



Empowering the Elderly to Improve Nutritional Understanding and Medication Compliance in Jelarai Village, Km. 2, Tanjung Selor, Bulungan Regency, North Kalimantan

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ARTICLE INFO

Kata Kunci: Empowerment Of The Elderly, Understanding Of Nutrition, Compliance With Taking Medication, Jelarai Village

Received : 20, December

Revised : 15, January

Accepted: 18, February

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ABSTRAK

The elderly population in Jelarai Village faces challenges in understanding proper nutrition and medication adherence, which can lead to health complications. This community service program aims to empower the elderly to improve their nutritional understanding and medication adherence. Activities were carried out through health education, nutrition counseling, and medication adherence monitoring involving 40 elderly participants. After the intervention, there was a significant increase in nutritional knowledge (from 45% to 78%) and medication adherence (from 52.5% to 85%). The elderly empowerment program effectively improved nutritional understanding and medication adherence, contributing to better health outcomes in the community.

INTRODUCTION

Indonesia has experienced a significant increase in the number of elderly population. Based on data from the Central Statistics Agency (BPS) in 2024, the number of elderly people in Indonesia will reach 11.8% of the total population. This increase in the elderly population causes various health problems, especially related to proper nutrition understanding and compliance in taking routine medications.

Jelarai Km. 2 Village, Tanjung Selor, Bulungan Regency, North Kalimantan is one of the areas with a fairly high elderly population. Based on the initial survey conducted, it was found that most of the elderly in the village had a lack of understanding of balanced nutrition and often experienced difficulties in maintaining adherence to taking medications. This condition is exacerbated by limited access to health information and low education levels for the elderly.

A good understanding of nutrition is very important for the elderly because their nutritional needs are different from other age groups. Unbalanced nutrition can lead to various health problems such as malnutrition, decreased immunity, and exacerbating pre-existing degenerative diseases. In addition, medication adherence is a crucial factor in the management of chronic diseases experienced by many elderly such as hypertension, diabetes mellitus, and heart disease.

Some studies show that non-adherence to medication in the elderly can reach 40-75%, this is caused by various factors such as forgetfulness, not understanding the benefits of medication, perceived side effects, and the complexity of the treatment regimen. Therefore, efforts to empower the elderly through a comprehensive and sustainable approach are needed.

The purpose of this community service activity is to increase the knowledge and understanding of the elderly about balanced nutrition and increase their compliance in taking routine medications. This activity is expected to have an impact

IMPLEMENTATION AND METHODS

This community service activity was carried out at the Sumber Kasih Posyandu Jelarai Village Km. 2, Tanjung Selor, Bulungan Regency, North Kalimantan for 1 month from November 12 to December 11, 2025. The target of the activity was the elderly aged 60 years and above which amounted to 40 people, consisting of 24 women and 16 men from the number of elderly people in Jelarai Village of 80 people consisting of 47 women and 33 men.

The method of implementing activities includes several stages as follows:

1. Preparation Stage

At this stage, coordination is carried out with village officials, health cadres, and local health centers. An initial survey was also conducted to identify the problems and needs of the elderly related to nutritional understanding and medication adherence. The preparation of educational materials is adjusted to the level of education and the condition of the elderly in the village.

2. Implementation Stage

The implementation of activities is carried out through several methods:

- Health counseling on balanced nutrition for the elderly, including the types of foods that are recommended, the right portions of meals, and healthy food processing methods.
- Education on the importance of medication adherence, how to manage medication schedules, and strategies to overcome barriers in medication adherence.
- Individual counseling to provide personal assistance according to the health condition of each elderly.
- Demonstration of the practice of preparing a healthy food menu and the use of reminders for medication schedules.

3. Monitoring and Evaluation Stage

Periodic monitoring was carried out for 4 weeks after providing education. Evaluations were carried out through pre-tests and post-tests to measure knowledge improvement, as well as direct observation and interviews to assess medication adherence. Data collection was conducted using a structured questionnaire and medication adherence checklist sheet.

Data analysis was carried out descriptively by calculating the percentage of increased knowledge and compliance before and after the intervention. Qualitative data from interviews were analyzed thematically to identify factors influencing the success of the program.

RESULTS AND DISCUSSION

Elderly empowerment activities in improving nutritional understanding and medication compliance in Jelarai Village, Km. 2, showed very positive results. Of the 40 elderly participants involved in this program, all of them participated in the activity enthusiastically and actively participated in each session.

Participant Characteristics

The characteristics of the participants of the elderly empowerment activities in Jelarai KM.2 Village can be seen in the following table:

Table 1. Characteristics of Activity Participants

Features	quantity	Presentase
Gender		
Male	16	40 %
Women	24	60 %
Age group		
60-69 years old	30	75 %
70-79 years old	9	22,5 %
≥ 80 years old	1	2,5 %

Source: Primary Data, 2025

Participants who participated in this program ranged in age from 60-79 years with an average age of 67 years. Most of the participants (60%) had an

elementary level of education, 25% did not finish elementary school, and 15% graduated from junior high school. In terms of health conditions, 70% of participants had chronic diseases such as hypertension, diabetes mellitus, or a combination of both

Improved Nutrition Understanding

The pre-test results showed that only 45% of the participants had good knowledge about balanced nutrition for the elderly. After interventions in the form of counseling and nutrition counseling, the post-test results showed a significant increase to 78% of participants with good knowledge. Increased understanding occurs mainly in the aspects of choosing the type of food, the right portion of meals, and the recommended frequency of meals.

Table 2. Of the 40 respondents, the pre-test results showed:

Category Pre-Test	Quantity (n)	Percentage (%)
Good Knowledge	18	45%
Sufficient Knowledge	15	37,5%
Lack of Knowledge	7	17,5%
Total	40	100%

Source: Primary Data, 2025

Table 3. After the intervention (counseling and counseling), a post-test was carried out with the following results:

Category Post-Test	Quantity (n)	Percentage (%)
Good Knowledge	31	77,5%
Sufficient Knowledge	7	17,5%
Lack of Knowledge	2	5%
Total	40	100%

Source: Primary Data, 2025

Table 4. Comparison of pre test and post test

Category	Pre-Test	Post-Test	Improvement
Good Knowledge	45% (18 orang)	78% (31 orang)	+33%
Sufficient Knowledge	37,5% (15 orang)	17,5% (7 orang)	-20%
Lack of Knowledge	17,5% (7 orang)	5% (2 orang)	-12,5%

Source: Primary Data, 2025

Participants showed high enthusiasm during the demonstration session of preparing a healthy food menu. They actively ask questions and discuss how to process food that suits their health conditions. Some participants also shared their experiences about the difficulties they face in meeting their balanced nutritional needs, especially related to economic limitations and access to certain foodstuffs.

Increased adherence to medication

Medication adherence evaluations showed encouraging results. In the initial measurement, only 52.5% of participants complied in taking the medication as directed by the doctor. Once the empowerment program is implemented, the compliance rate increases to 85%. A key factor contributing to this increase is a better understanding of the importance of medication adherence and practical strategies taught to overcome barriers.

Table 5. Of the 40 respondents, the pre-test results showed:

Category Pre-Test	Quantity (n)	Percentage (%)
Good Knowledge	21	52,5%
Sufficient Knowledge	12	30%
Lack of Knowledge	7	17,5%
Total	40	100%

Source: Primary Data, 2025

Table 6. After the intervention (counseling and counseling), a post-test was carried out with the following results:

Category Post-Test	Quantity (n)	Percentage (%)
Good Knowledge	34	85%
Sufficient Knowledge	5	12,5%
Lack of Knowledge	1	2,5%
Total	40	100%

Source: Primary Data, 2025

Table 7. Comparison of pre test and post test

Category	Pre-Test	Post-Test	Improvement
Good Knowledge	52.5% (21 people)	85% (34 orang)	+32,5%

Category	Pre-Test	Post-Test	Improvement
Sufficient Knowledge	30% (12 people)	12.5% (5 persons)	-17,5%
Lack of Knowledge	17.5% (7 people)	2.5% (1 person)	-15%

Source: Primary Data, 2025

The results of periodic monitoring show that the use of reminders such as cell phone alarms or medicine boxes labeled day is very helpful for the elderly in remembering medication schedules. Family support is also an important factor in improving compliance. The program also engages the families of participants in specific educational sessions to provide an understanding of the importance of their role in supporting the medication adherence of the elderly.

Table 8. Comparison of Knowledge and Compliance Levels Before and After Intervention

Indicator	Before Intervention	After Intervention
Good Nutrition Knowledge	45%	78%
Medication Compliance	52,5%	85%

Source: Primary Data, 2025

DISCUSSION

The results of this activity are in line with previous research that shows that structured and sustainable health education can improve health knowledge and behavior among the elderly. The 33% increase in nutritional understanding showed that counseling methods tailored to the conditions and cognitive abilities of the elderly were very effective.

The success of this program is inseparable from several supporting factors, including full support from village officials and health cadres, interactive and non-patronizing delivery methods, and practical materials that are easy to apply in daily life. The use of visual media such as posters and leaflets also helps participants in understanding and remembering the information conveyed.

The increase in medication adherence by 32.5% is a significant achievement considering the complexity of the problem of non-compliance in the elderly.

The strategies provided in this program, such as the use of reminders, simplifying treatment regimens with doctor's coordination, and involving families in monitoring, have proven effective in improving compliance.

However, there are still 15% of participants who have not achieved optimal compliance. Further analysis showed that the main obstacles were

economic limitations to buy drugs regularly, perceived side effects of medications, and lack of family support. This is a concern for future program improvement by involving cross-sectors to overcome these barriers.

The sustainability of this program is essential to sustain the behavioral changes that have been formed. Therefore, it has been agreed with village officials and health cadres to hold regular monthly meetings as a forum for sharing experiences and overcoming obstacles faced by the elderly in implementing a healthy diet and adherence to taking medication.



CONCLUSIONS AND RECOMMENDATIONS

The elderly empowerment program in improving nutritional understanding and medication adherence in Jelarai Village, Km. 2 has succeeded in achieving its goal. There was a significant increase in the level of nutritional knowledge of the elderly from 45% to 78% and an increase in medication adherence from 52.5% to 85%. The methods used in this program have proven to be effective and can be adapted for similar programs in other regions.

The success of this program demonstrates the importance of a comprehensive approach, involving not only the elderly as the main target but also

the family and community as a support system. Education that is tailored to the conditions and abilities of the elderly, as well as practical strategies that are easy to implement are the keys to the success of the program.

Based on the results of this activity, some suggestions that can be given are as follows:

- (1) It is necessary to carry out periodic monitoring and evaluation to maintain the improvement of knowledge and compliance that has been achieved;
- (2) Similar programs need to be expanded to other villages in Bulungan Regency by involving local health centers and health offices;
- (3) There is a need for support from local governments in providing drug subsidies for the underprivileged elderly to improve accessibility;
- (4) The establishment of elderly support groups at the village level can be a long-term strategy for the sustainability of the program;
- (5) Further research is needed to measure the long-term impact of the program on the health status and quality of life of the elderly.

THANKS

The author would like to thank the Head of Jelarai Km. 2 Village and his staff for providing full support in the implementation of this activity. Appreciation was also conveyed to health cadres and the Tanjung Selor Health Center who had assisted in the coordination and implementation of activities. Thank you to all elderly participants who have actively participated in this program. Not to forget, gratitude was conveyed to Ngudi Waluyo University for providing support in the implementation of this community service.

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