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The Effect of Booklets on Husbands' Knowledge and Support Regarding Basic Immunization

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Abstract

Complete basic immunization is a key strategy in strengthening children's immunity, preventing the transmission of infectious diseases, and reducing morbidity and mortality. However, immunization coverage in Indonesia remains suboptimal, as evidenced by the large number of children who did not receive complete basic immunization between 2017 and 2021. In West Kalimantan, immunization coverage is still below the national target, with Pontianak City achieving only 55% of the 95% Universal Child Immunization (UCI) target and Kubu Raya Regency reaching 68.3% as of December 2023. This study aimed to analyze the effect of booklet media on husbands' knowledge and support regarding basic immunization. A quantitative approach was employed using a quasi-experimental design with a one-group pretest–posttest format. The study involved 83 respondents selected through non-probability sampling. Data were analyzed using the paired sample t-test to assess differences before and after the intervention. The results showed a statistically significant increase in both knowledge and support among husbands after the booklet intervention ($p < 0.05$). These findings indicate that booklet-based education is effective in improving husbands' understanding and involvement in supporting basic immunization. In conclusion, the use of booklet media significantly enhances husbands' knowledge and support regarding complete basic immunization in the Kuala Mandor B Community Health Center area, Kubu Raya Regency.

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1. INTRODUCTION

Based on WHO data in 2021, as many as 25 million children did not receive complete immunization globally, which is 5.9 million more than in 2019 and represents the highest number since 2009. In Indonesia, the number of children who have not been fully immunized from 2017 to 2021 reached 1,525,936. Furthermore, the coverage of Universal Child Immunization (UCI) in West Kalimantan ranks fourth lowest nationally. The coverage of complete basic immunization in Pontianak City is only 55% of the 95% target, while in Kubu Raya District it reached 68.3% in December 2023 (Dinas Kesehatan Kabupaten Kuburaya, 2023). A preliminary survey from the Kuala Mandor B Community Health Center reported that immunization coverage decreased to 46.4% from a target of 95% with a total target of 470 infants, indicating a significant gap between targets and actual achievements.

Basic immunization aims to prevent disease, disability, and death, thereby protecting children during their growth period from various dangerous diseases. Immunization also contributes to the establishment of herd immunity, which is essential to prevent the spread of infectious diseases, especially among individuals who cannot be immunized due to specific health conditions. Therefore, increasing immunization coverage is crucial to reducing disease transmission. In Indonesia, immunization programs have been implemented since 1956 and expanded through the Immunization Development Program (PPI) in 1977 to prevent Vaccine-Preventable Diseases (PD3I), including tuberculosis, diphtheria, pertussis, measles, polio, tetanus, and hepatitis B. The success of immunization programs is measured through indicators such as UCI and dropout rates, where UCI reflects the proportion of infants aged 0–11 months who receive complete basic immunization (Pohan, Harahap, & Hadi, 2023).

Despite these efforts, not all infants receive complete immunization, leading to the phenomenon of immunization dropout (DO), which includes DPT/HB1–DPT/HB3, Polio1–Polio4, and DPT/HB1–Measles dropout categories. The national immunization program aims to reduce morbidity, disability, and mortality due to Vaccine-Preventable Diseases (VPD), with specific targets including achieving complete basic immunization coverage and UCI status in all regions (Kementerian Kesehatan Republik Indonesia, 2017). However, the persistence of low coverage suggests that barriers remain, particularly those related to parental knowledge and support. Increasing husbands' knowledge is essential, as knowledge influences attitudes and decision-making processes, and better-informed individuals are more likely to support immunization practices (Pusat Pendidikan dan Pelatihan Tenaga Kesehatan, 2014).

Health education is a key strategy to improve knowledge and support, especially when delivered using appropriate media. Various educational media such as visual, audio, and audiovisual tools can enhance understanding and retention of information. Booklets are one form of visual media that present information in an attractive, concise, and easy-to-understand manner (Nababan 2023; Wibawa 2021). Previous studies have shown that booklet-based education significantly improves immunization completeness (Hajar, Lastri, & Riya 2024). Booklets offer advantages such as flexibility for repeated reading and the ability to provide more comprehensive information compared to leaflets, although they also have limitations such as production costs and durability (Ndapaole 2020; Ainiyah, 2020). Field findings from interviews with fathers at Posyandu revealed that many had never received education about immunization and lacked awareness of its importance, resulting in limited support for mothers.

However, previous studies have primarily focused on maternal knowledge, with limited attention given to the role of husbands in supporting immunization practices. This

represents a critical gap, considering that decision-making within families often involves paternal influence. The novelty of this study lies in examining the effect of booklet-based education specifically targeting husbands' knowledge and support regarding basic immunization, particularly in a setting with low immunization coverage such as the Kuala Mandor B Health Center area. Therefore, this study aims to analyze the effect of booklet media on husbands' knowledge and support for complete basic immunization in the working area of the Kuala Mandor B Community Health Center.

2. METHOD

The study employed a quasi-experimental design using a pretest–posttest approach with a control group. The population consisted of all husbands who had infants aged 0–12 months. A total of 83 respondents were selected as the study sample, representing husbands with infants within the specified age range.

Data collection was conducted through direct interviews to obtain respondents' demographic characteristics, followed by the administration of a structured pretest questionnaire to assess baseline knowledge and support regarding basic immunization. Subsequently, the intervention group received health education through booklet media, while the control group did not receive the intervention. After the intervention period, a posttest questionnaire was administered to both groups to measure changes in knowledge and support. The instruments used in this study included a validated questionnaire and an educational booklet.

The collected data were analyzed using univariate and bivariate methods. Univariate analysis was used to describe the distribution of respondents' characteristics, knowledge, and support levels. Bivariate analysis was performed to determine the effect of the booklet intervention on husbands' knowledge and support regarding basic immunization, using appropriate statistical tests based on data distribution.

This study has obtained ethical approval from the Ethics Committee of the Pontianak Ministry of Health Polytechnic with ethical clearance number 274/KEPK-PK.PKP/V/2024.

3. RESULTS AND DISCUSSION

Table 1. Characteristics of Respondents Based on Age, Education, and Occupation.

Characteristics	n	%
Age		
< 35 years	40	48.2
≥ 35 years	43	51.8
Total	83	100
Education		
Elementary–Junior High School	44	53.0
Senior High School	30	36.1
Higher Education	9	10.8
Total	83	100
Occupation		
Teacher	15	18.1
Employee	24	28.9
Merchant	10	12.0
Farmer	34	41.0
Total	83	100

Based on Table 1, most respondents were aged ≥35 years, indicating that the

majority were in a mature age group. Age is known to influence an individual's level of comprehension and mindset, where increasing age is generally associated with improved understanding and knowledge acquisition.

In terms of education, the majority of respondents had a basic education level (elementary to junior high school). Education is a key factor influencing knowledge, as individuals with higher educational backgrounds tend to process information more rationally and effectively. This suggests that the relatively low educational level among respondents may influence their baseline knowledge regarding immunization.

Regarding occupation, most respondents worked as farmers. Employment can affect access to information and social interaction, which in turn influences knowledge and attitudes. Individuals who are actively engaged in work environments may have more opportunities to obtain information through social interactions.

Table 2. Differences in Knowledge Before and After Booklet Intervention.

Variable	n	Min	Max	Mean	SD	p-value
Before	83	14	19	16.39	1.286	0.000
After	83	11	20	17.80	1.480	

Table 2 shows that the results showed an increase in the mean knowledge score after the booklet intervention. The paired t-test yielded a p-value less than 0.05, indicating a statistically significant difference between knowledge before and after the intervention. This suggests that booklet-based education effectively improves husbands' knowledge regarding basic immunization.

Table 3. Differences in Support Before and After Booklet Intervention.

Variable	n	Min	Max	Mean	SD	p-value
Before	83	30	38	35.00	2.519	0.000
After	83	33	40	39.00	1.824	

Table 3 shows that the results indicated an increase in the mean support score after the booklet intervention. The paired t-test showed a statistically significant difference, as evidenced by a p-value less than 0.05. This finding demonstrates that the use of booklet media effectively enhances husbands' support for basic immunization.

The results of this study indicate that there was a significant difference in husbands' knowledge before and after the booklet intervention. The statistical analysis using the paired t-test showed a p-value of 0.000 ($p < 0.05$), confirming that the booklet-based education had a significant effect on improving knowledge. This finding suggests that the provision of structured and accessible health education materials can effectively enhance husbands' understanding of basic immunization. In addition, the characteristics of respondents showed that most were aged over 35 years, had a basic level of education, and worked predominantly as farmers. These characteristics may influence how information is received and processed, as age, educational level, and occupation are known to affect comprehension, access to information, and decision-making capacity.

The improvement in knowledge observed in this study is consistent with previous research. Studies by Hastuti et al. (2021) demonstrated that booklet media could significantly increase knowledge and attitudes regarding complete basic immunization, with notable improvements in post-intervention scores. Similarly, Bomboa, Pascoal & Lumy, (2015) reported that booklet-based education during the COVID-19 pandemic significantly improved knowledge and attitudes toward immunization, with a substantial increase between pre-test and post-test scores. Other findings also indicate that before

intervention, most respondents tended to have only sufficient or even low levels of knowledge, which improved to a good category after receiving booklet-based education. Limited knowledge and lack of access to information can hinder acceptance of immunization, as individuals may not fully understand its purpose, benefits, schedule, and potential consequences if not administered.

From a behavioral perspective, knowledge plays a fundamental role in shaping long-term behavior. According to (Indrawati et al., 2022), behaviors formed based on adequate knowledge and awareness tend to be more sustainable compared to those formed without a strong cognitive basis. Human behavior is influenced by psychological factors such as knowledge, perception, motivation, and attitudes, which are further shaped by experience, beliefs, and socio-cultural context. Therefore, increasing knowledge through effective educational media such as booklets is a crucial step in promoting positive health behaviors, including support for immunization.

In addition to knowledge, this study also found a significant difference in husbands' support before and after the booklet intervention, as indicated by a p-value of 0.000 ($p < 0.05$). The increase in support was reflected in improved understanding across several indicators, including knowledge of immunization, its benefits, and the consequences of not immunizing children. This finding suggests that improving knowledge through educational interventions can positively influence attitudes and support behaviors. The results are in line with studies by Lumbantoruan et al., (2022) and Hastuti et al., (2021), which showed that booklet media effectively improves both knowledge and attitudes related to immunization.

Husband support is a critical component in maternal and child health practices. According to (Wardayani, 2021), forms of husband support include informational, emotional, instrumental, and appraisal support, all of which contribute to encouraging mothers to utilize health services. Support from the husband, as the closest family member, plays a vital role in influencing maternal behavior, including decisions related to child immunization (Subriani et al., 2022). Furthermore, Subriani et al. (2022) describe husband support as a form of motivation and assistance that can influence a wife's behavior in achieving health-related goals. Adequate support can enhance a mother's confidence and willingness to seek immunization services for her child (Igiyani, 2020; Iswanti, & Tansah 2019).

The effectiveness of booklet media in this study can also be explained by its characteristics as an educational tool. Booklets combine visual and textual information, making them more engaging and easier to understand. The presence of images can attract attention and facilitate comprehension, while the printed format allows for repeated reading. This repetition supports memory retention, as explained by the Law of Disuse theory, which suggests that frequently revisited information is less likely to be forgotten. In this study, respondents showed enthusiasm in reading the booklet, indicating that this medium successfully captured their interest and supported the learning process.

Overall, the findings highlight that booklet-based health education is an effective strategy to improve both knowledge and support among husbands regarding basic immunization. Increased knowledge not only enhances understanding but also fosters positive attitudes and supportive behaviors, which are essential for improving immunization coverage. This aligns with the broader objective of immunization programs, which aim to protect children from preventable diseases and ensure their right to optimal health.

However, this study has several limitations, including the use of a quasi-experimental design without randomization, which may limit causal inference. Additionally,

the study was conducted in a single setting with a relatively homogeneous sample, potentially limiting the generalizability of the findings. Future research is recommended to involve larger and more diverse populations and to incorporate control groups and long-term follow-up to better assess the sustainability of the intervention effects.

4. CONCLUSION

In conclusion, the use of booklet media significantly enhances husbands' knowledge and support regarding complete basic immunization in the Kuala Mandor B Community Health Center area, Kubu Raya Regency.

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