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INTEGRATED EDUCATION AND SCREENING PROGRAM: PREVENTING FRAILTY RISK AND PROMOTING ELDERLY HEALTH

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ABSTRACT

Aging increases the risk of frailty and metabolic disorders among older adults, which may reduce physical, mental, and social functioning and accelerate disability. This Community Service Program (Pengabdian kepada Masyarakat/PkM) at the Toraja Church Congregation in Tangerang aimed to improve older adults' awareness and knowledge regarding frailty prevention through health education and integrated health screening. In addition, this program also aimed to identify the health conditions of older adults, including anthropometric status, metabolic conditions, blood pressure, physical strength, and frailty levels as part of early detection and prevention of frailty progression. This activity is expected to support the improvement of quality of life and independence among older adults as a contribution to achieving the Sustainable Development Goals (SDGs), particularly SDG 3 on good health and well-being. The methods included screening for fasting blood glucose, cholesterol, uric acid, vital signs, body mass index (BMI), muscle mass, mid-upper arm circumference (MUAC), calf circumference, handgrip strength, and frailty assessment using the Clinical Frailty Scale, followed by education through modules, presentations, and learning videos. The results among 16 older adults showed that the majority were aged ≥60 years (62.5%), male (62.5%), and had higher education levels (62.5%). Anthropometric conditions showed that 31.3% were overweight and 68.8% were obese; 87.5% had normal muscle mass, while 12.5% experienced decreased muscle mass. Metabolic screening showed abnormal fasting blood glucose (56.3%), high uric acid levels (68.8%), and high cholesterol levels (56.3%). High systolic blood pressure was found in 56.3% of participants, while the majority had normal pulse rates (87.5%). Frailty assessment showed that 62.5% were categorized as pre-frail, 25% as frail, and 12.5% as robust. Educational evaluation results demonstrated an increase in the average knowledge score from 75.65 to 81.36. The conclusion of this Community Service Program at the Toraja Church Congregation in Tangerang showed that most older adults were in the pre-frailty and frailty categories, accompanied by a high prevalence of obesity and metabolic disorders such as hyperglycemia, hyperuricemia, hypercholesterolemia, and hypertension. The implementation of integrated health screening combined with health education was proven to improve older adults' knowledge regarding frailty prevention and the importance of maintaining a healthy lifestyle. Therefore, continuous screening and education programs are needed as efforts for early detection, prevention of frailty progression, improvement of quality of life, and maintenance of independence

among older adults. Older adults are also encouraged to adopt healthy lifestyles through balanced nutrition, physical activity according to their abilities, and regular monitoring of metabolic conditions with support from families, communities, and cross-sector collaboration. Churches are recommended to routinely organize community-based health screening and educational programs for older adults and collaborate with healthcare professionals in monitoring the health conditions of older adults. Furthermore, future Community Service Programs are expected to involve a larger number of participants and develop sustainable intervention programs to support frailty prevention and improve the quality of life of older adults.

Keywords: Education, Screening, Frailty, Health, Older Adults.

1. INTRODUCTION

The theme "Happy Elderly, Prosperous Indonesia" and the subtheme "Caring for the Elderly, Caring for the Nation," adopted for the 2025 National Elderly Day, serve as a motivation for healthcare professionals to improve the quality of services provided to older adults, both in healthcare facilities such as community health centers (*puskesmas*) and at the community level. This theme also reflects the hope that older adults can remain healthy physically, psychologically, and socially throughout their lifespan, as the health of older adults has a direct impact on the overall health and well-being of the nation.

In this context, the Community Service Activity plays an important role in raising awareness and building community capacity for the prevention of frailty in older adults through education and church-based community health screening. This activity aligns with the Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-Being), SDG 4 (Quality Education), and SDG 17 (Partnerships for the Goals). Therefore, the theme of this PkM is formulated as "Multidimensional Frailty Prevention and Elderly Health Screening through Church-Based Community Education".

It is estimated that by 2050, the number of people aged 65 years and older will exceed the number of children under five worldwide, with the proportion of the population aged ≥60 years nearly doubling from 12% to 22% (WHO) (Khan et al., 2024). Aging is characterized by a decline in the function of cells, tissues, and organs, which results in a reduced capacity to adapt to internal and external stressors (Colloca, Giuseppe., Et al., 2020). This leads to a gradual decline in physical, mental, psychological, and social capacities, while increasing the risk of various health conditions, including frailty.

Frailty is a condition characterized by multidimensional functional decline, encompassing physical, psychological, and social aspects, which makes older adults more vulnerable to physiological stressors. Several factors can accelerate the onset of frailty, including demographic characteristics, mental health status such as depression, level of well-being, and low social engagement (Tallutondok et al., 2022). In Indonesia, frailty and pre-frailty are relatively common conditions among older adults. Data indicate that the prevalence of frailty in Indonesia reaches 26.8%, while more than half of the elderly population, 55.5%, experience pre-frailty (Pradana et al., 2023). These findings indicate that the majority of older adults are at risk of declining physical function and health as they age. The

results of the Indonesia Longitudinal Aging Study (INALAS) involving 908 community-dwelling older adults (≥60 years) support this observation, showing that 18.7% of participants were classified as frail, 66.2% as pre-frail, and 15.1% as robust (Setiati et al., 2021). Frailty in older adults is also associated with functional dependency, risk of malnutrition, depression, history of falls, history of hospitalization, and polypharmacy (Setiati et al., 2021). Setiati et al (2021)emphasized that the majority of older adults are at risk of declining physical function and overall health.

The target participants of this Community Service Activity (*Pengabdian kepada Masyarakat*, PkM) were members of the Toraja Church Congregation in Tangerang (GetorTa), consisting of approximately 80 households, the majority of whom are of Toraja ethnicity who migrated to the Jabodetabek area. The community is located relatively close to healthcare facilities, approximately 2–5 km from the nearest community health center (*puskesmas*) and hospital. According to congregation data, there are 155 individuals aged 45 years and older, with 101 individuals in the 45–59 age group and 54 individuals in the 60–76 age group. Of this total population, 82 are male and 73 are female. About 25% of the older adults exhibit signs of declining health, such as chronic fatigue, mobility impairments, and degenerative diseases. However, participation in the PkM activities was limited to only 16 individuals, as the event coincided with other community activities. This situation highlights the need for strategies to increase member engagement in elderly health programs.

Interviews with church leaders revealed that “no integrated screening program combining general health assessments and frailty evaluation has ever been conducted for pre-elderly or elderly members.” Furthermore, the congregation’s understanding of the concept of frailty remains low, and most have never received education on healthy lifestyle practices as a form of prevention. Some older adults also reported experiencing fatigue, joint pain, and reduced physical activity; however, these conditions have not been medically addressed due to financial constraints and limited awareness of the importance of early detection through screening. Additional evidence comes from the weekly *Warta Jemaat*, which frequently reports information about pre-elderly or elderly members who are ill, whether hospitalized or receiving care at home. These conditions not only disrupt individual activities and quality of life but also impose psychosocial and economic burdens on families.

Therefore, this Community Service Program (Pengabdian kepada Masyarakat/PkM) aims to improve the awareness and knowledge of the Toraja Church Congregation in Tangerang regarding frailty prevention through health education and integrated health screening for older adults. In addition, this program also aims to identify the health conditions of older adults, including anthropometric status, metabolic conditions, blood pressure, physical strength, and frailty levels as part of early detection and prevention of frailty progression. This activity is expected to support the improvement of quality of life and independence among older adults as a contribution to achieving the Sustainable Development Goals (SDGs), particularly SDG 3 on good health and well-being.

2. PROBLEM AND RESEARCH QUESTIONS

The prevalence of frailty in Indonesia reaches 26.8%, while more than half of older adults, 55.5%, experience pre-frailty (Pradana et al., 2023). Based on data from the target participants of the Community Service Activity (*Pengabdian kepada Masyarakat*, PkM), the Toraja Church Congregation in Tangerang (GetorTa) has an elderly population with health-related issues, including chronic fatigue, mobility impairments, and degenerative diseases. Furthermore, interviews with church leaders revealed that no integrated screening program combining general health assessments and frailty evaluation has ever been conducted. The research question is formulated as follows: "What are the results of integrated health screening, the level of frailty, and the knowledge of older adults in the Toraja Church Congregation in Tangerang?"

Figure 1. Map of the Toraja Church Congregation in Tangerang

3. LITERATURE REVIEW

Frailty is a multifactorial geriatric syndrome caused by the body's decreased ability to cope with stressors due to the aging process (Hariyanto et al., 2026). Frailty is a multidimensional condition characterized by a decline in physical, psychological, and social functions, making older adults more vulnerable to physiological stress. However, frailty is more commonly associated with the decline in physical function resulting from aging (Tallutondok et al., 2022). Frailty is also understood as a continuous process that progresses from a robust and healthy condition to pre-frailty and eventually frailty. During the pre-frailty stage, physiological reserves are still able to compensate for damage, allowing the condition to potentially return to normal (Nugrogo, et al, 2023). Clinical manifestations of frailty include decreased mobility and ability to perform Activities of Daily Living (ADL), weakened physical strength, changes in appearance, and declining physiological functions such as reduced bone mass, muscle mass, and organ function. In addition, older adults with frailty are at greater risk of experiencing health problems and comorbidities (McKee AM & Morley JE, 2021). The occurrence of frailty is influenced not only by age but also by various other factors, including demographic characteristics, mental health conditions such as depression, level of well-being, and low social activity (Tallutondok et al., 2022).

The development of frailty is closely associated with changes in various body systems, one of which is the endocrine system. Hormones that play an important role in skeletal muscle metabolism include steroid hormones and insulin-like growth factor-1 (IGF-1). Reduced levels of these hormones contribute to the loss of muscle mass and strength associated with aging, particularly the decline of estrogen in postmenopausal women and testosterone in men. In addition, serum levels of dehydroepiandrosterone sulfate (DHEA-S) and IGF-1 are known to be lower in frail older adults compared to non-frail older adults. These findings indicate that hormonal changes play an important role in the development of frailty (Nugrogo, et al, 2023).

In addition to the endocrine system, the immune system also plays a role in the occurrence of frailty. Chronic elevation of the pro-inflammatory cytokine interleukin-6 (IL-6), which is characteristic of chronic inflammation, is strongly associated with frailty. Increased IL-6 levels are linked to weight loss, greater susceptibility to infection, and adverse physiological effects caused by sarcopenia. Research also shows that individuals classified as having cognitive frailty have significantly higher serum IL-6 levels than the robust group and are at greater risk of mortality during a 10-year follow-up period. These findings suggest that chronic inflammatory processes may be a central mechanism underlying physical weakness, cognitive impairment, and increased mortality in older adults (Nugrogo, et al, 2023).

Given these various health problems, early recognition, diagnosis, and multimodal management of both physical and cognitive signs and symptoms are needed to prevent frailty from progressing into more severe functional decline. This approach is important to reduce the risks of morbidity, dependency, falls, mortality, social isolation, institutionalization, and poor quality of life among older adults. It has been suggested that physiological disturbances in frail older adults may not be apparent under normal conditions but may emerge when the body experiences physiological stress, such as infection, extreme temperatures, injury, acute illness, or surgery. In frail older adults, the body's ability to adapt to these conditions has declined due to reduced physiological reserves, making them more vulnerable to worsening health conditions (Nugrogo, et al, 2023).

Physiological changes associated with frailty are complex because they involve interactions among multiple body systems. The interaction between chronic inflammation, hormonal imbalance, inadequate nutritional intake, aging processes, and physiological changes can lead to sarcopenia, which subsequently increases the risk of frailty. Therefore, the biological and physiological functions involved in frailty are not limited to a single system but rather involve multisystem interactions that influence one another. Cellular aging, environmental factors, genetic factors, and chronic diseases also contribute to the development of physical frailty (Nugrogo, et al, 2023).

One of the important mechanisms in the development of frailty is the decline in mitochondrial function with advancing age. This decline leads to impaired energy regulation, increased oxidative stress, and excessive inflammatory responses, which affect neuroendocrine systems, metabolism, and the body's response to stress. These changes are associated with three major stress-response systems, namely the innate immune system, the hypothalamic-pituitary-adrenal (HPA) axis, and the sympathetic nervous

system. Chronic activation of these systems may result in progressive functional decline that ultimately leads to frailty and cognitive impairment. In addition, chronic inflammation characterized by increased production of pro-inflammatory cytokines and an imbalance between pro-inflammatory and anti-inflammatory cytokines is believed to be a key mechanism linking physical frailty and cognitive impairment in older adults (Nugrogo, et al, 2023).

Based on the various biological, physiological, and risk-factor changes occurring in older adults, an approach is needed to identify frailty or vulnerability at an early stage. One widely used approach is the frailty diagnostic criteria proposed by Fried. According to these criteria, a person is considered frail if they meet three or more of the following five indicators: physical weakness, decreased walking speed, easy fatigability, reduced activity, and weight loss. Frailty syndrome is not considered a disease but rather a transitional condition between functional and nonfunctional states, as well as between health and illness. Frailty develops gradually from a robust condition to an early stage called pre-frailty, in which an individual meets one or two criteria, and eventually progresses to frailty. In more severe stages, the condition may progress to failure to thrive, characterized by weight loss, increased dependency on others, and possible cognitive impairment (Lutpatul & Hikmah, 2022).

One of the most commonly used methods to assess frailty is the Fried Physical Frailty Phenotype. This method uses five main indicators to determine the level of frailty in older adults and generates scores that classify them into three categories: robust, pre-frail, and frail. Older adults with a score of 0 are categorized as robust, those with scores of 1–2 as pre-frail, and those with scores of 3–5 as frail (Deng & Sato, 2024). This classification is important in helping healthcare professionals perform early detection and determine appropriate interventions for older adults.

Based on the description above, frailty is a condition of vulnerability in older adults characterized by declines in physical, psychological, and social functions due to aging processes and various contributing factors. This condition can be identified using specific criteria, such as those proposed by Fried, enabling healthcare professionals to perform early detection of older adults who are in pre-frail or frail conditions. Therefore, frailty assessment is important to prevent more severe functional decline, improve the quality of life of older adults, and determine appropriate interventions according to the level of vulnerability experienced.

4. METHODS

The Community Service Activity was conducted at the Toraja Church Congregation in Tangerang, with the participation of 16 older adults. The activity began with the completion of attendance forms and health screening, which included: 1) fasting blood glucose measurement, 2) cholesterol testing, 3) uric acid testing, 4) measurement of vital signs and body mass index (BMI), 5) frailty screening using handgrip strength, mid-upper arm circumference (MUAC), and calf circumference, and 6) frailty assessment through a scale based on interviews. After the screening, participants were given time for breakfast.

Figure 2. Participants Undergoing Health Screening

Next, the participants completed a pre-test before the education session began. The educational activity started with an opening prayer and welcoming remarks from the organizers and representatives of the Toraja Church, followed by the presentation of materials using PowerPoint and instructional videos. After the education session, participants were given the opportunity for discussion and questions, and then completed a post-test. The activity concluded with the distribution of prizes or door prizes to participants and church representatives, a closing prayer, a group photo, and the provision of refreshments.

Figure 3. Participants Attending Health Education

5. RESULTS AND DISCUSSION

The integrated education and screening activity conducted with 16 older adults was proven effective in increasing participants' knowledge regarding frailty risk prevention and health maintenance, as evidenced by an increase in the mean knowledge score from 75.65 (pre-test) to 81.36 (post-test), representing a gain of 5.71 points. The majority of participants were male (62.5%), aged ≥60 years (62.5%), had higher education (bachelor's or master's degree, 62.5%), and most were not employed, totaling 17 respondents (75%). These findings indicate that the educational intervention was well-received by older adults who possessed health awareness and the capacity to understand the material, even though this group is already vulnerable to frailty risk. Knowledge is acquired through a cognitive process, in which an individual must first understand or recognize a particular piece

of information in order to possess that knowledge. In general, knowledge is influenced by internal factors, such as age and gender, as well as external factors, including education, occupation, experience, information sources, interests, environment, and socio-cultural context (Hurlock, as cited in Cahyono et al., (2019). These data indicate that a structured educational approach can be an effective method for enhancing health awareness, particularly among older adults who are vulnerable yet still possess sufficient cognitive capacity to receive and comprehend information. he improvement in knowledge observed in this PkM activity is consistent with previous research Mirawati, Dita & Mutnawasitoh, (2024) eported that there is a relationship between educational level and knowledge about stroke among older adults. Having a good level of knowledge is important for older adults, as it plays a key role in influencing their overall health status (Qin et al., 2025).

Based on the health measurements of 16 older adults, there was notable variation in physical conditions that should be considered in efforts to prevent frailty. The average height of participants was 157.75 cm, ranging from 145 to 171 cm, indicating differences in anthropometry among individuals. Weight data also showed that the majority of respondents had a body mass index (BMI) in the obesity category. Eleven respondents (68.8%) were classified as obese, while five respondents (31.3%) fell into the overweight category. These data indicate that most older adults experience a significant degree of excess body weight, with the highest proportion in the obesity category. This condition suggests that the majority of older adults are at risk of weight-related health problems. A study by Ariaratnam et al., (2020) reported that the prevalence of obesity among older adults in Malaysia was 30.2%. Factors associated with obesity in this population included being female, having a secondary education level with a household income of RM 3,000 or higher, and having hypertension or diabetes.

In addition, nutritional status based on mid-upper arm circumference (MUAC) measurements indicated that the majority of older adults were in the normal category (15 individuals, 93.8%), while one individual (6.3%) was at risk of Chronic Energy Deficiency (CED). These findings confirm that although most older adults have adequate nutritional status, monitoring remains necessary to prevent nutritional decline that could accelerate the onset of frailty. A similar pattern was observed in muscle mass parameters, where most participants had normal muscle mass (14 individuals, 87.5%), while 2 individuals (12.5%) had low muscle mass. This is important because the loss of muscle mass (sarcopenia) is one of the main indicators in the development of frailty. Sarcopenia is a complex geriatric syndrome due to its multifactorial pathogenesis. Various factors involved in the pathogenesis of sarcopenia include neuromuscular degeneration, alterations in muscle protein turnover, changes in hormone levels and sensitivity, chronic inflammation, oxidative stress, and behavioral/lifestyle factors (Njoto, 2023).

Weight gain that occurs simultaneously with a loss of muscle mass in older adults is a consequence of the aging process, which leads to changes in body composition. As age increases, lean body mass can decrease by up to approximately 40% between the ages of 20 and 70, followed by a reduction in fat mass after age 70, along with a redistribution of fat to visceral areas, skeletal muscles, and the liver. This condition is further exacerbated by a

tendency for energy intake to remain constant or decline, while energy expenditure decreases due to a reduction in metabolic rate of approximately 2–3% per decade and decreased physical activity. As a result, body fat mass increases, particularly visceral fat. The accumulation of visceral fat triggers the production of pro-inflammatory cytokines such as TNF-α and IL-6, which are catabolic and accelerate the loss of muscle mass, leading to sarcopenia, reduced mobility, and increased frailty. In addition, hormonal changes in older adults, such as declines in growth hormone, testosterone, and DHEA, as well as the development of leptin and insulin resistance, further worsen this condition and contribute to obesity and altered body composition in later life (McKee & Morley, 2021).

Vital signs measurements indicated that the majority of older adults had high systolic blood pressure (9 individuals, 56.3%), while diastolic blood pressure was mostly normal or in the prehypertension category, suggesting a risk of cardiovascular disease that could accelerate physical decline. Pulse data showed that most participants had a normal heart rate (14 individuals, 87.5%), indicating that cardiac function remained largely stable. However, the prevalence of hypertension tends to increase with age, and both age and elevated blood pressure are key factors influencing arterial stiffness. In older adults with hypertension, large arteries become rigid, causing systolic pressure and pulse wave velocity to increase due to wave reflection, which has important predictive value for cardiovascular risk. In this context, blood pressure prevention and management efforts are necessary, including physical activity, a balanced diet low in salt and high in fiber, and weight control, with pharmacological therapy indicated when hypertension or cardiovascular risk is high (Laurent & Boutouyrie, 2020). In line with this, a study by Imelda, Sjaaf & Puspita (2020) showed that among older adults at Puskesmas Air Dingin Lubuk Minturun, salt intake, consumption of fatty foods, and stress were associated with the occurrence of hypertension, whereas smoking habits, physical activity, obesity, and socioeconomic status were not related to the incidence of hypertension.

Handgrip strength, with most participants falling into the moderate category (50%), indicates a sufficient level of physical strength for daily activities, although 25% were classified as weak. In older adults, handgrip strength typically declines naturally with aging, primarily due to sarcopenia, which involves loss of muscle mass and chronic energy deficiency. Aging often leads to a reduction in the function of tissues and organs, including a decrease in skeletal muscle mass of approximately 0.1–0.5% per year from the age of 30, with a more rapid decline after age 65 accompanied by reduced muscle strength. The loss of muscle mass and strength is referred to as sarcopenia, a progressive condition with a multifactorial pathogenesis that includes neuromuscular degeneration, alterations in muscle protein turnover, hormonal disturbances, chronic inflammation, oxidative stress, and behavioral and lifestyle factors. Sarcopenia is considered severe when declines occur in muscle strength, muscle mass, and physical performance. Management strategies include resistance-type physical exercise, increased intake of essential amino acids, vitamin D supplementation in cases of deficiency, polyunsaturated fatty acids (PUFAs), testosterone therapy, and the use of angiotensin-converting enzyme inhibitors (Njoto, 2023).

Screening results among older adults showed that 56.3% had abnormal fasting blood glucose, 68.8% had elevated uric acid levels, and 56.3% had

high cholesterol, reflecting an increased metabolic risk associated with the aging process. Aging is a progressive and irreversible pathophysiological process characterized by a decline in tissue and cellular function, as well as an increased risk of various age-related diseases, including metabolic disorders. These findings highlight the importance of routine screening and education on healthy dietary habits to maintain the health and physical function of older adults (Zhang et al., 2023).

Based on frailty measurements, the majority of older adults were classified as Pre-Frailty (10 respondents, 62.5%), followed by Frailty (4 respondents, 25%) and Robust (2 respondents, 12.5%). A study conducted by Dwi et al., (2024)on factors associated with frailty in older adults in Kelurahan Mangunjaya indicated that only one variable, age, was significantly related to frailty. Meanwhile, four other variables—gender, education level, socioeconomic status, and daily activities—were not found to be associated with frailty. Furthermore, the frailty condition observed in older adults is supported by health screening results, which indicated elevated metabolic risk indicators, including abnormal fasting blood glucose (56.3%), high uric acid levels (68.8%), and high cholesterol levels (56.3%). The combination of reduced physiological reserves due to the aging process and the presence of these metabolic risks contributes to decreased muscle strength, diminished adaptive capacity, and reduced metabolic function, thereby increasing older adults' vulnerability to various stressors such as illness, infection, or metabolic load. Given this health profile, the majority of older adults were classified as being in the pre-frailty phase, an early stage leading to frailty, during which the risk of disability, decline in physical function, disease complications, and reduced quality of life increases significantly (Corral-Pérez et al., 2023).

Thus, interventions such as integrated screening and education on healthy lifestyle practices—including nutrition, physical activity, and metabolic control—are highly relevant. These measures can help detect early signs of frailty and enable preventive actions to slow down or prevent progression to full frailty (Deng et al., 2025). This approach is also important for improving the quality of life of older adults, prolonging their independence, and reducing the public health burden associated with frailty-related complications.

6. CONCLUSION

The integrated health education and screening program conducted among 16 older adults was shown to be effective in increasing knowledge about frailty prevention, as evidenced by an increase in the average score from 75.65 to 81.36. These findings indicate that a structured educational approach is well-received by older adults and plays an important role in enhancing health awareness, particularly among those who still possess adequate cognitive capacity.

Screening results revealed that the majority of participants were affected by obesity, metabolic disorders (hyperglycemia, hyperuricemia, and hypercholesterolemia), and elevated systolic blood pressure, although most maintained normal nutritional status and muscle mass. Frailty assessment showed that most participants fell into the pre-frailty category, indicating vulnerability to stressors and a higher risk of further functional decline.

These findings underscore the importance of routine screening and education on healthy lifestyle practices, including nutritional monitoring, physical activity, and metabolic control, for early detection, prevention of frailty progression, improvement of quality of life, and maintenance of older adults' independence.

Churches are recommended to routinely organize community-based health screening and educational programs for older adults as a form of support for the health of the congregation, as well as collaborate with healthcare professionals and local healthcare facilities in monitoring the health conditions of older adults. Furthermore, future Community Service Programs (PkM) are expected to involve a larger number of participants, be conducted regularly and continuously, and develop intervention programs such as elderly exercise programs, nutrition education, and health assistance to support frailty prevention and improve the quality of life of older adults.

7. REFERENCES

Ariaratnam, S., Rodzlan Hasani, W. S., Krishnapillai, A. D., Abd Hamid, H. A., Jane Ling, M. Y., Ho, B. K., Ghazali, S. S., Tohit, N. M., & Mohd Yusoff, M. F. (2020). Prevalence Of Obesity And Its Associated Risk Factors Among The Elderly In Malaysia: Findings From The National Health And Morbidity Survey (Nhms) 2015. *Plos One*, *15*(9 September), 1–9. Https://Doi.Org/10.1371/Journal.Pone.0238566

Cahyono, A., Darsini, & Fahrurrozi. (2019). Pengetahuan ; Artikel Review. *Jurnal Keperawatan*, *12*(1), 97.

Colloca, Giuseppe., Di Capua, Beatrice., Bellieni, Andrea., Fusco, Domenico., Ciciarello, Francesca., Tagliaferri, Luca., Valentini, Vincenzo &Balducci, Lodovico. (2020). No Title. *Biological And Functional Biomarkers Of Aging: Definition, Characteristics, And How They Can Impact Everyday Cancer Treatment*, *22*(11), 115. Https://Doi.Org/Https://Doi.Org/10.1007/S11912-020-00977-W

Corral-Pérez, J., Ávila-Cabeza-De-Vaca, L., González-Mariscal, A., Espinar-Toledo, M., Ponce-González, J. G., Casals, C., & Vázquez-Sánchez, M. Á. (2023). Risk And Protective Factors For Frailty In Pre-Frail And Frail Older Adults. *International Journal Of Environmental Research And Public Health*, *20*(4). Https://Doi.Org/10.3390/Ijerph20043123

Deng, Y., & Sato, N. (2024). Global Frailty Screening Tools: Review And Application Of Frailty Screening Tools From 2001 To 2023. *Intractable And Rare Diseases Research*, *13*(1), 1–11. Https://Doi.Org/10.5582/Irdr.2023.01113

Deng, Y., Yamauchi, K., Song, P., & Karako, T. (2025). Frailty In Older Adults: A Systematic Review Of Risk Factors And Early Intervention Pathways. *Intractable And Rare Diseases Research*, *14*(2), 93–108. Https://Doi.Org/10.5582/Irdr.2025.01026

Dwi, A., Damayanti, R., & Pradana, A. A. (2024). *Stikes Mitra Keluarga Jurnal Mitra Kesehatan (Jmk) Faktor – Faktor Yang Berhubungan Dengan Kondisi Frailty Pada Lansia Di Kelurahan Mangunjaya Factors Associated With Condition Of Frailty To Olderly In Mangunjaya Village Seluruh Sistem Tubuh , Jaringan . 06*(02), 157–168.

Hariyanto, R. A., Handajani, Y. S., & Turana, Y. (2026). *Artikel Penelitian Hubungan Parameter Kebugaran Fisik Dengan Sindroma Frailty Pada Lansia Di Jakarta The Relationship Between Physical Fitness Parameters And Frailty Syndrome In Jakarta*. *42*.

Imelda, Sjaaf Fidiariani F, & P. P. (2020). Faktor- Faktor Yang Berhubungan Dengan Kejadian Hipertensi Pada Lansia Di Puskesmas Air Dingin Lubuk Minturun. *Health & Medical Journal*, *Ii No 2*(Heme), 68–77. Http://Jurnal.Unbrah.Ac.Id/Index.Php/Heme/Article/View/532/232

Khan, H. T. A., Addo, K. M., & Findlay, H. (2024). Public Health Challenges And Responses To The Growing Ageing Populations. *Public Health Challenges And Responses To The Growing Ageing Populationses*, *3*(3), 1–9. Https://Doi.Org/10.1002/Puh2.213

Laurent, S., & Boutouyrie, P. (2020). Arterial Stiffness And Hypertension In The Elderly. *Frontiers In Cardiovascular Medicine*, *7*(October), 1–13. Https://Doi.Org/10.3389/Fcvm.2020.544302

Lutpatul;, Hikmah, P. A. A. (2022). *Doi: Http://Dx.Doi.Org/10.33846/Sf13310 Faktor Yang Mempengaruhi Kondisi*. *13*(1), 624–629.

Mckee Am & Morley Je. (2021). *Obesity In The Elderly.Tle*. National Library Of Medicine. Https://Www.Ncbi.Nlm.Nih.Gov/Books/Nbk532533/

Mirawati, Dita & Mutnawasitoh, A. R. (2024). Hubungan Tingkat Pendidikan Dengan Pengetahuan Stroke Pada Lansia. *Jurnal Ilmiah Ilmu Kesehatan*, *12*(1), 114–124.

Njoto, E. N. (2023). Sarkopenia Pada Lanjut Usia: Patogenesis, Diagnosis Dan Tata Laksana. *Jurnal Penyakit Dalam Indonesia*, *10*(3). Https://Doi.Org/10.7454/Jpdi.V10i3.1444

Nugrogo, M.Barlian.,Rahmad., Soenarti,Sri & Zaini, A. (2023). *Manajemen Komprehensif Pada Frailty (Kondisi Kerapuhan Pada Orang Tua)* (Tim Ub Press, Ed.; Pertama). Ub Press.

Pradana, A. A., Chiu, H. L., Lin, C. J., & Lee, S. C. (2023). Prevalence Of Frailty In Indonesia: A Systematic Review And Meta-Analysis. *Bmc Geriatrics*, *23*(1), 1–14. Https://Doi.Org/10.1186/S12877-023-04468-Y

Qin, T., Wei, P., & Xie, Y. (2025). Does Education Level Affect The Health Status Of The Elderly? The Chain Mediating Effect Of Internet Use, Health Behavior And Social Class Identity. *Plos One*, *20*(2 February), 1–18. Https://Doi.Org/10.1371/Journal.Pone.0319389

Tallutondok, E. B., Hsieh, C. J., & Li, P. S. (2022). The Parallel Mediation Effects Of Depression, Well-Being, And Social Activity On Physical Performance And Frailty In Community-Dwelling Middle-Aged And Older People. *Current Gerontology And Geriatrics Research*, *2022*. Https://Doi.Org/10.1155/2022/7979006

Zhang, K., Ma, Y., Luo, Y., Song, Y., Xiong, G., Ma, Y., Sun, X., & Kan, C. (2023). Metabolic Diseases And Healthy Aging: Identifying Environmental And Behavioral Risk Factors And Promoting Public Health. *Frontiers In Public Health*, *11*(October), 1–10. Https://Doi.Org/10.3389/Fpubh.2023.1253506