

ELECTRON

(Journal of Science and Technology)

Vol 7, No.3, October 2025, pp. 88 – 93

ISSN 2622-6618 (Online), ISSN 2623-2219 (Print)

<https://journal.ahmareduc.or.id/index.php/electron>

The use of pocket books in improving knowledge of tetanus toxoid immunization among adolescents

Endra Endriati¹✉, Aspia Laman¹, Dini Fitri Damayanti¹

¹Department of Midwifery, Politeknik Kesehatan Kementerian Kesehatan Pontianak, Pontianak, West Kalimantan, Indonesia

Info Article

Article History:

Received:

October 9, 2025

Revised:

October 16, 2025

Accepted:

October 17, 2025

Keywords:

TT Immunization,
Pocket Book, Tetanus,
Adolescents

Abstract

Tetanus Toxoid (TT) immunization is crucial for protecting adolescents, especially prospective brides, from tetanus infection. Adequate knowledge about TT immunization can increase participation in immunization programs and reduce maternal and infant mortality. This study aimed to determine the effectiveness of pocket books in improving adolescents' knowledge about TT immunization at Santo Benediktus Pahauman High School. A quantitative quasi-experimental design with a one-group pretest–posttest approach was used, involving 120 respondents selected through total sampling. Knowledge levels were measured using questionnaires before and after the intervention. The results showed a significant increase in knowledge, with the average score rising from 7.50 (range 3–14) before the intervention to 18.42 (range 15–20) after using the pocket book ($p < 0.05$). These findings indicate that pocket books are effective educational media for improving adolescents' understanding of TT immunization. In conclusion, pocket books can be utilized as an effective tool in health education to promote immunization awareness among adolescents.

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Corresponding Author:

✉ Endra Endriati

Department of Midwifery, Politeknik Kesehatan Kementerian Kesehatan Pontianak, Pontianak, West Kalimantan, Indonesia

Email: endraendriati@gmail.com

INTRODUCTION

Health development aims to increase individuals' awareness, willingness, and ability to live healthy lifestyles, contributing to the achievement of optimal community health (Cerf, 2021; Minister of Health of the Republic of Indonesia, 2022; Oe, Yamaoka, & Ochiai, 2022; Norris et al., 2022; Dushkova, & Ivlieva, 2024; Suryani, Yudiernawati, & Wahyuni, 2025). Immunization is one of the most effective and low-cost preventive measures proven to reduce disease incidence and mortality rates (Minister of Health of the Republic of Indonesia, 2022). Among various vaccines, Tetanus Toxoid (TT) immunization plays a key role in protecting women of childbearing age and prospective brides from tetanus infection, which remains a major cause of maternal and infant mortality in Indonesia (Minister of Health of the Republic of Indonesia, 2021).

Tetanus, commonly known as "lockjaw," can cause fatal complications if not prevented through vaccination (Hakim et al., 2021; Waqar et al., 2021; Ahmed et al., 2022; Faqih et al., 2025; Galassi et al., 2025). People who have had tetanus do not develop natural immunity, making TT immunization essential for both personal and neonatal protection (Minister of Health of the Republic of Indonesia, 2022). The government, through Regulation No. 12 of 2017, mandates TT immunization for women of childbearing age and pregnant women, particularly those preparing for marriage, as part of pre-pregnancy health services (Minister of Health of the Republic of Indonesia). However, TT immunization coverage among this target group remains very low.

In Landak District, the 2023 TT immunization target for non-pregnant women of childbearing age was 76,788 individuals, but only 0.3% received the vaccine (Ministry of Health of the Republic of Indonesia, 2021). Similarly, in the Pahauman Health Center area, only 11 out of 3,925 targeted women were immunized. Cultural practices such as traditional marriages by the Dayak Customary Council, which do not require TT immunization, further contribute to the low coverage rate. This situation highlights the need for effective health promotion strategies that can increase adolescents' and prospective brides' awareness and participation in TT immunization programs.

Previous studies (Santy, 2022; Sitorus et al., 2022; Sunarsih et al., 2022) have demonstrated that educational interventions, including counseling, can improve knowledge and compliance regarding TT immunization. However, most of these studies focused on counseling sessions rather than alternative educational media. Research on the use of pocket books as a tool for increasing health knowledge has shown promising results in other contexts, such as marriage readiness (Rohmatika et al., 2021) and adolescent health education (Batjo et al., 2022). Despite this, evidence on the effectiveness of pocket books in improving adolescents' knowledge about TT immunization remains limited.

This research fills that gap by assessing the effectiveness of pocket books as a health promotion medium to increase adolescents' understanding of TT immunization. The novelty of this study lies in the application of pocket books specifically designed to enhance immunization knowledge among adolescents a group that plays a crucial role in shaping future maternal health outcomes. The purpose of this study was to evaluate the effectiveness of pocket books in improving adolescents' knowledge about Tetanus Toxoid (TT) immunization at Santo Benediktus Pahauman High School.

METHOD

This study employed a quantitative approach with a quasi-experimental design using a one-group pretest–posttest format without a control group. The respondents' knowledge was measured twice—before and after the intervention in the form of distributing pocket books containing information about Tetanus Toxoid (TT) immunization. This design was chosen to determine the effectiveness of pocket books in improving adolescents' knowledge about TT immunization.

The data used in this study were primary data obtained directly from respondents. Data collection was carried out using a structured questionnaire that included identical sets of questions administered before and after the intervention. The questionnaire was designed to assess the level of knowledge regarding TT immunization among adolescents. The total sampling technique was used, involving all eligible respondents, resulting in a total of 120 participants.

Data analysis was conducted using computerized statistical software. Univariate analysis was used to describe the respondents' knowledge levels before and after the intervention, while bivariate analysis was employed to test the effectiveness of the pocket book in increasing knowledge. A normality test was performed prior to hypothesis testing to determine the appropriate statistical method.

This research was ethically approved by the Ethics Committee of the Pontianak Ministry of Health Polytechnic, with approval number 83/KEPK-PK.PKP/II/2024. All participants provided informed consent prior to participation, and confidentiality was maintained throughout the study.

RESULTS AND DISCUSSION

Table 1. Average Knowledge of TT Immunization among Adolescents at Santo Benediktus Pahauman High School Before and After Education Using Pocket Books.

	N	Min	Max	Mean
Pre Test	120	3	14	7.50
Post Test	120	15	20	18.42

Table 1, the average knowledge of TT immunization among adolescents before the TT immunization intervention at Santo Benediktus High School in Pahauman, was 7.50 with a range of 3 to 14. After the intervention, the average knowledge increased to 18.42 with a range of 15 to 20.

Table 2. Results of the paired sample test

	N	Correlation	Sig.
Pre-test & Post-test Score	120	0.339	0.000

Table 2, the results of the paired samples test show a p-value of 0.000, which is smaller than the significance value of 0.05. Based on these results, it can be concluded that there was an increase in TT immunization knowledge among adolescents at Santo Benediktus Pahauman High School after being given *the pocket book*.

DISCUSSION

Characteristics of The Effect of Pocket Book Use on Increasing TT Immunization Knowledge Among Adolescents at SMA Santo Benediktus Pahauman

The results of the study indicate that the use of pocket books can increase knowledge of TT immunization among adolescents at Santo Benediktus Pahauman High School. The pocket books given to respondents were able to increase the average knowledge of TT immunization by 10.92. Before the pocket books were given, the average knowledge of TT immunization was 7.50, while after the pocket books were given, the average knowledge increased to 18.42. The results of this study support the findings of Rohmatika et al. (2021), which indicate that health promotion using pocket books for prospective brides can increase their knowledge, thereby influencing their readiness for marriage. Before and after the intervention, which involved giving PERKASA pocket books to women who were prospective brides, there was a significant difference in their readiness for marriage. Before receiving the pocket book, the percentage of prospective brides who were very

ready to marry was 47.2%, and after receiving the pocket book, the percentage of brides-to-be who were very ready to marry increased to 91.7%, a 44.5% increase in respondents who were very ready to marry. Statistically, it can be concluded that providing PERKASA pocket books to brides-to-be influences their readiness to face marriage.

The findings of this study support the research by Santy (2022) that education influences an increase in a person's level of knowledge. Santy found that there was an increase in the average knowledge score of 6.66 after counseling. Before receiving counseling, the average knowledge level of the respondents was 78.67, and after counseling, it increased to 85.33.

The results of this study indicate that after receiving health promotion through pocket books, there was an increase in knowledge, especially among adolescent girls. The increase in knowledge among adolescent girls was due to the effectiveness of information delivery in health promotion using pocket books with attractive and easy-to-understand designs. Thus, adolescent girls were able to understand the information better, which in turn had a positive impact on increasing their knowledge (Santy, 2022).

Significance of Using Pocket Books in Improving TT Immunization Knowledge Among Adolescents

The research findings show that the p-value obtained from the paired sample test is 0.000, which is lower than the significance level of 0.05. This indicates that the use of pocket books has a significant impact on increasing TT immunization knowledge among adolescents at Santo Benediktus Pahauman High School.

These research findings are in line with the research by Azizah et al. (2021), which found a clear correlation between knowledge about Tetanus Toxoid immunization and pregnant women in the third trimester at BPM Ida Ningsih. The research by Sitorus et al. (2022) shows that there is a relationship between knowledge, attitude, and support from husbands with the completeness of Tetanus Toxoid (TT) immunization in pregnant women being studied.

According to the researchers' assumption, the use of pocket books can increase knowledge about TT immunization because pocket books are easy to carry around, making it easier for individuals to access health information whenever needed, whether at home, at work, or while traveling. Additionally, pocket books provide quick and easy access to health information and often contain information presented in a concise and easy-to-understand manner. This allows users to quickly find answers to health questions or problems they face without having to search for complex information.

CONCLUSION

In conclusion, pocket books can be utilized as an effective tool in health education to promote immunization awareness among adolescents. Future studies are recommended to involve a control group to allow for a more comprehensive comparison of intervention effectiveness. Researchers could also explore the long-term retention of knowledge after the use of pocket books and assess whether improved knowledge leads to behavioral changes, such as actual participation in TT immunization programs.

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