

IMPROVING ELDERLY KNOWLEDGE ABOUT OBESITY PREVENTION THROUGH PHYSICAL ACTIVITY EDUCATION

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Abstract

Background: Obesity among the elderly is a growing health problem associated with increasing age and declining physical activity. **Objective:** This community service activity aimed to improve the elderly's understanding of the importance of physical activity in preventing obesity through direct education within the community setting. **Methods:** The method used was an interactive lecture supported by informative and easy-to-understand leaflets. The activity was conducted at Mushola Darul Hijrah and involved 12 elderly participants. **Results:** The evaluation results showed an increase in participants' knowledge regarding the definition of obesity, its causes, and the benefits of light exercises such as aerobics, walking, and stretching in maintaining an ideal body weight. **Conclusion:** The direct educational approach proved effective in raising awareness and encouraging the elderly to adopt an active and healthy lifestyle. Family support and the social environment were also identified as important factors in sustaining physical activity practices among the elderly.

Keywords: Elderly, Health Education, Obesity, Physical Activity, Prevention

Background

Elderly individuals are generally defined as people aged 50 years and above. Older adults are individuals who have entered old age, a stage characterized by various physiological changes such as decreased muscle mass, slower metabolism, and an increased risk of chronic diseases, including obesity, hypertension, and diabetes (3).

The elderly population in Indonesia has increased significantly in line with the rising life expectancy. According to Law Number 13 of 1998, elderly individuals are defined as those aged 50 years or older. Based on data from the Population Census (SUSPAS), there were more than 27 million elderly people in Indonesia in 2019. However, with increasing age, various health challenges emerge, including declining physical function, reduced quality of life, and a higher risk of non-communicable diseases such as hypertension and obesity.

Obesity is a condition characterized by excessive body fat accumulation that results in abnormal body weight and may negatively affect health. This condition is often caused by an imbalance between energy intake and energy expenditure, such as consuming diets high in fat

and sugar without adequate physical activity. Obesity has become a major health concern affecting all age groups, including the elderly population.

Obesity among the elderly is a common nutritional problem and is often associated with unhealthy dietary patterns (1). In addition, low awareness among older adults regarding the risks of obesity contributes to unhealthy behaviors. According to the Health Belief Model (Rosenstock et al., 2020), health-related behaviors are strongly influenced by an individual's perception of susceptibility to disease, the severity of the condition, the perceived benefits of preventive actions, and the barriers experienced in adopting such behaviors (5).

Based on the 2018 Basic Health Research (Riskesdas), the prevalence of obesity among the elderly in Indonesia reached 14.6%. Furthermore, data from the 2023 Indonesian Health Survey (SKI) reported that the national prevalence of obesity increased to 23.4%, while central obesity reached 36.8%. More specifically, the highest prevalence of central obesity was found in the 45–54 years age group (48%), followed by individuals aged 55–64 years (44.9%), 65–74 years (38.7%),

and 75 years and above (28.3%). In Lampung Province, the prevalence of central obesity was reported at 30.2% (2).

According to the health determinants theory proposed by H.L. Blum in (Marzuki et al., 2023), an individual's health status is influenced by four main factors: behavior (lifestyle), environment, health services, and genetic factors. In the context of obesity among the elderly, behavioral factors play a substantial role, particularly dietary habits and physical activity (4). Reduced physical activity among older adults is often overlooked as part of lifestyle changes that may negatively affect health.

A study conducted by (Wulandari et al., 2025) at the Baitussalam Community Health Center in Aceh Besar showed that although most elderly participants had adequate nutritional intake, no significant relationship was found between energy, carbohydrate, protein, or fat intake and the incidence of obesity among the elderly (7). These findings indicate that factors beyond nutritional intake, such as physical activity and body metabolism, should also be considered in addressing obesity in older adults.

Physical activity refers to any bodily movement produced by skeletal muscles that requires energy expenditure. Such activities may range from moderate to vigorous intensity. Physical activity plays an important role in maintaining the health and quality of life of the elderly. This was demonstrated by a study conducted in Sudimoro Village, Klaten, which found a significant relationship between physical activity and the quality of life among elderly individuals aged 60–69 years. Older adults with moderate to high levels of physical activity tended to have a better quality of life. Similarly, a study by Roslaini, Asniar, and Susanti (2022) involving elderly individuals with hypertension in North Aceh revealed that factors such as gender, family size, and risk of falls significantly influenced the level of physical activity among the elderly (6). High levels of physical activity were shown to reduce blood pressure, improve cardiac function, and prevent complications associated with chronic diseases.

In general, the purpose of this educational program was to help elderly individuals understand the importance of maintaining a healthy diet and engaging in regular physical activity. Through this initiative, it is expected that older adults will be able to prevent obesity and maintain better health and physical fitness,

thereby improving their comfort and quality of life during old age.

Method

This study This community service activity was conducted in the form of health education regarding the benefits of physical activity in preventing obesity among the elderly. The activity employed lecture and interactive question-and-answer methods as the primary educational approaches. The program was carried out on Friday, May 9, 2025, from 09:00 to 10:00 WITA at Mushola Darul Hijrah. A total of 12 elderly participants aged between 50 and 75 years attended the activity.

The implementation of the program consisted of several stages, namely pre-implementation, preparation, implementation, and closing. During the pre-implementation stage, the community service team obtained permission from the local village authorities and coordinated the activity plan with community representatives. This stage was intended to ensure the smooth implementation of the educational program and participant participation.

During the preparation stage, the team prepared educational materials and supporting equipment, including speakers, microphones, and banners. Venue arrangements and participant readiness were also organized prior to the activity. In addition, each team member prepared their respective roles and responsibilities to facilitate the educational session effectively.

The implementation stage began with an opening session, followed by an initial discussion to assess participants' knowledge regarding obesity and its health risks. Educational material concerning the importance of physical activity in preventing obesity was then delivered through lectures and interactive discussions. The session emphasized simple and practical forms of physical activity suitable for elderly individuals, including walking, stretching, and light exercise.

At the end of the activity, a closing session was conducted to conclude the educational program. Documentation of the activity was carried out through a group photo session involving both participants and the community service team.

Results and Discussion

Results

The community service activity entitled “The Role of Physical Activity: Effective Exercise for Preventing Obesity” was successfully conducted at Mushola Darul Hijrah. The program involved 12 elderly participants aged between 50 and 75 years who resided in the surrounding community area. The activity was implemented through direct educational counseling using lecture, discussion, and interactive question-and-answer methods supported by educational leaflets and banners.

At the beginning of the activity, an initial assessment was conducted through informal discussions and direct questioning to identify participants’ baseline knowledge regarding obesity and the importance of physical activity. The findings indicated that participants generally understood obesity only as a condition of excessive body weight without fully recognizing its causes, health risks, and prevention strategies. Several participants were also unable to explain the relationship between sedentary lifestyles, unhealthy dietary patterns, and the development of obesity-related diseases such as hypertension, diabetes mellitus, and cardiovascular disorders. In addition, participants demonstrated limited understanding regarding the role of regular physical activity in maintaining body metabolism and preventing excessive weight gain during old age.

The educational intervention was subsequently delivered by the community service team through face-to-face counseling sessions. Educational materials focused on the definition of obesity, risk factors contributing to obesity among the elderly, the health impacts of obesity, and the

importance of maintaining regular physical activity as a preventive strategy. The material also emphasized practical and age-appropriate physical activities that could be safely performed by elderly individuals, including elderly gymnastics, stretching exercises, walking, and other forms of light exercise. The educational content was delivered using simple and communicative language to ensure that participants could easily understand the information presented.

Throughout the educational sessions, participants showed high enthusiasm and active involvement. Participants actively participated in discussions, asked questions related to obesity and healthy lifestyles, and shared their personal experiences regarding eating habits, physical activity routines, and health complaints associated with aging. Several participants expressed that they rarely engaged in regular exercise due to fatigue, lack of motivation, or limited awareness regarding the importance of physical activity. However, after receiving explanations and examples of simple exercises suitable for older adults, participants



Figure 1. Presentation of Educational Material at Mushola Darul Hijrah



Figure 2. Leaflet/Educational Media Used

demonstrated increased interest and motivation to adopt healthier lifestyle behaviors.

The educational media used during the activity also contributed positively to participants' understanding. Leaflets containing concise information regarding obesity prevention, healthy dietary habits, and examples of light physical activities were distributed to all participants. These leaflets served as supporting educational tools that reinforced the verbal explanations delivered during the counseling sessions. Participants were able to review the material independently after the activity, which further supported information retention and comprehension. In addition, banners displaying key educational messages were installed at the activity venue to improve participants' visual engagement and strengthen the delivery of health promotion messages.

The interactive question-and-answer sessions provided participants with opportunities to clarify information and discuss challenges related to maintaining healthy lifestyles during old age. Participants commonly asked questions regarding suitable types of exercise for elderly individuals, recommended duration and frequency of physical activity, and dietary habits that could support obesity prevention. The community service team responded to these questions by providing practical recommendations adjusted to the participants' physical conditions and daily activities.

At the end of the educational intervention, an evaluation was conducted through direct questioning and interactive discussion to assess participants' understanding of the material presented. The evaluation results demonstrated a noticeable improvement in participants' knowledge regarding obesity prevention and the importance of physical activity. Almost all participants were able to correctly identify several causes of obesity, explain the benefits of regular physical activity, and mention examples of light exercises appropriate for elderly individuals. Participants also demonstrated improved awareness regarding the importance of maintaining balanced nutrition and active daily routines to support healthy aging.

The positive responses and active participation observed during the activity indicated that the educational intervention was effective in increasing participants' awareness and understanding regarding obesity prevention among the elderly. These findings suggest that direct educational counseling using simple

communication methods and supportive educational media can effectively improve health knowledge among elderly populations.

In addition, family support and social environment were identified as important factors influencing elderly individuals' willingness and ability to maintain regular physical activity. Several participants stated that encouragement from family members and participation in group-based physical activities increased their motivation to engage in healthier behaviors. Therefore, the involvement of family and community support systems may contribute significantly to the sustainability of healthy lifestyle practices among elderly individuals.



Figure 3. Group Photo of the Community Service Team and Participants

Overall, the implementation of this community service activity demonstrated that educational counseling regarding physical activity and obesity prevention could improve elderly participants' knowledge, awareness, and motivation to adopt healthier lifestyles. The activity also fostered positive interaction between the community service team and participants, creating a supportive educational environment that encouraged active participation and discussion throughout the program.

Discussion

The participants involved in this community service activity were elderly individuals aged between 50 and 75 years with diverse educational backgrounds and levels of

physical activity. Based on anthropometric measurements conducted by the Cempaka Community Health Center in April 2025, several participants were found to have body mass index (BMI) values above the normal range, indicating overweight and obesity conditions. These findings are consistent with previous studies reporting that aging is associated with physiological changes, including decreased muscle mass, reduced metabolic rate, and increased fat accumulation, all of which contribute to a higher risk of obesity among older adults (8).

Obesity in the elderly is a major public health concern because it increases the risk of chronic diseases such as hypertension, diabetes mellitus, cardiovascular disease, and metabolic syndrome. Aging-related reductions in physical activity and energy expenditure further exacerbate the accumulation of body fat. The World Health Organization (WHO) emphasizes that insufficient physical activity among older adults contributes significantly to functional decline, reduced quality of life, and increased morbidity (9). Therefore, promoting regular physical activity is considered an important strategy to support healthy aging and prevent obesity-related complications among elderly populations.

During the implementation of the educational activity, participants demonstrated high enthusiasm and active participation, particularly during the counseling sessions that utilized leaflets as educational media. The leaflet-based approach proved effective because the materials were designed with attractive visual elements, soft contrasting colors, and simple language that facilitated comprehension among elderly participants. This finding is supported by previous research showing that visual educational media, such as leaflets and booklets, can significantly improve health knowledge and understanding among older adults due to their simplicity, accessibility, and ability to be reviewed repeatedly at home (10).

The effectiveness of leaflet-based education in this activity may also be related to the characteristics of elderly individuals, who commonly experience declines in visual acuity, cognitive processing, and memory retention. Educational materials that combine concise written information with visual illustrations are therefore more suitable for this population. Participants were able to revisit the educational content independently after the counseling session, which likely strengthened their understanding of

obesity prevention and healthy lifestyle practices. The use of visual media has been widely recommended in elderly health education because it enhances participant engagement and facilitates better retention of information (11).

In addition, the active involvement of participants during discussion and question-and-answer sessions reflected increased interest and engagement in the learning process. Several participants shared their personal experiences related to unhealthy dietary habits, limited physical activity, and age-related health complaints. This interactive educational approach created a supportive environment that encouraged participants to express their concerns and seek clarification regarding obesity prevention strategies. Previous studies have demonstrated that participatory and interactive educational interventions are more effective in improving health awareness and behavioral motivation among elderly individuals compared to passive information delivery alone (12).

The educational materials emphasized the importance of engaging in regular and age-appropriate physical activity, including walking, stretching exercises, and elderly gymnastics. These activities are considered safe and practical for older adults because they can improve muscle strength, flexibility, balance, and cardiovascular fitness while minimizing the risk of injury. WHO guidelines recommend that older adults perform at least 150–300 minutes of moderate-intensity physical activity per week, combined with muscle-strengthening and balance-training activities, to maintain functional ability and reduce the risk of chronic diseases (9).

The findings of this activity are also consistent with studies reporting that regular physical activity contributes positively to body composition and metabolic health among elderly populations. Physical activity has been shown to reduce body fat accumulation, improve insulin sensitivity, maintain muscle mass, and decrease the risk of metabolic syndrome. Furthermore, physically active elderly individuals tend to have better physical fitness, functional independence, and quality of life compared to those with sedentary lifestyles (13).

Another important finding observed during the activity was the role of social and

family support in encouraging elderly individuals to adopt healthier lifestyles. Several participants reported that support from family members and participation in community-based activities increased their motivation to perform regular physical activity. Social support has been recognized as an important determinant of successful lifestyle modification among older adults because family encouragement and peer interaction may enhance adherence to healthy behaviors and reduce feelings of isolation (14). Community-based educational interventions therefore provide not only health information but also opportunities for social interaction and emotional support among elderly participants.

The results of this activity indicate that educational interventions tailored to the characteristics and limitations of elderly individuals can effectively improve health knowledge and awareness regarding obesity prevention. The use of simple language, visual educational media, and interactive communication methods created a learning environment that was comfortable and understandable for participants. Such approaches are particularly important in elderly populations because age-related cognitive and sensory changes may affect the ability to receive and process health information effectively.

Overall, this community service activity demonstrated that direct educational counseling regarding physical activity and healthy lifestyles was effective in improving elderly participants' understanding of obesity prevention. The positive responses and active engagement observed during the sessions suggest that community-based educational programs may contribute to increasing awareness, motivation, and healthy behavioral changes among elderly populations. Therefore, continuous health education programs focusing on balanced nutrition and regular physical activity should be encouraged as part of preventive strategies to reduce obesity and improve the quality of life among older adults.

Conclusion

This community service activity demonstrated that health education regarding physical activity was effective in improving elderly participants' knowledge and awareness about obesity prevention. Following the educational intervention conducted at Mushola Darul Hijrah, participants showed better understanding regarding the causes of obesity and the benefits of regular physical activity, including

walking, stretching, and elderly exercise.

The use of interactive lectures, discussions, and educational media such as leaflets and banners contributed positively to participants' comprehension and engagement during the activity. In addition, family and social support were identified as important factors in encouraging elderly individuals to maintain healthy lifestyle behaviors.

Therefore, continuous health education programs focusing on physical activity and balanced nutrition are recommended to support obesity prevention and improve the quality of life among elderly populations.

Bibliography

1. Anastasya G, Siregar FA, Ashar T. The effect of obesity, carbohydrate, and fat intake on the incidence of type 2 diabetes mellitus at the age of 30–50 years in Medan. 2024.
2. Widiya GA, Lusida N. Pengaruh konsumsi fast food terhadap risiko obesitas pada remaja di berbagai negara dan wilayah daerah. *J Kesehat Kedokt.* 2020;267–80. doi:10.62383/vimed.v2i2.1601.
3. Kruthkul K, Inthiraj A, Komindr S, Santiboon TT. Effectiveness of community-based lifestyle interventions for obesity management in the urban elderly. *Eur J Public Health Stud.* 2025;8(2). doi:10.46827/ejphs.v8i2.211.
4. Marzuki DS, Tahrin N, Sudirman NMSS, Athaya F, Arny SST, Lathifatunnisa, et al. Derajat kesehatan masyarakat. 2023.
5. Rosenstock IM, Strecher VJ, Becker MH. Social learning theory and the health belief model. *Sage Journals.* 2020.
6. Roslaini R, Asniar A, Susanti SS. Faktor-faktor yang berhubungan dengan aktivitas fisik lansia dengan hipertensi. *Qual J Kesehat.* 2022;16(2):102–8. doi:10.36082/qjk.v16i2.612.
7. Wulandari D. Pengaruh asupan gizi terhadap kejadian obesitas pada lansia di wilayah kerja Puskesmas Baitussalam, Aceh Besar. *J Nutr Sci.* 2025;11.
8. Suryadinata RV, Wirjatmadi B, Adriani M, Lorensia A. Effect of age and weight on physical activity. *J Public Health Res.* 2020;9(2):1840.
9. World Health Organization. WHO guidelines on physical activity and

- sedentary behaviour. Geneva: World Health Organization; 2020.
10. Arfini L, Wahyuningsih U. Education regarding physical activity to control obesity in pre-elderly and elderly using booklet media. *Jurnal Bakti Masyarakat Indonesia*. 2022;5(3):565–573.
 11. World Health Organization. Promoting physical activity for older people: a toolkit for action. Geneva: World Health Organization; 2023.
 12. McLaughlin M, et al. A scoping review of physical activity interventions for older adults. *Int J Behav Nutr Phys Act*. 2021;18:82.
 13. Hou X, Tang ZY, Liu Y, Liu YJ, Liu JM. Epidemiological study on the dose–effect association between physical activity volume and body composition of the elderly in China. *Int J Environ Res Public Health*. 2020;17(17):6365.
 14. Franco MR, Tong A, Howard K, et al. Older people’s perspectives on participation in physical activity: a systematic review and thematic synthesis of qualitative literature. *Br J Sports Med*. 2021;55(22):1268–1276.