

FOOD SAFETY EDUCATION FOR ELDERLY GROUPS IN SUNTER, NORTH OF JAKARTA : PREVENTING FOODBORNE ILLNESS THROUGH COMMUNITY EMPOWERMENT

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ABSTRACT

Foodborne hazards pose serious health risks, particularly to elderly populations who are more vulnerable due to weakened immunity and age-related conditions. This community service program aimed to improve food safety knowledge and attitude among elderly groups through participatory education. The program involved elderly participants in Sunter, North of Jakarta, delivered in four stages: situational analysis, collaborative planning, tailored food safety socialization, and evaluation. Data were collected using pre-test and post-test questionnaires as well as observation of practices. The results showed a significant improvement in food safety knowledge, with scores increasing by (10,1%). The highest gains were observed in temperature danger zone concept and in daily hygienic practices. Attitudes toward household food safety also improved, particularly in “*cooking should not use contaminated water*” and “*dishwashing sponges should be replaced regularly*”. This program demonstrated that community empowerment through targeted education can enhance food safety knowledge and attitude among the elderly, contributing to the prevention of foodborne illness and supporting healthy aging.

Keywords: Food Safety, Education, Elderly Group, Foodborne Illness, Hazards.

1. INTRODUCTION

Foodborne illness remains a major public health concern worldwide, causing significant morbidity and mortality each year. According to the World Health Organization (WHO, 2020), an estimated 600 million cases of foodborne diseases occur annually, resulting in 420,000 deaths. The elderly are considered one of the most vulnerable groups due to age-related physiological changes, weakened immune systems, and chronic health conditions that increase susceptibility to foodborne pathogens (Liu et al., 2018).

Community empowerment is a proven strategy to improve knowledge and behavior related to public health, including food safety (Choudhary et al., 2019). Tailored education programs focusing on elderly groups can enhance awareness and practices, thereby reducing the risk of foodborne illness. This paper presents the implementation and outcomes of a food safety education program for elderly participants, with the goal of preventing foodborne illness and promoting healthy aging.

In Indonesia, the increasing proportion of elderly people presents both opportunities and challenges for public health. Data from the Indonesian Central Bureau of Statistics (BPS, 2022) shows that the elderly population continues to rise, necessitating greater attention to food safety practices. However, many elderly individuals have limited access to information and education regarding safe food handling, storage, and preparation. Poor practices in these areas can contribute to foodborne outbreaks and health complications (Rahmawati & Setiawan, 2021). For the writing of paper content, the template must be referred. It will make style and layout of the written paper easier. The author is required to express quantitatively the portrait, profile, and condition of the target audience involved in community service activities. The conditions and potential of the area in terms of physical, social, economic, and environmental aspects that are relevant to the activities carried out can also be described. Also describe the potential that is used as material for community service activities. The author is asked to formulate the problem concretely and clearly in this section. Explain the objectives to be achieved in the community service activity.

2. METHOD

The method used in this activity was socialization on household-level food safety. The stages of the community service program are presented in Figure 1.

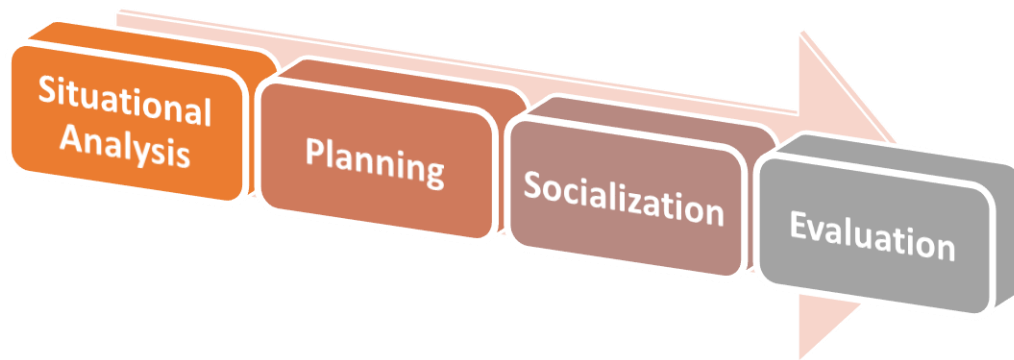


Figure 1. Stages of Community Service Activities

Figure 1 illustrates four main stages in the implementation of the community service activities, which are described as follows:

Situational Analysis

This stage was carried out by identifying and studying the problems faced by the community, particularly among the elderly group in Sunter, South Jakarta. One of the key issues identified was related to household food safety. The results of this analysis served as the foundation for designing activities that addressed the needs of the target community.

Planning

In the planning stage, discussions were conducted with community partners, specifically the elderly group, to arrange the activity schedule and to address issues related to food safety within the community. Through this process, the partners gained a clearer understanding of the importance of addressing food safety concerns. The planning also included discussions on the time and venue of the activity. Based on the agreement, the socialization was scheduled to be held on June 8, 2024, at a designated location in Sunter, South Jakarta.

Socialization

The socialization stage was carried out according to the established plan. The participants consisted of 22 elderly individuals representing 14 neighborhood units (RTs) within the RW. The expectation was that these participants would disseminate the knowledge gained to their respective RTs. The agenda of the event included: (1) Opening; (2) Singing of the national anthem Indonesia Raya; (3) Remarks by the RW Chairperson and representatives of the elderly group; (4) Remarks by local officials; (5) Pre-test; (6) Socialization on household food safety; and (7) Post-test.

Evaluation

The evaluation aimed to measure the improvement in participants' understanding after the socialization. This was assessed by comparing the pre-test and post-test results, with higher post-test scores indicating that the material was effectively conveyed. The pre-test was administered at the beginning of the session, while the post-test was conducted at the end, both consisting of closed-ended questions. In addition to knowledge assessment, the evaluation also examined participants' attitudes to determine whether there were positive changes in behavior regarding household food safety. Feedback from participants was also collected, and overall, the responses were positive, suggesting that the socialization activities were successful. method employed in this program was community education on elderly groups at Sunter, South Jakarta - food safety. The stages of the community service activities are illustrated in Figure 2.

3. RESULTS AND DISCUSSION

The socialization was carried out according to the established plan. The number of participants exceeded the initial target, with 29 participants attending compared to the targeted 25. The agenda proceeded smoothly and gained additional enthusiasm with the presence of Puteri Indonesia Jakarta. The atmosphere of the socialization session is shown in Figure 3.



Figure 2. The Atmosphere of the Socialization Session

The results of the community service activities indicate that the food safety socialization program with the community partners was successfully implemented as planned. Prior to the implementation, planning was conducted together with the partners. This collaborative planning was carried out effectively, allowing the partners to recognize that the lack of knowledge and attitudes regarding household food safety was a shared issue that needed to be addressed collectively. Moreover, the process demonstrated that after the program, the partners would be able to address these issues independently.

Figure 3 shows that the implementation of activities proceeded well. The event began with opening remarks delivered by the Chairperson of the elderly group in Sunter, South Jakarta. Before the socialization began, an offline pre-test was conducted. The pre-test session also ran smoothly, with participants instructed to answer based on their current knowledge and attitudes.

The food safety socialization was delivered in an atmosphere that balanced seriousness with comfort. All participants paid close attention to the explanations provided. During the discussion session, participants asked questions, such as what practices should be followed to ensure food safety when washing kitchen utensils. The speaker emphasized that all utensils must be cleaned after use, sponges should be stored in a dry place, and dishwashing sponges should be replaced regularly. Although this may seem like a minor issue, participants admitted that they often forgot to replace their dishwashing sponges, despite the fact that bacteria can accumulate significantly in them. Increase average score of food safety knowledge of elderly groups at Sunter, North Jakarta can be seen pada Figure 2.

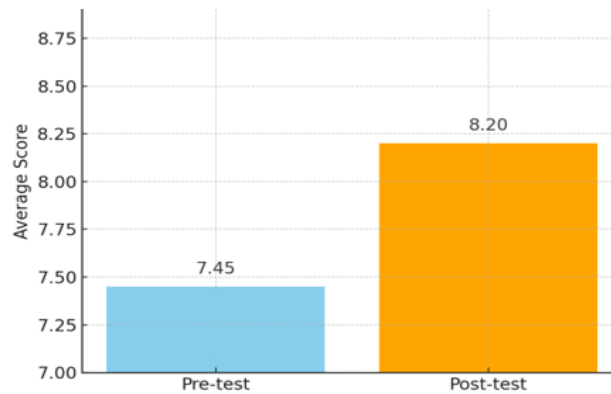


Figure 2. Increase Average Score of Food Safety Knowledge of Elderly Groups in Sunter, North Jakarta

The evaluation results indicate an increase in the knowledge of elderly participants regarding food safety after the socialization (Pujilestari, et al., 2019; Pujilestari and Sabariman, 2023; Setyawati, et al., 2021). The average knowledge score before the socialization (pre-test) was 7.45, while after the socialization (post-test) it increased to 8.20, with an improvement of 0.75 points or 10.1%. This improvement demonstrates that the educational intervention contributed significantly to strengthening the elderly's understanding of food safety aspects.

Although the increase can be categorized as moderate, it remains important since knowledge is the fundamental basis for changes in attitudes and daily food consumption behaviors. With the improvement in the elderly's understanding of issues such as contamination hazards, the importance of using safe water, and proper food storage and handling practices, the risk of foodborne diseases can be minimized. These findings are consistent with Notoatmodjo's (2014) theory which states that health education can increase individual knowledge, which in turn has the potential to influence attitudes and behaviors. Increase in food safety knowledge of the elderly group in Sunter, South Jakarta can be seen at Table 1 and Figure 3.

Table 1. Increase in Food Safety Knowledge of the Elderly Group in Sunter, South Jakarta

No.	Question	Pre-test	Post-test	Increase	% Increase
1	Staples as physical hazard	7,59	8,5	0,91	11,90%
2	Raw vegetables washed properly	9,31	9,7	0,39	4,20%
3	Danger zone 5–60°C	1,72	2,3	0,58	33,70%
4	Sponge washed and dried	5,17	6,2	1,03	19,90%
5	Buy food in clean places	4,83	6	1,17	24,20%
6	Check canned food integrity	9,31	9,7	0,39	4,20%
7	Store raw meet in freezer	9,31	9,7	0,39	4,20%
8	Cooking water quality	8,62	9,2	0,58	6,70%
9	Reheat food only one	8,97	9,4	0,43	4,80%
10	Separated utensilis raw/cooked	9,66	9,8	0,14	1,40%
Rata-rata		7,45	8,2	0,75	10,10%

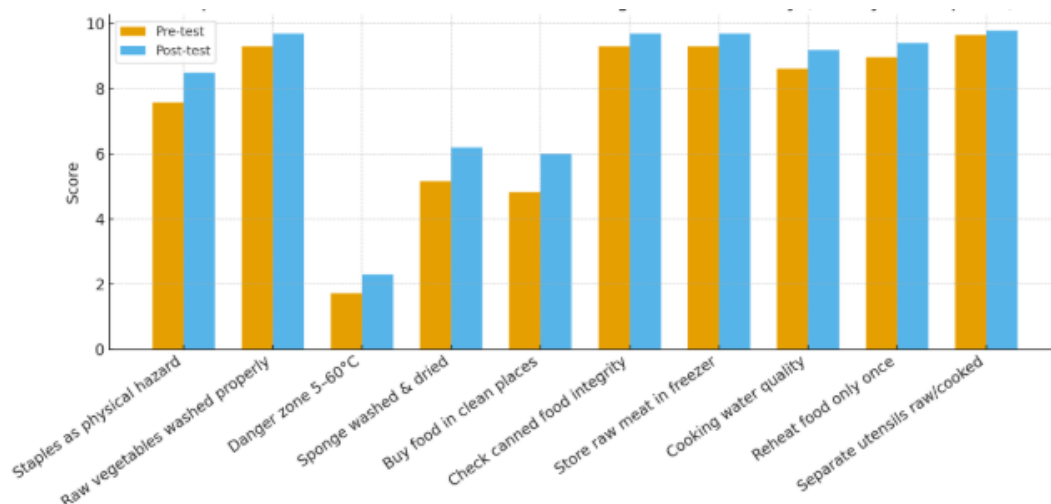


Figure 3. Increase in Food Safety Knowledge of the Elderly Group in Sunter, South Jakarta

Table 1 and Figure 2 shows that a more detailed analysis shows that the most significant improvement in knowledge was observed in the question regarding the temperature danger zone (5–60°C), which increased by 0.58 points (33.7%). This finding is important because the temperature range of 5–60°C is known to be the optimal growth range for pathogenic microorganisms (WHO, 2015). Initially, knowledge about this concept was relatively low (pre-test score of only 1.72), indicating that the educational intervention provided a substantial impact. These results reinforce previous findings that safe temperature practices are often overlooked by household consumers (Rahayu, 2020).

Knowledge among the elderly regarding equipment and environmental hygiene also showed meaningful improvements. For instance, awareness that dishwashing sponges should be cleaned and dried increased from 5.17 to 6.20 (+19.9%), while the understanding that food should be purchased from clean sources rose from 4.83 to 6.00 (+24.2%). These increases align with the findings of Kusnandar et al. (2019), who emphasized that simple hygiene practices, such as proper maintenance of kitchen utensils and careful selection of food sources, play a major role in preventing cross-contamination at the household level. This suggests that training materials based on daily practical experiences are more easily understood by the elderly.

Other areas also demonstrated improvements, though to a smaller extent. For example, understanding that cooking water should be colorless, tasteless, and odorless increased by 0.58 points (6.7%), while knowledge that cooked food should only be reheated once rose by 0.43 points (4.8%). These findings indicate that the training reinforced knowledge that was already relatively well understood. WHO (2015), through its five keys to safer food, highlights the importance of safe water usage and proper reheating practices to prevent bacterial growth. Thus, although the improvement was relatively modest, it still supported the overall objectives of the training.

In contrast, aspects with already very high baseline scores showed little further improvement. For example, knowledge about inspecting canned food (9.31 to 9.70; (4.2%)), proper storage of raw meat in the freezer (9.31 to 9.70; (4.2%)), and separating utensils for raw and cooked food (9.66 to 9.80; (1.4%)) exhibited only minimal gains. This indicates that the elderly already had sufficient understanding of these aspects prior to the intervention. It also confirms that educational interventions tend to yield more significant improvements in areas where baseline knowledge is lower.

From these findings, it can be concluded that the was most effective in addressing topics that were less familiar to participants, such as the concept of temperature danger zones and basic hygiene practices. Therefore, future educational activities should place stronger emphasis on direct demonstrations, simulations, and practical examples. Elderly participants generally comprehend information more effectively through hands-on experiences rather than abstract theories.

Overall, this program supports the existing literature, which suggests that consumer-level food safety education, particularly among the elderly, can enhance awareness and promote the adoption of safe food-handling behaviors (Redmond & Griffith, 2009). Consequently, food safety training can serve as an effective preventive strategy to reduce the risk of foodborne diseases in the community, especially among vulnerable groups such as older adults. At the end of the program, a post-test was administered to evaluate whether participants had gained a better understanding of food safety, as well as to assess any positive changes in their attitudes toward food safety. The improvement of knowledge can lead to the enhancement of positive attitudes (Pujilestari, 2019). Increase in average score attitudes of Sozialitation participants in the elderly group, Sunter, South Jakarta can be seen at Figure 4.



Figure 4. Increase of Average Score of food safety attitude of elderly groups in Sunter, North Jakarta

The findings indicate that the attitudes of the elderly group toward food safety were already at a favorable level even before the socialization. The average pre-test score reached 9.0, which slightly increased to 9.1 in the post-test, equivalent to an improvement of 0.9%. This result suggests that the socialization program had a positive effect, albeit not substantial, since the respondents' attitudes were already well established from the outset.

The relatively small increase reflects the fact that attitudes, compared to knowledge, are generally more stable and less susceptible to short-term interventions. However, maintaining and reinforcing positive attitudes through continuous socialization remains crucial, as strong attitudes are a key determinant in translating knowledge into consistent safe food-handling practices. Increasing of food safety aspects can be shown at Table 2 and Figure 5

Table 5. Increase of Food Safety Aspects in the Elderly Group, Sunter, North Jakarta

No.	Question	Pre test	Post-test	Increase	% Increase
1.	Wash hands before cooking	10,00	10,00	0,00	0
2.	Do not use contaminated water	8,62	8,92	0,30	3,45
3.	Formalin in tofu is not a problem	8,28	8,56	0,29	3,45
4.	Dishwashing sponge must be replaced regularly	10,00	10,00	0,00	0
5.	Using staples on food plastic packaging	9,31	9,29	-0,02	-0,26
		9,24	9,35	0,11	1,21

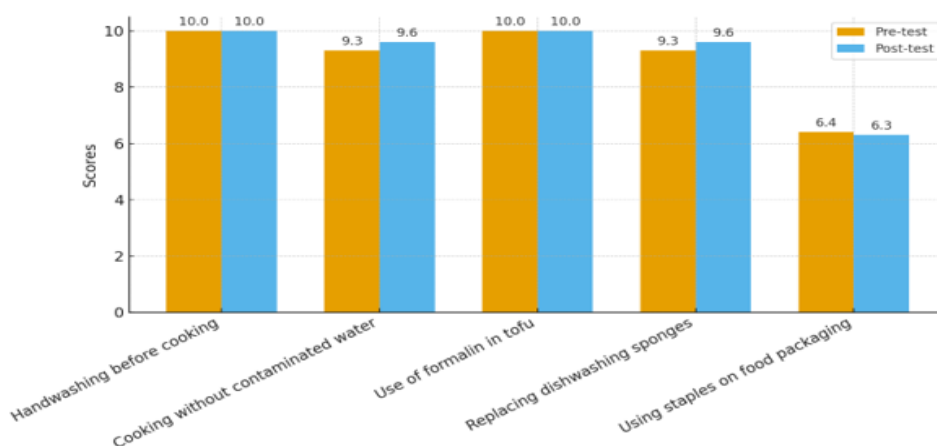


Figure 5. Increase of Score of food safety attitude of elderly groups in Sunter, North Jakarta

The most notable improvements in attitudes were observed in the indicators “not using contaminated water” and “dishwashing sponges should be replaced regularly”, each of which increased by 3.4%. This aligns with the concept of Hygiene and Sanitation, which emphasizes that the use of clean water and proper maintenance of kitchen utensils are essential aspects in preventing microbial cross-contamination in food. These findings also suggest that the elderly

participants are relatively receptive to material directly related to daily household activities, particularly those that can be immediately practiced.

For the indicators “washing hands before cooking” and “avoiding the use of formalin in tofu”, scores remained consistently at the maximum level (10.0) in both the pre-test and post-test. This indicates that positive attitudes toward these practices had already been well established prior to the intervention. This phenomenon is understandable, as handwashing is a common hygienic behavior in the community, and knowledge regarding the dangers of formalin is already relatively widespread in society.

Interestingly, for the indicator “the use of staples in food packaging is still acceptable for practicality”, there was a slight decrease in the score from 6.4 to 6.3 (-2.0%). This suggests a certain resistance to attitude change in areas associated with convenience. Staples are perceived as simple, fast, and practical tools, making it difficult to shift attitudes despite increased knowledge of their risks. In fact, the introduction of alternative packaging methods may have been perceived as more complicated compared to long-established habits. This finding is consistent with the Health Belief Model (HBM), which posits that the adoption of health behaviors is influenced not only by risk perception but also by perceived barriers. In this case, although the elderly participants recognized the risks of using staples, the perceived impracticality of alternatives hindered attitude change.

Overall, these results indicate that food safety socialization was effective in reinforcing attitudes related to basic hygiene practices but still faces challenges in modifying behaviors linked to convenience and comfort. Therefore, future intervention strategies should adopt a more applicative and participatory approach, such as direct demonstrations of safe yet practical alternatives to staples and providing concrete examples that are easy to apply in daily life.

The practical implication of these findings is that food safety education for the elderly should not only emphasize knowledge but also address factors of convenience and entrenched habits. Accordingly, subsequent socialization programs are recommended to incorporate participatory methods—such as simulations or hands-on practice—in order to foster more consistent positive attitudes and encourage sustainable behavior change. explain the future development opportunities. Articles can be strengthened with relevant documentation related to services or goods as outputs, or the main focus of activities. Documentation can be in the form of pictures of the application or implementation process, pictures of product prototypes, tables, graphs, and so on.

4. CONCLUSION

1. The improvement in food safety knowledge among the elderly group in Sunter, North Jakarta showed an average increase of 10.1%, indicating a meaningful change
2. The most significant improvement was observed in the understanding of the temperature danger zone concept and in daily hygienic practices
3. The improvement in food safety attitudes among the elderly group in Sunter, South Jakarta showed an average increase of 0.9%, which can be considered as not statistically meaningful, since the participants' attitudes were already favourable from the beginning
4. The most notable attitude improvements were found in the indicators “*cooking should not use contaminated water*” and “*dishwashing sponges should be replaced regularly*”. However, a decline was observed in the indicator “*using staples on food packaging is still acceptable for practicality*”, reflecting resistance to behavior change related to convenience.

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