



## The Relationship of Knowledge Level and Mother's Fear on the Side Effects of IUD Contraception at Sipatana Health Center

Zaliha Almaira Bobihoe<sup>1</sup>, Ridha Hafid<sup>2\*</sup>, Mihrawaty S. Antu<sup>3</sup>

<sup>1</sup>Mahasiswa Program Studi Ilmu Keperawatan UNG

<sup>2</sup>Dosen Program Studi Ilmu Keperawatan UNG

<sup>3</sup>Dosen Program Studi Ilmu Keperawatan UNG

\*Author Correspondence: [ridhahafid@gmail.com](mailto:ridhahafid@gmail.com)

### Article Info

#### Article history:

Received 11 Mar, 2026

Revised 14 May, 2026

Accepted 25 May, 2026

#### Keywords:

IUD, mother's fear, level of knowledge

### ABSTRACT

Intra Uterine Device (IUD) is an effective long-term contraceptive method, but users are still low. The use of IUD contraceptives is only about 19–20%. Barriers to IUD use include fear of side effects, lack of information, and myths that develop in society. This study aims to determine the relationship between knowledge level and mother's fear of the side effects of IUD contraception in the working area of the Sipatana Health Center.

The study used a quantitative method with an analytical observational study design, using a cross sectional approach. The population of this study is mothers who use non-IUD contraceptives totaling 1,567 people. The sample amounted to 93 respondents using the purposive sampling technique. The research instrument uses knowledge and mother's fear instruments. Data analysis using the Chi-Square test.

The results showed that there was a relationship between the level of knowledge and mother's fear, obtained p-value = 0.000 which was smaller than the significance value of  $\alpha = 0.05$  which means that the lower the mother's knowledge, the higher the fear. This research is expected to be an evaluation material related to the use of IUDs in the work area of the Sipatana Health Center as well as an initial screening related to mothers' fears of IUD use

### INTRODUCTION

Intra Uterine Device (IUD) is one of the effective long-term non-hormonal contraceptive methods in prolonging pregnancy, with a period of use between 5–10 years depending on the type. IUDs work by inhibiting sperm movement and preventing fertilization, making it one of the safe and efficient modern contraceptive options. Globally, the use of modern contraceptives continues to increase. World Health Organization (WHO) data for 2025 shows that around 874 million women aged 15–49 years use modern contraception, and about 16% of them are IUD users.

However, IUD use in developing countries is still relatively low, at around 1.2%. This low use is caused by various factors, such as lack of knowledge, misconceptions, and fear of side effects, such as pain, bleeding, and fertility disorders. In addition, social factors such as lack of husband support, cultural influence, and limited access to trained health workers also affect the low utilization of IUDs.

In Indonesia, contraceptive use is still dominated by hormonal methods (80–81%), while non-hormonal methods such as IUDs are only around 19–20%. This shows that the use of IUDs is still not optimal compared to other contraceptive methods.

At the regional level, data from the Gorontalo Provincial Health Office in 2025 shows that the number of IUD acceptors is quite high, but the distribution is not even in each region. At the health facility level, the Sipatana Health Center is one of the health centers with a relatively low number of IUD users, which shows that the use of this contraceptive method is still not optimal in the region.

One of the factors that affect the low use of IUDs is mother's fear, which is the mother's fear or anxiety about IUD insertion and side effects. These fears include concerns about pain during insertion, bleeding, infection, as well as the notion that IUDs can cause infertility. This fear often arises due to a lack of correct information and

negative perceptions in society.

One of the factors that affect the low use of IUDs is mother's fear, which is the mother's fear or anxiety about IUD insertion and side effects. These fears include concerns about pain during insertion, bleeding, infection, as well as the notion that IUDs can cause infertility. This fear often arises due to a lack of correct information and negative perceptions in society.

The level of knowledge of the mother is an important factor related to mother's fear. Good knowledge of the type, how it works, the benefits, and the safety of IUDs can help lower fear levels and increase acceptance of IUD use. On the other hand, low knowledge can reinforce negative perceptions thereby reducing the mother's interest in using IUD contraception.

The results of previous studies show that the level of knowledge of mothers plays an important role in determining the perception and acceptance of IUD contraception. Research by Okvitasari (2024) found that mothers with low knowledge tended to have negative perceptions and concerns about side effects, while mothers with good knowledge showed higher confidence and interest in using IUDs. These findings are in line with the research of Massay et al. (2024) which states that the lack of proper information and understanding about IUDs can cause fear, concern, and rejection of the use of these contraceptive methods.

Based on the results of initial observations and interviews with the nurse in charge of the family planning program and 5 mothers of childbearing age in the work area of the North City Health Center, it was obtained that some mothers still have limited knowledge about IUD contraception. The results of the interviews showed that 2 mothers did not have a deep understanding of how IUDs work and side effects, while the other 3 mothers still had concerns about possible side effects, such as pain during insertion, bleeding, and fertility disorders after use. In general, these findings show that although the use of IUDs is quite high, there is still limited knowledge and mother's fear in some mothers about the side effects of IUD insertion.

Based on the description above, the researcher is interested in further research on "The Relationship between Knowledge Level and Mother's Fear on the Side Effects of Intra Uterine Device (IUD) Contraceptive Installation in the Working Area of the Sipatana Health Center".

## RESEARCH METHODS

This study is a quantitative research with an analytical observational design using a cross sectional approach. The study population of mothers who use non-IUD contraceptives amounted to 1,567 people. The sample totaled 93 respondents. The sampling technique uses purposive sampling. The research instrument uses knowledge and mother's fear instruments. Data analysis was carried out univariate and bivariate using the Chi-Square test.

## RESEARCH RESULTS

### Respondent Characteristics

Table 1 Characteristics of Respondents by Age

Age	N	%
Late Youth (17-25)	35	37,2
Early Adulthood (26-35)	47	50,0
Late Adulthood (36-45)	12	12,8
<b>Total</b>	<b>94</b>	<b>100</b>

Source: Primary Data, 2026

Based on Table 1, it can be seen that most of the mothers are in the Early Adult group (26-35 years), which is 47 people (50%) and a small number are in the Late Adult group (36-45 years), which is 12 people (12.8%).

Table 2 Characteristics of Respondents by Education

Education	N	%
SD	21	22,3
Junior High School	2	2,1
High School	62	66,0
S1	9	9,6
<b>Total</b>	<b>94</b>	<b>100</b>

Source: Primary Data, 2026

Based on table 2, it can be seen that the level of education of mothers is dominated by high school graduates, which is 62 people (66%) and a small number of junior high school graduates, which amount to 2 people (2.1%).

Table 3 Characteristics of respondents by occupation

<b>Jobs</b>	<b>N</b>	<b>%</b>
IRT	85	90,4
PNS	9	9,6
<b>Total</b>	<b>94</b>	<b>100</b>

Source: Primary Data, 2026

Based on table 3, it can be seen that most of the respondents work as IRTs, namely 85 people (90.4%) and as small people work as civil servants, which is 9 people (9.6%)

Table 4. Characteristics of Respondents Based on Family Planning Use History

<b>Types of Family Planning</b>	<b>N</b>	<b>%</b>
Implants	57	60,7
Injection	16	17
Pills	21	22,3
<b>Total</b>	<b>94</b>	<b>100</b>

Source: Primary Data, 2026

Based on table 4, it can be seen that most of the respondents used implanted birth control, which was 57 people (60.7%) and a small percentage used injectable birth control, which amounted to 16 people (17%).

Table 5 Characteristics of Respondents by Number of Children

<b>Number of Children</b>	<b>N</b>	<b>%</b>
1	30	31,9
2	29	30,9
3	28	29,8
4	6	6,3
6	1	1,1
<b>Total</b>	<b>94</b>	<b>100</b>

Source: Primary Data, 2026

Based on table 5, it can be seen that most of the respondents have 1 child, which is 30 people (31.9%) and a small number of respondents have 6 children, which is 1 person (1.1%).

### Research Variables

Table 6 Characteristics of respondents based on Knowledge

<b>Knowledge</b>	<b>N</b>	<b>%</b>
Good	7	7,4
Enough	34	36,2
Less	53	56,4
<b>Total</b>	<b>92</b>	<b>100</b>

Source: Primary Data, 2026

Based on table 6, it can be seen that most of the respondents have poor knowledge, namely 53 people (56.4%) and a small number of respondents have good knowledge, which is 7 people (7.4%).

Table 7 Characteristics of respondents by Mother's Fear

<b>Mother's Fear</b>	<b>N</b>	<b>%</b>
Low	3	3,2
Medium	45	47,9
Height	46	48,9
<b>Total</b>	<b>92</b>	<b>100</b>

Source: Primary Data, 2026

Based on table 7, it can be seen that most of the respondents had high fear, namely 46 people (48.9%) and a small number of respondents had low fear, which amounted to 3 people (3.2%).

## Bivariate Analysis

Table 8 The Relationship of Knowledge to Mother's Fear

<i>Knowledge</i>	<i>Mother's Fear</i>			<i>N</i>	<i>P-value</i>
	<b>Low</b>	<b>Medium</b>	<b>Height</b>		
Good	3	4	1	7	0,000
Enough	0	21	13	34	
Less	0	21	32	53	
São Paulo	3	45	46	94	

Source: Primary Data, 2026

Based on the results of the analysis of 94 respondents, the distribution of knowledge level and mother's fear showed variations in each group. Among respondents with low knowledge (53 people), the majority had high mother's fear (32 respondents), followed by the medium category (21 respondents), and there were no respondents with low mother's fear.

In the sufficient knowledge group (34 respondents), most were in the category of moderate mother's fear (21 respondents), followed by the high category (13 respondents), and no low mother's fear was found. Meanwhile, among respondents with good knowledge (7 respondents), the majority had low and moderate mother's fear (3 respondents each), and only 1 respondent was in the high category.

The results of the statistical test using the Chi-Square test showed a  $p\text{-value} = 0.000$  ( $p < 0.05$ ), so it can be concluded that there is a significant relationship between the level of knowledge and mother's fear of the side effects of IUD contraception in the work area of the Sipatana Health Center.

## DISCUSSION

### Mother's Knowledge of IUD Contraceptive Insertion

Based on the results of the study, most of the mothers in the work area of the Sipatana Health Center have a level of knowledge in the poor category, namely 53 respondents (56.4%). This shows that the majority of mothers still have limitations in understanding information related to IUD contraception.

Based on the analysis of questionnaire items, it is known that questions about the definition of IUD and the shortcomings or limitations of its use are the most incorrect items answered by respondents. This shows that the basic understanding of the concept, characteristics, and side effects of the IUD is still low. This condition can be caused by the suboptimal receipt of health information by mothers, even though counseling activities have been carried out at health centers. Low participation in educational activities causes not all mothers to obtain comprehensive information.

According to Sorensen's theory, low knowledge is not only caused by a lack of information, but also an individual's limitations in accessing, understanding, evaluating, and applying health information (Sorensen, 2019). This limitation shows that the mother is not able to process information comprehensively, thus having an impact on the low understanding of IUD contraception.

The results of this study are in line with the research of Rahayu and Wijayanti (2022) and Purba et al. (2024) which showed that some respondents were still in the low knowledge category. This condition illustrates that limitations in understanding health information can affect an individual's perception and attitude towards a health measure.

Furthermore, in the category of sufficient knowledge, there were 34 respondents (36.2%). These results show that the mother already has a basic understanding of IUD contraception, but not yet fully in-depth.

Based on the item analysis, respondents in this category still had difficulty answering questions related to side effects and limitations in IUD use. This shows that the understanding is still at a basic level and is not comprehensive. These conditions can be influenced by educational factors, where most of the respondents are at the secondary and primary education levels, thus affecting the ability to understand more complex health information.

In the concept of health literacy, individuals with a sufficient level of knowledge are at the stage of basic understanding, namely being able to receive information but not fully able to apply it optimally in daily life (Nutbeam, 2017).

These findings are supported by research by Sari and Wijaya (2022) and Kharisma et al. (2021) which show that most respondents are in the category of sufficient knowledge, which reflects a basic but not yet in-depth understanding of health information.

Meanwhile, the category of good knowledge was the group with the least number, namely 7 respondents (7.4%). This shows that only a small percentage of mothers have a comprehensive understanding of IUD contraception.

Based on the item analysis, respondents in this category were able to answer most of the questions correctly, both related to the definition, how it works, and the side effects of IUDs. This shows that the respondents

have a good understanding of the information provided.

This condition can be influenced by age factors, where most of the respondents are in the age group of late adolescence and early adulthood who have better ability to access information, especially through digital media. Broad access to information allows individuals to gain better knowledge.

According to the theory of Green and Kreuter (2016), knowledge is a predisposing factor that affects individual behavior. Good knowledge will form rational perceptions so that individuals are better able to make the right decisions related to health.

The results of this study are in line with previous research that showed that individuals with good knowledge tend to have a more comprehensive understanding and a more positive attitude towards the use of contraceptive methods.

### **Mother's Fear Of Side Effects Of IUD Contraception**

Based on the results of the study, most of the mothers in the work area of the Sipatana Health Center had a high level of mother's fear in the high category, namely 46 respondents (48.9%), followed by the medium category as many as 45 respondents (47.9%), and the low category as many as 3 respondents (3.1%). These findings suggest that fear of IUD contraception is still a fairly dominant problem.

Theoretically, a high fear of medical action can arise due to an excessive perception of risk as well as a lack of a deep understanding of procedures and side effects that are generally temporary and manageable. Fear in the context of reproductive health is also often influenced by inaccurate information or indirect experiences, such as stories from others (Masrurroh et al., 2024).

The results of this study are in line with the research of Rachmawati and Agustin (2022) which shows that most mothers experience a high level of fear of health measures. The study explains that concern about possible side effects is a major factor that increases maternal fear.

Furthermore, in the category of moderate mother's fear, there were 45 respondents (47.9%). This suggests that some mothers still have a fear of IUD insertion, but at a level that is still controllable.

According to Spielberger's (2016) theory of anxiety, fear can arise as a temporary situational response. In the moderate category, the anxiety experienced by individuals is still within adaptive limits, so that individuals are still able to think rationally and control their emotional responses.

These findings are supported by research by Dewi et al. (2021) which states that moderate-level anxiety is common in individuals facing medical procedures. This condition reflects the existence of worry, but it is still within the limits of emotional control.

Meanwhile, the low mother's fear category was the group with the least number, namely 3 respondents (3.1%). This suggests that only a small percentage of mothers have a high level of confidence and do not experience significant fear of IUD insertion.

According to the Uncertainty Reduction Theory, an individual's level of fear decreases when uncertainty can be minimized through clear and adequate information. Individuals who have a good understanding tend to be able to predict the consequences of an action, so their emotional response is more stable and controlled (Griffin et al., 2019).

These results are in line with Permata et al.'s (2021) research which shows that only a small percentage of respondents are in the low fear category, while the majority are in the medium and high categories. Individuals with low fear generally have a more rational perception of risk as well as better adaptability.

In addition, the characteristics of respondents can also affect the level of mother's fear. The majority of mothers in this study were multiparaphernalia, who had previous reproductive experience. This experience allows mothers to assess risks more rationally so that they tend to have a lower level of fear than primipara mothers who still have limited experience (Putri et al., 2023).

Based on the overall results of the study, it can be assumed that the level of mother's fear is influenced by risk perception, experience, and information received by mothers. Although IUDs are a safe and effective method of contraception, negative perceptions formed from inaccurate information and previous experiences cause most mothers to still be in the category of high to moderate fear.

### **The Relationship between Knowledge Level and Mother's Fear on the Side Effects of IUD Contraception Installation at Sipatana Health Center**

Based on the results of the study, it is known that of the 53 mothers with a lack of knowledge, most of them had mother's fear in the high category, namely 32 respondents, followed by the medium category as many as 21 respondents, and no low category was found. In the group of mothers with sufficient knowledge level (34 respondents), the majority were in the medium mother's fear category (21 respondents), followed by the high category (13 respondents), and there was no low category. Meanwhile, in the group of mothers with a good level of knowledge (7 respondents), most were in the low and medium mother's fear category (3 respondents each), and only 1 respondent in the high category.

The results of the statistical test using the Chi-Square test showed a p-value of 0.000 ( $p < 0.05$ ), so it can be concluded that there is a significant relationship between the level of knowledge and mother's fear in mothers in

the work area of the Sipatana Health Center.

The findings of this study show that mother's fear in the high category is most commonly experienced by mothers with a lack of knowledge, which is as many as 32 respondents. This indicates that limited knowledge contributes to increased fear of the side effects of IUD contraception. Theoretically, low knowledge causes individuals to have an incomplete understanding of the procedures, benefits, and side effects of a health measure, thereby increasing the perception of risk and uncertainty. This condition ultimately triggers an emotional response in the form of fear (Surtikanti et al., 2023).

Although counseling activities have been carried out by health workers, the low participation of mothers in participating in these activities causes the information provided to be not fully accepted by all targets. In addition, the low awareness of some people on the importance of reproductive health information also contributes to the limited knowledge of mothers about IUD contraception. This condition can reinforce negative perceptions and increase mother's fear of using these contraceptive methods.

The results of this study are in line with the research of Lestari and Yuliani (2021) which shows that mothers with low knowledge have a higher risk of experiencing fear of IUD use. Research by Sari and Wulandari (2021) also found that low knowledge is related to negative attitudes, including fear of the installation process and contraceptive side effects.

On the other hand, the least high category of mother's fear was found in mothers with a good level of knowledge, which was as many as 1 respondent. This shows that good knowledge tends to reduce fear because individuals have a more rational understanding of a health action. However, fear is not completely gone, as it can still be influenced by other factors such as personal experiences, the influence of the social environment, and the quality of communication with health workers. Huber-Krum et al. (2022) state that fear of IUD use is not only influenced by cognitive factors, but also by subjective experiences and individual perceptions.

These findings are supported by research by Sari and Handayani (2021) and Ishizuka et al. (2023) which show that even if individuals have good knowledge, emotional factors and risk perceptions can still influence the appearance of fear.

Based on the results of the study, it can be concluded that the level of knowledge has an important role in shaping mother's fear of the side effects of IUD contraception. Mothers with good knowledge tend to have more rational perceptions and higher levels of trust, so fear is at a low level. On the other hand, mothers with less and enough knowledge still have limited understanding that causes the emergence of fear at moderate to high levels. In addition, mother's fear is also influenced by other factors beyond knowledge, such as experience, social environment, and quality of counseling, which were not studied in this study.

## CONCLUSION

The level of knowledge of mothers about the installation of IUD contraceptives Most of the mothers in the work area of the Sipatana Health Center have a low level of knowledge, namely 53 respondents (56.4%), followed by the level of sufficient knowledge as many as 34 respondents (36.2%), and the level of good knowledge as many as 7 respondents (7.4%).

The level of Mother's Fear of the side effects of IUD contraception Most mothers in the work area of the Sipatana Health Center experienced a high category of mother's fear, namely 46 respondents (48.9%), followed by the medium category of 45 respondents (47.9%), and the low category of 3 respondents (3.2%).

There was a relationship between the level of knowledge and mother's fear of the side effects of IUD contraception installation The results of statistical analysis using the chi-square test showed a p-value = 0.000 ( $p < 0.05$ ), so it can be concluded that there is a significant relationship between the level of knowledge and mother's fear of the side effects of IUD contraception installation at the Sipatana Health Center.

## ADVICE

### On behalf of the Puskesmas

The results of this study are expected to be an input in improving the quality of health services, especially in fulfilling the information needs of mothers regarding IUD contraception. The health center is expected to strengthen counseling and education activities that are directed towards the benefits, insertion procedures, and side effects of IUD contraceptives to help reduce mother's fear and increase maternal acceptance of these contraceptive methods.

### For Mothers or Respondents

The results of this study are expected to be an initial screening material to recognize the fear experienced by mothers about the installation of IUD contraception, especially related to limited knowledge about side effects. With a better understanding, mothers are expected to be able to be more rational in considering the selection of appropriate contraceptive methods.

### For the Next Researcher

The results of this study are expected to be an initial reference and consideration in developing further research related to other factors that can affect the level of knowledge and mother's fear of mothers towards the use of long-term contraception, especially IUD contraception, with a wider range of variables and research methods.

### REFERENCES

- Adofo, E., Dun-Dery, E. J., Kotoh, A. M., Dun-Dery, F., Avoka, J. A., & Ashinyo, M. E. (2021). Fear of infertility limits contraceptive use among first-time mothers in Ghana: A cross-sectional study. *SAGE Open Medicine*, 9.
- Amenu, D., Wakjira, T., Tadele, A., Kebede, A., & Asefa, Z. (2023). Why intrauterine device (IUD) utilization is low in southwestern Ethiopia. *Acta Obstetrica et Gynecologica Scandinavica*, 102(7), 905–913.
- Dewi, I. N., Sambas, E. K., & Hersoni, S. (2021). Description of the side effects of using contraceptives in the womb in couples of childbearing age. *Journal of BTH Nursing*, 1(1), 42–53.
- Dorrah, M., Elnoamany, S., Ahmed, Y. S., Gadelmawla, A. F., Ragab, A., Mahdy, Z. M., Afifi, M. S., & Atef, M. (2024). Is there any psychological harm during IUD insertion among Egyptian women? *The Egyptian Journal of Hospital Medicine*, 96(1), 2464–2471.
- Glanz, K., Rimer, B. K., & Viswanath, K. (2022). *Health behavior: Theory, research, and practice* (6th ed.). Wiley.
- Green, L. W., & Kreuter, M. W. (2016). *Health program planning: An educational and ecological approach* (4th ed.). McGraw-Hill Education.
- Huber-Krum, S., Hackett, K., Senderowicz, L., Pearson, E., Francis, J. M., Siril, H., Ulenga, N., & Shah, I. (2022). Women's perspectives on postpartum intrauterine devices in Tanzania. *Studies in Family Planning*, 50(4), 317–336.
- Ishizuka-Inoue, M., Shimoura, K., Nagai-Tanima, M., & Aoyama, T. (2023). The relationship between health literacy, knowledge, fear, and COVID-19 prevention behavior. *JMIR Formative Research*, 7.
- Ministry of Health of the Republic of Indonesia. (2020). *Family Planning Service Guidelines*. Jakarta: Ministry of Health of the Republic of Indonesia.
- Kharisma, M. D., Kusdiyah, E., & Suzan, R. (2023). The relationship between the level of maternal knowledge and the incidence of diarrhea in toddlers. *Journal of Medical Studies*, 3(2).
- Lestari, D., & Yuliani, F. (2021). The relationship between knowledge level and maternal anxiety towards IUD use. *Journal of Midwifery*, 10(2), 85–92.
- Masuroh, M., Yuliani, I., Mindarsih, E., Verawati, B., & Rahmawati, I. (2024). Anxiety of mothers before IUD and implant insertion. *Nurse and Health: Journal of Nursing*, 13(2), 409–414.
- Muna, J. I., & Mahiti, G. R. (2022). Perceptions of intrauterine devices among women in Tanzania. *East African Health Research Journal*, 6(1), 32–38.
- Notoatmodjo, S. (2020). *Health promotion and health behavior*. Jakarta: EGC.
- Permatasari, R., Sari, D. P., & Lestari, W. (2023). The relationship between the mother's knowledge, information sources, and husband's support to the willingness to have an IUD inserted. *Journal of Reproductive Health*, 14(1), 45–53.
- Putri, A. S., Yunitasari, E., & Wahyudari, A. S. (2023). Analysis of factors related to contraceptive use based on Health Belief Model. *Tambusai Health Journal*, 4(3).
- Rachmawati, A., & Agustin, E. R. (2022). The relationship between maternal fear of side effects of IUD contraception. *Indonesian Journal of Midwifery Today*, 2(1), 20–26.
- Rahayu, R., & Wijayanti, T. (2022). The relationship between the mother's level of knowledge and the use of IUD contraception. *Borneo Student Research*, 3(2), 1675–1687.
- Sari, M., & Handayani, R. (2021). Factors that affect the acceptance of IUD contraceptives in mothers. *Indonesian Journal of Midwifery*, 12(3), 173–180.
- Sari, & Wulandari. (2021). The relationship between maternal knowledge and attitudes with IUD contraceptive use. *Journal of Public Health*, 9(1), 45–53.
- Sousa, C. O. G. L., Reis, S. N., Andrade, G. N., Santos, B. N. S., & Felisbino-Mendes, M. S. (2025). Women's knowledge about intrauterine device and user satisfaction in Brazil: A systematic review. *Revista da Escola de Enfermagem da USP*, 59.
- Surtikanti, Almumtahanah, & Ningsih, M. K. (2023). The relationship between maternal knowledge and interest in using IUD birth control. *Journal of Nursing and Health*, 5(3), 135–141.
- World Health Organization. (2025). *Contraceptive use and family planning worldwide*. Geneva: WHO.