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The Level of Knowledge as a Predictor of Husband's Participation in Vasectomy: A Study at Buleleng I Community Health Center, 2023

Luh Yenny Armayanti[1*], Ketut Sri Mentari [2], Putu Rama Pratama Karma[3]

[1]Diploma III of Midwifery Study Program, Faculty of Medicine, Universitas Pendidikan Ganesha, Buleleng, Indonesia
[2]Kertha Usada General Hospital
[3]Mangusada Regional Hospital, Badung Regency
*Email: yenny.armayanti@undiksha.ac.id

Abstract

Male participation in Family Planning (FP) programs, particularly in permanent contraceptive methods such as vasectomy, remains significantly low in Indonesia. This study aimed to examine the relationship between the level of husband's knowledge and their participation in vasectomy use within the working area of Buleleng I Public Health Center in 2023. Purposive sampling was used to choose 76 male respondents of reproductive age who were already parents in a cross-sectional, quantitative analytical study. A systematic questionnaire addressing two main variables knowledge of vasectomy and involvement in its use was used to gather data. Both univariate and bivariate techniques were used to analyze the data, and Pearson's correlation test was used to look at how the variables related to one another. A mean score of 80.80 (SD ±10.05) indicated that respondents had a high level of knowledge, whereas a mean score of 4.63 (SD ±0.72) indicated moderate participation in the vasectomy program. Knowledge and participation were shown to be significantly correlated by the correlation analysis (p = 0.001). These findings suggest that a husband's propensity to use vasectomy as a form of contraception increases with his degree of understanding. This study comes to the conclusion that one of the main factors influencing men's participation in vasectomy is knowledge. Therefore, community-based educational interventions and health promotion initiatives should be strengthened to enhance men's awareness and involvement in family planning programs, as part of broader efforts to promote gender equity in reproductive health.

Keywords: Knowledge, Husband, Vasectomy, Contraception, Family Planning

1. Introduction

Family planning is a crucial component of public health strategies aimed at improving maternal and child health, reducing poverty, and supporting sustainable development. In Indonesia, the family planning program (Program Keluarga Berencana/KB) has been actively promoted for decades through the National Population and Family Planning Board (BKKBN). While much progress has been made, especially among women of reproductive age, male participation in family planning particularly in permanent contraceptive methods like vasectomy remains extremely limited. Male participation in family planning remains limited across nearly all regions of Indonesia. The proportion of men using vasectomy had not exceeded 1%, while condom use among male contraceptive users was only about 1.3%.[1] According to the 2017 Indonesian Demographic and Health Survey (SDKI), the prevalence of contraceptive use among married men includes vasectomy (0.2%), condoms (3.1%), and traditional methods such as withdrawal (2.9%) and periodic abstinence (1.1%).[2]

Vasectomy is a minor surgical procedure for male sterilization that is safe, highly effective, cost-efficient, and does not interfere with sexual performance. Vasectomy is a permanent method of contraception that involves cutting the vas deferens to prevent sperm from reaching the egg, thereby eliminating the possibility of fertilization.[3] Compared to female sterilization (tubectomy), vasectomy is simpler, quicker, and has a lower risk of

complications. Despite these advantages, vasectomy remains one of the least utilized contraceptive methods among Indonesian men. National data continue to show a wide gender gap in contraceptive responsibility, with women bearing the primary burden of family planning, even when they face medical contraindications or personal reluctance. The percentage of men participating in vasectomy based on their knowledge of contraceptive methods was 37.7%. In contrast, the participation rate of women in tubectomy was significantly higher, reaching 67.0%.[4] According to data from the Bali Provincial Statistics Agency in 2025, out of 448.960 active family planning participants, 26.491 (5.91%) were female sterilization (tubectomy) acceptors, while only 916 (0.2%) were male sterilization (vasectomy) acceptors.[5]

One of the major factors contributing to the low uptake of vasectomy in Indonesia is a lack of knowledge and understanding among men. Limited knowledge of reproductive health, along with the influence of a patriarchal culture that remains deeply rooted in Indonesian society, where men are often seen as holding greater authority than women. Additionally, there is a prevailing societal mindset that contraception is solely a woman's responsibility. Therefore, promoting gender equality is essential to ensure the success of the family planning program.[6] Misconceptions and negative beliefs about vasectomy are widespread, such as the belief that it leads to impotence, loss of masculinity, or is religiously or culturally inappropriate. The low level of male participation in vasectomy as a contraceptive method is likely influenced by inadequate understanding of vasectomy, limited promotion and availability of information regarding male-focused family planning, restricted access to vasectomy services, and prevailing socio-cultural norms that do not fully support male involvement in family planning programs.[7] This suggests that the family planning program continues to face substantial psychosocial challenges in communities where patriarchal values are deeply rooted.[8,9] Encouraging male participation, particularly in permanent methods such as vasectomy, requires targeted strategies that address both cultural perceptions and knowledge gaps.

Knowledge is a key determinant in shaping attitudes and behaviors. Numerous studies have found that men with higher knowledge levels about family planning methods are more likely to participate actively in contraception, including vasectomy. Predisposing factors (such as knowledge and attitude), enabling factors (including the availability of vasectomy services and accessibility of health facilities), and reinforcing factors (such as spousal support) are all associated with men's participation in vasectomy. Among these, knowledge emerges as the most influential variable.[10] Men of reproductive age with poor knowledge about vasectomy are 2.77 times more likely to have negative perceptions of the procedure, while those with moderate knowledge are 1.825 times more likely, compared to men with good knowledge of vasectomy.[11]

The Buleleng I Community Health Center plays an essential role in delivering reproductive health services to the local population. However, the acceptance rate of vasectomy remains low despite ongoing family planning education and outreach. A preliminary study conducted on October 25, 2022, at Buleleng 1 Community Health Center revealed that the number of couples of reproductive age in the service area was approximately 11.429. However, the use of male sterilization (vasectomy) remained very low. Records show that in 2021, there were only 30 vasectomy users, and this number had not changed as of October 2022, remaining at 30 participants. This suggests the need to

assess whether knowledge levels among husbands are sufficient, and whether there is a measurable relationship between their understanding of vasectomy and their willingness to participate in it.

This research offers a new approach to understanding the low participation of men in family planning programs, specifically vasectomy, by positioning the level of knowledge as the main predictor. Unlike previous studies that have primarily focused on socio-cultural or economic factors, this study specifically examines how a husband's knowledge contributes to his involvement in vasectomy. Conducted at Buleleng I Community Health Center in 2023, it provides recent, location-specific data to support more targeted, evidence-based interventions in male family planning programs.

Therefore, this study seeks to investigate the level of knowledge as a predictor of husband's participation in vasectomy at Buleleng I Community Health Center in 2023. The study aims to determine whether a significant correlation exists between how much men know about vasectomy and their decision to engage in this contraceptive method. The findings are expected to inform the design of more effective communication strategies and educational programs that can increase male participation in family planning, especially in rural or culturally conservative settings.

2. Method

This study applied a quantitative analytical design with a correlational approach and a cross-sectional method to investigate the relationship between the level of knowledge and husband's interest in participating in the vasectomy family planning program. The research involved 76 male respondents, selected using a non-probability sampling technique, specifically purposive sampling. Participants were chosen based on predetermined criteria established by the researcher. The inclusion criterion for the sample was men of reproductive age who had already fathered children. The study examined two primary variables: (1) the husband's knowledge regarding vasectomy as a family planning method (independent variable) and (2) the husband's participation in vasectomy contraception (dependent variable). Each variable was measured using a structured questionnaire. The knowledge variable was assessed through 17 question items, while the participation variable was measured using 7 question items. All research instruments were previously tested and confirmed to be valid and reliable, with the Corrected Item-Total Correlation showing that the calculated r-value was greater than the table r-value (0.361). Meanwhile, the reliability test results indicated a Cronbach's Alpha value of 0.979, which exceeds the minimum threshold of 0.6. The study obtained ethical clearance from the Ethics Committee of STIKES Buleleng, as documented in the letter of approval with reference number 552/EC-KEPK-I/2024, indicating that the study met ethical research standards. Data analysis was conducted through both univariate and bivariate analyses. Univariate analysis was employed to describe the frequency distribution of each research variable, namely, husband's knowledge and their participation in vasectomy presented in percentages. Bivariate analysis was used to explore the relationship between the independent variables (husband's knowledge and fear regarding vasectomy) and the dependent variable (husband's interest in vasectomy family planning). The statistical analysis was performed with the aid of computerized systems using the Pearson correlation test.

3. Result

Located in the Buleleng Subdistrict, Buleleng I Public Health Center serves an area

of 12.447 km². This healthcare facility implements two primary programs: (1) the Basic Health Program, which includes health promotion, environmental sanitation, maternal and child health services (MCH), family planning (FP), community nutrition improvement, communicable disease control, and basic medical care; and (2) the Developmental Program, which encompasses occupational health services, elderly health care, school health initiatives, and adolescent health programs.

To support the implementation of these programs, Buleleng I Public Health Center operates one auxiliary health center and oversees 42 integrated health service posts distributed across its service area. The total number of healthcare personnel amounts to 41, of whom 18 are medical and paramedical staff directly involved in delivering community health services.

This study was conducted at Buleleng I Public Health Center and involved a total of 76 participants. Based on educational background, the respondents comprised 4 individuals (9.2%) with a junior high school education, 53 individuals (69.7%) with a senior high school education, and another 16 individuals (21.1%) who were university graduates.

In terms of occupation, 14 respondents (18.4%) were laborers, 17 (22.4%) worked as farmers, and 31 (40.7%) were self-employed. Additionally, 10 respondents (13.2%) were civil servants, and 4 (5.3%) were employed in the military.

Referring to Table 2, the average age of respondents was 41.15 years with a standard deviation of ±4.95 years. The youngest recorded age was 35 years, while the oldest was 55 years. Meanwhile, the average income level of the respondents was 80.80 with a standard deviation of ±10.05, ranging from a minimum of 59 to a maximum of 100.

Based on the data presented in Table 3, the average level of husband's knowledge was 80.80 with a standard deviation of ±10.05, ranging from a minimum score of 59 to a maximum of 100. Meanwhile, husband's participation had an average score of 4.63 with a standard deviation of ±0.72, with participation scores ranging from 3 to 7.

Normality testing for the variables of husband's knowledge and participation was conducted using the Kolmogorov-Smirnov method. The analysis results showed significance values (p-values) greater than 0.05, indicating that the data were normally distributed. Therefore, a parametric correlation test was deemed appropriate for further analysis.

Table 1. General characteristics of respondents

Respondent Characteristics	Frequency	Precentage
Education		
Junior High School	7	9.2%
Senior High School	53	69.7%
University	16	21.1%
Occupation		
Laborer	14	18.4%
Farmer	17	22.4%
Self-Employed	31	40.7%
Civil Servant	10	13.2%
Military	4	5.3%

Table 2. Respondents' age and income

Variable	Mean	SD	Min	Max
Age (years)	41.15	4.95	35	55
Income (score)	80.80	10.05	59	100

Table 3. Husband's knowledge and participation levels in vasectomy contraception

Variable	Mean	SD	Min	Max
Knowledge Level	80.80	10.05	59	100
Participation Level	4.63	0.72	3	7

Table 4. Relationship between husband's knowledge and participation in vasectomy contraception

Variable	Mean	SD	Min	Max	p-value
Knowledge Level	80.80	10.05	59	100	0.001
Participation Level	4.63	0.72	3	7	

Furthermore, based on the results of the correlation test presented in the table, a p-value of 0.001 was obtained, which is lower than the significance threshold of 0.05. This indicates a statistically significant relationship between the level of husband's knowledge and their participation in the vasectomy contraceptive program. In other words, the higher the level of knowledge, the greater the likelihood of husbands becoming involved in the use of this contraceptive method.

4. Discussion

The service area of Buleleng I Public Health Center, which encompasses a broad range of public health programs including health promotion and family planning plays a significant role in facilitating the equitable dissemination of information. The availability of 42 integrated health posts and one auxiliary health center serves as a strategic platform for educating the community, including men, about the importance of their involvement in family planning programs.

The characteristics of respondents in this study indicate that the majority of husbands had a moderate to high level of education, with 41.7% having completed senior high school and another 41.7% having attained higher education. Furthermore, 40.7% were self-employed. Access to health information and the ability to make informed decisions are significantly influenced by educational achievement.[12]

The World Health Organization (WHO) claims that formal education helps people become more health literate, which improves their comprehension and ability to make decisions about their reproductive health.[13] As a result, having more education can help one become more knowledgeable about vasectomy and other forms of contraception.

It is often acknowledged that knowledge plays a crucial role in health-related decision-making, especially when it comes to the use of contraceptive techniques. According to the study's findings, the spouses who participated in the survey had a comparatively high degree of vasectomy knowledge. This implies that respondents have had enough exposure to pertinent vasectomy material, which may have been

facilitated through targeted health promotion initiatives conducted by the Buleleng I Public Health Center, as well as through other informational channels such as mass media or community-based education.

These results are in line with those of Wulandari (2018), who observed that men's interest in vasectomy can be heightened by more awareness of non-hormonal contraceptive techniques.[14] Understanding the vasectomy surgery, its safety, possible adverse effects, and how it affects sexual function are all components of adequate knowledge. Psychological barriers including thoughts of social stigma or weakened masculinity can be successfully eliminated when healthcare practitioners provide precise and consistent information.[15]

Similar results were reported internationally by Kabagenyi et al. (2014) in Uganda, showing that men's readiness to engage in contraceptive methods was positively correlated with higher levels of knowledge.[16] Another study by Ringheim (2015), conducted in Kenya and India, also emphasized that effective counseling on vasectomy significantly enhances knowledge and reduces resistance toward the method.[17]

However, possessing knowledge does not necessarily lead to corresponding behavioral action. A study by Shattuck et al. (2011) in Malawi found that although men's awareness of contraceptive methods had increased, only a small proportion actively participated in contraceptive decision-making.[18] This indicates that beyond knowledge, social norms and perceptions of masculinity remain significant barriers to male involvement in family planning.

The level of husband's participation in this study indicates a moderate level of involvement in family planning programs, specifically regarding the vasectomy method. Within the Indonesian context, this represents a positive development, considering the generally low male participation in contraception and the persistent influence of patriarchal norms and social stigma, which often hinder male engagement in family planning initiatives.[19]

According to an international study by Dudgeon and Inhorn (2012), partner communication, gender roles, and faith in the healthcare system all have an impact on men's participation in family planning programs. Male participation is typically limited in communities with strong patriarchal values because it is widely believed that family planning is the responsibility of women.[20] Though it is still heavily influenced by the social notion that contraception is primarily a female responsibility, such engagement may also indicate a changing view among men regarding their role in reproductive health.[8]

The Hardee et al. (2017) study promotes a more gender-sensitive, inclusive, and instructional approach to reproductive health promotion, where men are positioned as active users of contraceptive techniques rather than just supporters.[21] Taloko and Tendean (2022) assert that community-based tactics including local leaders and culturally appropriate methods are crucial to boosting male contraceptive use.[22] The results of this study are therefore especially pertinent to the promotion of public health policies that encourage shared responsibility between husbands and wives and gender equity in family planning.

The correlation analysis's findings showed a significant correlation between spouses' use of vasectomy-based contraception and their level of knowledge. This suggests that a husband's likelihood of actively participating in family planning initiatives increases with his level of understanding of vasectomy.

These results are in line with earlier research. For example, Afrinaldi and Suandi (2021) discovered that men's participation in

family planning programs is highly influenced by their level of knowledge.[23] Similarly, a research by Shattuck et al. (2011) showed that men were more likely to actively pursue family planning when they received education and counseling about contraceptive methods.[18] Furthermore, a study by Stevenson et al. (2023) in the Philippines found that males were three times more likely to participate in the decision-making process for contraception if they got organized information from healthcare institutions..[24]

According to the Theory of Planned Behavior, a person's behavior is impacted by their perception of behavioral control, subjective norms, and attitude toward the behavior. All three elements can benefit from adequate understanding, which will increase both the intention and actual involvement in family planning programs.[25] According to the Health Belief Model (HBM), individuals are more likely to take health-related action when they perceive clear benefits from the action and possess sufficient knowledge to assess its advantages and risks.[26]. In this context, husbands who are well-informed about vasectomy are more likely to perceive it as a safe, effective, and responsible contraceptive method.

Nevertheless, this study also acknowledges that while knowledge is a significant factor, other elements such as spousal support, cultural stigma, and access to vasectomy services also play critical roles in determining the level of male participation.

In addition to knowledge, several factors influencing the choice of vasectomy as a family planning method among men of reproductive age included attitude, number of children (parity), age, as well as the availability of healthcare resources and infrastructure.[27]

The analysis results indicated a significant relationship between knowledge and the participation of men of reproductive age in the use of vasectomy as a contraceptive method. In addition, men's attitudes also had a significant effect on their participation in using vasectomy as did the support from their wives. Among these three factors, wife's support was the most dominant, as reflected by an odds ratio (OR) of 21.712. Therefore, it can be concluded that knowledge, attitude, and wife's support play an important role in encouraging the participation of men of reproductive age in the use of vasectomy contraception.[28]

This study has several limitations. The cross-sectional design does not allow for causal interpretation between knowledge and vasectomy participation. The use of purposive sampling limits the generalizability of findings. Additionally, self-reported data may be subject to social desirability bias. Cultural and social norms, which may also influence participation, were not explored in depth. Therefore, the results should be interpreted with caution.

5. Conclusion

This study revealed a significant relationship between husband's level of knowledge and their participation in vasectomy within the working area of Buleleng I Public Health Center. The findings indicate that the higher the level of knowledge, the greater the likelihood of men participating in the use of this permanent contraceptive method. Although respondents generally demonstrated a good level of knowledge, actual participation remained limited due to cultural barriers, stigma, and suboptimal access to services. Therefore, increasing male participation in family planning programs requires comprehensive educational strategies, community-based approaches, and inclusive health services that promote gender equity.

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