



# Analysis of Elderly Health Status through Intrinsic Capacity Assessment Using the Simple Elderly Screening (SKILAS) Instrument in the Community

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<p><b>Track Record Article</b></p> <p>Accepted: 13 June 2024 Revised: 28 May 2024 Published: 28 June 2024</p> <p><b>How to cite :</b> Hayati, D. G., &amp; Kamsu, S. (2024). Analysis of Elderly Health Status through Intrinsic Capacity Assessment Using the Simple Elderly Screening (SKILAS) Instrument in the Community. <i>Contagion: Scientific Periodical of Public Health and Coastal Health</i>, 6(1), 656-667.</p>	<p style="text-align: center;"><b>Abstract</b></p> <p><i>Maintaining the health of the elderly is a challenge today, considering that increasing age is generally accompanied by a decrease in functional abilities and health status. One of the preventive efforts to detect a decline in functional capacity is to conduct screening. Screening aims to identify possible risk factors and provide an assessment for further treatment. This study aimed to analyze the health status of the elderly through intrinsic capacity assessment using Simple Elderly Screening (SKILAS) instrument. This screening can assess the decline in intrinsic capacity and then provide specific interventions so that this decline can be slowed down. The data was taken from the routine report of the elderly program of the Tangerang City Health Office from January to February 2024 for 3942 elderly. The sample was taken by purposive sampling in 5 Puskesmas with the criteria that the health center had received training and had conducted SKILAS screening. Data were obtained from the results of screenings conducted by elderly program managers at health facilities or Posyandu. The visiting elderly were assessed for independence function using the Activity Daily Living (ADL) instrument and continued with intrinsic capacity screening using the SKILAS instrument. The results of screening showed that 3771 (95.7%) have a good level of independence. The results of simple elderly screening showed 26 elderly (0.94%) have symptoms of depression, 65 elderly (1.65%) experienced the risk of cognitive decline, 120 elderly ( 3.04%) experienced limited mobilization, 142 elderly (8.22%) experienced malnutrition, 225 elderly (10.16%) experienced visual impairment and 15 elderly (0.38%) experienced hearing loss. It is recommended that all elderly people receive SKILAS screening to detect early decline in intrinsic capacity.</i></p> <p><b>Keywords:</b> <i>Elderly, Intrinsic capacity, Screening</i></p>
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## INTRODUCTION

The elderly are an age group that requires special attention. In 2045, Indonesia will experience a demographic bonus, at which time the number of elderly people will reach 20% of the population. Currently, the Life Expectancy (LE) of the population has increased to 71.34 year (BPS, 2023). However, the Healthy Life Expectancy (HALE) in 2019 was 63.7 years (World Health Organization, 2023). This means that the population only lives a healthy life of around 63-64 years out of the 71-72 years of life expected to be lived. This shows that the gap between life expectancy and healthy life expectancy is still around 8 years.

Currently, the Life Expectancy of Tangerang City is 72.24 years, an increase from the previous year (BPS Provinsi Banten, 2024). An increase in the number of elderly people can positively impact if the elderly population is healthy, active, and productive. The main challenge today is related to maintaining the quality of life of the elderly, considering that increasing age is generally accompanied by a decrease in functional abilities and a decline in

health status (Hasibuan et al., 2023).

According to WHO (World Health Organization) the health burden of the elderly comes from various diseases such as heart disease, stroke, visual impairment, hearing loss, and dementia (World Health Organization, 2022). The 2015 World Report on Ageing and Health states the goal of healthy aging is to help people develop and maintain functional ability. Functional capability is defined as "health-related attributes that enable people to do what they value". Functional ability consists of an individual's intrinsic capacity, the individual's environment, and the interaction between them (World Health Organization, 2015). Intrinsic capacity is the combination of an individual's physical and mental capacities that determine their functional ability combined with environmental factors and their interaction (Zhao et al., 2022).

During the elderly, there is a decline in intrinsic capacity characterized by decreased hearing function, visual function, cognitive function, movement function, and also the emergence of symptoms of depression and malnutrition. A study conducted in Latin America, India and China reported that the prevalence of malnutrition in the elderly was between 66% to 98.7%, vision capacity between 59.8% to 93.5%, hearing capacity between 76.9% to 96.8%, cognitive capacity is between 33.2% to 90.3%, and psychological capacity is between 62.0% to 98.5%. Apart from that, the prevalence of elderly people with good intrinsic capacity is around 12.0% to 62.8%. These findings show the importance of maintaining intrinsic capacity for the health of the elderly (Rarajam Rao et al., 2023).

In Indonesia, the prevalence of malnutrition in the elderly is 44% (Dewiasty et al., 2022). Hearing impairment is 30 to 35% (Putri et al., 2023). Vision impairment is 32.8%, cognitive decline is 22% and mobility impairment is 29% (Puspitasari et al., 2021). Data from the elderly health program from the Tangerang City Health Service stated that 0.3% of elderly people experienced mental emotional disorders, 1.7% experienced cognitive decline, 6.48% experienced malnutrition, 1.05% experienced visual impairment, 0.79% experienced hearing impairment and 6% of elderly people have limited mobility (Tangerang City Health Service, 2023). This decline in intrinsic capacity must be recognized and managed early on so that the elderly can maintain their intrinsic capacity for a longer time (WHO, 2019). One of the preventive efforts to detect a decrease in intrinsic capacity in the elderly is to conduct screening. Screening is an assessment to screen and separate people who are at risk from those who are not (WHO, 2019). The purpose of screening is to identify people in the population who are at

higher risk of a condition or health problem to provide early intervention or treatment (WHO, 2019)

One of the screening models for older people developed by WHO is the *Integrated Care For Older People* (ICOPE). This screening is conducted to identify older adults who are starting or already experiencing a decline in intrinsic capacity. Domains of intrinsic capacity assessed include cognitive decline, mobility, malnutrition, visual impairment, hearing loss, and depressive symptoms (WHO, 2019). Screening results are followed by personalized interventions and care that incorporate strategies to slow or prevent further decline in intrinsic capacity (Gutiérrez-robledo et al., 2021). These interventions also include disease care and identification of social support needs in the elderly.

The WHO ICOPE Screening Tool is useful for identifying older adults with poor physical and mental function, helping to detect declining intrinsic capacity and slowing the onset of dependence on care (Ma et al., 2020). ICOPE tool show good performance indicators in healthy older populations and older people who are in the early phase of the aging process. ICOPE is considered a simple, inexpensive, and feasible tool (Rojano et al., 2023) Repeated assessment (e.g. every six months) in people who have no abnormalities on the ICOPE screening tool is a potential way to anticipate an intrinsic capacity decline in participants with normal initial screening results (Force, 2020)

Currently, the ICOPE instrument has been adapted by the Ministry of Health and modified into the SKILAS (Simple Elderly Screening) instrument. This instrument has begun to be widely used in health facilities and also in the community, namely in Posyandu Lansia. In Tangerang City, SKILAS has been used in several Posyandu for the Elderly since early 2024. For this reason, the researcher wanted to find out more about the utilization of the SKILAS instrument to detect the decline in intrinsic capacity in the elderly. With this screening, the decline in intrinsic capacity can be recognized early and then intervened.

## **METHODS**

This study is a quantitative research using descriptive analysis with a cross-sectional design. Data were taken from the routine report of the elderly program of the Tangerang City Health Office during the period January - February 2024. The population for this study consists of elderly individuals throughout the city of Tangerang, totaling 88,150 people. Samples in this study were taken using *purposive sampling* technique, specifically from 5 community health centers that had received SKILAS screening training., namely Puskesmas Ciledug, Puskesmas Neglasari, Puskesmas Kunciran Baru, Puskesmas Cipondoh and Puskesmas Sukasari. The data

was obtained from the examination and screening using the SKILAS conducted by the program manager on 3942 elderly individuals at healthcare facilities or elderly community health posts. The independent functioning of the elderly visitors was assessed using the Activities of Daily Living (ADL) instrument, followed by screening of intrinsic capacity using the SKILAS instrument. Analysis was carried out univariately to determine the level of independence and decreased intrinsic capacity in the elderly.

## RESULTS

**Table 1. Characteristics of Respondents (n=3942)**

Characteristics	Frequency	Percentage
<b>Age</b>		
60 -69 years	2763	70.09
>70 years	1179	29.91
<b>Gender</b>		
Woman	2214	56.16
Man	1728	43.84

From the results of routine reports during January - February 2024, data was obtained from 3942 elderly people who were assessed for their level of independence and screening with the SKILAS instrument. Of these, 2763 (70.09%) were aged between 60 - 69 years and 1179 (29.91%) were over 70 years old. More than half of the 2214 (56.16%) elderly were female.

**Table 2. Distribution of Result of SKILAS Screening (n=3942)**

Variable	Frequency	Percentage
<b>Activity Daily Living</b>		
Independence	3771	95.70
Mild to moderate	152	3.86
High dependency	19	0.48
<b>Intrinsic capacity</b>		
Without decline	3349	84.95
Visual impairment	225	10.16
Malnutrition	142	8.22
Limited Mobility	120	3.04
Cognitive decline	65	1.65
Symptom depression	26	0.94
Hearing Loss	15	0.38

Based on Table 2, it can be seen that the results of screening the independence of the elderly using the Activity Daily Living (ADL) instrument show that 3771 (95.7%) of the elderly have a good level of independence, meaning that the elderly can still carry out daily activities well. And the mild-moderate dependence of 152 people (3.86%) and high dependence of 19 people (0.48%). The results of SKILAS showed 26 elderly (0.94%) showed

symptoms of depression, 65 elderly (1.65%) experienced the risk of cognitive decline, 120 elderly (3.04%) experienced limited mobilization, 142 elderly (8.22%) experienced malnutrition, 225 elderly (10.16%) experienced visual impairment and 15 elderly (0.38%) experienced hearing impairment.

## DISCUSSION

From Table 1, it can be seen that the composition of the elderly aged 60-69 years is 2763 people (70.09%), while the number of elderly aged more than 70 years reaches 1179 (29.91). From this data, we find out the number of elderly with high risk (over 70 years) who need special attention such as priority for home visits or long-term care needs. In addition, the number of elderly women is also greater, which is 56.16%. This data is in line with the composition of BPS data, that elderly women have a longer life, but it is not accompanied by Healthy Adjusted Life Expectancy, where HALE for elderly women is 11 years and for men 9 years (Ainistikmalia, 2019).

### Independence level

High life expectancy must be accompanied by the functional ability of the elderly in daily life. Activity Daily Living (ADL) is a term used to describe the basic skills needed to independently care for oneself, such as eating, bathing, and mobility (Edemekong et al., 2023). The inability to complete activities of daily living for the elderly can lead to unsafe conditions and poor quality of life, (Edemekong et al., 2023). From the results of the analysis, it was found that 95.7% of the elderly had a good level of independence. This shows that the elderly in Tangerang City are still in optimal condition.

The elderly who are independent and able to carry out various activities will have an impact on improving the quality of life of the elderly. From this data, there are still 3.86% of elderly people who have mild-moderate dependence. Elderly who experience dependence due to physical conditions and experience a decrease in organ function will reduce the ability of the elderly to carry out daily activities, thus affecting their quality of life (Freiberger et al., 2020).

In addition, there are still 0.48% of elderly people with severe dependence and disability. Elderly people with these conditions require long-term care with the help of *caregivers* to live more optimally. Related studies have shown that individual socioeconomic factors, somatic health, depression status, and health insurance affect ADL functioning. The ability to perform Activities of Daily Living is also the most important indicator to evaluate the ability to live independently in the elderly. WHO said that the main indicator of elderly

health evaluation should not only be death and disease but also the ability to live independently (Gao et al., 2022).

### **Decreased intrinsic capacity**

From the research findings, it is evident that 84.95% of the elderly have not experienced a decline in intrinsic capacity. This result is higher than the previous study, which reported a prevalence of intrinsic capacity decline in the elderly ranging from 12.0% to 62.8% (Rarajam Rao et al., 2023). However, an estimated 15.05% of the elderly are facing a reduction in intrinsic capacity across various domains. Due to the aging process and the presence of comorbidities, older adults with impaired intrinsic capacity may experience poor recovery and are vulnerable to becoming dependent/disabled after being exposed to stress. Older adults who are impaired in one or more intrinsic capacity domains have a higher risk of becoming disabled compared to older adults who are not impaired in any intrinsic capacity domain. The worse elderly intrinsic capacity, the more likely they are to be affected by adverse environmental factors which may lead to poorer health status and greater risk of disability. Intrinsic capacity is associated with frailty, and a higher incidence of frailty is associated with depressive symptoms, decreased vitality, and visual impairment (Rojano et al., 2023).

This means that elderly individuals who are functionally dependent are nearly 6 times more likely to be frail compared to those who are independent. The decline in functional status is a significant risk factor for frailty among Indonesian elderly. Frailty is associated with limitations in the ability to perform daily activities independently, increasing reliance on others for assistance (Setiati et al., 2021).

### **Symptoms of depression**

From the results of the study, it was found that 0,94 % of the elderly experienced symptoms of depression. These results still remain lower than Handajani's research, which indicated a 16.3% prevalence of depression among the elderly in Indonesia (Handajani et al., 2022). Depression is one of the most common problems in the world with a prevalence of 5.7% in the elderly (World Health Organization, 2023). Depressive conditions can significantly affect the quality of life. Handajani's research Handajani (2022) on the elderly in Indonesia states that factors associated with depression include low economic status, dissatisfaction with life, poor health, dependence (IADL score results), and experiencing falls or sleep disorders. In some chronic conditions, stroke, arthritis, and hearing loss are also causes of depression.

Depressed elderly are characterized by poor mood, lack of motivation, loss of physical strength, failure to feel pleasure, sleeplessness, lack of concentration, feelings of helplessness,

hopelessness, depression, and lack of self-esteem (National Institute of Mental Health, 2024). However, the problem is that the elderly have difficulty expressing their mood, and the symptoms are not expressed as complaints. In the elderly, symptoms such as sleeplessness, loss of appetite, and somatic symptoms such as constipation and pain are associated with symptoms of medical illness and are not considered symptoms of depression (Sözeri-Varma, 2012). Even though these symptoms can be a manifestation of depression in the elderly.

In the SKILAS instrument, a "Yes" answer to questions regarding symptoms of depression should be followed up with further examination using the Geriatric Depression Scale (GDS) instrument WHO (2019) Routine screening for depression in the elderly is effective in providing appropriate care and reducing psychiatric hospitalization (Chen et al., 2024).

### **Cognitive decline**

From the results of the study, it was found that 1.65% of the elderly experienced cognitive decline. The findings indicate a notably lower prevalence of cognitive decline compared to Puspitasari (2021), which reported a rate of around 22% among the elderly. The relatively low incidence of cognitive decline in the elderly in Tangerang City may be attributed to the fact that not all elderly individuals have undergone screening. Cognitive decline in normal aging refers to the slow processing of complex problems and difficulty in retrieving information from long-term memory. Unidentified cognitive decline causes the elderly to fall into dementia. Symptoms of dementia tend to be vague and sometimes hidden, as a result, many people with dementia are not diagnosed at a later stage (Juniarni et al., 2021).

Elderly with impaired cognitive capacity according to ICOPE / SKILAS can get a further assessment and follow-up using several instruments, one of which is Mini-Cog (WHO, 2019) This instrument combines a memory test with a recall of 3 items/words with a clock drawing test (Limpawattana & Manjavong, 2021). Cognitive impairment is suspected if the patient cannot recall any word or recalls one or two words with an abnormal clock drawing test. Patients with positive Mini-Cog screening should be referred for further neuropsychological testing (WHO, 2019). One way to delay cognitive decline is by giving cognitive stimulation such as doing physical activity, *reminiscence therapy*, *memory training*, and *puzzle therapy* (Prahasasgita & Lestari, 2023). In addition, social involvement or contact with others and healthy lifestyle behaviors can enhance memory and cognition. Eating a healthy and balanced diet, being physically active for at least 30 minutes a day, and getting enough sleep can help prevent chronic diseases and improve cognitive function (Miranda, 2023).

### **Limited mobilization**

From the results of the study, it was found that 3.04% of the elderly experienced mobilization limitations. Studies state that 48% of elderly people in Indonesia have mobility problems such as difficulty walking and climbing stairs (Cameron & Suarez, 2017). Mobility limitations are reported to be increasingly common in the elderly and affect approximately 35% of people aged 70 years and a large proportion of people aged over 85 years. Mobility limitations are also associated with an increased risk of falls, hospitalization, decreased quality of life, and even death (Freiberger et al., 2020). Mobility, including the ability to walk and/or climb stairs, is an important predictor of quality of life in older adults and indicates successful aging. Mobility limitations complicate access to healthcare and result in poor psychological health (Musich et al., 2018).

Elderly people with limited mobility must adapt to the environment rather than limiting space for movement. Among them by providing an elderly-friendly environment, such as adjusting the home environment so that the elderly avoid the risk of falling. In addition, one way for the elderly to continue to mobilize well is to use mobility aids and carry out routine exercise programs according to the capacity and needs of the elderly (WHO, 2019).

### **Malnutrition**

As life expectancy increases, the risk of disease and health problems in the elderly also increases. Several risk factors, including decreased nutrient intake and weight loss that occur with aging, make the elderly population more vulnerable to malnutrition (Corcoran et al., 2019). From the data obtained 8,22% of the elderly are undernourished, even though adequate nutritional intake is key to health and quality of life. This data is significantly lower than (Dewiasty et al., 2022) research, at approximately 44%. This could be attributed to the fact that nutrition issues in the elderly have not been prioritized, resulting in many elderly individuals not receiving proper screening. The prevalence of malnutrition increases in the elderly population and is associated with decreased functional status, impaired muscle function, decreased bone mass, immune dysfunction, anemia, and decreased cognitive function (Norman, 2021).

In addition, due to changes in the socio-economic environment, the elderly are often left alone which can interfere with maintaining good nutritional status Norman (2021), Sensory impairment (decreased taste and smell), poor oral health such as chewing problems, and difficulty swallowing, isolation, loneliness, low income, and complex long-term chronic conditions all increase the risk of malnutrition in the elderly (Corcoran et al., 2019)

Most malnutrition problems in older people can be prevented, delayed, or corrected by



maintaining a healthy diet, and good nutrition including maintaining oral health (Chan et al., 2023).

From the SKILAS screening results, the elderly with a score of "YES" the SKILAS screening continued with an assessment of nutritional status using the *Mini Nutritional Assessment* (MNA) Instrument. The elderly who are identified as malnourished should receive appropriate nutritional interventions including dietary management and additional oral nutrition if needed. In addition, eating with family can also overcome nutritional barriers in the elderly (WHO, 2019).

### **Hearing loss**

From the SKILAS screening results, 0.38% of the elderly (15 people) experienced hearing loss. The data is far below Putri (2023) research, where hearing loss in the elderly was 30-35%. This may be due to not all elderly people receiving hearing impairment screening. Older adults with hearing loss may experience long-term life disorders, such as difficulties in communication, social isolation, and poor mood that will affect their quality of life (Liu & Lee, 2019). Hearing loss is associated with other health problems, including cognitive decline and risk of dementia, depression and anxiety, poor balance, falls, hospitalization, and premature death (WHO, 2019). One way to reduce these potential risk factors is by using hearing aids and having regular check-ups and medication. Hearing aid use is associated with higher cognitive performance. However, while hearing aids can improve cognitive performance, hearing loss still negatively impacts older people with social isolation or depression. Treating hearing loss can decrease the problems associated with cognitive decline and reduced quality of life (Dawes et al., 2015). Families can help minimize the impact of hearing loss on the elderly by learning appropriate communication strategies including teaching the elderly how to read lip language or sign language (WHO, 2019).

### **Visual impairment**

From the screening results with SKILAS, it was found that 10,16 % of the elderly had visual impairment. Visual impairment is the most common disability reported by the elderly. The prevalence of visual impairment in the elderly in Indonesia is reported to be 68%. (Cameron & Suarez, 2017). Vision is an important part of intrinsic capacity, which helps older people move around and interact safely with others and their environment. Farsightedness and nearsightedness, cataracts, glaucoma, and macular degeneration are some of the causes of visual impairment that become more common with age (Al-Namaeh, 2021). Visual impairment can lead to difficulties in maintaining family and other social relationships, obtaining information, moving safely (especially when balance and risk of falling), and

performing daily tasks. In addition, visual impairment can increase the risk of recurrent falls due to poor acuity of low contrast vision (Singh & Maurya, 2022). Anxiety and depression may result from reduced visual function (WHO, 2019).

The *American Optometric Association (AOA)* recommends a comprehensive eye examination every one to two years for all adults aged 65 years and older (Association, 2024). A comprehensive eye examination includes a visual acuity test, pharmacologic dilation of the pupils, tonometry, and visual field testing (Pelletier et al., 2016). Seniors with visual impairment may require assistive devices such as glasses for near and far vision impairment. Seniors with cataracts can also have their vision restored with surgery. In addition, environmental adaptations are also needed to facilitate their activities, such as providing a good lighting environment, removing obstacles, and creating contrast so that the elderly can distinguish and recognize objects and obstacles around them (WHO, 2019).

## CONCLUSIONS

Decreased intrinsic capacity in the elderly is part of the aging process. This decline in intrinsic capacity needs to be recognized and identified so that appropriate interventions can be provided. SKILAS (Skrining Lansia Sederhan) is one method to assess intrinsic capacity in the elderly. This screening must be carried out on all elderly people in the community. This allows health workers and communities to monitor any changes and provide specific interventions before functional ability is lost. This intervention is crucial in helping the elderly maintain their optimal quality of life and dignity as they age, by preventing them from becoming more fragile and reducing their dependence on care and their environment.

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