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Comparative Study on the Effect of Lecture vs Pamphlet on the Knowledge and Practices on Proper Wound Care and Tetanus Toxoid Immunization among Adult Farmers in Barangay Lower Salug Daku and Lower Mahayag, Mahayag, Zamboanga Del Sur

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A B S T R A C T

In developing countries like the Philippines, farmers are particularly vulnerable to tetanus due to their work and exposure to hazards. Preventing tetanus involves proper wound care and immunization in which no programs are available in the Philippines. This study aimed to assess the impact of health education comparing lectures versus pamphlets on knowledge and practices related to wound care and tetanus immunization among adult farmers. The study focused on two barangays in the Municipality of Mahayag, with 50 respondents divided into two groups: one receiving lecture and the other receiving pamphlets. The topics covered wound care, tetanus, and tetanus toxoid immunization. A questionnaire and self-reported checklist were used to assess knowledge and practices before, 2 days after the intervention, and one month after the post-intervention 1. Data analysis included statistical tests like paired T-test, ANOVA, and McNemar's Test. Before the intervention, the two groups had comparable knowledge levels. Following the interventions, the lecture group showed consistently higher knowledge scores in both post-intervention assessments compared to the pamphlet group which was statistically significant (P-value = 0.005). Additionally, the lecture group exhibited better practices related to wound care compared to the pamphlet group. In terms of tetanus toxoid immunization, more farmers in the lecture group (76%) submitted to vaccination than in the pamphlet group (58%). In conclusion, lectures proved to be more effective than pamphlet distribution in improving knowledge and practices on proper wound care and tetanus immunization. The study suggests conducting similar research focused on wound care and to create programs for farmers, including free access to vaccines for preventing tetanus infection.

Keywords: proper wound care, tetanus toxoid, lecture, pamphlet

1. Background of the Study

The nature of the farmer's work predisposes them to injuries that cause wounds. One of the major contributors to health spending goes to treating wounds and their complications (Riccò, M., et al, 2017). A local farmer in Mahayag said that they will do home remedies like application of oils in treating wounds and seek consultation once it worsens. Among the most common complications of wounds is an infected wound with high exposure to tetanus which is caused by improper cleaning and the use of unsterile materials. (Chen, Y.C., et al, 2012). Tetanus is a severe, sometimes lethal condition that is characterized by skeletal muscle convulsions and widespread increased rigidity. The condition typically manifests as lockjaw, neck stiffness, and subsequently generalized convulsive spasms. It is brought on by the spore-forming bacteria Clostridium tetani, which produces toxins found in soil, animal, and human excrement. Tetanus occurs worldwide but is most frequently encountered in densely populated regions in hot, damp climates with soil rich in organic matter (Center for Disease Control and Prevention, 2021). In developing countries such as the Philippines, tetanus is common in adults due to inappropriate treatment of injuries and a decline in protective antibodies in the elderly (Martinez & Cruz, 2019). Males, especially farmers, are commonly affected due to the nature of their work, which increases their risk of harboring the bacteria through cuts, abrasions, burns, and puncture wounds (Kuan, Y. T., et al, 2020). Ideally, the incidence of tetanus can be significantly reduced by prophylaxis and proper wound management of the injury as well as public awareness programs (Hasanica, N., et al., 2020).

The entire municipality of Mahayag covers more than 3,500 holdings or farms for the year 2012. More than half of the working population relies on farming. Occupational related injuries were reported in the municipality as well. Cases of injuries related to farming is increasing as per observation of the residents. For the year 2021, wounds and infected wounds are among the top causes of morbidity in the municipality. With that we cannot totally rule out the risk of farmers getting tetanus. Programs on farming safety, basic hand hygiene and first aid to injuries related to farming as well as vaccination of farmers against tetanus as prophylaxis is not in the picture. (Mahayag Development Plan, 2021)

In Barangay Lower Salug Daku (LSD), almost half of the working population are farmers. Similarly, in Barangay Lower Mahayag (Lourmah), most of the working individuals rely on agriculture particularly in farming as their source of living. Farmer's Associations, focal points in these areas, convene local farmers for camaraderie, meetings, and irrigation planning, addressing concerns of diseases impacting both farmers and productivity, alongside prevalent workplace hazards such as injuries and traumatic wounds. The 2019 morbidity report for Barangay Lower Salug Daku highlights wounds as the fourth most reported health issue, and in Lower Mahayag's 2021 Development Plan, tetanus emerges as a significant cause of mortality, with unreported deaths possibly linked to tetanus infections. A focused group discussion with local farmers reveals a lack of proper wound care understanding, leaning towards traditional remedies and seeking medical help only for severe pain or infection. This knowledge gap stems from inadequate awareness about potential diseases, prevention, and proper treatment, emphasizing the absence of tailored health interventions for farmers, hence the study's necessity.

However, it is believed that poor wound care and lack of immunization awareness leads to a high prevalence of tetanus in developing countries. (Arogundade FA et.al., 2004). Furthermore, in previous studies, tetanus infection is only addressed using tetanus toxoid immunization (Rabadi T. et al., 2022). Therefore, in this study, proper wound care is incorporated in addition to information regarding tetanus and tetanus toxoid immunization. Lecture and distribution of pamphlets were used as means of health education for their perceived availability and feasibility (Hasanica, N., et al., 2020). Furthermore, it is the goal of the study to determine which means of health education would be more beneficial in improving practices in proper wound care and tetanus toxoid immunization.

Proper management and care of wounds caused by the nature of the farmer's work are paramount to preventing possible life-threatening complications (Kuan, Y. T., et al, 2020). One of these complications is tetanus, which is preventable but still claims tens of thousands of deaths globally each year (WHO/UNICEF Joint Report, 2022). Appropriate measures should be taken to achieve the prevention of tetanus mortality and morbidity. Thus, this paper aimed to address the possible lack of knowledge and inappropriate practice on wound care and possible tetanus problem through lecture intervention and to compare it to pamphlet intervention. The researcher concentrated on the effect of lecture versus pamphlet intervention on wound care in increasing the knowledge and practice on proper wound care and tetanus toxoid immunization status among adult farmers in Barangay Lower Salug Daku and Lower Mahayag, Mahayag, Zamboanga Del Sur.

Nomenclature

Knowledge – refers to the respondents' information and comprehension of proper wound care, tetanus, and the disease's vaccine.

Practice – refers to the respondents' previous and present seeking behavior in proper wound care and receiving Tetanus toxoid as pre-exposure prophylaxis.

Lecture – is an oral presentation intended to present information to increase the respondents' knowledge and practices regarding proper wound care and tetanus toxoid immunization.

Pamphlet – is an educational material or leaflet with the information regarding proper wound care and tetanus toxoid immunization

1.1 Review of Related Literature

Farmers are at high risk for occupational hazards. These hazards are more apparent during planting and harvesting season. With that, a cross-sectional study in Nepal revealed a significant prevalence of injuries among farmers. Cuts were the most common injury type at 79.7%, followed by puncture wounds (11.3%) and lacerations (7.5%), highlighting risks in agricultural work. The study identified diverse causes, primarily hand tools, sliding, sharp objects, animal interactions, and falls. With 67% of injuries affecting upper limbs, particularly fingers, addressing this vulnerability is crucial for injury prevention. The study emphasized the need for urgent interventions to reduce agricultural injuries due to their high prevalence, underlining the importance of effective preventive measures. (Bhattarai, D., et al., 2016)

Knowledge and practices are target areas for increasing the capacity of farmers in return decreasing their exposure to hazards. According to a Taiwanese study that examined wound care-related knowledge, attitudes, and practices among 361 participants. The findings revealed that 34% identified healthcare providers as their primary information source, followed by self-study/experience and social media/the internet. Treating wounds, whether their own or others', caused anxiety and a lack of confidence for 72% of participants. Knowledge about wound care was considered good by 69.1% of individuals, with most assessing wounds before applying dressings, cleansing hands, and using non-sterile cotton swabs. Effective wound care techniques averaged at 74.5%. In attitudes, 28.5% felt knowledgeable about wound assessment, while 50.7% expressed concern over recognizing wound infections or complications. Only 27.1% were confident in wound care despite 91.5% understanding its impact on healing. mHealth technology use correlated positively with knowledge (r=.132, P=.01), attitudes (r=.239, P=.001), and behaviors (r=.132, P=.01) regarding wound care. The majority favored mHealth technology for wound care, believing it could optimize mobile device use (93.9%) and enhance outcomes (95.6%), yet 93.6% had never used it (Y. Kuan et al., 2020).

Health education is a way of improving knowledge and practices. In line with that, a quasi-experimental study involving 178 emergency traumatized patients in Taiwan was divided into two groups: the experimental and control groups. The study's intervention, rooted in adult learning theory, literature review, and clinical expertise, comprised discussions, skill demonstrations, practice sessions, and health information dissemination. The program encompassed nurses' instructional posters depicting wound care procedures, demonstrations of wound care skills, patient practice on prosthetic models, and provision of guidebooks with care instructions and supply lists for home. An assessment tool with five subscales was used to measure intervention effectiveness, covering demographics, wound characteristics, true/false wound care items, wound care skills, and program satisfaction. The findings

indicated that the experimental group exhibited higher knowledge, skills, and satisfaction compared to the control group following the wound care program ($p < 0.05$). Notably, the experimental group had significantly lower wound infection rates (9%) compared to the control group (20.2%) ($p < 0.05$). Conclusively, the study emphasized the necessity of technical knowledge in wound care, underscoring the efficacy of practical demonstrations and patient self-practice for effective learning. The results indicated that a well-designed health program can enhance patients' wound care knowledge, skills, and overall care quality, leading to reduced wound infection rates among emergency patients (Chen, Y.C., et al, 2012).

Health experts and with up-to-date information are needed for the implementation of the study. Several studies revealed that exposure to healthcare providers improves health practices. In 2015, a national health interview survey in the U.S. assessed adult vaccination coverage, finding that frequent healthcare visits correlated with higher vaccination compliance. The study highlighted that increased awareness of administered vaccines contributed to a modest rise in vaccination coverage (W.W. Williams et al, 2015). In a cross-sectional questionnaire-based study among agricultural workers in North-Eastern Italy, focusing on tetanus vaccine, 58.4% of 707 participants were up to date with immunizations. Inadequate immunization was attributed to forgetting recommended boosters. Furthermore, 79.5% demonstrated a positive attitude toward tetanus vaccination, correctly recognizing its mandate for agricultural workers. Predictors of vaccine inclination included reduced misconceptions and heightened awareness of official guidelines. Interaction with healthcare professionals emerged as a key factor in achieving proper immunization status (M. Ricco et al, 2017).

Apart from enhancing proper wound care practices, immunization with tetanus toxoid stands as the foremost preventive measure. The 2020 Adult Immunization Schedule by the Centers for Disease Control and Prevention (CDC) advises initiating or completing the series with Tdap as the initial dose for individuals aged 19 and above who lack knowledge of or have not completed the 3-dose primary series with Td-containing vaccine. There should be a 4-week interval between the first two doses, followed by a 6-month interval between the second and third doses. In the Philippines, the Philippine Society for Microbiology and Infectious Disease has issued a clinical practice guideline for adult immunization, recommending that adults without a history of the tetanus-diphtheria combination 3-dose primary series or those who've received only part of it should undergo the full primary series, which includes a Tdap dose, providing protection against tetanus, diphtheria, and pertussis.

Previous studies aimed at enhancing tetanus toxoid immunization status were conducted at ADZU-SOM by Bajala (2014), Viray (2017), and Ammad (2018). These studies employed lectures on tetanus to increase adherence to tetanus toxoid immunization. All three investigations highlighted the positive impact of lectures on the knowledge of adult male farmers, evident through increased post-intervention assessment scores. Bajala's study exhibited a significant knowledge score increase from pre-intervention to the first post-intervention exam, with knowledge retention seen between the first and second post-tests. Conversely, Viray's study observed a score decline in the second post-intervention assessment due to a one-month gap between tests, raising doubts about lecture effectiveness due to a high dropout rate of 41.1%. Notably, Viray's study found lecture not as influential in motivating vaccination, while Ammad's research affirmed lecture as effective in boosting farmers' knowledge about tetanus and tetanus toxoid immunization, along with good knowledge retention. These studies collectively demonstrated a rise in tetanus immunization from 0% to 86% in Bajala's, 0% to 77% in Viray's, and 0% to 88% in Ammad's. However, challenges like fear of injection, scheduling conflicts, vaccine misinformation, and the notion of vaccination only after sustaining an injury hindered achieving 100% tetanus immunization. Additionally, all three investigations noted a decline in tetanus vaccination rates for the second dose of tetanus toxoid immunization one month after the first dose. Considering this, lectures focusing on proper wound care and management instead of solely on tetanus will be employed, aiming to enhance knowledge and practices concerning wound care and tetanus toxoid immunization.

During the peak of the COVID-19 pandemic, local researches were initiated. Quimson's study (2021) investigated the impact of an information booklet on tetanus toxoid immunization status among male farmers aged 19 to 65, with a sample of 43 participants. Distributing the booklets led to a noticeable improvement in knowledge, as reflected in posttest scores, with a mean of 8.37 (SD 1.62) compared to the pre-test mean of 4.75. Of the 37 participants, 86% underwent tetanus toxoid immunization, although attaining 100% vaccination remained a challenge due to concerns arising from negative articles, particularly about COVID-19 vaccines. Similarly, Alcazaren's study (2022) utilized pamphlets to enhance knowledge and practices related to tetanus and tetanus toxoid immunization among 27 farmers. Notably, knowledge improvement was evident, with only 18.50% passing the pre-intervention assessment, rising to 85.2% two days after the intervention, yet declining to 59.2% four weeks later. Vaccination records indicated that 74% received immunization. Despite improved knowledge, full vaccination achievement remained constrained by vaccine hesitancy. Consequently, pamphlets focusing on proper wound care and management will be employed, striving to enhance knowledge and practices concerning wound care, management, and tetanus toxoid immunization, aligning with previous study outcomes. However, another study counters the effectiveness of pamphlets and similar materials. Notably, an investigation aiming to assess the effectiveness of printed health-educational materials was conducted, employing a quantitative, applied, descriptive-analytical approach. Outcomes indicated that distributing health-educational posters is recommended for reaching a wide audience over an extended period. Yet, the study also underscored the lack of certainty in achieving a substantial knowledge increase through such distribution. The saturation of various leaflet types, from marketing to health education, might contribute to the observed lack of knowledge growth and attitude change post-leaflet distribution (N. Hasanica et al, 2020).

Hence, the researcher opted to compare the efficacy of lectures and pamphlets due to their cost-effectiveness. In lectures, no printouts are necessary, while pamphlets provide respondents the flexibility to review information at their convenience. Furthermore, the shape and scope of health education vary based on the target population it aims to impact. Mailig's study (2015), comparing lecture and pamphlet as health education interventions to enhance maternal knowledge and skills in home diarrhea management, suggested pamphlets as a viable alternative to lectures. However, Kho's study (2012), assessing the impact of lecture and pamphlet as health education interventions on farmers' knowledge, attitude, and practices regarding pesticide use, concluded that pamphlet-based education did not significantly alter respondents' knowledge, even post-interventions. In contrast, a study by Fernandez (2017) demonstrated that lecture, as a health education intervention to enhance farmers' knowledge and practices in pesticide handling, led to significant improvement a week after intervention. Consequently, the study will employ both lecture and pamphlet approaches, taking into account the insights from

these studies. Given the context of enhancing knowledge and practices concerning proper wound care, management, and tetanus toxoid immunization in Barangay Lower Salug Daku and Lower Mahayag, Mahayag, Zamboanga del Sur, a thorough evaluation of the knowledge and behaviors of adult farmers is crucial and pertinent.

2. Methodology

2.1 Research Design

The study utilized a quasi-experimental research design, to determine the knowledge and practices on proper wound care and tetanus toxoid immunization and its effect on the immunization coverage using lecture versus pamphlet among the adult farmers in Barangay Lower Salug Daku and Barangay Lower Mahayag, Municipality of Mahayag, Zamboanga del Sur.

2.2 Sample Size

The minimum calculated number of participants in the study was calculated using StaCalc of EpiInfo, on sample size for cohort/cross-sectional study. Assumptions were 95% confidence level, 80% power and 10% margin of error, 18.5 % will have a passing score before the intervention and 59% of the population is expected to have an increase in knowledge after the intervention, based on a study conducted by Alcazaren (2022) entitled, "The Effect of Pamphlet and Easy Access to Tetanus Toxoid Vaccines on the Compliance to Tetanus Immunization among Adult Rice Farmers in Barangay Boalan, Zamboanga City." Therefore, the minimum sample size is 44 farmers.

2.3 Sampling Design

The sampling method used for this study was convenience sampling. Based on the minimum sample size mentioned above, the experimental group had at least 22 respondents and the control group had at least 22 respondents as well. Total count was used in choosing the respondents. For both groups, the researcher identified and created a list of farmers through a survey questionnaire given during barangay meetings, then based on the inclusion criteria, a final list was also created. A total of fifty (50) farmers who met the inclusion criteria, were invited to take part in the study. They were divided into two groups based on their residence, and after evaluation, each barangay had twenty-five (25) respondents each. No dropouts were noted.

2.4 Research Setting

Two barangays participated in this study to avoid contamination. For this reason, Lower Salug Daku and Lower Mahayag were chosen. The two barangays have farming as the major source of income and most of their working population are farmers. The proximity to each other is at least 3 kilometers (from barangay hall to barangay hall based on Google Maps). Barangay Poblacion which is the center of the municipality divides the two barangays, hence due to its high population density and its total land area covered, it will really divide the two barangays well. Lecture was conducted in Barangay Lower Salug Daku and pamphlets were distributed to the farmers of Barangay Lower Mahayag, Mahayag, Zamboanga Del Sur.

2.5 Respondents

Inclusion Criteria

• Adult farmers aged 18 years old and above.

• A resident of the Barangay Lower Salug Daku or Lower Mahayag, Mahayag, Zamboanga Del Sur

• Adult farmers with incomplete or unrecalled Tetanus immunization status

Exclusion Criteria

• Unable to read and understand.

Drop out criteria

• Change of residence within the study period.

2.6 Research Instruments

The research instruments were patterned on the study of Quimson, 2021 and Dr. Alcazaren, 2022, Bajala, 2014, and T. Kwan et al, 2020. The questionnaire content was validated by the Municipal Health Officer of Mahayag, Dr. Wilson G. Lumapas, for accuracy and consistency. The questionnaire was translated from English to Visayan by the researcher and was reverse translated by an Elementary English teacher that is fluent in Visayan to ensure that the translation is correct. The questionnaire was pretested at Barangay Sta. Cruz, Mahayag, Zamboanga del Sur. Results showed a Chronbach's alpha of 0.79 which indicates that the questionnaire is acceptable.

Survey Questionnaire

The survey tool, a self-reported questionnaire written in Bisaya, was given to the adult farmers. It contained the socio-demographic data of the respondents (name, age, occupation, etc.). It also contained questions regarding the source of wound care knowledge and wound experiences, adult tetanus toxoid immunization status of the respondents, including year of last dose, number of times received, and purpose of injection. The researcher made sure to clarify to the respondents whether they had received adult or childhood tetanus toxoid immunizations.

Knowledge and Practices Questionnaire

The researcher formulated a knowledge questionnaire containing demographic data (name, age, occupation, etc.) which was filled up by the respondent. This was immediately followed by a series of multiple-choice questions on basic information on wound, proper wound care and Tetanus based on the validated module. The questionnaire consisted of 12-item multiple choice questions for knowledge and 8 statements for self-reported practices. For the knowledge questionnaire, the highest score for knowledge is 12 and 0 is the lowest score. Passing score would be 7 out of 12 or 60% correct answers based on the latest guidelines of the Department of Education for grading. This questionnaire will evaluate the knowledge of the respondents regarding proper wound care and tetanus toxoid immunization. For the practices, an 8-item self-reported questionnaire was utilized. For each item, there are 3 choices in which the first is the proper practice, second is the improper practice and the third is not done at all. In the interpretation of the practices are as follows, the first practice is considered as a good practice and the second and third practice are the bad practices. The knowledge and practices questionnaire were used during the pre-test, post-test 1, and post-test 2 assessments of the study in both groups.

2.7 Data Gathering Procedure

Pre-Intervention

The study commenced with the researcher introducing the research to Dr. Wilson Lumapas, the Municipal Health Officer of Mahayag, to the Head Nurse and midwives and sought approval from the barangay council for the conduct of the study. During the Farmer's Association Meeting, an initial survey was conducted by the researcher, followed by the creation of a master list of participating farmers. Scheduling for the lecture, pamphlet dissemination, and tetanus toxoid immunization was subsequently organized. In adherence to ethical standards, prior to the intervention, informed consent was duly obtained from the respondents, and a questionnaire was administered to gauge their baseline knowledge and practices.

Intervention

Lecture and Pamphlet

The researcher sourced the module from both the Philippine National Red Cross and the pamphlet provided in Alcazaren's 2021 study. This lecture content underwent scrutiny and received input from the Municipal Health Officer for validation. Subsequently, the module was pre-tested with a sample of five (5) adult farmers in Barangay Sta. Cruz to ensure its comprehensibility. Both the module and questionnaires underwent pre-testing two (2) weeks prior to the pamphlet distribution. Insights and feedback gathered from adult farmers in Barangay Sta. Cruz informed the pamphlet's modification process, shaping its contents. Notably, Barangay Sta. Cruz shares similarities in terms of population and occupational characteristics with the target barangays in this study, thus serving as a relevant reference point.

Lecture group

For Lecture, the researcher provided the module and PowerPoint presentation for the intervention. The lecture was given by a health care professional at the multipurpose hall of the barangay. Active participation was encouraged by allowing the respondents to ask questions and clarifications.

Pamphlet group

For Pamphlet group, the researcher distributed the pamphlet among the respondents during their Farmer’s Association meeting. The researcher made sure that the farmers can read and understand the contents of the pamphlet. The respondents were given 2 days to read through the material.

Post Intervention

For both interventions, the respondents were scheduled to have the post-test 1 after 2 days and Tetanus toxoid immunization was optional. For those who submitted themselves for immunization, consent for vaccination and injection was signed and collected. The researcher logged their names and provided vaccination cards. The researcher reminded the respondents regarding the second dose of tetanus toxoid, which is four weeks after the first dose. Post-test 2 was also conducted one month after the post-test 1. In the interim, tetanus toxoid immunization was open

2.7 Ethical Considerations

The Ateneo de Zamboanga School of Medicine research panel reviewed and approved the study. After a thorough evaluation, permission was granted to proceed. The study's goals, purpose, and intervention were described by the researcher. The participants were given informed consent forms written in the local dialect to read before they agree to participate in the study. Pre- and post-intervention activities was done voluntarily. The utmost discretion and confidentiality were used

2.8 Data Analysis

Data on sociodemographic profiles of the respondents was analysed using frequency and percentage and comparability study was done using Pearson Chi Square. The data gathered from both pre- and post-interventional phases will be analysed in two different areas: knowledge and practices on proper wound care and tetanus toxoid vaccination Knowledge: A correct answer to a respective question will be given 1 point, while an incorrect answer will not be given any point. The highest score will be 12 out of 12 items, while the lowest will be 0 out of 12 items. Mean scores from pre-intervention evaluation, post-intervention 2 days after the activity and post-intervention 1 month after the 2nd post-intervention were compared using paired t-test to determine the effect of the intervention on the knowledge of the farmers. Analysis of Variance (ANOVA) was utilized in comparing the efficacy of the two interventions. For the practice on proper wound care before and after the interventions, McNemar's test was utilized. Pearson Chi-square test was used to compare the effectiveness of lecture versus pamphlet on proper wound care among farmers. Practice on Tetanus Toxoid Immunization: The results will be presented using frequency and percentages. Statistical Package for Social Sciences (SPSS) was utilized for the data processing and analysis. Results

Sociodemographic Profile

The table below illustrates a sociodemographic comparability study involving two groups of participants, initially targeting 44 adult farmers aged 18 and above but ultimately enrolling 50 participants (25 in each group). The control group, from Barangay Lower Mahayag, received pamphlets, while the experimental group, from Barangay Lower Salug Daku, received lectures. Most participants were male, aged 50-69, married, and had attained a high school education. All participants provided consent for their involvement. The study's findings reveal that the control and experimental groups exhibited similar sociodemographic characteristics, as no significant differences were detected, with a p-value exceeding 0.05.

Table 1. Gender, Age, civil status, and educational attainment of adult rice farmers in Barangay Lower Mahayag and Lower Salug Daku, Mahayag, ZDS

Demographics		**Pamphlet Group (N=25)**		**Lecture Group (N=25)**		**p-value**
		Freq	%	Freq	%	
Gender	Male	18	**72.0**	15	**60.0**	0.370
	Female	7	**28.0**	10	**40.0**	
Age	20-29	0	**0.0**	1	**4.0**	0.082
	30-39	3	**12.0**	6	**24.0**	
	40-49	1	**4.0**	4	**16.0**	
	50-59	9	**36.0**	11	**44.0**	
	60-69	10	**40.0**	3	**12.0**	
	70-79	2	**8.0**	0	**0.0**	
Civil Status	Single	2	**8.0**	5	**20.0**	0.071
	Married	22	**88.0**	15	**60.0**	
	Widow/er	1	**4.0**	6	**24.0**	
Educational Attainment	Elementary	7	**28.0**	2	**8.0**	0.068
	Highschool	14	**56.0**	13	**52.0**	
	College	4	**16.0**	10	**40.0**	

*Significant at p-value of <0.05

Knowledge

All respondents were able to complete the two post intervention assessments. The knowledge of farmers before and after the intervention was evaluated using a 12-item self-administered questionnaire. Paired T-test was used to compare the knowledge of the farmers before and after the educational intervention per group. Analysis of Variance was utilized in comparing the two educational intervention – pamphlet and lecture.

Table 2 shows the comparison of the knowledge mean score of adult farmers in the pamphlet group during the pre-intervention, post intervention1 and post intervention 2 using paired t-test. For the pamphlet group, only 4 out of 25 (16%) passed during the pre-intervention assessment. Results showed a knowledge mean score of 6.08 with scores ranging from a lowest of 2 to 10 as the highest. Two days after the intervention, post intervention 1 was conducted and showed an increased knowledge mean score from 6.08 to 9.60 with a passing rate of 96% or 24 out of 25 respondents passed. As shown

in the table, there was a statistically significant increase in the knowledge mean scores of the farmers in the pamphlet group from pre intervention to post intervention 1 with a P-value of 0.000 at a 0.05 significant level. Thus, the distribution of pamphlets is effective in improving the knowledge of farmers.

Upon examination of the results of the post intervention 2, 17 out of 25 (68%) respondents passed. With a knowledge mean score of 7.44 as compared to 6.08 knowledge mean score before the intervention, it is apparent that there is a slight increase. There was still a significant difference between the pre-intervention and post-intervention 2 with a p-value of 0.022, even with a mean difference of -1.36 which means that the post-intervention 2 scores were close to the pre intervention scores.

Moreover, it was also noted that there is a decrease in mean knowledge score from 9.60 during the post intervention 1 to 7.44 during the post-intervention 2 which is statistically significant with a P-value of 0.002. This reveals that there was knowledge decay noted 1 month after the intervention.

Table 2.

Test Comparison	Mean Score	Mean Difference	SD	p-value
Pre-Intervention	6.0800	-3.52	1.42	0.000*
VS Post-Intervention 1	9.6000			
Pre-Intervention	6.0800	-1.36	2.77	0.022*
VS Post-Intervention 2	7.4400			
Post-Intervention 1	9.6000	2.16	3.05	0.002*
VS Post-Intervention 2	7.4400			

Comparison of knowledge mean score of farmers in the pamphlet group before and after the intervention

**Significant at p-value of <0.05*

Table 3 shows the comparison of the knowledge mean score of adult farmers in the lecture group during the pre-intervention, post-intervention 1 and 2 using paired t-test. Out of the 25 respondents, only 16 (64%) passed with a mean score of 7 with scores ranging from 3 as the lowest to 11 as the highest. Two days after the intervention, post-intervention 1 was conducted which showed an increased knowledge mean score from 7 to 10.92 with a 100% passing rate. This result was statistically significant with a P-value of 0.000 at a 0.05 significant level. Therefore, the lecture improved the knowledge of farmers.

Furthermore, upon looking at the results of the post-intervention 2, there was still a 100% passing rate with an increased knowledge mean score of 11.28 as compared to the pre intervention knowledge mean score. So, with a p-value of 0.000, there is a statistically significant increase in the knowledge mean score between the pre-intervention and post-intervention 2 assessments.

If we observe the results between the post-intervention 1 and 2 assessments, we can note that there is a slight increase in the knowledge mean score from 10.92 to 11.28. However, it was not statistically significant with a p-value of 0.185 at 0.05 significant level. This means that, there is no knowledge decay among the respondents 1 month after the intervention.

Table 3. Comparison of knowledge Mean Score of adult farmers in the lecture group before and after intervention

Test Comparison	Mean Score	Mean	SD	p-value
Pre-Intervention	7.000	-3.92	2.04	0.000*
VS Post-Intervention 1	10.9200			
Pre-Intervention	7.000	-4.28	2.57	0.000*
VS Post-Intervention 2	11.2800			
Post-Intervention 1	10.9200	-0.36	1.32	0.185
VS Post-Intervention 2	11.2800			

**Significant at p-value of <0.05*

Table 4 is the comparison of the knowledge mean scores between the pamphlet and lecture group before and after the intervention. As presented in the table, the difference in the knowledge mean scores of the pamphlet and lecture group before the intervention was not statistically significant. Therefore, both interventions are comparable since their baseline knowledge mean score are at par.

After the intervention, the lecture group had the higher knowledge mean score for the two post-intervention assessments compared to that of the pamphlet group. The difference in the knowledge mean score of the two groups is statistically significant with a P-value of 0.005 at a 0.05 significant level. This implies that lecture is a better tool in improving the knowledge of the adult farmers on tetanus and proper wound care. One month after the interventions, for the pamphlet group, the knowledge mean score declined from 9.60 to 7.44 whereas in the lecture group it increased from 10.92 to 11.28. Therefore, with the p-value of 0.000 at a 0.05 significant level, there was a statistically significant difference between the pamphlet and lecture group one month after the intervention. The pamphlet group showed knowledge decay while the lecture group had no knowledge decay one month after the interventions. Therefore, lecture as an intervention to increase the knowledge of adult farmers regarding tetanus and proper wound care is better than the pamphlet distribution.

Table 4. Comparison of knowledge Mean Scores of adult farmers between the pamphlet group lecture group before and after intervention

Comparison	Pamphlet Group	Lecture Group	p-value
Pre-Intervention	6.0800	7.0000	0.107
Post-Intervention 1	9.6000	10.9200	0.005*
Post-Intervention 2	7.4400	11.2800	0.000*

**Significant at p-value of <0.05*

Practices on Proper Wound Care

An 8-item self-reported questionnaire was utilized in assessing the practices of the adult farmers regarding proper wound care in both pamphlet and lecture group. In each practice, there are 3 choices in which the first is the proper procedure, second is the improper procedure and the third is not done at all. In the interpretation of the practices are as follows, the first procedure is considered as a good practice and the second and third procedures are the bad practices. In comparing the practice result within the group, McNemar's test was utilized and to compare the results between the two interventions, Pearson Chi Square was used..

Table 5 presents the results of the basic wound care procedures among the participants in the pamphlet group. Procedure 1 focuses on observing the proper assessment of wound appearance before and after cleaning. The results revealed that during the pre-intervention phase, 12 out of 25 (48%) farmers properly practice this procedure. There was a significant increase in the number of farmers who demonstrated this step correctly from pre-intervention to post- intervention 1, with 20 farmers, supported by a p-value of 0.012. Similarly, comparing the pre-intervention result to post-intervention 2, 21 farmers followed the procedure properly, with a p-value of 0.022. However, the increase in the number of farmers who passed this procedure from post-intervention 1 to post-intervention 2 evaluation was not significant.

Procedure 2 involved the observation of handwashing before and after cleaning. The results for this item revealed that consistently, 17 out of 25 (68%) farmers practice this procedure from pre-intervention through post-intervention 2 evaluation.

Procedure 3 focused on cleaning the wound with mild soap and water. It was noted that 18 (72%) of the farmers in the pamphlet group demonstrated this procedure properly during pre-intervention, and the number increased to 21 (84%) during post-intervention 1 evaluation. However, the increase was not significant. Additionally, the result decreased to 18 (72%) during the post-intervention 2 evaluation, and this decrease was also not significant.

Procedure 4 was about the use of povidone iodine/antibacterial ointment to disinfect the wound. During the pre-intervention phase, 20 (80%) farmers reported using povidone iodine/antibacterial ointment when treating wounds. This number significantly increased to 25 (100%) on post-intervention 1 evaluation. However, the decrease from post-intervention 1 to post-intervention 2 and the increase from pre-intervention to post-intervention 2 were not significant, with p-values of 1 and 0.125, respectively.

Procedure 5 is the observation on the manner of disinfecting the wound from the center going out. It was noted that there was a significant increase in the number of respondents who practice this procedure from 14 (56%) during pre-intervention to 24 (96%) during post-intervention 1 evaluation, supported by a p-value of 0.006. However, the result decreased to 19 (76%) during post-intervention 2, and this decrease was not significant.

Procedure 6 addressed the utilization of sterile gauze for dressing the wound. Initially, 15 out of 25 (60%) farmers reported practicing this procedure. After the intervention, there was a significant increase in the number of farmers performing this practice, with p-values of 0.006 and 0.012 when comparing pre-intervention with post-interventions 1 and 2 results, respectively. Although there was a slight decrease from 24 (96%) in post-intervention 1 to 23 (92%) in post-intervention 2, this decrease was not significant.

Procedure 7 focused on covering the wound with gauze or a towel and applying pressure to the wound. The results revealed that 21 out of 25 (84%) farmers practiced this procedure. This number increased to 25 (100%) during post intervention-1 and to 22 (88%) during post intervention 2 evaluation. However, the increase in the number of respondents was not significant.

Finally, Procedure 8 was about seeking medical advice at a capable facility immediately whenever the wound showed signs of infection. The results revealed that 20 (80%) of the farmers in this group sought medical advice at the RHU or hospital when the wound was infected during the pre-intervention evaluation. The results increased to 25 (100%) in post-intervention 1 and to 23 (92%) in post-intervention 2. However, the increase in results was not significant, with p-values of 0.063 and 0.375 for post intervention 1 and post intervention 2, respectively.

Table 5. Comparison of practices of farmers before and after the distribution of pamphlets using McNemar's Test

Procedure	**Pre-Intervention n (%)**	**Post Intervention 1 n (%)**	**Post Intervention 2 n (%)**	**p-values**		
				Pre Vs. Post 1	Pre Vs. Post 2	Post 1 Vs. Post 2
1. Assessment of wound appearance done before and after cleaning	12 (48%)	20 (80%)	21 (84%)	0.012*	0.022*	1.000
2. Handwashing done before and after cleaning	17 (68%)	17 (68%)	17 (68%)	1.000	1.000	1.000
3. Cleaning of wound done with mild soap and water	18 (72%)	21 (84%)	18 (72%)	0.289	1.000	0.453
4. Material used to disinfect wound is povidone-iodine/antibacterial ointment	20 (80%)	25 (100%)	24 (96%)	0.032*	0.125	1.000
5. Manner of disinfecting the wound from the center going out	14 (56%)	24 (96%)	19 (76%)	0.006*	0.302	0.063
6. Dressing used is sterile gauze	15 (60%)	24 (96%)	23 (92%)	0.006*	0.012*	1.000
7. Once bleeding cover the wound with gauze or towel and apply pressure	21 (84%)	25 (100%)	22 (88%)	0.125	0.625	0.500
8. If the wound has signs of infection, refer immediately for further medical advise	20 (80%)	25 (100%)	23 (92%)	0.063	0.375	0.500

**Significant at p-value of <0.05*

Table 6 presents the results of the basic wound care procedures among the participants in the lecture group. Procedure 1 involved assessing the appearance of the wound before and after cleaning. Initially, only 8 out of 25 (32%) farmers in the lecture group reported performing this assessment. However, after the lecture intervention, there was a significant increase to 24 (96%) farmers who stated that wound appearance should be assessed before and after cleaning. This increase was supported by a p-value of 0.000 during post-intervention 1 evaluation. In post-intervention 2 evaluation, a decrease to 19 (76%) was noted; however, the decrease was not significant. Overall, the number of farmers who satisfied this procedure significantly increased from 8 (32%) to 19 (76%) by the end of the evaluation, with a p-value of 0.001.

For Procedure 2, it was found that prior to the intervention, only 14 out of 25 (56%) farmers claimed to practice handwashing before and after cleaning the wound. During post-interventions 1 and 2 evaluations, the number of farmers who practiced handwashing was consistent at 23 (92%), and this was significantly higher than the result during the pre-intervention assessment, supported by p-values of 0.004 and 0.012, respectively.

Procedure 3 involved the cleaning of the wound using mild soap. Initially, 14 out of 25 (56%) farmers practiced this procedure during the pre-intervention assessment. However, this number significantly increased to 22 (88%) in post-intervention 1 and to 25 (100%) in post intervention 2, with p-values of 0.021 and 0.001, respectively.

For Procedure 4, 17 (68%) farmers in the lecture group reported using povidone-iodine or antibacterial ointment for wound disinfection during the pre-intervention evaluation. After the intervention, this number significantly increased to 25 (100%) in both post-interventions 1 and 2 evaluations, with a p-value of 0.008.

In Procedure 5, 13 (52%) farmers stated that they disinfect the wound from the center going out during the pre-intervention evaluation. The results significantly increased to 24 (96%) in post-intervention 1 and 25 (100%) in post-intervention 2, with p-values of 0.001 and 0.000, respectively.

Procedure 6 involved the use of sterile gauze for wound dressing. Initially, 14 (56%) respondents stated that they used sterile gauze for wound dressing. After the lecture, results significantly increased to 25 (100%) in both post-intervention 1 and 2 evaluations.

In Procedure 7, prior to the intervention, 17 (68%) farmers reported that they used gauze and a towel to cover the wound and apply pressure when the wound was actively bleeding. The results significantly increased to 25 (100%) in both post-interventions 1 and 2 evaluations, supported by a p-value of 0.008.

For Procedure 8, it was reported during the pre-intervention assessment that only 12 (48%) farmers sought medical advice for possible wound infection. During post-interventions 1 and 2 evaluations, the number of farmers who practiced this procedure significantly increased to 24 (96%) and 25 (100%), respectively, with a p-value of 0.000.

Table 6. Comparison of practices of farmers before and after lecture using McNemar's Test

Procedure	**Pre-Intervention n (%)**	**Post Intervention 1 n (%)**	**Post Intervention 2 n (%)**	**p-values**		
				Pre Vs. Post 1	Pre Vs. Post 2	Post 1 Vs. Post 2
1. Assessment of wound appearance done before and after cleaning	8 (32%)	24 (96%)	19 (76%)	0.000*	0.001*	0.063
2. Handwashing done before and after cleaning	14 (56%)	23 (92%)	23 (92%)	0.004*	0.012*	1.000
3. Cleaning of wound done with mild soap and water	14 (56%)	22 (88%)	25 (100%)	0.021*	0.001*	0.250
4. Material used to disinfect wound is povidone-iodine/antibacterial ointment	17 (68%)	25 (100%)	25 (100%)	0.008*	0.008*	1.000
5. Manner of disinfecting the wound from the center going out	13 (52%)	24 (96%)	25 (100%)	0.001*	0.000*	1.000
6. Dressing used is sterile gauze	14 (56%)	25 (100%)	25 (100%)	0.001*	0.001*	1.000
7. Once bleeding cover the wound with gauze or towel and apply pressure	17 (68%)	25 (100%)	25 (100%)	0.008*	0.008*	1.000
8. If the wound has signs of infection, refer immediately for further medical advise	12 (48%)	24 (96%)	25 (100%)	0.000*	0.000*	1.000

**Significant at p-value of <0.05*

Table 7 below presents a comparison of the practice results per basic wound care procedure between the Lecture group and Pamphlet group. Regarding Procedure 1, the results showed that there were no significant differences between the two groups in the number of respondents who practiced this procedure in all three evaluations. Both groups had similar outcomes in properly assessing wound appearance before and after cleaning.

Table 7. Comparison of practices between the pamphlet and lecture group for procedure 1 using Pearson Chi Square

Procedure			
Assessment of wound appearance done before and after cleaning	**Pamphlet**	**Lecture**	**p-value**
Pre-Intervention	12 (48%)	8 (32%)	0.248
Post-Intervention 1	20 (80%)	24 (96%)	0.082

Post-Intervention 2	21 (84%)	19 (76%)	0.480

**Significant at p-value of <0.05*

For Procedure 2 (Table 8), it was observed that the Lecture group had a significantly higher number of respondents practicing handwashing in both post-interventions 1 and 2 evaluations compared to the Pamphlet group. This difference was supported by a p-value of 0.034 in both post-interventions 1 and 2 evaluations, indicating that the lecture intervention was more effective in promoting handwashing among participants.

Table 8. Comparison of practices between the pamphlet and lecture group for procedure 2 using Pearson Chi Square

Procedure			
Handwashing done before and after cleaning	**Pamphlet**	**Lecture**	**p-value**
Pre-Intervention	17 (68%)	14 (56%)	0.382
Post-Intervention 1	17 (68%)	23 (92%)	0.034*
Post-Intervention 2	17 (68%)	23 (92%)	0.034*

**Significant at p-value of <0.05*

In Procedure 3 (Table 9), the results indicated that the Lecture group had a significantly higher number of respondents who utilized mild soap for wound cleaning during the post-intervention 2 evaluation, with a p-value of 0.004. This suggests that the lecture intervention might have contributed to an increased adoption of this practice in the Lecture group.

Table 9. Comparison of practices between the pamphlet and lecture group for procedure 3 using Pearson Chi Square

Procedure			
Cleaning of wound done with mild soap and water	**Pamphlet**	**Lecture**	**p-value**
Pre-Intervention	18 (72%)	14 (56%)	0.239
Post-Intervention 1	21 (84%)	22 (88%)	0.684
Post-Intervention 2	18 (72%)	25 (100%	0.004*

**Significant at p-value of <0.05*

Procedure 4 (Table 10) showed no significant differences between the two groups regarding the utilization of povidone-iodine or antibacterial ointment for wound disinfection. Both groups had similar rates of usage for this procedure.

Table 10. Comparison of practices between the pamphlet and lecture group for procedure 4 using Pearson Chi Square

Procedure			
Material used to disinfect wound is povidone-iodine/antibacterial ointment	**Pamphlet**	**Lecture**	**p-value**
Pre-Intervention	20 (80%)	17 (68%)	0.333
Post-Intervention 1	25 (100%)	25 (100%)	1.000
Post-Intervention 2	24 (96%)	25 (100%)	0.312

**Significant at p-value of <0.05*

For Procedure 5, the results revealed that the number of participants who passed this procedure in the Lecture group was significantly higher than in the Pamphlet group, with a p-value of 0.009. This implies that the lecture intervention had a positive impact on the proper manner on disinfection of wounds the Lecture group.

Table 11. Comparison of practices between the pamphlet and lecture group for procedure 5 using Pearson Chi Square

Procedure			
Manner of disinfecting the wound from the center going out	**Pamphlet**	**Lecture**	**p-value**
Pre-Intervention	14 (56%)	13 (52%)	0.777
Post-Intervention 1	24 (96%)	24 (96%)	1.000

Post-Intervention 2	19 (76%)	25 (100%)	0.009*

**Significant at p-value of <0.05*

For both Procedure 6 and Procedure 7, the data comparison indicated that there were no significant differences between the two groups in the number of participants who utilized sterile gauze for dressing wounds or applying pressure to actively bleeding wounds.

Table 12. Comparison of practices between the pamphlet and lecture group for procedure 5 using Pearson Chi Square

Procedure			
Dressing used is sterile gauze	**Pamphlet**	**Lecture**	**p-value**
Pre-Intervention	15 (60%)	14 (56%)	0.774
Post-Intervention 1	24 (96%)	25 (100%)	0.312
Post-Intervention 2	23 (92%)	25 (100%)	0.149
Once bleeding cover the wound with gauze or towel and apply pressure			
Pre-Intervention	21 (84%)	17 (68%)	0.185
Post-Intervention 1	25 (100%)	25 (100%)	1.000
Post-Intervention 2	22 (88%)	25 (100%)	0.203

**Significant at p-value of <0.05*

For Procedure 8, the results showed that there were significantly more farmers in the Pamphlet group seeking medical advice if a wound showed signs of infection, with a p-value of 0.018. However, after the intervention, the results revealed no significant difference between the two groups in the number of participants who followed this procedure, with p-values of 1 and 0.149 for post interventions 1 and 2 evaluations, respectively. This suggests that while the Pamphlet group initially had more participants seeking medical advice, the impact of the lecture intervention led to similar rates of adherence in both groups over time.

Table 13. Comparison of practices between the pamphlet and lecture group for procedure 8 using Pearson Chi Square

Procedure	**Pamphlet**	**Lecture**	**-Value**
If the wound has signs of infection, refer immediately for further medical advise			
Pre-Intervention	20 (80%)	12 (48%)	0.018*
Post-Intervention 1	25 (100%)	24 (96%)	1.000
Post-Intervention 2	23 (92%)	25 (100%)	0.149

**Significant at p-value of <0.05*

Practices on Tetanu Toxoid Immunization

The study had a total respondent of 50 who were identified to have unknown or incomplete primary three dose series of tetanus toxoid vaccine and who have not received a tetanus toxoid boosted dose for the last 10 years. For the practices on tetanus toxoid immunization, the results will be presented using frequency and percentages.

As shown in table 8, there was an increase in the practices of adult farmers towards tetanus toxoid immunization after the distribution of pamphlets. During the pre-intervention, there was no respondent who got vaccinated. After the intervention, 13 out of 25 or 58% respondents submitted themselves for tetanus toxoid immunization and received 2 doses. It also depicts the increase in the practices of adult farmers towards tetanus toxoid immunization after the lecture. During the pre-intervention, there was no respondent who submitted for vaccination. After the intervention, 19 out of 25 or 76% of the respondents submitted themselves for tetanus toxoid immunization and received 2 doses.

To compare the two interventions, as seen in tables 8 and 9, it was clear that the lecture intervention was more effective in improving the practices towards tetanus toxoid immunization. For the pamphlet group only 58% or 13 out of 25 submitted for vaccination whereas in the lecture group 76% or 19 out of 25 did.

Table 14. Tetanus toxoid immunization after interventions in frequency and percentages

Practices	**Pre-Intervention**	**Post-Intervention 1** (**1st Dose of TT vaccine**) **N=25 (Pamphlet Group)** **N=25 (Lecture Group)**	**Post-Intervention 2** (**2nd Dose of TT vaccine**) **N=25 (Pamphlet Group)** **N=25 (Lecture Group)**
Adult farmers who went for TT immunization in the Pamphlet Group	0 (0%)	13 (58%)	13 (58%)
Adult farmers who went for TT immunization in the Lecture Group	0 (0%)	19 (76%)	19 (76%)

4. Discussion and Implication

In a developing country context, farmers are highly vulnerable to tetanus infection due to frequent occupational injuries such as cuts, punctures, and lacerations from tools, workplace accidents, animal interactions, and falls. This paper references a study (Bhattarai et al., 2016) highlighting this vulnerability. To address this issue, the study aims to determine the most effective intervention for improving tetanus toxoid immunization and proper wound care practices among farmers.

In this study, the results showed a significant decrease in knowledge scores in the pamphlet group, particularly from the post-intervention 1 score of 9.60 to 7.44 in post-intervention 2. It was unexpected for post-intervention 1 and post-intervention 2 to differ significantly or show a decline. This decline in knowledge could be due to factors like respondents' busy schedules preventing them from revisiting the pamphlet and the absence of encouragement for a re-read. Another possible reason for the decline might be the lack of reinforcement or follow-up in revisiting the pamphlet, as reinforced learning has been shown to enhance knowledge retention in modern medical education (Younas et al., 2019). However, despite this decline, a comparison between the pre-intervention mean score and the post-intervention 2 mean score still indicates a statistically significant increase in knowledge, with a p-value of 0.022. Regarding the pamphlet itself, several respondents found the content comprehensible and straightforward, suggesting that it was reader-friendly in this context.

The study compared the effectiveness of two educational interventions in improving the knowledge of adult farmers regarding tetanus and proper wound care. In the lecture group, there was a notable improvement in knowledge scores. The pre-intervention mean knowledge score of 7 increased to 10.92 in post-intervention 1 and further to 11.28 in post-intervention 2. All increases when comparing post-intervention scores to pre-intervention scores were statistically significant. Additionally, there was no significant difference between post-intervention 1 and 2, indicating sustained or even increased knowledge over time.

Respondents in the lecture group provided positive feedback, stating that the lecture was both informative and enjoyable. The key factor contributing to the positive outcomes in this group was the interaction between the lecturer and respondents, which allowed for questions and clarifications, facilitating effective knowledge retention. This study highlights the effectiveness of collaborative engagement between the lecturer and respondents, as well as among the respondents themselves, in enhancing the knowledge of adult farmers, as supported by previous research (Coman et al., 2020).

In contrast, the pamphlet group experienced a decline in knowledge scores in post-intervention phases, potentially due to various factors such as lack of revisits, reinforcement, or follow-up. However, a comparison between the pre-intervention and post-intervention 2 mean scores still demonstrated a statistically significant increase in knowledge.

Overall, the study convincingly demonstrates that lectures are a superior option for improving the knowledge of adult farmers concerning tetanus toxoid and proper wound care when compared to pamphlets. This finding aligns with similar studies by Bajala (2014) and Ammad (2018), which also found lectures to be effective in increasing the knowledge of adult farmers.

Both interventions aimed to improve farmers' practices in proper wound care, but upon comparison, the lecture intervention demonstrated a more substantial impact compared to pamphlet distribution. In the pamphlet group, not all practices showed significant improvement, specifically handwashing before and after cleaning, wound cleaning with mild soap and water, wound coverage with gauze or a towel followed by pressure to stop bleeding, and immediate medical consultation for signs of infection. These practices saw similar or slight increases in respondent adherence, resulting in statistically insignificant outcomes. This lack of significance might be attributed to the absence of a mechanism for seeking clarification from medical professionals or experts in the pamphlet distribution. Moreover, the pamphlet group lacked key components of effective health education, such as collaborative learning and reinforcement of positive health behaviors, which were identified as lacking in this study (Coman et al., 2020). In contrast, the lecture intervention appeared to better facilitate knowledge retention and practice improvement among farmers, likely due to the interactive nature of lectures, where respondents could seek clarifications and engage with the lecturer.

In the lecture group, all practices related to proper wound care showed significant improvement, and this effect was sustained even one month after the intervention (post-intervention 2). The interactive nature of the lectures, which allowed for engagement and questions from respondents, likely played a

pivotal role in enhancing these practices among adult farmers. This finding aligns with research by Deslauriers et al. (2019), which suggests that active learning and interaction with instructors can contribute to improved outcomes in educational interventions. In contrast to the lecture group, the pamphlet group did not exhibit significant improvements in all practices, indicating that the lecture intervention was more effective in enhancing farmers' knowledge and practices related to wound care.

Both the current study and the study by Hernandez in 2017 show that lectures were more effective than pamphlet distribution in enhancing vaccination rates. In the present study, the lecture group exhibited a higher tetanus toxoid immunization rate among adult farmers compared to pamphlet distribution, while Hernandez's study demonstrated a similar trend in boosting pneumococcal vaccination rates among senior citizens. Alcazaren's study, which explored adult farmers' perceptions of tetanus immunization and vaccine accessibility, revealed that a significant portion of respondents (55%) based their vaccination decisions on the availability of tetanus toxoid vaccines at the barangay health center, indicating the importance of vaccine accessibility in vaccination choices. These findings collectively underscore the effectiveness of lectures and the role of vaccine availability in influencing vaccination decisions among different populations.

In this study, the researcher did not disclose the availability of tetanus toxoid vaccines. Instead, when respondents were selecting their vaccination schedules, they were asked if they were willing to be vaccinated even with pay. All individuals who underwent vaccination in both intervention groups responded affirmatively. In the lecture group, one respondent even commented“Pagkahuman nako makadungog sa lecture, murag ganahan na ko magpabakuna kay para man ni sa atong kahimsog ug dili ta babalaka ug samot inig masamad ta.” (“After hearing the lecture, I would really want to get vaccinated because this is for our health and when the time we will get wounded, we will not worry that much”). This comment reinforced the connection between health education and the willingness of adult farmers to undergo tetanus toxoid immunization. Those who did not get vaccinated cited conflicting schedules, feeling unwell or sick, or simply not having a specific reason as their explanations. Respondents were encouraged to receive their third Tetanus Toxoid dose after six months for extended protection.

This study, along with previous research by Nain (2014) and Hernandez (2017), confirms the effectiveness of both pamphlet distribution and lectures in improving knowledge and practices related to proper wound care and tetanus toxoid immunization among adult farmers. However, the lecture method was found to be more impactful, consistent with findings from previous studies. Several reasons support this trend. Lectures promote active participation and engagement, enhancing attentiveness and the authority of the lecturer (Charlton, 2006). They offer a direct and straightforward teaching approach through oral communication (Naqibi et al., 2015). In the lecture group, respondents could interact with the lecturer for clarifications, fostering interactivity, knowledge retention, and practice improvement. Elang's 2018 study on enhancing knowledge and self-reported practices among mothers regarding ear infections also concluded that lectures are effective in improving self-reported practices.

This study's implications hold significance for public health, highlighting the value of lecture-based approaches in health education for adult farmers regarding wound care and tetanus toxoid immunization. By demonstrating lectures’ effectiveness over pamphlet distribution in enhancing knowledge and practices, the study offers insights to guide the design of health education initiatives in farming communities. Public health practitioners and policymakers can utilize these findings to devise strategies for effectively disseminating crucial health information to vulnerable populations like farmers at risk of tetanus infections. Recognizing lectures' greater impact on knowledge retention and behavior change can direct resources toward interactive educational sessions. Moreover, the study underscores the importance of direct educator interaction for addressing queries, enhancing overall intervention effectiveness. These implications extend beyond farming and tetanus prevention, offering broader insights for knowledge enhancement and positive behavior change in public health initiatives, enhancing health literacy and practices in diverse communities.

One of the limitations of the study was the timing of the two interventions, which were not simultaneously administered. Nevertheless, the study took place under consistent conditions within the municipality of Mahayag. It's worth noting that the farming schedules in different barangays vary; for instance, Barangay X was in the midst of its harvest season, while Barangay Y was in the planting season during the study. Consequently, both interventions were carried out ahead of the planting season in each of the studied barangays. Specifically, the pamphlet intervention occurred in Barangay Lower Mahayag in February 2023, while the lecture intervention took place in April 2023. Another constraint to consider is the sampling approach used, specifically convenience sampling. The study's outcomes could vary when conducted in different environments or contexts. This implies that what proved effective in this study may not yield the same results in other settings or with different populations.

5. Recommendation and Conclusion

The primary objective of this study is to employ health education for the purpose of empowering the community and protecting them from health risks. The study aimed to enhance knowledge and promote practices related to proper wound care and tetanus toxoid immunization through both lectures and pamphlets.

The results indicated that both interventions led to increased knowledge and improved wound care practices, along with higher coverage of tetanus toxoid immunization. Nevertheless, the study findings highlighted that lectures were more effective than pamphlets in enhancing knowledge and fostering better practices concerning tetanus, tetanus toxoid immunizations, and proper wound care. The health education methods used in this study influenced the responder’s choice to be vaccinated and to practice proper wound care.

Based on the study's findings and the positive impact of lectures on enhancing wound care practices and tetanus toxoid immunization, the researcher suggests exploring further research avenues. It is the researcher’s recommendation to conduct a more focused investigation into proper wound care.

Additionally, a study should be conducted to gauge farmers' perceptions of proper wound care. Another recommended approach is to conduct a study involving practical demonstrations and return demonstrations of proper wound care practices.

Furthermore, it is proposed to develop a health policy aimed at establishing programs dedicated to educating farmers about preventing tetanus infections. This policy should also ensure free access to tetanus vaccines for farmers.

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