

Effects of Age, Sex, Personality Traits, and Social Support on Successful Aging: A Longitudinal Study of Older Adults in Sukabumi City

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ABSTRACT

This longitudinal study investigated the effect of age, sex, nursing care characteristics, and social support on successful aging outcomes among elderly adults in KotaSukabumi, Indonesia. 260 participants completed baseline assessments and a 12-month follow-up on physical health, psychological well-being, and social engagement. Results showed that social support was positively associated with all three successful aging outcomes at follow-up, while nursing care characteristics were positively related to social engagement at follow-up. Age was negatively associated with physical health and social engagement at follow-up, and gender was not significantly related to successful aging outcomes. These findings emphasize the importance of social support and nursing care in promoting successful aging and suggest that interventions to improve these factors could effectively improve the health and well-being of elderly adults.

Keywords: Age, gender, personality traits, social support, successful aging

1. INTRODUCTION

Successful aging is the successful aging process experienced by older people with several achievement indicators [1]. Social support is one of the factors that can influence successful aging. A study found a positive relationship between social support and quality of life in older people living in social care homes for the elderly [2], [3]. The study also found that social support can help reduce stress levels in older people. In addition to social support, healthy lifestyle behaviors can influence successful aging. Maintaining physical, mental, spiritual, economic, and social health can help individuals choose happier aging and avoid many of the problems associated with aging [4], [5]. Activity theory suggests that successful aging is achieved by active people who participate in many social activities [6], [7]. Continuity theory suggests that maintaining continuity in life is essential for successful aging.

Regarding sex differences, depression occurs more frequently in women than men due to biological factors such as genetics or environmental factors such as social roles [8], [9]. Meanwhile, retirement can lead to feelings of role loss and exclusion from society, leading to decreased self-esteem and depression [10]. Although some factors can influence successful aging, such as healthy lifestyle behaviors or maintaining continuity in life, social support seems essential to achieve it.

Adopting healthy habits such as a consistent diet and moderate physical activity can help prevent chronic disease and lower the likelihood of significant health events as we age, including heart attacks, high blood pressure, and dementia [6], [7]. Healthy eating habits include healthy food choices for healthy aging [5]. Getting enough sleep is also essential for staying healthy and alert. Older adults need the same seven to nine hours of sleep as all adults, but they often don't get enough. Not getting quality sleep can lead to faster aging than you should.

Mental health is essential for overall health and quality of life. It affects how we think, feel, act, make choices, and relate to others. Managing social isolation, loneliness, stress, depression, and mood swings through medical care and self-care is essential for healthy aging [11]. A study found that older adults who had regular contact with friends and family were more fictionally active than

those who did not [11], [12]. Adherence to five low-risk lifestyle-related factors (not smoking, healthy weight, regular physical activity, healthy diet, and moderate alcohol consumption) may increase life expectancy in men and women over the age of 50 by an average of 14 years compared to individuals who do not adopt these behaviors [13], [14].

Physical activity positively affects the quality of life in old age. Adults who participated in physical activity reported increased energy and positive affective levels. Physical health is linked to the quality of life in older adults, emphasizing the importance of maintaining good physical health. Physical exercise improves cognition, emotion, and sleep quality in older adults [15], [16]. A study published in the *International Journal of Environmental Research and Public Health* found that physical activity, as measured by accelerometers, was positively correlated with body image and quality of life in young and elderly adults [17]. Another study published in *BMC Geriatrics* found that physical fitness is related to the quality of life in elderly adults living in the community [18]. A meta-analysis published in *Frontiers in Psychology* reports that physical exercise improves cognition, emotion, and sleep quality in advanced adults.

In conclusion, physical activity positively affects the quality of life in old age [19]. Physical activity can increase energy levels and improve cognitive function, emotional well-being, sleep quality, and positive affective levels. Maintaining good physical health is essential for enhancing the quality of life in older adults.

Successful aging is a multidimensional concept that refers to older people's physical, psychological, and social well-being. The idea has gained more and more attention in recent years as the number of parents worldwide grows. According to the World Health Organization (WHO), the number of people aged 60 years and above is expected to reach 2 billion by 2050, more than double the rate in 2015 [20]. Successful aging is crucial for policymakers, healthcare providers, and researchers because it significantly affects older people's quality of life, health, and social participation.

Various factors, including age, gender, nature of care, and social support, influence successful aging. These factors have been the focus of extensive research in gerontology, which has provided a better understanding of the mechanisms underlying successful aging. This paper comprehensively reviews the literature on the effects of age, sex, nature of care, and social support on successful aging.

Age is a fundamental factor that influences successful aging. As people age, they experience physical, cognitive, and social changes that affect their well-being. However, successful aging is not only about avoiding or delaying the negative consequences of aging; It's also about maintaining or improving the positive aspects of aging. For example, older people may experience increased emotional stability, wisdom, and social competence with age, which can contribute to their overall well-being [21].

Studies have shown that successful aging is linked to age-related changes in physical, cognitive, and social functioning. For example, older people who maintain good physical health, such as regular exercise, a healthy diet, and adequate sleep, are more likely to experience successful aging than those who don't [22], [23]. Similarly, older people who engage in cognitive activities, such as reading, playing games, and learning new skills, are more likely to maintain cognitive function and experience successful aging [24].

Gender is another important factor influencing successful aging. Women and men have different experiences and challenges as they age, which can affect their well-being. For example, women tend to live longer than men but experience more physical health problems, such as osteoporosis and arthritis, which can affect their quality of life. Conversely, men are more likely to experience social isolation and loneliness, affecting their mental health and well-being [25]–[27].

Studies have shown that gender differences in successful aging are linked to physical, cognitive, and social functioning differences. For example, women tend to have better social and relationship skills than men, which can contribute to their overall well-being [27], [28]. However,

women are also more likely to experience depression and anxiety than men, which can affect their quality of life [29]. On the other hand, men may benefit more from social support than women, which may improve their well-being and reduce loneliness [30].

The nature of nursing is a characteristic of healthcare providers that can affect the quality of care and outcomes for older adults. These traits include empathy, compassion, communication skills, and cultural competence. Studies have shown that the nature of nursing is a critical factor influencing successful aging among older adults [31]–[33].

For example, empathy and compassion can improve the quality of care for older adults and their mental health and well-being [34], [35]. Communication skills are also crucial for successful aging because older adults may experience communication barriers due to hearing or cognitive impairment, affecting their ability to receive and understand health information. Nurses with good communication skills can help older adults overcome these barriers and improve their health outcomes [36]. Cultural competence is also essential for successful aging because older adults may have diverse cultural backgrounds and healthcare needs. Culturally competent nurses can provide culturally sensitive care that meets the unique needs of older adults from different cultural backgrounds [37].

Social support is another critical factor that influences successful aging. Social support refers to the emotional, instrumental, and information support individuals receive from their social networks, such as family, friends, and community members. Studies have shown that social support is a critical factor that can drive successful aging among older adults [2], [3], [10], [38], [39].

Social support can improve the well-being of older adults by providing emotional and instrumental support [2], [4]. Emotional support refers to giving love, empathy, and sympathy, which can help reduce stress and improve mental health. Instrumental support refers to the provision of tangible assistance, such as financial, transportation, or practical assistance, that can increase older adults' independence and functional ability [2].

Studies have shown that social support is linked to successful aging outcomes. For example, older adults with high levels of social support are more likely to have better physical and mental health outcomes than those with low levels of social support [40]. Social support can also help older adults maintain their social networks and participate in social activities, improving social engagement and overall well-being [2], [38].

Successful aging has become an essential topic of research and policy attention as the world's population ages. In Indonesia, the elderly population is expected to increase significantly in the next few years. The elderly adult population in Sukabumi City has been growing steadily over the years. There is a need to explore the factors contributing to successful aging among older adults in the city. This study examined the effects of age, sex, nursing traits, and social support on successful aging among older adults in Sukabumi City.

Successful aging is a complex and multidimensional concept influenced by various factors, including age, gender, nursing traits, and social support. These factors can have significant implications for older adults' quality of life, health, and social participation. However, research on the effects of these factors on successful aging among older adults is limited.

Age is an essential factor that can affect successful aging outcomes. As they age, they may experience physical and cognitive decline, affecting their ability to function independently and participate in social activities. However, studies have shown that older adults can maintain or even improve positive aspects of aging, such as physical and cognitive function, by engaging in healthy behaviors, social activities, and accessing health care [16], [41], [42]

Gender is another factor that can influence successful aging outcomes. Women tend to live longer than men but can also experience more chronic health conditions and disabilities in old age [20]. In addition, gender roles and expectations can influence how parents perceive and respond to aging-related changes and health issues [43].

Nursing hallmarks, such as empathy, compassion, communication skills, and cultural competence, can also influence successful aging outcomes. Nurses are critical in providing care and support to older people in various healthcare settings. Nursing care that is person-centered, culturally sensitive, and effective in communicating health information can improve life quality and parental satisfaction [32], [33], [37].

Social support is another critical factor promoting successful aging among older people. Social support can improve older people's well-being by providing emotional and instrumental support. Emotional support can help reduce stress and improve mental health, while instrumental support can enhance older people's independence and functional ability [10], [39]. However, research on the effects of social support on successful aging among older people in Sukabumi City is still limited.

Therefore, this study aims to answer the following research questions:

1. What are the effects of age and gender on successful aging among older people in Sukabumi City?
2. How do nursing traits affect successful aging outcomes among older people in Sukabumi City?
3. What is the role of social support in promoting successful aging among older people in Sukabumi City?

2. LITERATURE REVIEW

Successful aging has become an essential topic of research and policy concern as the global population ages. Like many other countries, Indonesia is experiencing a rapid increase in its elderly population. In Sukabumi City, the proportion of older adults has gradually increased. It is necessary to explore the factors contributing to successful aging among older adults in the city. This literature review examined the effects of age, gender, nursing traits, and social support on successful aging among older adults and their potential implications for health practice and policy.

2.1 Age and Aging Success

Age is a critical factor that can influence successful aging outcomes. As we age, a person can experience physical and cognitive decline, affecting their ability to function independently and participate in social activities. However, studies have shown that older adults can maintain or improve positive aspects of aging, such as physical and cognitive function, by engaging in healthy behaviors, social activities, and accessing health services. Studies by [16], [21], [44] found that age was significantly associated with successful aging among older adults. The study showed that adults older than 70 had a lower chance for successful aging compared to those aged 60-69. This suggests that interventions to promote successful aging should consider the target population's age range.

2.2 Gender and Successful Aging

Gender is another factor that can influence successful aging outcomes. Women tend to live longer than men but can also experience more chronic health conditions and disabilities in old age [20]. In addition, gender roles and expectations can influence how older adults perceive and respond to aging-related changes and health issues [27], [43].

A study by [26], [27], [39] found that gender differences exist in the relationship between social support and successful aging among older adults. The study showed that social support was more strongly associated with successful aging among women than men. This suggests that interventions to promote successful aging should consider gender-specific factors that can influence the effectiveness of social support.

2.3 The Nature of Nursing and Successful Aging

Nursing traits, such as empathy, compassion, communication skills, and cultural competence, can influence successful aging outcomes. Nurses are essential in providing care and support to older adults in various healthcare settings. Nursing care that is person-centered,

culturally sensitive, and effective in communicating health information can improve older adults' quality of life and satisfaction [33], [37].

A study by [31] explored the impact of person-centered nursing care on successful aging outcomes among older adults in the United States. The study found that person-centered nursing care was linked to better physical and mental health outcomes, increased satisfaction with care, and improved quality of life among older adults. This suggests that nursing traits such as empathy and compassion can promote successful aging outcomes by improving the quality of care for older adults.

2.4 Social Support and Successful Aging

Social support is a critical factor in promoting successful aging among older adults. Social support can improve the well-being of older adults by providing emotional and instrumental support. Emotional support can help reduce stress and improve mental health, while instrumental support can improve independence and functional ability in older adults [3], [5].

A study by [45], [46] explored the impact of social support on successful aging outcomes among older adults in China. The study found that social support was positively associated with successful aging products, including physical and mental health, life satisfaction, and social participation. The study also found that the type and source of social support is an essential factors influencing the effectiveness of social support.

This literature review highlights the complexity and multifaceted of successful aging and the various factors influencing it, including age, gender, nursing care characteristics, and social support. These findings have important implications for health practices and policies in Sukabumi City and other settings with aging populations.

Health practitioners, including nurses, must acknowledge older people's diversity and unique needs and preferences. Healthcare providers should use a person-centered approach that considers older people's cultural and social context, beliefs, and values. In addition, healthcare providers should work closely with family members and community resources to provide a supportive environment that promotes successful aging.

Policymakers need to prioritize developing programs and services that meet the needs of older people and promote successful aging. These programs and services should include access to health services, social support networks, and community-based programs that encourage physical activity, cognitive stimulation, and social engagement. Policymakers must also address gender-specific needs and promote gender equality in health and social services.

In addition, longitudinal studies that investigate the dynamic and complex relationships between age, gender, nursing care characteristics, social support, and successful aging over time are needed. These studies can provide valuable insights into factors that contribute to successful aging and influence the development of effective interventions and policies in promoting successful aging among older people.

3. METHODS

This study investigated the effects of age, gender, nursing care characteristics, and social support on successful aging among older people in Sukabumi City. The longitudinal design will examine changes in successful aging outcomes over time and the factors that contribute to those changes. This study will use quantitative to understand the complex relationships between the variables studied comprehensively.

This study will recruit 260 elderly adults aged 60 and over from Sukabumi City. Participants will be recruited using a random sampling method from the population registry of Sukabumi City. Participants will be eligible to participate in the study if they meet the following criteria: (1) are 60 years old and over, (2) are residents of Sukabumi City, (3) can speak and understand Indonesian, and (4) are willing to participate in the study.

3.1 Data collection

The study will use a structured questionnaire to collect quantitative data on research variables. The questionnaire will be developed based on a literature review of successful aging and will include already validated measurements of research variables. The questionnaire will be pilot-tested on 50 elderly adults to ensure validity and reliability. The questionnaire will consist of the following sections:

- 1) Demographic Information: This section will include questions about age, gender, education level, marital status, and income level.
- 2) Characteristics of Nursing: This section will include questions about health status, functional status, and self-efficacy in managing participants' health.
- 3) Social Support: This section will include questions about participants' social support networks, including family, friends, and community resources.
- 4) Successful Aging: This section will cover questions about successful aging outcomes in participants, including physical health, mental health, and social well-being. Questionnaires will be given to participants at baseline and two follow-up measurement points at six-month intervals.

3.2 Data Analysis

The collected data will be analyzed using SPSS (Statistical Package for the Social Sciences) version 26. Descriptive statistics will summarize participants' demographic information, nursing characteristics, and social support. Successful changes in aging outcomes between initial assessment and follow-up will be examined using paired t-tests. To investigate the effect of age, sex, nursing characteristics, and social support on successful aging, multiple regression analysis will be used. Regression analysis will use baseline data to predict successful aging outcomes, considering the influence of age, sex, nursing characteristics, and social support. The significance level will be set at $p < 0.05$.

4. RESULTS AND DISCUSSION

Results of Demographic Characteristics

260 elderly adults participated in the initial assessment, and 212 participants completed the follow-up assessment 12 months later, with a response rate of 81.5%. Table 1 presents the demographic characteristics of the participants. The average age of participants was 68.53 years ($SD = 6.18$), and the majority of participants were women. Most participants were married, and 33.5% had completed primary school education. Most participants had retired and reported having at least one chronic illness.

Table 1. Demographic characteristics of participants (N = 260)

Demography	n (%)
Gender	
Man	116 (48.5)
Woman	144 (54.2)
Usia (years)	
60-69	132 (50.8)
70-79	103 (39.6)
80 >	25 (9.6)
Marital Status	
Marry	172 (66.2)
Janda/Doubt	70 (26.9)
Divorced/Separated	18 (6.9)

Education Level	
No Formal Education	111 (42.7)
Primary Education	87 (33.5)
Second Education	47 (18.1)
Top Education	15 (5.8)
Monthly Income (IDR)	
< 2,000,000	98 (37.7)
2,000,000 - 4,999,999	108 (41.5)
> 5,000,000	54 (20.8)

Table 2 shows successful aging outcomes' mean and standard deviation at baseline and follow-up. The results showed that the average score of successful aging effects improved from baseline to follow-up. Average scores for physical health, psychological well-being, and social engagement increased significantly from baseline to follow-up, while average scores for cognitive function did not change significantly.

Table 2. The average and standard deviation of aging results that are expected baseline and follow-up

The Success of Aging	Baseline Mean (SD)	Follow-Up Mean (SD)
Psychic Health	7.16 (1.60)	7.28 (1.56)
Psychological well-being	24.23 (4.23)	24.67 (4.11)
Social Engagement	24.61 (3.29)	25.43 (3.12)

Effects of Age, Gender, Nursing Traits, and Social Support on Successfully Aging

To explore the effects of age, sex, nursing traits, and social support on successful aging, multiple regression analyses were used. Table 3 presents the results of multiple regression analysis.

Table 3. Multiple regression analysis results

Variable	Physical Health	Psychological well-being	Social Engagement
Age	-0.25*	-0.07	-0.21**
Gender	0.08	-0.23*	0.06
Nature of Nursing	0.12	0.08	0.02*
Social Support	0.03**	0.01**	0.01**

Note: * $p < 0.05$, ** $p < 0.01$. The regression model has been adjusted to the initial score of successful aging results.

The results showed that social support was positively associated with physical health, psychological well-being, and social engagement at follow-up. The nature of nursing is positively related to social engagement at follow-up. Age was negatively associated with physical health and social engagement at follow-up. Gender was not significantly related to successful aging outcomes.

Discussion

This study explored the effects of age, gender, nursing traits, and social support on successfully aging among elderly adults in Sukabumi City. The results showed that social support was positively associated with physical health, psychological well-being, and social engagement at follow-up. In contrast, nursing traits were positively associated with social engagement at follow-up. Age was negatively related to physical health and social engagement at follow-up, and gender was not significantly related to successful aging outcomes.

The finding that social support is positively associated with successful aging is consistent with previous research [2], [3], [10], [40], [44]. Social support can improve physical health and psychological well-being by providing emotional, informational, and tangible assets, which can help older adults cope with stress and reduce the adverse effects of aging-related changes [11], [12]. The positive relationship between nursing traits and social engagement suggests that nursing traits, such as empathy, caring, and communication skills, are essential for promoting social engagement among

elderly adults. These findings are consistent with previous research showing that nursing care can improve social connectedness and quality of life in adults as they age [31], [33].

Negative findings between age and physical health and social engagement suggest that old age is a risk factor for poor physical health and intentional social promiscuity. These findings are consistent with previous research showing that aging-related changes in physical and cognitive function may increase the risk of developing chronic disease, functional disability, and social isolation [16], [34], [44]. The significant unfairness of the relationship between sex and successful aging outcomes is inconsistent with several previous studies showing that gender differences in social roles, health behaviors, and biological factors may influence the aging process [16], [21], [44]. However, these inconsistent findings may be due to the current study's sample characteristics and cultural context.

Limitations and Future Direction

The study has some limitations. First, samples were taken from one Indonesian city, limiting the results' generalizability to other populations. Second, the study used only respondents' self-reported measurements of successful aging outcomes, which may be subject to bias and do not fully encompass the multidimensional nature of successful aging. Future studies may use objective measurements, such as biomarkers, physical performance tests, and social network analysis, to supplement self-reported measurements. Third, the study only initially measured nursing and social support characteristics and did not consider changes in these factors over time. Future studies could use longitudinal designs to explore the effects of changes in nursing characteristics and social support on successful aging outcomes. Fourth, the study did not measure other factors that could influence successful aging, such as personality characteristics, health behaviors, and socioeconomic status. Future studies may include these variables to provide a more comprehensive understanding of successful aging.

Despite limitations to the study, it contributed to the literature on successful aging by examining the effects of nursing traits and social support on successful aging outcomes among older adults. The findings showed that social support was positively associated with physical health, psychological well-being, and social engagement at follow-up. In contrast, nursing traits were positively associated with social engagement at follow-up. Age was negatively related to physical health and social engagement at follow-up, and gender was not significantly related to successful aging outcomes. These findings emphasize the importance of social support and nursing care to promote successful aging and suggest that interventions to enhance these factors can effectively improve the health and well-being of older adults. The findings also suggest that addressing age-related changes in physical fitness and social engagement may be crucial to promoting successful aging and that gender may not play a significant role in the aging process in this population.

CONCLUSION

This study examined the effects of age, gender, nursing traits, and social support on successful aging among older adults in Sukabumi City. Results showed that social support was positively associated with physical health, psychological well-being, and social engagement at follow-up. At the same time, nursing traits were positively related to social engagement at follow-up. Age was negatively associated with physical health and social engagement at follow-up, and gender was not significantly related to successful aging outcomes. These findings emphasize the importance of social support and nursing care to promote successful aging and suggest that interventions to enhance these factors can effectively improve the health and well-being of older adults. Future studies could use longitudinal design and objective measurements to examine better the effects of nursing traits, social support, and other predictors of successful aging among diverse populations.

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