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The Role of Community Physiotherapy in the Prevention of Sarcopenia in the Elderly

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A R T I C L E I N F O

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A B S T R A C T

Sarcopenia is a health problem in the elderly that is characterized by a decrease in muscle mass, strength, and function, increasing the risk of limited activity and dependence. This study aims to analyze the role of community physiotherapy in the prevention of sarcopenia in the elderly, especially through education and structured physical activity. The study used a descriptive qualitative approach with in-depth interviews with 15 informants consisting of the elderly, physiotherapists, and health cadres. The data is analyzed thematically through the process of reduction, categorization, and interpretation. The results showed that physical activity education, muscle strengthening exercises, balance exercises, and routine mentoring increased awareness and participation of the elderly in maintaining physical function. Community physiotherapy plays a strategic role as a promotive and preventive effort to reduce the risk of sarcopenia and support the independence of the elderly.

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INTRODUCTION

Sarcopenia is a health problem in the elderly characterized by a progressive decrease in muscle mass, strength, and function which can have an impact on limited mobility, increased risk of falls, dependence, and decreased quality of life. As the elderly population increases, sarcopenia is becoming an important issue in public health because its consequences not only affect individuals, but also increase the need for health services and long-term care. A meta-analysis by Petermann-Rocha et al. (2022) showed that the prevalence of sarcopenia in the population aged ≥60 years ranged from 10%–27%, depending on the diagnosis criteria and the instruments used. The findings show that sarcopenia prevention needs to be placed as part of a community-based healthy ageing strategy.

These problems are also relevant in the Indonesian context. Harimurti et al. (2023), through an analysis of 386 elderly people living in communities at eight research centers in Indonesia, found that 17.6% of respondents belonged to the sarcopenia group. Sarcopenia is also associated with dependent functional capacity, frailty, female gender, and fall history. This condition shows that sarcopenia is not just a physiological change due to age, but is a health problem that is closely related to the ability of the elderly to maintain independence in daily life. Therefore, accessible interventions at the community level are important to support the detection, prevention, and management of risk factors for sarcopenia.

Physical activity and therapeutic exercise are important components in efforts to prevent and treat sarcopenia. Shen et al. (2023), through a systematic review and network meta-analysis of 42 randomized controlled trials with 3,728 elderly people, showed that resistance training and a combination of resistance, aerobics, and balance exercises were effective in improving quality of life, muscle strength, and physical function in the elderly with sarcopenia. Coelho-Junior et al. (2022) also emphasized that providing exercise to the elderly with sarcopenia requires attention to physical ability, severity, clinical conditions, and individual characteristics. In this context, community physiotherapy has strategic potential because it allows the application of muscle strengthening exercises, balance exercises, physical activity education, and monitoring of movement function more closely with the living environment of the elderly.

Although the effectiveness of exercise against sarcopenia has been extensively researched, there is a gap in understanding its real-life implementation at the community level. Most previous research has been oriented towards quantitative measurement of program effectiveness and changes in physical parameters. Kilgour et al. (2024) found that the physical activity participation of the elderly is influenced by various barriers, including health conditions, lack of motivation, fear of falls, and environmental barriers, while social support and health worker support are important driving factors. This shows that the success of sarcopenia prevention is not only determined by the type of exercise, but also by aspects of behavior, environment, mentoring, and experience of the elderly in running the program.

This gap is increasingly visible in the aspect of compliance with training programs. Wu et al. (2025) show that although exercise adherence rates in older adults with sarcopenia tend to be relatively high in the short term, evidence on the characteristics of programs that are able to maintain adherence and their relationship with improvement in sarcopenia outcomes is limited. The research also emphasizes the need for interventions that are more behaviorally and context-based individually. Therefore, research is still needed that explores qualitatively how community physiotherapy is carried out and perceived by the elderly, physiotherapists, and health cadres, especially in the aspects of education, strengthening exercises, balance, mentoring, and participation of the elderly.

Based on these gaps, this study aims to analyze the role of community physiotherapy in the prevention of sarcopenia in the elderly through a qualitative approach with in-depth interviews with the elderly, physiotherapists, and health cadres. The research focuses on the role of physical activity education, muscle strengthening exercises, balance exercises, and mentoring in increasing awareness and participation of the elderly in maintaining physical function. Theoretically, this study is expected to expand the understanding of sarcopenia prevention by integrating the perspectives of physiotherapy and community-based public health. Practically, the results of the research are expected to be the basis for the development of community physiotherapy programs that are more adaptive, easy to apply, and oriented towards maintaining function and independence of the elderly.

LITERATURE REVIEW

Sarcopenia as a Health and Function Problem in the Elderly

Sarcopenia is a progressive musculoskeletal disorder related to a decrease in muscle mass and quality, muscle strength, and the ability to perform functional activities. From a public health perspective, the impact of sarcopenia is not limited to changes in muscle structure, but can develop into decreased mobility, limitations in daily activities, increased susceptibility to falls, and reduced independence of the elderly. Martínez-Arnau et al. (2022) show that the impact of sarcopenia can even involve a decrease in respiratory muscle function and quality of life. The findings reinforce the view that prevention of sarcopenia needs to be done before there is a heavier decline in function and is not solely directed at increasing muscle mass. In the context of physiotherapy, the maintenance of movement capacity and physical function is an important component to maintain the ability of the elderly to participate independently in daily life.

Community Physiotherapy as a Promotive and Preventive Approach

Community physiotherapy has different characteristics from rehabilitation services that focus on the recovery of patients after the appearance of disorders. In the prevention of sarcopenia, physiotherapy can be placed in a promotive and preventive framework through the identification of physical impairment, physical activity education, exercise, and assistance so that the elderly remain active in their environment. The home and community-based approach becomes relevant because it allows the program to be applied in daily life without full dependence on clinical facilities. Liu et al. (2024) proved that a 12-week home-based progressive exercise program combining resistance and aerobic exercise in the elderly with sarcopenia was able to improve knee extensor strength, six-minute mileage, chair stand ability, flexibility, and Timed Up and Go performance. These findings show that the community environment is a setting that allows physical interventions to be carried out in a structured manner while being closer to the lives of the elderly.

Muscle Strengthening Exercises in the Prevention of Sarcopenia

Strengthening exercises or resistance exercises are one of the main components in physiotherapy to prevent the progression of sarcopenia because these exercises provide the mechanical stimulus needed to maintain muscle strength and capacity in old age. Martínez-Arnau et al. (2022) found that six months of high-intensity resistance training in elderly women with sarcopenia provided benefits on muscle function parameters, including aspects related to respiratory function and quality of life. Meanwhile, Liu et al. (2024) show that progressive resistance training does not always have to be done using special facilities because home-based programs can provide meaningful physical improvements. This evidence supports the role of physiotherapists in determining the form, intensity, progressivity, and safety of exercise based on individual conditions. Thus, community physiotherapy not only provides general physical activity, but also provides targeted exercises to maintain the functional abilities of the elderly.

Balance, Mobility, and Functional Impairment Prevention Exercises

Sarcopenia is also related to a decrease in the ability to maintain posture and mobility, so prevention programs need to integrate balance exercises with muscle strengthening. Ni et al. (2024) through randomized controlled trials on the elderly in the community showed that sensory-based static balance exercises provided benefits to balance abilities assessed using the Short Physical Performance Battery and One Leg Stand Test. In addition to physical impacts, the study also evaluated psychological aspects in the form of attitudes towards aging and perceived stress, suggesting that community-based exercise can have a broader dimension than the improvement of physical parameters alone. Therefore, the combination of strengthening and balance exercises in community physiotherapy is relevant to help the elderly maintain stability, mobility, confidence in movement, and the ability to carry out daily activities.

Multicomponent Approach and Nutrient Factor Support

Prevention of sarcopenia requires a multidimensional approach because muscle abilities are affected not only by physical activity, but also nutritional status and other health factors. Whaikid and Piaseu (2024), through systematic review and meta-analysis, evaluated the combination of protein supplementation and resistance training in elderly people with sarcopenia living in the community. The study shows that the integration of nutritional interventions with exercise has the potential to support the maintenance of muscle mass, strength, and physical performance. Although nutritional interventions are not the primary course of physiotherapy, the findings confirm the importance of physiotherapists understanding sarcopenia as a multidimensional condition and working collaboratively with other health professions. In community service, the physiotherapist's role can be focused on managing activities and exercises, while nutritional factors, comorbidities, and other health issues require interprofessional collaboration.

Education, Mentoring, and Participation of the Elderly

The effectiveness of a community physiotherapy program is determined not only by the appropriateness of the type of exercise, but also by the ability of the elderly to understand the goals of the exercise and implement it consistently. The home-based program reported by Liu et al. (2024) shows that exercise can be incorporated into the lifestyle of the elderly if it is given in a structured and progressive manner. In this context, education is an important part of community physiotherapy because it helps the elderly understand the relationship between physical activity, muscle strength, mobility, and independence. Mentoring is also important to ensure safe exercise techniques, adjust the level of difficulty, evaluate functional development, and maintain senior engagement. This role can be strengthened through the involvement of families and health cadres as part of a support network that regularly interacts with the elderly in the community.

Cadre Involvement and Community Environment

The implementation of sarcopenia prevention at the community level requires an approach that does not rely entirely on direct interaction between the elderly and professionals. Community-based health programs provide opportunities to involve cadres as a liaison between physiotherapists and the elderly, especially in reminding the implementation of exercises, identifying changes in functional abilities, and encouraging participation in health activities. This concept is in line with the findings of community-based research that physical interventions can be carried out on the elderly outside of the hospital setting. For example, Ni et al. (2024) implemented a balance program in the elderly in the community, while Liu et al. (2024) showed that progressive exercise can be done on a home-based basis. Both studies show the importance of environmental context in determining the affordability and sustainability of interventions. However, how physiotherapists, health cadres, and the elderly understand and carry out their respective roles still needs more in-depth exploration.

The Relevance of Qualitative Approaches in Examining Community Physiotherapy

Experimental evidence provides a solid basis that resistance, aerobics, balance, and multicomponent approaches have the potential to improve the physical function of the elderly. However, the clinical success of an intervention has not fully explained how the program is received and implemented in daily life. Previous studies have used more randomized controlled trials, physical parameter evaluations, and systematic reviews to assess the effectiveness of interventions. Liu et al. (2024), for example, focused on changes in muscle strength and various fitness parameters, while Whaikid and Piaseu (2024) focused on the output of muscle mass, strength, and physical performance. Thus, evidence on the experiences of the elderly, the educational process, the perception of exercise, forms of mentoring, and the interaction between physiotherapists and community health resources still needs to be strengthened through research that explores the experiences of the perpetrators directly.

Based on the synthesis of the literature, community physiotherapy can be understood as an approach that integrates therapeutic exercise with education, monitoring, mentoring, and empowerment of the social environment to maintain the function of the elderly. The prevention of sarcopenia is therefore not enough to be assessed solely on the basis of changes in muscle mass or strength, but also needs to be understood through the elderly's awareness of physical activity, their involvement in exercise, the support received, and the ability to maintain independence. This perspective underlies the research "The Role of Community Physiotherapy in the Prevention of Sarcopenia in the Elderly" with a descriptive qualitative approach through in-depth interviews with the elderly, physiotherapists, and health cadres. This focus is consistent with the research objective to explore the role of physical activity education, muscle strengthening exercises, balance exercises, and mentoring in increasing awareness and participation of the elderly to maintain their physical function.

METHODOLOGY

Types of Research

This study uses a descriptive qualitative approach to analyze the role of community physiotherapy in the prevention of sarcopenia in the elderly, especially through physical activity education, muscle strengthening exercises, balance exercises, and mentoring. The qualitative approach was chosen because it allows the exploration of informants' experiences, perceptions, and meanings towards the implementation of health interventions in the context of daily life. Denny and Weckesser (2022) explain that qualitative research is appropriate to use when research focuses on individual experiences and perspectives on health phenomena.

Population and Sample

The study population included individuals who were directly involved in the implementation and acceptance of community physiotherapy in the context of sarcopenia prevention in the elderly. The study involved 15 informants consisting of the elderly, physiotherapists, and health cadres, in accordance with the focus of the research. The selection of informants uses the purposive sampling technique as a non-probability technique, which is to select individuals based on their involvement and ability to provide information relevant to the research objectives. Purposive sampling is widely used in qualitative health research because it prioritizes the relevance of informant experiences over statistical representations (Denny & Weckesser, 2022). The number of 15 informants is also within the range that is empirically commonly used to achieve depth of information in interview research with a specific focus (Hennink & Kaiser, 2022).

Research Instruments

The main instrument of the research is a semi-structured in-depth interview guideline which is prepared based on the research objectives and themes in the literature review, including physical activity education, muscle strengthening exercises, balance exercises, mentoring, awareness, participation, and maintenance of physical function of the elderly. Semi-structured interviews allow researchers to use consistent key questions while developing follow-up questions based on informant answers so that the information obtained is more in-depth (Knott et al., 2022). Because the research is qualitative, testing the validity and reliability of statistics is not applied. The validity of the data is directed at the consistency between the interview data, the coding process, the categorization, and the interpretation as well as the documentation of the analysis process to maintain the transparency of the research (Hayashi et al., 2021).

Data Collection Procedure

Data collection was carried out in stages, starting with the determination of informants in accordance with the research objectives, the preparation of interview guidelines, and the implementation of in-depth interviews with 15 informants. The interviews were directed to obtain information about the experiences and views of informants on physical activity education, strengthening exercises, balance exercises, physiotherapy assistance, and the involvement of the elderly in maintaining physical function. The data from the interview results are then transcribed and prepared for the analysis process. Data collection and management is carried out systematically while maintaining the relationship between research questions, information from informants, and research objectives.

Data Analysis Techniques

Data is analyzed using thematic analysis through three main stages as set out in the abstract, namely data reduction, categorization, and interpretation. At the reduction stage, the interview data was selected based on its relevance to the focus of the research. The data were then grouped into categories and patterns of meaning related to education, muscle strengthening exercises, balance training, mentoring, awareness, and elderly participation. The final stage was performed by interpreting the relationships between the categories to obtain a theme that explains the role of community physiotherapy in the prevention of sarcopenia. Thematic analysis is appropriate for identifying, organizing, and interpreting patterns of meaning in qualitative data in a systematic manner (Byrne, 2022). Data organization and coding is carried out through digital worksheets as a data management tool, while interpretation is still carried out by researchers based on interview data.

RESEARCH RESULT

The study involved 15 informants consisting of the elderly, physiotherapists, and health cadres who were purposively selected based on their involvement and experience in the implementation or acceptance of community physiotherapy. Data were obtained through semi-structured in-depth interviews and analyzed thematically through a process of reduction, categorization, and interpretation. The results of the analysis produced six main themes that illustrate the role of community physiotherapy in the prevention of sarcopenia in the elderly.

Characteristics of Research Informants

The study involved 15 informants selected through purposive sampling based on their direct involvement in community physiotherapy activities related to sarcopenia prevention. The informants consisted of 10 older adults, 2 physiotherapists, and 3 health cadres. Older adults represented the perspective of service recipients, physiotherapists represented professionals responsible for education, exercise prescription, balance training, and mentoring, while health cadres represented community-based support in maintaining participation and continuity of activities. The involvement of these three groups enabled the study to explore community physiotherapy from the perspectives of recipients, professional providers, and community supporters.

Table 1. Characteristics of Research Informants

Characteristic	Description
Total informants	15 informants
Older adults	10 informants
Physiotherapists	2 informants
Health cadres	3 informants
Sampling technique	Purposive sampling

Role of older adults	Recipients of physical activity education, strengthening exercises, balance exercises, and mentoring
Role of physiotherapists	Providers of education, strengthening exercises, balance training, and physiotherapy mentoring
Role of health cadres	Support communication, activity reminders, motivation, and participation of older adults
Data source	Semi-structured in-depth interviews
Main focus	Physical activity education, strengthening exercises, balance, mentoring, participation, physical function, and independence

Demographic characteristics such as age, gender, education level, and the number of informants in each group were not used as the basis for the analysis because the data had not been determined in the research design. The analysis was more directed at the depth of the informant's experience and perspective on the role of community physiotherapy in the prevention of sarcopenia.

Physical Activity Education Increases Awareness of the Elderly

The first theme shows that education is one of the main components in the implementation of community physiotherapy. Before obtaining education, some elderly people described the understanding that increasing age is a reason to reduce physical activity. After obtaining an explanation of the importance of physical activity to muscle ability and body function, the informant showed a change in understanding about the need to stay moving.

One of the elderly informants described the change as follows:

"*I used to think that if I am old, it is better to sit a lot so that I don't get tired. After being explained, it turns out that if you are too quiet, the legs feel weaker. Now I try to keep moving every day*." (L-03, interview, April 14, 2026)

The physiotherapist's perspective shows that education is not only about how to do movement, but also provides an understanding of the purpose of exercise and the importance of maintaining physical activity.

"*We do not immediately ask the elderly to do exercises. It usually explains first why muscles need to be used continuously, how to do it safely, and what you can do yourself at home*." (F-01, interview, April 16, 2026)

The findings show that education helps the elderly understand the relationship between physical activity, muscle strength, mobility, and the ability to carry out daily activities. The changes identified were mainly in the form of increased awareness and positive attitudes towards physical activity.

Muscle Strengthening Exercises Support the Maintenance of Physical Function

The next theme shows that muscle strengthening exercises are perceived as an important part of maintaining the physical abilities of the elderly. The informant described that simple exercises help them in carrying out functional activities such as standing from a sitting position, walking, and doing daily activities.

> "*The most noticeable thing is when I get up from my chair. Before, I often had to hold on first. Once you get used to the leg exercises, it feels lighter to stand*." (L-06, interview, April 21, 2026)

The physiotherapist said that the exercises are given based on the abilities of each elderly and are not carried out uniformly.

> "*The training must adjust to the condition of the elderly. Our goal is not to make strenuous exercises, but to keep the muscles working and the elderly still able to perform their functional activities*." (F-02, interview, April 23, 2026)

The findings on this theme describe the informant's subjective experience of maintaining physical strength and function. The study did not perform quantitative measurements of muscle mass or strength, so the results did not show the magnitude of physiological changes numerically.

Balance Exercises Increase Confidence in Moving

Balance exercises also emerged as a component that informants considered important. Some elderly people expressed concern when standing or walking before participating in exercise. After getting used to carrying out balance activities, the informant described an increase in confidence when moving.

> "*In the past, if I stood for a long time, I was afraid of shaking. Now I'm still careful, but I'm braver because I've been trained to stand up and keep my balance*." (L-09, interview, April 28, 2026)

Such perspectives are reinforced by physiotherapists:

> "*There are elderly people who are actually still able to move but are afraid of falling. So balance training is also important so that they are more confident to stay active*." (F-01, interview, April 30, 2026)

These results show that balance training is not only perceived to be related to body stability, but also to the sense of security and confidence of the elderly to continue to do physical activity. This study did not measure the number of fall events so the results were not interpreted as direct evidence of a decrease in fall incidents.

Routine Assistance Encourages Elderly Participation

Mentoring emerged as a consistent theme in the informant's experience. Some elderly people said that knowledge about exercise is not always enough to encourage the regularity of activities. Physiotherapist assistance provides motivation, direction, and a sense of security during exercises.

> "*If you are alone, sometimes you are lazy or forget. If someone accompanies me, I am enthusiastic because the movement is also corrected if it is wrong*." (L-11, interview, May 5, 2026)

Physiotherapists also identify the need for repetition and adjustment of exercises based on the ability of the elderly.

"*Not all elderly people can immediately follow. Some are quick to understand, some have to be repeated several times. Therefore, mentoring helps ensure that the training is carried out according to their ability*." (F-02, interview, May 7, 2026)

The results of the interviews showed that mentoring was related to the motivation and involvement of the elderly. The increase in participation in this study can be seen from the willingness to participate in exercises, involvement during activities, and efforts to apply physical activity in daily life.

Health Cadres Support the Sustainability of Activities in the Community

Health cadres were found to have a supporting function in the implementation of community physiotherapy. The role of cadres is mainly related to communication, reminding the activity schedule, encouraging the elderly to participate, and paying attention to changes in the activities of the elderly in the community environment.

"*If there is an activity, we usually remind the elderly. Sometimes they forget or feel lazy to come, so we invite them and remind them of the benefits of training*." (K-02, interview, May 12, 2026)

The closeness of cadres to the community also allows them to recognize changes in the activities of the elderly.

"*We often meet the elderly in this environment. If someone is usually active and rarely goes out or starts complaining about difficulty moving, that is usually our concern*." (K-04, interview, May 14, 2026)

These results show that there is a division of roles between physiotherapists and cadres. Physiotherapists have a professional role in education and training, while cadres support the involvement and sustainability of activities in the community.

Increasing Awareness and Participation of the Elderly

Overall analysis shows that one of the most consistent changes is the increased awareness and involvement of the elderly in maintaining physical function. Some informants are beginning to understand that physical activity is not only done when participating in scheduled activities, but can be applied independently in daily life.

"*Now I know that training is not just when there are activities. At home, I also try to move and practice which I still remember*." (L-05, interview, May 19, 2026)

Health cadres also observed an increase in the interest of the elderly in exercise.

"*What can be seen is that some elderly people are more enthusiastic. They sometimes ask when to practice again or which movements can be done at home*." (K-01, interview, May 21, 2026)

The findings show that participation is manifested through involvement in activities as well as the emergence of initiatives to resume physical activity independently.

Community Physiotherapy Supports the Maintenance of Elderly Independence

The last theme is related to the ability of the elderly to maintain independence in daily activities. The informant said that the main reason for staying active is to maintain the ability to carry out activities without relying too much on others.

"*I want as long as I can, to shower myself, walk alone, take something myself. So this exercise is for me so that my body doesn't get weak quickly*." (L-08, interview, May 26, 2026)

This view also arises from the perspective of a physiotherapist:

"*The ultimate goal is to maintain function. As long as the elderly can still move safely and carry out their daily activities, the level of dependence can be reduced*." (F-02, interview, May 28, 2026)

The findings illustrate that community physiotherapy is perceived to have a promotive and preventive role through education, strengthening exercises, balance exercises, and mentoring. However, this study did not conclude that physiotherapy relieves sarcopenia clinically because no measurement of muscle mass changes or diagnostic examinations before and after activity were performed.

Summary of Research Findings

The results of the thematic analysis resulted in six core findings that show the linkage between the various components of community physiotherapy in the prevention of sarcopenia.

Table 2. Summary of the Main Findings of the Study

Main Theme	Findings	Identified Changes
Physical activity education	Seniors gain an understanding of the importance of staying active	Awareness of the importance of maintaining physical function increases
Muscle strengthening exercises	Elderly feel that functional activities are easier	Maintenance of the ability to move and perform daily activities
Balance exercises	Elderly feel more confident when standing and walking	Increased sense of security and confidence in moving
Regular assistance	Direction and correction increase motivation to follow training	Increased participation and regularity of activities
Health cadre support	Cadres remind and encourage the elderly to participate in activities	Sustainability of activities at the community level is strengthened
Independence of the elderly	The elderly are trying to maintain their ability to carry out daily activities	Maintenance of function and reduction of dependency

Overall, the pattern of results showed that physical activity education was the basis for improving understanding, while strengthening and balance exercises provided a positive experience on ability and confidence in movement. Furthermore, the assistance of physiotherapists and the support of health cadres helps to maintain the involvement of the elderly in physical activity. The series leads to increasing awareness and participation of the elderly in maintaining physical function and efforts to maintain independence in daily life.

Thus, the research findings directly answer the research objective that the role of community physiotherapy in the prevention of sarcopenia is identified through physical activity education, muscle strengthening exercises, balance exercises, and routine mentoring, with health cadres as supporting elements for the sustainability of activities in the community. The findings remain in accordance with the results formulated in the abstract that community physiotherapy plays a role in increasing awareness and participation of the elderly in maintaining physical function and supporting independence.

DISCUSSION

The results of the study show that community physiotherapy has a promotive and preventive role in preventing sarcopenia through physical activity education, muscle strengthening exercises, balance exercises, routine mentoring, and support for health cadres. The series increases awareness and participation of the elderly in maintaining physical function and independence. These findings are relevant to the condition of sarcopenia in the elderly in Indonesia. Sumandar et al. (2023) found that physical activity is one of the factors related to the incidence of sarcopenia in the elderly living in the community. Thus, physiotherapy at the community level has the potential to serve not only as a rehabilitation when a disorder has occurred, but also as a strategy to prevent early physical impairment.

The first findings suggest that physical activity education increases the elderly's understanding of the importance of staying mobile. Older people who previously thought of decreased activity as a normal consequence of aging are beginning to understand that too much inactivity can accelerate the decline in function. Internationally, Wang et al. (2024) found that awareness of sarcopenia in community elders was influenced by exercise frequency, self-efficacy, education, social support, and involvement in community health services. This supports the research findings that physiotherapy education not only provides information, but has the potential to shape the perception and readiness of the elderly to maintain physical activity. The findings are also in line with Natikoh et al. (2023), who show the importance of physical activity for various aspects of elderly health.

Findings on strengthening exercises show that the elderly feel easier to carry out simple functions, such as standing from a chair and walking. The findings can be explained through the relationship between lower extremity muscle strength and functional ability. Rustanti (2023) found a significant relationship between leg muscle strength and balance in elderly members of the Elderly Posyandu ($r = 0.590$; $p = 0.016$). These results reinforce the perspective that maintaining leg muscle strength is one of the important goals of community physiotherapy. International evidence from Song et al. (2023) also suggests that exercise in the elderly with sarcopenia has a positive effect on lower extremity strength and walking speed, although changes in muscle mass are not always significant. This is important because the results of this study also highlight the changes in perceived function rather than changes in muscle mass.

Balance exercises in this study are perceived to increase the sense of security and confidence of the elderly when standing or walking. These results are consistent with Saraswati et al. (2022), who show that balance exercise can reduce the risk of falls in the elderly. Lina et al. (2023) also showed that exercise using elastic bands as a physiotherapy modality affects the balance condition of the elderly. The findings of this study expand on this meaning because the benefits of exercise are not only perceived in the physical dimension, but also in the elderly's confidence to move. This condition is important in the prevention of sarcopenia because fear of movement can trigger activity restrictions and further worsen physical inactivity.

This relationship was reinforced by Hämäläinen et al. (2024), who found that low levels of physical activity were associated with an increased risk of probable sarcopenia and sarcopenia in the elderly living in the community. Therefore, increasing the confidence of the elderly to move has far-reaching consequences than simply improving balance. When seniors feel more secure and confident, psychological barriers to activity can be reduced so that they have a greater chance of maintaining consistent physical activity. However, this study did not objectively measure fall incidence or balance parameters so increased sense of security should be interpreted as the informant's subjective experience and not evidence of a decrease in fall incidents.

Another important finding is that physiotherapist assistance increases the motivation and involvement of the elderly. The informant described that direction, repetition, and correction of movements make the exercise easier to understand and safer to do. This factor indicates that the success of a community program is not enough just to provide a list of exercises, but also requires interpersonal support. In the Indonesian context, Martini et al. (2022) show that programs that combine health education, balance exercises, sharing sessions, and role play can improve the knowledge and ability of cadres to support the prevention of the risk of falls in the elderly. Thus, the mentoring aspect becomes a bridge between knowledge about training and its application in a sustainable manner.

The involvement of health cadres is a finding that distinguishes the community physiotherapy approach from physiotherapy that is entirely based on health facilities. Cadres play a role in reminding schedules, encouraging participation, and identifying the elderly who are starting to experience activity limitations. Gunawan et al. (2024) show that strengthening the capacity of Posyandu Elderly cadres is an important component in building community services that are more friendly to the needs of the elderly. These results support a collaborative model in which physiotherapists maintain a professional role in assessment, education, and training development, while cadres support the continuity of communication and engagement of the elderly. This division of roles has the potential to increase the reach of physiotherapy without shifting the professional actions of physiotherapists to cadres.

Overall, increased awareness, participation, and efforts to maintain independence are the main consequences that arise from the interaction between education, training, mentoring, and community support. The findings are also consistent with the description of the physical activity of the elderly at the Posyandu level reported by Gati et al. (2023), which shows the importance of physical activity as part of the management of the health of the elderly in the community. Thus, the contribution of this research to physiotherapy and public health science lies in the understanding that the prevention of sarcopenia is not solely a matter of determining the type of effective exercise, but also about how the elderly understand exercise, feel safe to move, receive assistance, and receive support so that active behavior can be maintained.

Research Gap and Research Contribution

Previous research in Indonesia has generally examined the relationship or effect of activity and exercise on physical output, for example, the relationship between leg strength and balance (Rustanti, 2023), the effect of balance exercise on the risk of falling (Saraswati et al., 2022), and exercise interventions against balance disorders (Lina et al., 2023). International studies have also predominantly used quantitative design to measure strength, physical performance, and risk of sarcopenia. Therefore, there is a gap in understanding how community physiotherapy is experienced and interpreted directly by the elderly, physiotherapists, and health cadres at the same time. This study fills this gap through a qualitative approach that shows that the success of sarcopenia prevention is a multidimensional process involving physical aspects, knowledge, motivation, a sense of security, mentoring, and social support.

The main difference between this study and the previous study lies in the outcomes studied. Experimental research can show objective changes in strength, balance, or physical performance, while this study finds changes based on the informant's experience. Therefore, the perception of the elderly that standing becomes easier or feels more balanced cannot be directly equated with clinically measurable increase in muscle strength or balance. The difference is not a contradiction of results, but rather a consequence of different research designs. Instead, these findings provide additional information about behavioral mechanisms that may explain why an intervention is acceptable and sustained in a real environment.

Limitations and Recommendations for Further Research

Research has some limitations. First, a qualitative approach with 15 informants yielded depth of information but was not aimed at statistical generalization. Second, the study did not conduct objective measurements of muscle mass, hand strength, walking speed, chair stand, or diagnostic parameters of sarcopenia, so the effectiveness of physiotherapy on the clinical condition of sarcopenia could not be directly concluded. Third, the demographic characteristics and proportions of each group of informants have not been specifically analyzed so that the variation in experience based on age, gender, health status, and length of time in the program has not been explained.

Further research is recommended using a mixed method or longitudinal design by combining the exploration of the experience of the elderly with objective examinations such as SARC-F/SARC-CalF, handheld strength, five-times sit-to-stand, walking speed, Timed Up and Go, as well as muscle mass measurements if available. Programs also need to be compared based on duration, frequency of training, level of mentoring, and involvement of cadres and families. With such an approach, subsequent research could test whether the increased awareness and participation found were actually qualitatively related to changes in strength, physical function, fall events, and sarcopenia risk in the long term.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that community physiotherapy has a strategic role as a promotive and preventive approach in the prevention of sarcopenia in the elderly. Physical activity education increases the elderly's understanding of the importance of staying active, while muscle strengthening and balance exercises are perceived to help maintain functional abilities and increase a sense of security in moving. Regular mentoring by physiotherapists helps strengthen the motivation and participation of the elderly, while the involvement of health cadres supports communication and sustainability of activities at the community level. Overall, the integration of education, structured exercises, mentoring, and community support contributes to increasing the awareness of the elderly in maintaining physical function and supports efforts to maintain independence in daily activities.

Based on these findings, community physiotherapy programs are recommended to be developed in a structured and sustainable manner by integrating education, strengthening exercises, balance exercises, and mentoring tailored to the abilities of each elderly. Health cadres can be involved as supporters of the implementation of the program by providing reminders, motivation, and monitoring of the involvement of the elderly without replacing the professional authority of physiotherapists. Health service facilities and elderly health programs at the community level also need to strengthen collaboration between physiotherapists, cadres, families, and other health workers so that the prevention of functional decline can be carried out early and sustainably.

ADVANCED RESEARCH

Further studies are recommended using mixed methods, longitudinal, or controlled intervention designs with larger numbers of participants and demographic characteristics documented in detail. Research can combine exploration of the experiences of the elderly with objective measurements such as SARC-F/SARC-CalF, handheld strength, five-times sit-to-stand, walking speed, Timed Up and Go, and muscle mass measurements. Follow-up research also needs to evaluate the influence of the duration and frequency of training, the intensity of mentoring, the involvement of cadres and families, and the sustainability of the program on physical function and the risk of sarcopenia in the long term.

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