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Effectiveness of Flipchart-Based Education on Premarital Screening Knowledge: A One-Group Pretest-Posttest Study Among Prospective Couples at a Primary Health Center

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ABSTRACT

Premarital screening is an important strategy to identify potential health risks before marriage and improve reproductive health outcomes. However, its utilization remains low, partly due to limited knowledge among prospective couples and the suboptimal use of effective educational media such as flipcharts. This study aimed to determine the effectiveness of flipchart-based health education in improving knowledge of premarital screening among prospective couples at UPTD Health Center I, West Denpasar. This study used a pre-experimental one-group pretest–posttest design. A total of 30 respondents (15 couples) were selected using consecutive sampling. Data were collected using a structured questionnaire administered before and after the intervention. The mean knowledge score increased from 62.83 to 90.83. The Wilcoxon signed-rank test showed a significant difference between pretest and posttest scores ($p < 0.05$), with 29 respondents demonstrating improvement. These findings indicate that the flipchart-based health education is effective in improving premarital screening knowledge. Therefore, the use of visual educational media is recommended to support health education programs in primary health care settings.

INTRODUCTION

Premarital screening is an important preventive effort to detect potential health risks before marriage and to prepare couples for a healthy pregnancy. Screening examinations allow early identification of infectious diseases, genetic disorders, anemia, and other health conditions that may affect maternal and child health outcomes. The World Health Organization states that screening aims to identify individuals who appear healthy but have a higher risk of certain health conditions so that early intervention can be provided to improve health outcomes [(1)].

In Indonesia, premarital screening has been integrated into reproductive health services. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 2 of 2025 concerning the implementation of reproductive health services, prospective brides and grooms are encouraged to undergo health examinations before marriage in order to detect health risks and obtain

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appropriate counseling and preventive care [2]. These services are commonly provided at community health centers (*Puskesmas*) and other health facilities [3]. Premarital preparation is closely related to the preconception period, which aims to identify potential health risks before pregnancy and improve maternal and fetal health outcomes [4]. Previous studies also reported that reproductive health education using visual or printed media can significantly increase knowledge among individuals preparing for marriage [5].

Despite the availability of these services, the coverage of premarital screening remains relatively low. Data from the Bali Provincial Health Profile in 2024 reported that although many prospective couples were registered for marriage, not all of them utilized premarital health services [6]. In UPTD Health Center I, West Denpasar, the coverage of premarital screening was only 1.6% of the annual target. Preliminary observations also indicated that many prospective couples visited health facilities only to fulfill administrative requirements rather than due to awareness of the importance of premarital screening [7]. This situation indicates that knowledge regarding premarital screening among prospective couples is still limited [8].

Health education is one of the strategies that can be used to improve knowledge and awareness regarding premarital health examinations [9]. Educational media such as flipcharts are considered effective because they present information visually and systematically, making it easier for participants to understand the material [10]. Studies have demonstrated that visual health education can significantly improve knowledge and health awareness among couples preparing for marriage [11]. Previous research also shows that premarital education programs contribute to improving reproductive health knowledge and encouraging preventive health behaviors among couples [12].

Based on these considerations, this study aimed to determine the difference in knowledge of prospective couples regarding premarital screening before and after education using flipchart media at UPTD Health Center I, West Denpasar.

METHOD

This study used a quantitative approach with a pre-experimental one-group pretest–posttest design to determine the difference in knowledge of premarital screening among prospective couples before and after receiving health education using flipchart media. The study was conducted at UPTD Health Center I, West Denpasar, Bali, Indonesia, from November 25 to December 1, 2025. The population consisted of prospective couples who attended premarital health services at the health center. This study received ethical approval from the Health Research Ethics Committee of Poltekkes Kemenkes Denpasar (No: DP.04.02/F.XXIV.25/989/2025).

A total of 30 respondents were selected using a non-probability sampling technique with consecutive sampling. Data were collected using a structured questionnaire consisting of 20 multiple-choice questions related to knowledge of premarital screening. Each correct answer was scored 5 and incorrect answers were scored 0, with total scores ranging from 0 to 100. The questionnaire used in this study had previously been tested for validity and reliability, with a Cronbach's alpha value of 0.890 indicating good reliability. The development and measurement of questionnaires followed standard procedures for quantitative health research instruments [13].

Data were analyzed using descriptive and inferential statistics. The normality of the data was tested using the Shapiro–Wilk test, which showed that the data were not normally distributed. Therefore, the Wilcoxon signed-rank test was used to analyze the difference in knowledge scores before and after the educational intervention with a significance level of $p < 0.05$. This study was conducted following research ethics principles, including informed consent, confidentiality, and voluntary participation [14].

RESULT AND DISCUSSION

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Table 1. Characteristics of respondents

Variable	f	%
Gender		
Male	15	50.0
Female	15	50.0
Total	30	100.0
Age		
21–35 years	28	93.3
>35 years	2	6.7
Total	30	100.0
Education		
Primary education	4	13.3
Secondary education	16	53.3
Higher education	10	33.3
Total	30	100.0
Occupation		
Unemployed	5	16.7
Employed	25	83.3
Total	30	100.0
Source of information		
Office of Religious Affairs (KUA)	20	66.7
Community health volunteers (Posyandu Cadres)	6	20.0
Health workers	4	13.3
Total	30	100.0

A total of 30 prospective couples participated in this study. The characteristics of respondents included age, education, occupation, and source of information regarding premarital screening. Most respondents were aged 21–35 years (93.3%), indicating that the majority were in the productive reproductive age group. Based on education level, most respondents had secondary education (53.3%), followed by higher education (33.3%) and basic education (13.3%). Most respondents were employed (83.3%). Regarding the source of information, the majority of respondents obtained information from the Office of Religious Affairs (KUA) or religious institutions (66.7%), followed by community health volunteers (20.0%) and health workers (13.3%). These are consistent with previous studies showing that health education using visual or printed media can significantly improve reproductive health knowledge. Educational interventions delivered through structured visual materials help participants better understand health information and encourage preventive health behavior [5,15].

These findings indicate that education level and access to information may influence the knowledge of prospective couples regarding premarital screening. Individuals with higher education and better access to information are generally more capable of understanding health information and adopting preventive health behaviors.

Table 2. Knowledge of prospective couples before and after education using flipchart media

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Knowledge	n	Mean	Median	Std. Deviation	Minimum	Maximum
Before education	30	62.83	65.00	8.167	40	75
After education	30	90.83	90.00	8.209	60	90

The increase in knowledge scores indicates that educational intervention using flipchart media improved the understanding of prospective couples regarding premarital screening. Flipcharts present health information through visual illustrations accompanied by concise explanations, which makes the material easier to understand [16].

Table 3. Differences in premarital screening knowledge before and after flipchart-based education

Variable	n	Mean	*Z-score*	*p-value*
Before education	30	62.83	-4.739	0.000
After education	30	90.83		

The results of the Wilcoxon signed-rank test showed a significant difference in knowledge before and after education using flipchart media ($p = 0.000$). A total of 29 respondents experienced an increase in knowledge scores, while one respondent showed no change.

These findings indicate that education using flipchart media significantly improves the knowledge of prospective couples regarding premarital screening. The effectiveness of flipchart media may be explained by its ability to combine visual and textual information that facilitates comprehension and enhances participant engagement during educational sessions.

This result is consistent with previous studies. Pancawati (2023) reported that flipchart-based health education significantly improved premarital health knowledge among prospective couples [10]. Similarly, Fauziatin et al. (2019) found that visual educational media can increase knowledge and awareness related to reproductive health preparation before marriage [9].

Health education interventions using visual communication methods have also been shown to improve knowledge retention and encourage positive health behaviors [17,18]. In addition, several studies reported that premarital education programs can increase awareness of reproductive health and prevent potential health risks before marriage [19,20].

Visual educational strategies are particularly effective in community health promotion because they simplify complex information and enhance interaction between educators and participants [21]. Previous studies also emphasized that educational interventions using visual aids can significantly increase knowledge levels and support behavioral change in reproductive health programs [22,23].

The use of flipchart media allows educators to present information systematically and interactively, enabling participants to better understand important aspects of premarital health screening. Therefore, flipchart-based education can be considered an effective strategy to improve knowledge and awareness among prospective couples regarding premarital health examinations.

CONCLUSION

Education using flipchart media significantly increased the knowledge of prospective couples regarding premarital screening at UPTD Health Center I, West Denpasar. The mean knowledge score increased from 62.83 before education to 90.83 after the educational intervention. Statistical analysis using the Wilcoxon signed-rank test showed a significant difference between knowledge before and after education ($p < 0.05$). These findings indicate that flipchart-based educational media is effective in improving the understanding of prospective couples about the importance of premarital health screening. The use of visual educational media is therefore recommended to support health education programs for prospective couples in community health centers.

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