



## Effectiveness of Leaflet Media in Health Education to Improve Maternal Knowledge on Implant Contraception

Kartini S

*Department of Midwifery, Institut Kesehatan dan Bisnis Kurnia Jaya Persada, Indonesia*

Correspondence author: Kartini S

Email: [kartini03.kjp@gmail.com](mailto:kartini03.kjp@gmail.com)

Address: Jl. Dr. Ratulangi 172 Kota Palopo, Makassar, Sulawesi Selatan, Telp. +6281245316945

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### ABSTRACT

**Introduction:** Health education is crucial in increasing public knowledge about reproductive health, including Family Planning. The leaflet serves as a medium for conveying information, the effectiveness of which is measured by how well the leaflet helps in better understanding implant contraception, including its benefits, risks, installation procedure, and maintenance. This increase in knowledge is then expected to encourage more accurate decision-making regarding the use of implant contraceptives.

**Objective:** This study aims to determine the effectiveness of leaflet media in health education on increasing mothers' knowledge about implant contraception at the Kurra Health Center in Tana Toraja Regency.

**Method:** The research design used is a pre-experiment with a one-group pre-post test design. The research population consists of all Women of Childbearing Age (WUS) in Lembang Rante Limbong, the working area of Puskesmas Kurra, totaling 131 individuals. A sample of 57 individuals was selected using a purposive sampling technique. Data were analyzed using a paired t-test or Wilcoxon test, depending on the data distribution.

**Result:** The research results show a p-value of 0.000, which is smaller than the  $\alpha$  value of 0.05.

**Conclusion:** There is an effectiveness of leaflet media in health education toward increasing mothers' knowledge about implant contraception at the Kurra Health Center, Tana Toraja Regency. This increase in knowledge is expected to help WUS make wiser decisions regarding family planning and choose contraceptive methods that align with their needs and preferences.

**Keywords:** health education, implant, knowledge, leaflet

## Introduction

One way to manage pregnancy is through contraceptive methods. Long-term contraceptive methods have proven effective in delaying, limiting, and stopping fertility. Therefore, the government is striving to increase the use of contraception (Dewiyanti, 2020). KB, which stands for *Keluarga Berencana* (Family Planning), is a program aimed at regulating the number and spacing of births, managing pregnancies, and promoting reproductive rights for families to create high-quality family structures. KB is one of the strategies supporting efforts to accelerate the reduction of maternal mortality rates by providing protection and assistance based on reproductive needs (Kemenkes RI, 2022).

Implant contraception is a long-term contraceptive method that uses an implant containing the hormone progestin, inserted under the skin of the upper arm. This implant prevents pregnancy by inhibiting ovulation, thickening cervical mucus, and preventing sperm from meeting the egg. Implants can last in the body for 3-5 years, depending on the type of implant used, and can be removed at any time if necessary. This method is very effective in preventing pregnancy and is suitable for women who want long-term contraception without the need to remember daily pills (A. Hidayat, 2019).

According to the family survey conducted by BKKBN in 2021, the prevalence rate of contraceptive use among Couples of Reproductive Age (PUS) in Indonesia reached 57.4%. The provinces with the highest contraceptive use rates were South Kalimantan (67.9%), Bangka Belitung Islands (67.5%), and Bengkulu (65.5%), while the provinces with the lowest rates were Papua (15.4%), West Papua (29.4%), and Maluku (33.9%) (Kemenkes RI, 2022). In 2021, 52.26% of reproductive-age women became users of modern contraceptives, with the most common being injectable contraceptives (57.99%), followed by pills (17.96%), implants (15.19%), and IUDs (4.59%) (Dinas Kesehatan Provinsi Sulawesi Selatan, 2021).

Knowledge about implant contraception is a factor related to its use among reproductive-age women. Therefore, efforts need to be made to increase knowledge and access to information about implant contraception, as well as to provide adequate support and family planning services (Putri et al., 2019). Health education is essential in increasing mothers' knowledge. A mother's knowledge about implant contraception is important for making informed and responsible decisions, reducing the risk of contraceptive failure, eliminating misunderstandings and stigma, increasing the acceptance and use of implants, and improving reproductive health and family planning. With proper knowledge, mothers can choose the appropriate contraceptive method, identify signs of complications, and effectively plan pregnancies. This has a positive impact on the health of mothers, families, and achieving educational and career goals (Azijah et al., 2020; Putri et al., 2019).

Several factors can influence a mother's knowledge about implant contraception. These include access to information, education and literacy, sources of information, experience, and social interaction (Darsini et al., 2019; Islamarida et al., 2023; Zakiah et al., 2023). Health education plays a crucial role in increasing mothers' knowledge about implant contraception. Through such programs, mothers receive accurate and up-to-date information about implant contraception, including its benefits, risks, and usage. With better knowledge, mothers can make more informed decisions about contraception. Health education also helps eliminate misunderstandings or negative stigma associated with implant use. Moreover, it provides a platform for mothers to ask questions and receive clarification from healthcare personnel.

Overall, health education plays an essential role in raising awareness of safe and effective contraceptive options (Sugiana et al., 2021).

Research by Rismawati & Sari (2021) concluded that health education has a significant impact on increasing mothers' knowledge about implant contraception. Therefore, efforts should be made to provide targeted and effective health education to communities, especially those in need. Another study found that after the distribution of leaflets, there was a notable increase in knowledge (Ayu & Widyani, 2022). To support the success of health education, media aids are essential. The use of media in learning is crucial as it facilitates material comprehension. However, before selecting and using media in counseling, one must understand its characteristics to achieve the desired goals. Leaflet media, consisting of folded sheets with extensive health information, is often used to assist in health counseling.

At the Kurra Health Center in Tana Toraja Regency, the number of implant contraceptive users remains low. This is due to community fears about using the contraceptive. Perceptions include fear of having a device implanted in the body, the belief that the implant will interfere with daily labor (such as morning planting or heavy lifting), and the concern that the implant might move within the body. These beliefs have led many women to avoid using implants. Based on these concerns, this research aims to examine the influence of health education on mothers' knowledge about implant contraception at the Kurra Health Center, Tana Toraja Regency.

### Objective

To evaluate the Impact of Health Education on Mothers' Knowledge Regarding Implant Contraception at Kurra Health Center, Tana Toraja Regency

### Method

In this study, the researcher employed a pre-experimental design using a one-group pre-test and post-test approach to observe differences in subjects' conditions before and after the intervention (Sholihah, 2019). The population consisted of women of reproductive age (PUS) in Lembang Rante Limbong, the working area of Kurra Health Center, Tana Toraja Regency, totaling 131 individuals. A sample of 57 individuals was selected using the Slovin formula and purposive sampling technique, which means the sample was chosen based on specific criteria. Data were analyzed using either the paired t-test or Wilcoxon test, depending on the distribution of the data. The paired t-test was applied if the data were normally distributed, while the Wilcoxon test was used for non-normally distributed data.

### Result

Table 1. Distribution of Respondents Based on Before Health Education

Knowledge Before Health Education	f	(%)
Good	14	24.6
Not Good	43	75.4
<b>Total</b>	<b>57</b>	<b>100.0</b>

According to the research findings, the frequency distribution of respondents based on their knowledge before receiving health education revealed that 14 individuals (24.6%) had good knowledge, while 43 individuals (75.4%) had poor knowledge.

Table 2. Distribution of Respondents Based on Knowledge After Health Education

<b>Knowledge After Health Education</b>	<b>f</b>	<b>(%)</b>
Good	40	70.2
Not Good	17	29.8
<b>Total</b>	<b>57</b>	<b>100.0</b>

According to the research findings, the distribution of respondents' knowledge after receiving health education indicated that 40 individuals (70.2%) had good knowledge, while 17 individuals (29.8%) still had poor knowledge.

Table 3. Description of Knowledge Statistics

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
knowledge before health education	57	6.2105	1.89677	2.00	10.00
knowledge after health education	57	8.0702	1.53367	4.00	10.00

The table provides a statistical overview of the respondents' knowledge before and after receiving health education. Among the 57 respondents in the study, the average knowledge score prior to health education was 6.2105, with a standard deviation of 1.89677. The minimum knowledge score was 2.00, and the maximum score was 10.00. After the health education intervention, the average knowledge score increased to 8.0702, with a standard deviation of 1.53367. The minimum score improved to 4.00, while the maximum remained at 10.00.

Table 4. The Effectiveness of Leaflets in Health Education on Mothers' Knowledge

<b>Variable changes score</b>		<b>N</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>	<b>P value</b>
Knowledge before-after	Negative Ranks	11	13.45	148.00	0,000*
	Positive Ranks	42	30.55	1283.00	
	Ties	4			
	Total	57			

*\*Wilcoxon signed rank test*

The table indicates that 11 participants experienced a decrease in knowledge after the health education intervention, with a mean rank of 13.45 and a total of 148.00 in the negative ranks. Meanwhile, 42 participants showed an increase in knowledge, with a mean rank of 30.55 and a total sum of positive ranks amounting to 1283.00. Four participants had equal knowledge scores before and after the intervention. The Wilcoxon test yielded a p-value of 0.000, which is less than the significance level of 0.05. Therefore, the results demonstrate the

effectiveness of leaflet media in health education in improving mothers' knowledge about implant contraception at the Kurra Health Center, Tana Toraja Regency.

## **Discussion**

### ***Description of Knowledge Before Health Education Using Leaflet Media***

The research results revealed that 75.4% of respondents had limited knowledge before receiving health education, while only 24.6% demonstrated good knowledge. This finding highlights the significant need for raising public awareness and understanding of health issues. Limited knowledge before health education reflects a gap in information and understanding about key health concepts among the community.

According to the modified theory of Lawrence Green in Notoatmodjo (2014), it is stated that behavioral changes can be influenced by several factors such as predisposing factors, which are basic factors that facilitate the formation of a certain behavior. Faktor predisposisi dapat berupa kognitif (pengetahuan), afektif (sikap). Selain itu, faktor predisposisi juga berkaitan dengan karakteristik individu. (umur, tingkat pendidikan, pekerjaan serta jumlah anak) (Notoadmodjo, 2014).

Health education, therefore, plays a crucial role in improving public knowledge. By using appropriate educational approaches, communities can be provided with essential information on topics like contraceptive methods, healthy living habits, and the importance of regular health check-ups. These efforts can enhance overall health literacy and decision-making, positively impacting public health, In line with the research conducted by Sri Wahyuni et al. (2017) titled "The Effectiveness of Health Education on the Increase in Knowledge of Reproductive-Aged Women about Intrauterine Contraceptive Devices in Cilampunghilir Village, Padakembang District, Tasikmalaya Regency," it shows an increase in the knowledge of reproductive-aged women. This improvement certainly did not happen on its own but rather through actions or activities of providing health education to women of reproductive age by conveying information about the definition, benefits, and side effects of intrauterine contraceptive devices.

### ***Description of Knowledge After Health Education Using Leaflet Media***

After receiving health education, there was a notable increase in respondents' knowledge, with 70.2% of participants demonstrating good knowledge. However, 29.8% of respondents still had insufficient knowledge. The 70.2% improvement in knowledge is an encouraging sign that health education has a significant positive impact. As a result of the intervention, the community is expected to make better health-related decisions and adopt healthier lifestyles.

This result also suggests the effectiveness of the health education program, which warrants further analysis to understand how the educational materials were designed and implemented to achieve such positive outcomes. Additionally, ongoing evaluations could help identify areas for improvement in future health education initiatives. The increased knowledge about implant contraceptives could help mothers make better-informed decisions aligned with their families' needs.

In line with the research conducted by Anastasia et al. (2020), which involved 145 respondents with an average pretest knowledge score of 20.25 and a standard deviation of 2.216. The average posttest knowledge score was 21.21 with a standard deviation of 1.725, and the Wilcoxon test results showed a PValue of 0.000 ( $p < 0.005$ ). Thus, it can be concluded that there is a significant difference in respondents' knowledge before (pretest) and after (posttest) receiving reproductive health promotion.

## ***Effectiveness of Leaflet Media in Health Education on Increasing Mothers' Knowledge About Implant Contraception***

The statistical analysis yielded a p-value of 0.000, which is smaller than the alpha value of 0.05, indicating that leaflet media was effective in increasing mothers' knowledge about implant contraception at the Kurra Health Center, Tana Toraja Regency. This finding is consistent with other research, such as Sophia (2023), which demonstrated the influence of counseling on contraceptive motivation among women of childbearing age.

Despite the overall positive impact, 11 participants experienced a decrease in knowledge scores after receiving health education. These individuals had a mean rank of 13.45, with a total sum of ranks of 148.00. Factors such as low education levels, literacy issues, or difficulty understanding the material might explain the decline in knowledge.

On the other hand, 42 participants showed an increase in knowledge scores, with a mean rank of 30.55 and a total sum of ranks of 1283.00. These results suggest that the majority of respondents benefited from the health education program. However, 4 participants maintained the same knowledge scores before and after the intervention, indicating that knowledge improvements were not universal.

The results of this study are in line with the research conducted by Rahmadani et al. (2024) titled "The Effect of Health Education Using Leaflet Media on the Level of Knowledge of Reproductive Health Disorders in Women at the Kedewan Health Center," which shows a difference and change in the respondents' level of knowledge after being given health education using leaflet media compared to the control group. The p-value in the Paired T-Test indicates a significant difference in the level of knowledge between the pretest and posttest in the intervention group ( $p=0.000$ ,  $p<0.05$ ).

This variability in outcomes underscores the importance of tailoring health education to meet the specific needs of the target audience. Factors such as literacy levels, language used, and the clarity of the information presented must be carefully considered to enhance the effectiveness of health education. Simplifying content, using accessible language, and involving participants actively can help reduce knowledge gaps and ensure that educational interventions reach all community members, including those with lower education levels.

Health education through leaflets can also be an efficient strategy in reaching a wide audience, as leaflets can be distributed en masse and are easily accessible to the public (Hidayati et al., 2022). This opens up opportunities to increase women's awareness and knowledge about reproductive health disorders, so they can take preventive and proactive steps to maintain their reproductive health (Sari et al., 2017). Therefore, health education using leaflets can be an effective tool in raising women's awareness and knowledge about important reproductive health issues (Oktaviani et al., 2014). The use of leaflet media in health education provides an increase in the respondents' knowledge level, which can be observed through the comparison between before (pretest) and after (posttest) the provision of health education (Achjar et al., 2023).

## **Conclusion**

The research results showed a p-value of 0.000, which is smaller than the alpha value of 0.05, confirming the effectiveness of leaflet media in improving mothers' knowledge about implant contraception at the Kurra Health Center, Tana Toraja Regency. This outcome highlights the value of health education in increasing awareness and understanding among Women of Reproductive Age (WRA). By providing WRA with clearer information about implant contraceptives—such as their benefits, risks, and effectiveness—health education can empower them to make more informed decisions about family planning. These insights allow

women to choose contraceptive methods that align with their personal and family needs, ultimately promoting better reproductive health and enabling more thoughtful family planning choices.

### **Conflict of interest**

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

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### **Authors' contribution**

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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