

Optimizing the role of health cadres in promoting healthy bone movement among the elderly in Banyuwangi district, East java

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Abstract

The increase in the elderly population is directly proportional to the increase in life expectancy. According to estimates from the World Health Organization (WHO), the global elderly population is projected to increase from 703 million in 2019 to 1.5 billion in 2050. In Indonesia, in 2020, the elderly population was 26.82 million (9.92%), and it is estimated to reach 20% by 2045. Tegaldlimo Sub-district is one of the sub-districts in Banyuwangi regency that shows a similar phenomenon of increasing elderly population. However, the knowledge, skills, and basic examinations to support the health conditions of the elderly in this sub-district still need improvement. On the other hand, this sub-district has human resources, namely PKK cadres, health services, elderly integrated health posts (posyandu lansia), and sports facilities that can be optimized to enhance knowledge and skills. Therefore, community service activities are needed to address the issues in the Tegaldlimo sub-district. This acceleration needs early readiness from all elements to ensure the quality of life for the elderly is maintained and to prevent excessive health financing for addressing elderly-related morbidities. The community service activities to be carried out in the Tegaldlimo sub-district consist of a series of empowerment and community participation activities involving PKK cadres and the elderly. Involving PKK cadres aims to make the program sustainable. Therefore, it is expected that this community service will increase knowledge and skills in the maintenance of elderly health, especially regarding bones and muscles.

Keywords: Elderly; Bone; Osteoporosis; Health cadres

1. Introduction

Elderly is a condition when a person has reached the age of ≥ 60 years. This group is further categorized into early age at the age of 65 - 74 years, middle-old between 75 - 84 years and elderly (oldest-old) at the age of ≥ 85 years (Lee et al. 2018). The increase in the elderly population is directly proportional to the increase in life expectancy (AHH) in Indonesia. Based on data released by the Central Statistics Agency (BPS), Indonesia's AHH increased from 71.20 years in 2018 to 71.34 years in 2019 (1). Since 1990, the elderly population has increased. In Indonesia in 2020 the number of elderly people was 26.82 million (9.92%) and it is estimated that in 2045 it will be 20%. This acceleration requires early readiness from all elements so that the quality of life of the elderly is maintained and prevents excessive use of health financing to deal with morbidity caused by the elderly.

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The elderly are correlated with several chronic clinical conditions, including deterioration or disorders of the bones, for example joint inflammation, bone fractures, sarcopenia and osteoporosis; all of which have the potential to reduce the quality of bone function and the quality of life of the elderly. Osteoporosis is still a global health problem, especially in developing countries. Osteoporosis attacks 20-25 million people in the United States, of which 1 in 2-3 women are post-menopausal and more than 50% of the population is over the age of 75-80 years (2). WHO states that worldwide there are around 200 million people who suffer from osteoporosis.

Tegaldlimo District is one of the sub-districts in Banyuwangi Regency. This sub-district has an area of 1341.12 km consisting of 9 villages. The male population is 34,432 and female 33,898 with a density of 51 people/km². The proportion of population aged 50 years and over is 30.47%, 55 years and over is 22.68%, 60 years and over is 15.99%, 65 years and over is 10.86%, 70 years and over is 6.67 %, and 75 years and over 3.78%. The health facilities in this sub-district are one inpatient health center, one non-inpatient health center, one medical center and six pharmacies. In this sub-district there are also health cadres who are coordinated by the Chair of Family Welfare Empowerment (PKK). The most sports facilities are football, fitness, aerobics, volleyball, badminton, table tennis, martial arts and futsal (3).

If we refer to WHO predictions, this figure will continue to increase and the potential for health problems related to elderly morbidity will also become higher. This elderly group tends to experience body changes very quickly when compared to other age groups. Changes that occur in the elderly can include various things, including physical, psychological and social changes that tend to decrease (4). Physical changes in the elderly will be related to the emergence of disease and other health problems which can be caused by aging factors and comorbidities suffered before entering old age. Bone and muscle health (5) as a form of the locomotor system is one system that needs to be strengthened because it will be closely related to mobility and independence with Tegaldlimo District having health service facilities, health cadres and recreational sports venues that can be optimized to improve the quality of elderly health. The quality of knowledge, nutrition and lifestyle play an important role in supporting the quality of life of the elderly and minimizing the resulting morbidity. However, the level of knowledge and skills regarding bone-muscle health, nutrition and lifestyle that can improve the quality of life of the elderly and minimize morbidity still needs to be increased in the community in Tegaldlimo sub-district. On the one hand, health checks for the elderly still need to be improved to monitor the health condition of the elderly..

2. Material and methods

Community service activities in Tegaldlimo Village are carried out through community empowerment and participation. The target population is PKK cadres and elderly representatives of Tegaldlimo Village, Tegaldlimo District, Banyuwangi Regency. The activity carried out was in the form of a seminar on aging and nutrition in the elderly. This activity aimed to increase basic knowledge (6). what is the physiological process of aging, its impact and comprehensive efforts to prevent the impact of aging and good nutrition in the elderly (7). Evaluation of participants' understanding of the material uses pre and posttests, while evaluation of activities is carried out using an event questionnaire. This seminar and training was held in one day on Friday, June 15 2023 in Tegaldlimo District, Banyuwangi, East Java.

In addition, anthropometric examinations, body composition and blood glucose status were carried out on cadres and the elderly. The measurement results aim to photograph the health conditions of cadres and the elderly, as well as provide education about their health results. Measurements taken were body weight, height, blood pressure, blood glucose levels, body composition to see the participants' muscle mass, fat mass and bone density (5,8). Not only that, there was also socialization and training on filling out elderly books for PKK cadres (8). This activity aims to improve the skills of PKK cadres in filling out elderly books. This book contains elderly health records, vital signs, anthropometry, complaints and clinical symptoms. The target of this activity is the entire target population which includes PKK cadres. Distribution of food product supplementation for adults by PT Nutrifood to cadres and the elderly. This activity aims to help optimize the nutritional status of the elderly and increase collaboration and cooperation between the Faculty of Medicine Universitas Airlangga, Medicine study program and industrial partners.

3. Results and discussion

3.1. Respondent Characteristic

The seminar and training was attended by 40 people (100%) and all were women (100%). In Figure 1 you can see the proportion of respondents based on gender. From this it can be seen that the proportion of respondents who came to the event were PKK cadres and elderly people, most of whom were women.

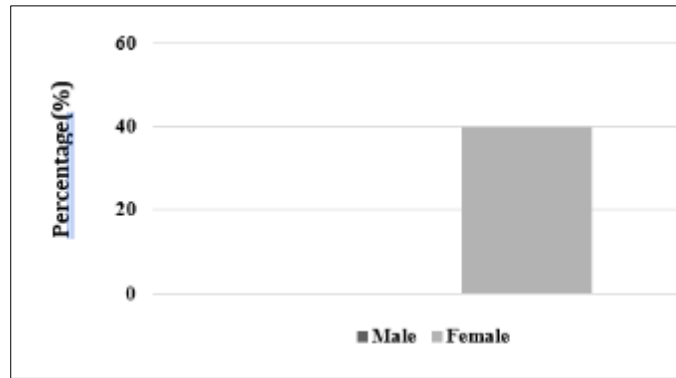


Figure 1 Proportion of respondents attending activities based on gender

The proportion of respondents based on their latest educational history can be seen in Table 1. From here it can be seen that the largest percentage are high school graduates/equivalent, namely 26 people (65%). Followed by junior high school (30%) and undergraduate degree (5%), and there were no participants who graduated from elementary school (0%).

Table 1 Proportion of respondents attending based on recent educational history

Latest Educational	Amount	Percentage
Elementary School	0	0
Junior High School	12	30
Senior High School	26	65
Undergraduate Degree	2	5
TOTAL	40	100

The proportion of respondents based on marital status can be seen in Table 2. It can be seen that the largest percentage is married, namely 37 people (92.5%). Followed by divorce, namely 2 people (5%), and unmarried, namely 1 person (2.5%).

Table 2 Proportion of respondents attending based on marital status

Marital status	Amount	Percentage
Married	37	92.5
Not married yet	1	2.5
Divorced	2	5
TOTAL	40	100

The proportion of respondents based on menstrual status can be seen in Table 4. It can be seen that the largest percentage are still menstruating, namely 29 people (72.5%). Followed by those who were no longer menstruating/menopausal, namely 11 people (27.5%).

Table 4 Proportion of respondents attending based on menstrual status

Menstrual status	Amount	Percentage
Menopause	11	27.5
Still menstruating	29	2.5
TOTAL	40	100

Meanwhile, the proportion of respondents based on income was mostly still under IDR 1,100,000.00 (82.9%) (Table 2).

Table 5 Proportion of respondents attending based on income

Income amount (IDR in thousands)	Amount	Percentage
<1.100	28	70
2.200 – 3.300	8	20
3.300	3	7.5
TOTAL	40	100

The implementation of this community service does not only take the form of seminars and training but also anthropometric measurements and the health status of event participants are carried out. The measurement results can be seen in table 6. In general, the participants' average condition was within normal limits. What needs to be noted is that some participants had hypertension, diabetes and obesity. Therefore, further intervention and education is needed regarding the health condition of each participant. Monitoring the health condition of the elderly needs to be carried out regularly. Education regarding the importance of health monitoring is important to understand the condition of the elderly.

Table 6 Anthropometric profile of respondents who attended the activity

Anthropometric profile	Mean	SD
Body weight (kg)	62	6.44
Body height (cm)	150.3	4.63
Systolic blood pressure (mmHg)	133.35	24.84
Diastolic blood pressure (mmHg)	81.50	11.66
Pulse rate (x/menit)	90.45	14.22
Blood glucose levels (mg/dl)	118.03	44.41
Waist circumference (cm)	91.46	10.48
Hip circumference (cm)	100.31	8.88
% Muscle mass	23.12	1.80
% Fat mass	34.95	3.81
% Visceral fat	9.55	7.29
Usia metabolik	52.05	10.77
BMI (kg/m ²)	26	4.16

3.2. Evaluation of Increased Participants' Knowledge

To see how enthusiastic the seminar and training participants were, at the beginning of the event a survey was conducted regarding the enthusiasm of the participants which can be seen in Figure 2. Participants stated that they

were very enthusiastic and enthusiastic about taking part in the seminar and training, none of which filled the others. The enthusiasm of the participants was due to the lack of training and similar activities for youth organization administrators. Apart from measuring enthusiasm, the increase in participants' knowledge was also measured using a pre-post test, the results of which can be seen in Table 3.

In Table 7 it can be seen that there was an increase in knowledge of 27.23% after activities in the health sector and an increase of 48.40% in the economic sector. Meanwhile for the overall material there was an increase of 36.96%. This increase in knowledge can be maximized if reinforcement is carried out repeatedly, and this is also input from seminar and training participants.

Table 7 Analysis of pretest and posttest mean for seminar and training activities

Evaluation	Mean	Standard Deviation	Normality test	Paired T-Test
Pre-	9	1.85	0.027	0.000
Post-	11.275	2.05	0.017	0.000

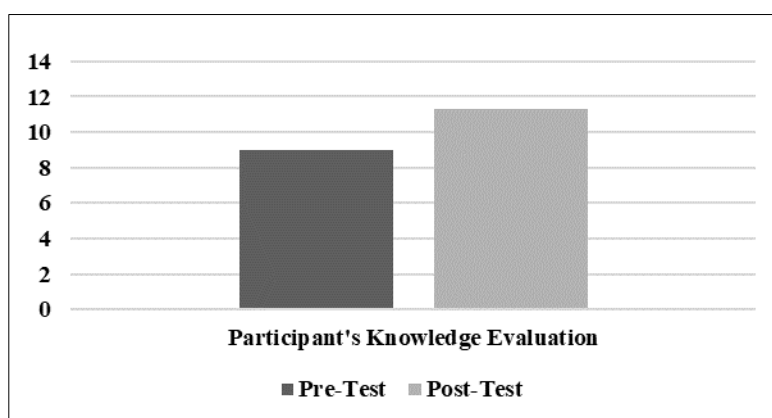


Figure 2 Participant's Knowledge Evaluation

3.3. Evaluation of Activities by Participants

Evaluation of activities by participants regarding timing found that no one felt that the activity time was inappropriate or very inappropriate. Most thought that the activity time was very appropriate, namely 38 people (95%) and 1 person (2.5%) was right. However, there was 1 person (2.5%) who thought that the timing of selecting activities was normal. Then, there was no evaluation regarding the choice of activity location which stated it was inappropriate. The reason for choosing this place is because this place has complete infrastructure and the beauty of the place.

Table 8 Evaluation of activities by participants based on time and place

Evaluation	Time	Place
Very inappropriate (1)	0 (0%)	0 (0%)
Inappropriate (2)	0 (0%)	0 (0%)
Just normal(3)	1 (2,5%)	0 (0%)
Appropriate (4)	1 (2,5%)	2 (5%)
Very appropriate (5)	38 (95%)	38 (95%)
TOTAL	40 (100%)	40 (100%)

4. Conclusion

The community service that was carried out at the Tegaldlimo Village Hall was attended by 40 participants representing health cadres and the elderly. with the proportion of participants all being women, with married status, income < Rp. 1,100,000.00 and very enthusiastic about participating in activities. Knowledge has increased significantly after carrying out this activity. The activity began with group exercise, delivering souvenirs in the form of medical equipment to the village, delivering material by resource persons and ending with anthropometric checks and blood glucose levels.

Suggestion

It is hoped that in the future, there will be more training and education as well as activities for the elderly to support the quality of knowledge, nutrition and lifestyle of the elderly, which play a very important role in improving the quality of life and minimizing morbidity in the elderly. Apart from that, monitoring the health of the elderly can be improved with routine health checks and filling out healthy elderly cards.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

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