

ARTICLE INFORMATION

Received: June 13, 2026

Revised: June 27, 2026

Available online: June 30, 2026

at: <https://e-jurnal.iphorr.com/index.php/mchc>

The effect of booklet-based education on vaginal discharge knowledge among women of childbearing age

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

Abstract

Background: The World Health Organization (WHO) reports that 75% of women have experienced vaginal discharge. If left untreated, vaginal discharge can lead to both psychological and physical health issues. In 2024, there were 318 reported cases of pathological vaginal discharge among women at Demang Sepulau Raya Hospital. One effective medium to increase the knowledge of women of reproductive age about vaginal discharge is the use of educational booklets.

Purpos: to determine the effect of booklet-based on vaginal discharge knowledge among women of childbearing age

Method: This quantitative study used a pre-experimental design, specifically a one-group pretest-posttest design. The population consisted of 130 women of childbearing age who sought treatment at the Obgyn Polyclinic of Demang Sepulau Raya Hospital. A total of 30 respondents were selected using purposive sampling. The study was conducted from February 2 to May 5, 2025. Data were collected using observation sheets and analyzed through univariate and bivariate analysis (paired sample t-test).

Results: The results showed that the average knowledge score of women of reproductive age regarding vaginal discharge was 62.50 before the education and increased to 83.00 after the intervention.

Conclusion: The analysis revealed a significant effect of booklet-based education on the knowledge of women of reproductive age at the Obgyn Polyclinic (p -value = 0.000).

Suggestion: It is recommended that healthcare providers implement booklets as educational tools to enhance patients' understanding of vaginal discharge and promote healthier behavior.

Keywords: Booklet Education; Vaginal Discharge; Women of Childbearing Age.

INTRODUCTION

Reproductive health refers to a healthy condition concerning the reproductive system (functions, components, and processes) of mothers, both physically, mentally, socially, and spiritually. Problems related to reproductive organs in mothers need serious attention, as these issues are most commonly found in developing countries, including Indonesia. Reproductive health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity in all matters related to the reproductive system (Oktavia & Sari, 2022). One of the most common reproductive

health problems experienced by women is vaginal discharge (leukorrhea).

Vaginal discharge is a type of excessive mucus that appears white, thick like starch, and slightly yellowish. There are two types of vaginal discharge: normal (physiological) and abnormal (pathological) (Ardayani, 2022). Vaginal discharge refers to excessive fluid secreted from the vagina that is not blood. It is a symptom associated with secretions from the genital tract other than blood. Physiological discharge consists of mucus that sometimes contains many epithelial cells with few leukocytes, whereas

pathological discharge contains a large number of leukocytes.

According to the World Health Organization (WHO), about 75% of women worldwide will experience vaginal discharge at least once in their lifetime, and 45% will experience it two or more times. In Europe, 25% of women experience it (Anggriani & Qalbi, 2021). In Indonesia, 75% of women have experienced vaginal discharge at least once, and 45% of them may experience it two or more times. More than 70% of Indonesian women experience discharge caused by fungi and parasites such as pinworms or protozoa (*Trichomonas vaginalis*). This number is significantly different from Europe (only 25%), largely due to Indonesia's humid climate, which facilitates *Candida albicans* infection one of the causes of vaginal discharge (Herdayani, Sofiyanti, Sari, Agustia, Rahayu, Syabrillah, & Lestari, 2021).

Other study in one district of Lampung Province found that more than half of the respondents experienced pathological discharge, totaling 20 women (57.10%). However, in both national and regional health profiles, data on vaginal discharge is not recorded, making it difficult to determine exact prevalence (Oktavia & Sari, 2022).

Pathological discharge is an exudate that contains many leukocytes, produced as a body reaction to injury (lesions). These may be caused by microbial infection, foreign bodies, benign neoplasms, precancerous lesions, or malignant neoplasms (Ee & Pusmaika, 2016). The causes include Gonorrhea infection, *Trichomonas vaginalis* parasites, and in some cases, foul-smelling discharge caused by cancer or poor hygiene. Complaints of discharge before menstruation statistically tend to affect the genital area, especially the vagina, uterus, and vulva (Ardayani, 2022).

If not managed properly, vaginal discharge can cause both psychological and physical problems. Short-term effects include itching that causes discomfort and potential secondary infections from scratching. Psychologically, it can cause excessive anxiety and reduce self-confidence in daily activities (Hanifah et al., 2023). Long-term effects may include infertility, ectopic pregnancy, and even cervical cancer, as early symptoms often start with vaginal discharge. Other complications include endometritis, pelvic inflammatory disease, chlamydia, and salpingitis (Hanifah, Herdiana, & Jayatni, 2023).

Previous studies also show the impact of health education. For instance, found that health education through booklets improved adolescent girls' knowledge about leucorrhea at Students of a Public Junior High School 1 Sukoharjo (Qori'ah, Widyastutik, & Putriningrum, 2023). Other study concluded that booklet-based health education significantly influenced knowledge ($p = 0.001 < 0.05$) (Kristina, Pratiwi, & Rumiati, 2022). Similarly, other study found that knowledge improved from pretest (80.3% in the "good" category) to posttest (98.9% in the "good" category), with a Wilcoxon test result of $p = 0.000 < 0.05$ (Sandriani, Pramitha, Srinayanti, Solihah, & Asmarani, 2024).

However, high cognitive ability among students does not necessarily guarantee high reproductive health knowledge, nor does good knowledge ensure good behavior. Therefore, adolescents should be the primary target and entry point for reproductive health promotion (Notoatmodjo, 2012).

Previous research has shown that most women of reproductive age have sufficient knowledge about vaginal discharge, although 6% still have low knowledge (Lubis & Siregar, 2021). Similarly, Widiastih & Setyawati (2018) found that most WRA did not engage in preventive measures against reproductive health problems, indicating the need for special attention to facilitate prevention and education.

Optimizing the delivery of health information requires appropriate media. Health education should be supported with effective media to maximize outcomes (Rofiah, Viridula, Inti, & Firdaus, 2024). Not all media types are suitable. Health promotion media, also known as teaching aids, can be visual, printed (booklets, leaflets, posters), electronic, or entertainment based. Vision accounts for 75-85% of learning, while hearing contributes 13-25% (Yulyana, Margaret, & Savitri, 2020). Among printed media, booklets are effective because they allow independent learning, can be accessed at leisure, are shareable with family and friends, and are easy to produce, update, and adapt (Istiqomah, Putri, & Satiyem, 2023).

RESEARCH METHOD

This study used a quantitative approach with a pre-experimental design (one-group pretest-posttest) to compare changes in knowledge levels women of

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

DOI: 10.56922/mchc.v5i3.1603

The effect of booklet-based education on vaginal discharge knowledge among women of childbearing age

reproductive age before and after receiving education using a booklet. The study was conducted at Demang Sepulau Raya Hospital between February 2 and August 28, 2025. The population consisted of all WRA attending the Obgyn clinic (130 women), with 30 respondents selected through purposive sampling. Inclusion criteria were women who could read, write, and communicate effectively. Exclusion criteria were respondents who withdrew or failed to complete the posttest questionnaire.

The independent variable was education on preventing pathological discharge using booklets, while the dependent variable was WRA knowledge about vaginal discharge. Knowledge was measured using a questionnaire covering the definition, types, causes, symptoms, impacts, prevention, and management of vaginal discharge. Scores were

based on correct answers (ratio scale, 0-100). Data collection was carried out directly by the researchers using a pretest questionnaire, booklet-based education, and a posttest questionnaire. The data collection process followed official administrative procedures from the university and hospital. Data analysis involved editing, scoring, processing, and cleaning.

Univariate analysis was conducted to describe variable distributions, while bivariate analysis tested differences in knowledge scores before and after education. The Shapiro-Wilk test was used to assess normality (since sample size < 50). As the data were not normally distributed, the Wilcoxon test was applied at a significance level of 0.05, with $p \leq 0.05$ interpreted as statistically significant.

RESEARCH RESULTS

Table 1. Characteristics of Respondents (N=30)

Variable	Results
Age (Mean$\pm$SD) (Range) (Years)	(30.25 $\pm$ 6.76) (18-45)
<20	1/3.3
20-35	23/76.7
>35	6/20.0
Parity (n/%)	
Primipara	8/26.7
Multipara	22/73.3
Education Level (n/%)	
Low (primary school or below)	10/33.3
Secondary (junior/senior high school)	19/63.3
High (diploma, bachelor's degree, or higher)	1/3.3
Employment Status (n/%)	
Employed	4/13.3
Unemployed	26/86.7

Table 1 shows that the average age of respondents and standard deviation are (30.25 $\pm$ 6.76), with an age range of (18-45). Based on parity, the majority of responses are multiparous, with a total of 22 (73.3%), with the majority of respondents having secondary education, with a total of 19 (63.3%) and the majority of respondents Unemployed, with a total of 26 respondents (86.7%).

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

Tabel 2. Mean Pre-Post Difference

Knowledge	Mean	SD	Min	Max
Before	62.50	10.23	45.0	80.0
After	83.00	10.95	60.0	100.0

The mean knowledge score on vaginal discharge before the intervention was 62.50 (SD = 10.23), with a minimum score of 45.0 and a maximum of 80.0. Following booklet-based education, the mean knowledge score increased to 83.00 (SD = 10.95), with a minimum score of 60.0 and a maximum of 100.0.

Tabel 3. Normality Test Results for Knowledge Scores

Knowledge	Shapiro-Wilk	Exp
Before	0.070	Normal
After	0.080	Normal

Shapiro-Wilk analysis showed that the data were normally distributed ($p > 0.05$), thus fulfilling the assumption for parametric testing.

Tabel 4. The Effectiveness of Booklet Education

Knowledge	Mean Difference	SD	t-test	P- Value
Before-After	20.50	5.46	20.5	0.000

Paired sample t-test analysis indicated a significant improvement in knowledge after the intervention, with a mean difference of 20.50 (SD = 5.46), $t = 20.5$, and $p < 0.001$. This confirms that booklet-based education significantly increased knowledge of vaginal discharge among women of childbearing age.

DISCUSSION

The results showed that the average knowledge score of women of reproductive age about vaginal discharge before receiving booklet-based education was 62.50, with a standard deviation of 10.23, a minimum score of 45.0, and a maximum score of 80.0.

This finding is in line with previous research who reported that in the pretest stage, most respondents were in the good category, totaling 53 respondents (80.3%). the pretest stage, knowledge levels of adolescent girls about fluor albus (leukorrhea) using booklet media were distributed as follows: 20 respondents (34.4%) with low knowledge, 17

respondents (29.3%) with moderate knowledge, and 21 respondents (36.3%) with good knowledge, from a total of 58 respondents (Sandriani et al., 2024). Other research also showed that before intervention, knowledge levels among respondents were in the good and moderate categories (44% each), with 12% categorized as low knowledge (Kristina et al., 2022)

Vaginal discharge has long been a common problem among women. Many women do not fully understand this condition and often underestimate it, which indicates the need to improve knowledge (Maysaroh & Mariza, 2021). If left untreated, vaginal discharge can cause psychological as well as physical problems. In the short term, it often causes itching and discomfort, which may lead to infection due to scratching, and may also cause excessive anxiety and decreased self-confidence. Long-term consequences include infertility, ectopic pregnancy, and cervical cancer, as early symptoms often begin with vaginal discharge. Other complications may include endometritis, pelvic inflammatory disease, chlamydia, and salpingitis (Hanifah et al., 2023).

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

The effect of booklet-based education on vaginal discharge knowledge among women of childbearing age

The questionnaire results also revealed that many respondents did not know the first steps to prevent vaginal discharge, with only 14 respondents answering correctly. This may be due to a lack of specific reproductive health education, particularly regarding intimate hygiene, as this subject is rarely emphasized in general health education. Additionally, myths and misinformation circulating in social environments and on social media influence respondents' understanding. The lack of direct health education from professionals and limited access to reliable sources, such as health books or school-based education, also contribute to low knowledge levels.

Based on respondent characteristics, education level was found to be the most consistent factor associated with knowledge about vaginal discharge. Other characteristics, such as age, parity, and occupation, showed variations but did not directly affect knowledge. Instead, these were mediated by access to information, health experiences, and participation in education. Thus, booklet-based education is particularly important in bridging information gaps, especially among women with lower education levels or limited access to information.

Average knowledge of women of childbearing age about vaginal discharge after education using booklets the results showed that the average knowledge score after receiving booklet-based education increased to 83.00, with a standard deviation of 10.95, a minimum score of 60.0, and a maximum score of 100.0.

These findings are consistent with other research who reported that after intervention, 92% of respondents were in the good category and 8% in the moderate category (Kristina et al., 2022). Similarly, found that posttest results showed 98.9% of respondents in the good category (Sandriani et al., 2024). Other study reported posttest results with 1.7% in the low category, 10.3% in the moderate category, and 87.9% in the good category (Qori'ah et al., 2023). Other research also found that education increased knowledge by approximately 60%, largely due to respondents being young adolescents with a strong curiosity about reproductive health (Mariza, Susilawati, & Yuviska, 2020).

One key factor influencing the effectiveness of this intervention was education level. Respondents with

secondary to higher education almost all achieved posttest scores ≥ 80 , with some reaching a perfect score of 100. However, respondents with basic education also showed significant improvement, scoring between 70 and 90, with only a few scoring 60. This demonstrates that booklet media can still be effective for those with lower education levels, provided that the language and content are simple and easy to understand.

Overall, the findings indicate that booklet-based education significantly improved knowledge among women of reproductive age. Characteristics such as younger age, lower parity, being a housewife, and higher education levels supported intervention success. However, variations in improvement suggest that education effectiveness is also influenced by individual readiness to learn. The success of this intervention depended not only on the quality of the booklet but also on the health workers' role as facilitators, their communication skills, and participants' active engagement in the learning process.

Statistical tests showed a p -value = 0.000 ($p < 0.05$), indicating a significant effect of booklet-based education on knowledge about vaginal discharge among women of reproductive age. This is consistent with other study who also found a significant effect of booklet-based education on adolescent girls' knowledge about leukorrhea ($p = 0.001 < 0.05$) (Kristina et al., 2022). Other research similarly reported that booklet-based education improved knowledge of fluor albus among adolescent girls in Sukoharjo (Qori'ah et al., 2023). while other studies show confirmed its effect on knowledge and attitudes among students in Ciamis ($p = 0.000 < 0.05$) ((Sandriani et al., 2024).

Although knowledge improvement varied by education level, age, and prior learning experiences, the results show that booklet-based education is an effective intervention. To maximize its impact, personalized approaches and interactive education are recommended, especially for groups with lower literacy.

CONCLUSION

Of 30 respondents, 23 (76.7%) were aged 20–35 years, 22 (73.3%) were multiparous, 19 (63.3%) had secondary education, and 26 (86.7%) were unemployed. The average knowledge score of

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

DOI: 10.56922/mchc.v5i3.1603

The effect of booklet-based education on vaginal discharge knowledge among women of childbearing age

women of reproductive age before booklet-based education was 62.50 (SD = 10.23; min = 45.0; max = 80.0). The average knowledge score after booklet-based education was 83.00 (SD = 10.95; min = 60.0; max = 100.0). There was a significant effect of booklet-based education on knowledge about vaginal discharge among women of reproductive age ($p = 0.000$).

SUGGESTION

For Future Researchers: This study can serve as a reference for further research with additional variables or different designs, such as qualitative studies. Future studies could evaluate the effectiveness of other media, such as videos, mobile apps, or social media, compared to the booklet to determine the most appropriate approach for different groups of women of reproductive age.

REFERENCES

- Anggriani, S., & Qalbi, S. A. (2021). Pengaruh Health Education Melalui Modul Kompetensi Ego Terhadap Skala Kecemasan Pada Remaja Kelas IX di SMP Negeri 12 Makassar. *Jimpk: Jurnal Ilmiah Mahasiswa & Penelitian Keperawatan*, 1(2), 165-169.
- Ardayani, T. (2022). Pengetahuan dengan Motivasi Wanita Usia Subur (WUS) tentang Vulva Hygienen terhadap Pencegahan Keputihan. *Journal of Telenursing (Joting)*, 4(2), 847-852.
- Ee, S., & Pusmaika, R. (2016). *Rismalinda. Kesehatan Reproduksi Wanita*. Jakarta: Cv. Trans Info Media, 2.
- Hanifah, H., Herdiana, H., & Jayatni, I. (2023). Hubungan Personal Hygiene, Aktivitas Fisik Dan Tingkat Stres Terhadap Kejadian Keputihan Pada Remaja Putri Kelas Xii di Sma Darussalam Kabupaten Garut Tahun 2023. *SENTRI: Jurnal Riset Ilmiah*, 2(10), 4318-4331.
- Herdayani, Y., Sofiyanti, I., Sari, M., Agustia, D., Rahayu, H. D., Syabrillah, W., & Lestari, E. A. (2021). Faktor-Faktor yang Berhubungan dengan Kejadian Keputihan pada Remaja Putri. In *Call for Paper Seminar Nasional Kebidanan* (pp. 83-90).
- Istiqomah, H., Putri, D. D., & Satiyem, S. (2023). Pendidikan Kesehatan Dengan Media Booklet Meningkatkan Perilaku Personal Hygiene Pada Ibu Nifas. *Jurnal Kebidanan Malakbi*, 4(2), 59-67.
- Kristina, N., Pratiwi, E. N., & Rumiati, E. (2022). Pengaruh Pendidikan Kesehatan Tentang Keputihan (Leukhorrea) Melalui Media Booklet Terhadap Pengetahuan Remaja Putri di Dusun Jamban. *Desa Cekok, Kecamatan Babadan, Kabupaten Ponorogo*, 3.
- Lubis, J., & Siregar, N. (2021). Hubungan Pengetahuan Dengan Kejadian Flour Albus Pada Wanita Usia Subur Di Wilayah Puskesmas Labuhan Rasoki Padangsidimpuan Tenggara. *Jurnal Maternitas Kebidanan*, 6(2), 101-107.
- Mariza, A., Susilawati, S., & Yuviska, I. A. (2020). Penyuluhan Tentang Fluor Albus (Keputihan) Pada Remaja Putri di SMPN 27 Bandar Lampung. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (Pkm)*, 3(2), 244-249.
- Maysaroh, S., & Mariza, A. (2021). Pengetahuan tentang keputihan pada remaja putri. *JKM (Jurnal Kebidanan Malahayati)*, 7(1), 104-108.
- Notoatmodjo, S. (2012). *Promosi Kesehatan Dan Perilaku Kesehatan Rineka Cipta*.
- Oktavia, Y., & Sari, L. P. (2022). Asuhan kebidanan kesehatan reproduksi dengan flour albus. *Jurnal Keperawatan Profesional (Kepo)*, 3(2), 123-130.
- Qori'ah, H. S., Widyastutik, D., & Putriningrum, R. (2023). Pengaruh Pendidikan Kesehatan Melalui Booklet Flour Albus Terhadap Tingkat Pengetahuan Remaja Putri Tentang Flour Albus di SMPN 1 Sukoharjo Harista Sari Qori ' ah 1.

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

DOI: 10.56922/mchc.v5i3.1603

The effect of booklet-based education on vaginal discharge knowledge among women of childbearing age

- Rofiah, K., Viridula, E. Y., Inti, S., & Firdaus, N. (2024). Program Edukasi Seksual dalam Pencegahan IMS pada Wanita Usia Subur di Wilayah Kerja Puskesmas Campurejo Kota Kediri. *Adimaska (Jurnal Pengabdian Masyarakat Kesehatan)*, 1(1).
- Sandriani, S., Pramitha, S. A., Srinayanti, Y., Solihah, R., & Asmarani, S. U. (2024). Pengaruh pendidikan kesehatan tentang leukorea dengan media booklet terhadap tingkat pengetahuan dan sikap remaja putri kelas XI di MAN 2 Ciamis. *Indogenius*, 3(3), 182-196.
- Yulyana, N., Margaret, S., & Savitri, W. (2020). Pengaruh pendidikan kesehatan media booklet terhadap pengetahuan ibu nifas tentang perawatan masa nifas. *Jurnal Kebidanan Besurek*, 5(1), 1-5.

Zera Androla, Ana Mariza*, Susilawati, Sunarsih

Universitas Malahayati

Corresponding author: *Email: anamariza@malahayati.ac.id

DOI: 10.56922/mehc.v5i3.1603