



THE INFLUENCE OF INFOGRAPHIC MEDIA ON PROSPECTIVE BRIDES' KNOWLEDGE ABOUT REPRODUCTIVE HEALTH

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ABSTRACT

Reproductive health is an important aspect that every prospective bride and groom must understand to prepare for a healthy and quality family life. However, the low level of knowledge of prospective brides and grooms is a challenge in efforts to prevent reproductive health risks. This study aims to determine the effect of infographic media on prospective brides and grooms' knowledge of reproductive health. The research design used a quasi-experimental approach with a one-group pretest-posttest. A total of 88 respondents were selected purposively from four Religious Affairs Offices in Banda Aceh City. The instrument in the form of a questionnaire tested for validity and reliability was given before and after the intervention using infographic media. The analysis showed a significant increase in knowledge scores from an average of 9.02 in the pretest to 18.86 in the posttest ($p = 0.000$). However, multivariate analysis showed that the variables of age, gender, education, occupation, and income did not significantly affect changes in knowledge ($p > 0.05$). Infographic media has been proven to effectively convey information visually and increase the understanding of prospective brides and grooms regarding basic concepts of reproductive health more easily and attractively.

Keywords: infographic media; knowledge; prospective bride; reproductive health

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INTRODUCTION

Reproductive health is an essential aspect of human life, not only related to the freedom of individuals from disease or disability, but also includes physical, mental, emotional, and social well-being related to the reproductive system, functions, and processes (Akbar et al., 2021). According to the 1994 International Conference on Population and Development (ICPD), the scope of reproductive health services is vast, including maternal and child health, family planning, handling of sexually transmitted infections including HIV/AIDS, adolescent reproductive health, issues such as sexual violence and female circumcision (Gaib et al., 2024). This issue is increasingly important in Indonesia given the high rate of early marriage, which places Indonesia as the country with the second highest rate in ASEAN (Nanlohy et al., 2021). This raises various reproductive health challenges, especially in developing countries, including Indonesia (Qurniasih et al., 2024). Prospective brides are a strategic group in efforts to promote reproductive health because they are in an important phase before pregnancy. However, many prospective brides do not have adequate knowledge about reproductive health, so pregnancy often occurs without careful planning and the support of optimal health conditions. This situation can have severe impacts, such as increasing the risk of disease transmission, pregnancy complications, and even maternal and infant mortality (Lestari et al., 2023). In addition, various health problems such as anaemia, infertility, and malnutrition also contribute to the risk of stunting, which is still a global problem. Based on Riskesdas data (2018), the prevalence of stunting in Indonesia reached 30.8%, and Aceh is one of the provinces with a high stunting rate of 10.9% (Ristia & Dewi, 2023).

The pre-pregnancy or preconception phase is an important period that can determine the quality of maternal and child health in the future. Health interventions from this period, both for women and men, such as healthy lifestyle management, nutritional status, and reproductive health checks, need to be a primary concern (Yulivantina et al., 2021). Maternal and child health is also closely related to the quality of human resources, so efforts to improve the health status of women and men before marriage are urgently needed. Reproductive examination and counselling programs for prospective brides and grooms are effective strategies for building a healthy family (Herawati et al., 2024; Simanjuntak & Wahyudi, 2021). Health education is vital in equipping prospective brides and grooms to face the future of marriage and pregnancy. Good knowledge can shape healthy attitudes and practices. Unfortunately, various studies show that there are still many prospective brides and grooms with low knowledge about reproductive health. For example, research by Amalia and Siswantara (2018) showed that 62.5% of respondents had poor knowledge, while other studies noted that between 12% and 88% of prospective brides and grooms did not understand important information about health and sexuality, including reproductive organ care, pregnancy, contraception, and immunization. This shows an urgent need for more effective and equitable health education interventions.

Efforts to increase knowledge are not enough to be done only after marriage; they must be started before marriage. This preparation includes moral and material readiness and a comprehensive understanding of health so prospective brides and grooms can live a healthy and planned family life (Rohmatika et al., 2021). However, there are still many prospective brides and grooms who only focus on the marriage and pregnancy process without understanding the importance of the preconception phase due to the lack of health counselling or education (Rohmatika et al., 2022). Communication and information media act as agents of change. Mass media and health promotion media have proven to convey educational messages widely. Media such as leaflets, posters, flipcharts, videos, and social media such as WhatsApp have been used to increase public knowledge about health issues, including stunting. Among these media, visual media is the most effective because it involves the visual senses, which play a major role in absorbing information (Ernawati, 2022; Khatimah, 2018).

One form of effective visual media is infographics, which is the presentation of information through data visualization and attractive design. Infographics have been shown to facilitate understanding of complex concepts and increase information retention (Arigia et al., 2016). Several studies have shown the effectiveness of infographics in increasing health knowledge, for example, in the BOM MASSAGE method for pregnant women (Vianti R.L, 2023) and anaemia education for adolescent girls (Maharani et al., 2024). Flipchart media or flip sheets are also a practical choice in health education. With a design that contains images and information back and forth, this media can improve individual knowledge, attitudes, and beliefs. Therefore, using interactive and visual educational media such as infographics or flip sheets is important in conveying reproductive health information to prospective brides and grooms (Martiyana et al., 2018). This study aims to determine the effect of infographic media on prospective brides and grooms' knowledge of reproductive health.

METHOD

This study is a quantitative study with a quasi-experimental approach and uses a one-group pretest-posttest design. This design allows researchers to assess the effectiveness of infographic media in increasing the knowledge of prospective brides and grooms about reproductive health by comparing the values before (pretest) and after (posttest) the intervention in the same group. The study was conducted in four Religious Affairs Offices in the Banda Aceh City area: the Religious Affairs Offices of Baiturrahman, Lueng Bata, Kuta

Alam, and Ulee Kareng Districts. The study was conducted for two months, from June to July 2024. The study population included all prospective brides and grooms who attended reproductive health counselling at the four Religious Affairs Offices, with a total population of 751. Samples were taken purposively from 88 respondents based on inclusion criteria, namely prospective brides and grooms who had never been married, and exclusion criteria, namely prospective brides and grooms who had never received premarital education. The instrument used in this study was a questionnaire to measure respondents' knowledge level before and after the intervention, which was tested for validity and reliability. Data were analyzed using a paired t-test to see the difference in pretest and post-test scores and a linear regression test as a multivariate analysis to determine the effect of infographic media on increasing the knowledge of prospective brides and grooms in more depth.

RESULT

Table 1.
Respondent characteristics (n = 88)

Variables	f	%	Mean	SD (Min-Max)
Age			27,21	3,44 (18-36)
Late Adolescence	28	31,82		
Early Adulthood	59	67,05		
Late Adulthood	1	1,14		
Gender				
Female	44	50		
Male	44	50		
Education				
Higher	51	57,95		
Secondary	36	40,91		
Basic	1	1,14		
Job				
Working	77	87,50		
Not Working	11	12,50		
Income				
Above City Minimum Wage	75	64,77		
Below City Minimum Wage	31	35,23		

Table 1 shows that most respondents are in the early adulthood age group, which is 67.05%, much higher than respondents in late adolescence at 31.82% and late adulthood at 1.14%. Regarding education level, the majority of respondents have higher education at 57.95%, followed by respondents with secondary education at 40.91%, while only 1.14% have basic education. Based on employment status, most respondents are known to have permanent jobs which is 87.50%, and the rest are unemployed 12.50%. Meanwhile, respondents with income above the City Minimum Wage dominate at 64.77%, while those with income below the City Minimum Wage are recorded at 35.23%.

Table 2.
Differences in average pre-test and post-test scores on knowledge

Variables	Pre-test	Post-test	P-value
Knowledge			
Mean ± SD	9.02±1.57	18.86±2.31	0,000
Median	9	18	

Table 2 shows that the average knowledge score of respondents was higher at the time of the posttest, 18.86 from a score range of 0-23, compared to the average at the time of the pretest, 9.02. The statistical test results obtained a P-value of 0.000, which means Ho is rejected. It can be concluded that there is a difference in respondents' knowledge about reproductive health between the pretest and posttest.

Table 3.
Multivariable analysis of the characteristics of the influence of infographic media on changes in knowledge of prospective brides and grooms

Variables	Coefficient (β)	p-value	95%CI
Age			
Late Adolescence			
Early Adulthood	0,833	0,186	-0,41-(2,07)
Late Adulthood	3,918	0,138	-1,28-(9,12)
Gender			
Female			
Male	-0,689	0,305	-2,01-(0,63)
Education			
Higher			
Secondary	0,211	0,736	-1,03-(1,45)
Basic	2,287	0,389	-2,96-(7,53)
Job			
Working			
Not Working	-0,741	0,477	-2,80-(1,32)
Income			
Above City Minimum Wage			
Below City Minimum Wage	0,009	0,989	-1,38-(1,39)

Table 3 shows that the infographic media intervention did not significantly increase reproductive health knowledge based on the demographic characteristics of respondents. Although the variables of early adulthood (coefficient 0.833) and late adulthood (coefficient 3.918), secondary education (0.211), basic education (2.287), and income below the City Minimum Wage (0.009) showed a unidirectional relationship, all had a significance value above 0.05. Meanwhile, male gender (coefficient -0.689) and unemployed status (coefficient -0.741) showed a negative relationship but were also insignificant. These findings indicate that the characteristics of age, education, occupation, gender, and income do not significantly affect the effectiveness of infographic media in increasing respondents' knowledge.

DISCUSSION

The study showed a significant increase in the knowledge of prospective brides and grooms about reproductive health after being given an intervention using infographic media. The average knowledge score increased from 9.02 in the pretest to 18.86 in the posttest in the score range of 0–23. The statistical test produced a p-value of 0.000, meaning there was a significant difference between before and after the intervention, so the null hypothesis was rejected. This finding confirms that infographic media effectively increases respondents' knowledge, which aligns with the findings of Amalia and Siswantara (2018) which showed a significant increase in participants' knowledge after education. Age has been proven to affect the respondents' ability to absorb information. Most respondents in this study were 18–35 years old and were cognitively still in a productive and optimal period in receiving and remembering information. This supports the theory that individuals under 40 have better cognitive capacity; above that age, there is a decline in the function of comprehension and memory (Hendriani et al., 2020). In addition, the level of education held by the majority of respondents was high school, which, according to Sihombing (2020) has a positive correlation with the level of knowledge, where the higher the education, the more likely a person is to receive new values and information.

Knowledge about reproductive health is essential because it is closely related to efforts to prevent stunting and healthy pregnancy planning. Premarital examinations, including haemoglobin and HBsAg levels, are the first step in assessing physical readiness and preventing the risk of transmitting diseases such as anaemia and hepatitis B. A study by

Dhamayanti and Sulastri (2020) showed that most prospective brides and grooms had normal haemoglobin levels and negative HBsAg results, indicating the importance of early detection to prevent pregnancy complications and disease transmission to the fetus. Reproductive health information can be obtained through various channels, both formal, such as school education and informal, such as print, electronic, and online media. According to Salsabila et al. (2019), educational media can increase interest in learning and the effectiveness of delivering health messages. Visual media such as infographics make the learning process more enjoyable and easier to understand so that the target of education can well absorb the information conveyed. Researchers found that although access to information is very broad today, it still takes time and special methods to convey information to prospective brides and grooms. Limited time and respondents' busyness are obstacles that hinder the learning process, so direct counselling is still needed as an effective communication method. Therefore, educational programs like this must be implemented continuously to reach more prospective brides and grooms optimally.

The effectiveness of infographic media in increasing knowledge has been proven by various studies, including by Putra et al. (2020), which showed a significant increase in knowledge after using flip-flop media. In this context, infographics arranged as flip-flops can present information concisely, attractively, and easily understood. This is by the principle that visual media that involves more than one sense in conveying information will increase the absorption of the material. Knowledge is the foundation for shaping behaviour. Verplanken and Orbell (2022), states that behaviour based on knowledge will last longer than behaviour only formed by habits without understanding. In this case, increasing the knowledge of prospective brides and grooms through infographic media is expected to be the basis for forming healthy living behaviour and readiness to live married life and the role of parents. Infographic media has advantages in terms of time efficiency and suitability with the dominant visual learning style in the younger generation. According to Fajarini et al. (2024), delivering information visually increases memory by up to 65%. In addition, the interactive approach used during education, such as discussions and quizzes, also strengthens participants' understanding. This aligns with the findings of Mulyani et al. (2024) that participatory methods can significantly increase participant involvement and understanding.

From a cognitive theory perspective, infographics work on the principle of dual coding, namely the delivery of information through two channels—visual and verbal—which are processed simultaneously by the brain. This strategy increases the effectiveness of material delivery and strengthens long-term memory. However, the effectiveness of infographics is highly dependent on visual quality, content relevance, and cultural sensitivity. Therefore, media developers must involve experts and conduct trials with target users before being widely used (Rukmana et al., 2023). As a further strategy, infographic media has great potential to be integrated into premarital education modules both at Office of Religious Affairs and at health facilities such as community health centres. The development of this media can also be expanded to digital platforms such as educational applications or websites. Counselling facilitators also need special training to impart interesting material to the participants' characteristics. Further research is needed to assess the long-term impact of this intervention on the behaviour, health, and readiness of prospective brides and grooms in fostering a healthy and prosperous family.

CONCLUSION

Infographic media is effective in increasing the knowledge of prospective brides and grooms about reproductive health, as indicated by a significant difference between the pretest and posttest scores after the intervention. Several factors, such as the productive age of the respondents, educational characteristics, and access to attractive and easy-to-understand visual

information, influence this increase. However, sociodemographic variables such as education level and income do not significantly affect changes in knowledge, indicating that the success of the intervention is more determined by the right approach to delivering information. For further researchers, it is hoped that they can develop further research by examining other variables such as attitudes, motivations and factors that influence premarital couples, such as respondent parenting patterns.

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