and motivation and attitude

Variable	Relationship with motivation	Relationship with attitude
Education	Yes (p<0.05)	Yes (p<0.05)
Occupation	No	Yes (p<0.05)
Number of children	Yes (p<0.05)	No
Information access	Yes (p<0.01)	Yes (p<0.01)

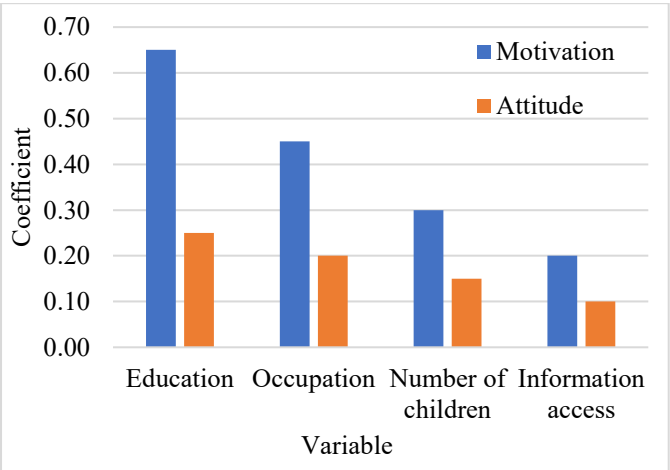

Figure 2. Significant relationship of sociodemographic variables to motivation and attitude

A logistic regression analysis was performed, as illustrated in Table 3, to ascertain the primary predictors of respondents' preferences for selecting permanent contraception techniques. The study indicates that access to knowledge is the primary determinant of elevated motivation, with an odds ratio of 3.5 (95% CI: 1.8–6.9; p<0.01). Education is the most significant factor affecting a favorable attitude towards sterilization, with an odds ratio of 2.4 (95% CI: 1.2–4.9; p<0.05). Moreover, the presence of two or more children is significantly associated with the inclination to select a permanent contraceptive method (OR=2.1; p<0.05).

Table 3. Logistic regression analysis

Variable	Odds Ratio (OR)	95% CI	p-value
Information access	3.5	1.8 – 6.9	< 0.01**
Education	2.4	1.2 – 4.9	< 0.05*
Number of children	2.1	–	< 0.05*

(*) indicates statistical significance at the 5% level (p < 0.05), while (**) indicates significance at the 1% level (p < 0.01)

These findings align with the Theory of Planned Behavior, which posits that attitudes, subjective standards, and perceived behavioral control influence the development of behavioral intentions. A favorable disposition towards permanent contraception is shaped by prior experiences, educational attainment, and confidence in the information provided by healthcare professionals. The limited prevalence of vasectomy utilization in contrast to tubal ligation underscores gender disparity in family planning decision-making. This research indicates that local family planning programs necessitate enhancement in communication, education, and more participatory counselling. Focusing on enhancing access to knowledge and eradicating

stigma around sterilization is thought to foster greater motivation and favorable attitudes among couples of reproductive ages towards permanent contraception.

Table 4 illustrates the distribution of respondents' attitudes regarding permanent contraception categorized by three levels of motivation. Of the 60 individuals exhibiting low motivation, 52 (86.7%) demonstrated negative attitudes, whereas only 8 (13.3%) displayed positive attitudes. In the moderately motivated group (n = 56), the percentage of negative attitudes decreased to 41 (73.2%), while 14 (26.8%) expressed positive views. In a cohort of 22 respondents, only 5 (22.7%) exhibited negative attitudes, while 17 (77.3%) demonstrated a positive outlook. Higher motivation is significantly linked to a transition from primarily negative to predominantly positive attitudes regarding sterilization. Favorable attitudes are frequently linked to the successful experiences of fellow community members who have undergone sterilization without notable negative effects. Bivariate analysis reveals a substantial link between motivation levels and attitudes. Within the cohort exhibiting low motivation, 86.67% demonstrated an unfavorable disposition towards permanent contraception. In the highly motivated group, 77.27% had an optimistic attitude. This association suggests that motivation is a significant predictor of attitudes and indirectly affects the probability of selecting a permanent strategy.

Table 4. Criteria of motivation

Criteria	Negative Attitude (%)	Positive Attitude (%)	Total (%)
Low motivation	52 (86,67%)	8 (13,33%)	60 (100%)
Moderate motivation	41 (73,21%)	14 (26,79%)	56 (100%)
High motivation	5 (22,73%)	17 (77,27%)	22 (100%)
Total	98 (71,01%)	40 (28,99%)	138 (100%)

4. DISCUSSION

The results of this study indicate that the motivation and attitudes of couples of reproductive age play an important role in decision-making regarding permanent contraceptive methods, particularly sterilization. Most respondents showed high motivation and a positive attitude towards sterilization, especially among those with ≥2 children and adequate access to information. These findings are consistent with the study by Hossain et al. (2024), which found that knowledge and partner involvement in the decision-making process significantly increase the intention to undergo sterilization.[19]

This study also revealed that education plays a crucial role in shaping a positive attitude towards permanent contraception. These findings are consistent with a study in Nepal by Dhungana et al. (2016), which reported that the mother's level of education is a strong predictor of the use of permanent contraception.[20] However, unlike the findings of Ontiri et al. (2020) in Kenya, which stated that the quality of service factor is more dominant than education in the preference for sterilization.[21] This indicates that education and services, including information in the local context, are very influential and reinforce the urgency of region-based studies such as those conducted in Madiun Regency. Access to information has proven to be the most consistent factor influencing motivation and attitudes. A study by Fataar et al. (2022) supports this, stating that effective communication between counsellors and couples of reproductive age increases confidence in permanent contraception.[22]

A study from Ethiopia (Geltore et al., 2022) also shows that couple-based contraceptive counselling is far more effective than individual approaches in shaping positive attitudes.[23] One of the important findings of this study is the gender disparity in participation in the use of permanent contraceptive methods. tubal ligation is more dominant compared to vasectomy, reinforcing the argument from Ahmed et al. (2024) about the dominance of women's roles in family planning practices and the limited support from male partners.[24] This indicates the potential for structural bias in education and family planning services that needs to be addressed.

From a methodological standpoint, the use of a simultaneous approach to motivation and attitudes is a strength of this research. This approach has not been widely applied in similar studies, which usually focus on only one aspect. For example, the study by Samari et al

(2020) only examined the preference for contraceptive methods without linking it to the dynamics of internal motivation.[25]

Another contribution of this research is enriching the local literature with empirical evidence that high motivation does not always guarantee a positive attitude or final decision for sterilization. This is confirmed by the findings of Bansal & Dwivedi (2020), which state that there is an intention-action gap in the use of permanent contraception despite high motivation.[26] Thus, this study emphasizes that family planning program strategies must be holistic, not only focusing on informative aspects but also considering psychological and sociocultural dimensions. The perception of sterilization is not only shaped by knowledge but also by social norms and fear of stigma, which often vary across regions and belief systems.[27] Family planning counselling programs need to be strengthened with a couple-based approach, two-way communication, and training for healthcare workers to handle resistance to sterilization empathetically and based on evidence. This aligns with the argument that sterilization decisions are ideally made within a couple dynamic, accounting for shared goals and mutual understanding.[28]

The results of this study must be interpreted with numerous limitations. First, the cross-sectional design makes it difficult to determine causal links between motivation, attitudes, and permanent contraceptive use. Second, purposive sampling in Bangunsari Health Center working area may add selection bias and limit generalizability. Third, interview questionnaires use subjective responses, which may introduce social desirability bias. This study did not examine contextual factors including cultural norms, social pressure, and extended family, even if the instruments were validated and reliable. These restrictions allow for longitudinal, qualitative, or mixed-methods research to better understand contraceptive behavior dynamics.

5. CONCLUSION

This study shows that reproductive-age couples in Madiun Regency prefer sterilization due to motivation and attitude. Most respondents meet demographic eligibility requirements like parity and age, but psychological and societal hurdles prevent permanent contraceptive uptake. High motivation does not always lead to a positive attitude or sterilization, highlighting the complexity of decision-making. Access to accurate, complete information is the biggest predictor of sterilization motivation and attitudes, followed by education, number of children, and information. These findings suggest switching from standard counselling models to behavior change communication (BCC) tactics that include motivation and emotion. The gender gap in sterilization uptake with female sterilization outnumbering male sterilization reflects reproductive health service institutional biases. This requires inclusive family planning approaches that encourage male participation, shared decision-making, and culturally sensitive communication. Thus, family planning programs must be more personalized, partner-focused, and culturally rooted to increase permanent contraceptive use. Programs should also teach healthcare providers to overcome emotional barriers, clarify misconceptions, and establish trust via empathic and continuous communication.

Ethical Approval

The study obtained ethical permission from the Research Ethics Committee of Muhammadiyah University of Madiun, reference number 012/KEPK/FIKES/I/2025.

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Competing Interests

All the authors declare that there are no conflicts of interest.

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Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

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