



Independence in Activities of Daily Living Among Community-Dwelling Older Adults: A Cross-Sectional Study

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Abstract: Older adults constitute a vulnerable population experiencing declines in physical, psychological, and social functioning, which may compromise their independence in performing activities of daily living (ADL). Maintaining ADL independence is essential for preserving quality of life, autonomy, and reducing dependency on family and long-term care services. Elderly associations serve as important community-based platforms that support social and psychological well-being; however, empirical evidence regarding ADL independence among their members remains limited. This study aimed to analyze the level of independence in activities of daily living among community-dwelling older adults. An analytical cross-sectional survey was conducted involving 101 elderly individuals residing in Kebakkalang RW VIII, Kemiri, Kebakkramat, Karanganyar. Independence in ADL was assessed using the Katz Index. The findings indicate that more than half of the respondents demonstrated independence in performing daily activities, suggesting a generally favorable functional status among elderly individuals engaged in community-based social groups. This level of independence reflects the potential role of social participation and community support in maintaining functional ability among older adults, particularly in early old age. These results provide important empirical evidence for healthcare providers, families, and community stakeholders to develop targeted preventive and promotive interventions aimed at sustaining and enhancing functional independence among older adults living in the community.

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INTRODUCTION

The aging process is a natural life cycle marked by a gradual decline in various physiological, psychological, and social functions, which increases vulnerability to chronic diseases and functional limitations (Prayoga & Puspitosari, 2024). In Indonesia, population aging has become an increasingly significant demographic phenomenon. Central Java officially entered the aging population era in 2022, with individuals aged 60 years and above accounting for 13.07% (approximately 4.86 million) of the total population, rising to 13.5% (around 5.07 million) in 2023. According to the 2023 Central Java Elderly Profile, Karanganyar Regency ranks fifth in terms of the largest elderly population in the province (BPS, 2023).

Globally, population aging presents a major public health challenge, particularly in low- and middle-income countries where the growth of the elderly population is occurring at an accelerated pace. As life expectancy increases, the focus of public health systems must shift from merely extending lifespan to ensuring that older adults maintain functional independence and quality of life during later years (Motamed-Jahromi & Kaveh, 2021).

Independence in performing Activities of Daily Living (ADL)—including eating, bathing, dressing, toileting, and mobility—serves as a critical indicator of functional capacity and overall well-being in older adults. Numerous studies have demonstrated that decreased ADL independence is associated with higher healthcare utilization, increased caregiver burden, and deteriorating physical and mental health outcomes (Redzovic, 2023; Pashmdarfard & Azad, 2020; Setyawati et al., 2024). Consequently, assessing ADL independence is widely recognized as an essential component of geriatric and public health research.

However, existing studies on ADL independence have largely focused on institutionalized elderly populations, hospital-based samples, or individuals with specific chronic conditions. Such approaches may not adequately capture the functional status of older adults living independently in community settings, particularly those who actively participate in elderly associations or social community groups. Furthermore, many previous studies emphasize determinants or risk factors of ADL dependency without providing localized empirical data that reflect the actual level of independence within specific communities.

From a public health perspective, the lack of community-level data on ADL independence limits the ability of policymakers and health practitioners to design targeted health promotion, preventive interventions, and age-friendly community programs. This gap is particularly evident in regions with a rapidly growing elderly population, such as Karanganyar Regency, where localized evidence remains scarce despite its significant demographic importance.

Therefore, this study is necessary to address the existing research gap by providing empirical evidence on the level of independence in activities of daily living among community-dwelling elderly individuals. By focusing on a specific community context, this research contributes to the academic literature by complementing prior institution-based studies and offering practical insights for developing community-based strategies that support active aging, functional independence, and sustainable elderly care systems.

THEORETICAL FRAMEWORK

The World Health Organization defines older adults as individuals aged 60 years and above, who experience biological, psychological, and social changes associated with the aging process (WHO, 2015). Aging is a natural and inevitable process characterized by a gradual decline in physiological functions and reduced adaptability to environmental stressors.

Physiologically, older adults commonly experience decreases in muscle strength, balance, and mobility, accompanied by cognitive changes and psychosocial transitions, such as reduced social roles and increased reliance on environmental support systems (Miller, 2018). These age-related changes directly influence functional capacity and the ability to live independently.

Independence in older adults refers to the capacity to perform daily activities without full dependence on others. This construct encompasses both Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), which represent basic and complex functional abilities, respectively (Katz et al., 1963; Lawton & Brody, 1969). ADL includes fundamental self-care activities such as eating, bathing, dressing, toileting, and mobility, while IADL covers more complex tasks such as managing finances, cooking, shopping, transportation, and communication.

Beyond physical functioning, independence among older adults is multidimensional, involving psychological and social components. Psychological functioning includes self-control, decision-making capacity, motivation, and self-efficacy, which influence an individual's willingness and confidence to remain active and autonomous (Taylor & Johnson, 2018). Social functioning refers to the ability to interact with others, maintain social roles, and participate in community life, all of which contribute to emotional well-being and sustained independence (Nugroho, 2019).

The level of independence in older adults is shaped by the interaction of multiple factors. Internal factors include age, physical condition, and the presence of chronic diseases, while psychological factors encompass motivation and self-efficacy. External factors consist of family support, environmental conditions, and access to health and social services (Wahyuni & Rahmat, 2020). These determinants do not operate in isolation but collectively influence functional outcomes.

In rural settings, the environmental context plays a particularly important role. Rural communities are typically characterized by strong social cohesion and higher levels of daily physical activity, which may support functional independence. However, these advantages are often counterbalanced by limited healthcare facilities, restricted transportation, and reduced access to assistive devices (Central Statistics Agency, 2022; Suhardjo, 2021). Additionally, demographic changes such as urban migration can weaken traditional family support systems, posing further challenges to maintaining independence among rural older adults.

Despite these constraints, rural communities also possess social strengths that can enhance independence, including a culture of mutual cooperation and strong interpersonal bonds. Such social capital has been shown to positively influence older adults' psychological well-being and functional capacity (Harper & Jones, 2020).

Based on the reviewed literature, this study adopts a conceptual framework in which independence in older adults is understood as a multidimensional outcome influenced by physical (ADL/IADL), psychological, and social functioning, within the broader context of internal characteristics and external environmental factors. The Katz ADL Index serves as the primary instrument to assess basic functional independence, while contextual factors related to demographic characteristics and rural community conditions are used to interpret variations in independence levels. This framework guides the analysis of the research findings by linking observed levels of ADL independence to individual and environmental influences within the community setting.

RESEARCH METHODS

This study employed a descriptive cross-sectional design aimed at providing an empirical overview of the level of independence in activities of daily living (ADL) among community-dwelling elderly individuals. The target population consisted of adults aged 60 years and above who were registered members of a community-based elderly

association in RW VIII Kemiri, Kebakkramat, Karanganyar. Inclusion criteria included being formally registered in the community group, having adequate communication ability, and providing informed consent to participate in the study. A total sampling technique was applied, resulting in a sample size of 101 elderly participants.

Data were collected using a structured questionnaire comprising two main components: (1) demographic and health-related characteristics, including age, sex, education level, marital status, living arrangement, and presence of chronic diseases; and (2) functional independence measured using the Katz Index of Independence in Activities of Daily Living. The Katz Index assesses six basic functions—bathing, dressing, toileting, transferring, continence, and feeding—with total scores ranging from 0 (very dependent) to 6 (fully independent). Data collection was conducted through individual face-to-face interviews by trained enumerators in locations agreed upon with participants to ensure comfort, privacy, and data accuracy.

Data analysis was performed using SPSS version 30. Descriptive statistical analysis, including frequency distributions and percentages, was used to summarize demographic characteristics and levels of ADL independence. Although demographic and health variables were collected, inferential statistical analyses (bivariate or multivariate) were not conducted because the primary objective of the study was descriptive in nature, focusing on establishing baseline empirical data on ADL independence within a specific community context. Furthermore, the sample size and the homogeneity of the study population limited the statistical power required to draw robust associative or predictive inferences.

Nevertheless, analytical depth was strengthened by interpreting patterns of ADL independence in relation to key demographic characteristics (such as age group and gender) within the descriptive framework. This approach allows the findings to serve as foundational evidence for future analytical studies employing larger samples and inferential statistical designs.

Ethical approval for this study was obtained from the Ethics Committee of Surakarta 'Aisyiyah University. Written informed consent was obtained from all participants prior to data collection. Participants were assured of the confidentiality and anonymity of their data and were informed of their right to withdraw from the study at any stage without any consequences.

RESULTS AND DISCUSSION

This descriptive study involved 101 elderly respondents in the RW VIII area of Kemiri Village, Kebakkramat District, Karanganyar Regency.

Table 1. Characteristic respondent

Characteristic	N	%
Age category (Kemensos, 2024)		
Pre-Elderly (Pra-LU/60-69 year)	63	62.37
Elderly (LU/70-79 year)	35	34.65
Late Elderly (LUA/>80 year)	3	2.98
Gender		
Male	37	36.63
Female	64	63.36

This study involved 101 elderly respondents residing in RW VIII, Kemiri Village, Kebakkramat District, Karanganyar Regency. The majority of respondents were categorized as Pre-Elderly (60–69 years), accounting for 62.37%, followed by Elderly (70–79 years) at 34.65%, and Late Elderly (≥ 80 years) at only 2.98%. In terms of gender, female respondents predominated (63.36%).

The dominance of the Pre-Elderly group reflects broader demographic trends in Indonesia, where the elderly population is still concentrated in the younger-old age group due to demographic transition and increasing life expectancy that has not yet resulted in a substantial proportion of very old individuals (BPS, 2023). However, this age distribution is not merely a demographic characteristic; it has important analytical implications for interpreting the level of functional independence observed in this study. According to the life-course and functional aging theories, functional decline is progressive rather than abrupt, meaning that individuals in early old age are more likely to retain independence in basic daily activities compared to those in advanced age (Melo et al., 2020; Hastaoglu & Mollaoglu, 2022).

The higher proportion of female respondents is consistent with national demographic data showing greater longevity among women. From a gerontological perspective, this finding is important because gender differences in aging are often associated with variations in health status, coping strategies, and help-seeking behavior. While women tend to live longer, they are also more likely to experience non-fatal chronic conditions that may gradually affect functional independence, highlighting the need for gender-sensitive interpretations of ADL outcomes (Karlsson et al., 2020).

Table 2. Level independence in daily life activities

Level Independence Category	N	%
Dependent (needs assistance)	45	44.55
Independent (can perform the task without assistance)	56	55.44

The results indicate that more than half of the respondents (55.44%) were independent in performing activities of daily living, while 44.55% required assistance. At first glance, this finding appears to confirm previous studies reporting relatively high levels of ADL independence among community-dwelling elderly individuals (Hanif, 2023; Novianti & Kartinah, 2024). However, a deeper analysis suggests that this independence should be interpreted within the context of age structure, functional reserve, and environmental support.

From the perspective of Katz's ADL theory, independence in basic activities reflects preserved physical and cognitive functioning, particularly in self-care domains such as feeding, bathing, and toileting (Katz et al., 1963). The predominance of Pre-Elderly respondents in this study likely contributed to the relatively high independence rate, as individuals in this age group generally retain sufficient functional capacity and adaptive ability. This supports the theoretical assumption that ADL decline accelerates with advancing age rather than occurring uniformly across all elderly groups.

Table 3. Distribution of levels of independence by age category

Age category	Dependent		Independent	
	N	%	N	%
Pra-LU	18	40	45	80.35
LU	24	53.33	11	19.64
LUA	3	6.66	-	-
Total	45	100	56	100

When independence was analyzed by age category, a clear gradient emerged. The Pre-Elderly group showed a substantially higher proportion of independent individuals, while dependency increased markedly in the Elderly (70–79 years) group and became universal in the Late Elderly group. This pattern aligns with functional aging theory, which emphasizes cumulative physiological decline, reduced muscle strength, balance impairment, and increased prevalence of chronic diseases as age advances (Miller, 2018).

However, this finding also invites critical reflection. The complete dependency observed in the Late Elderly group may not solely reflect biological aging but may also be influenced by contextual factors such as limited access to assistive devices, inadequate environmental adaptations, and reduced family support. According to ecological models of aging, functional independence is shaped by the interaction between individual capacity and environmental demands. When environmental support is insufficient, even mild functional limitations can translate into dependency (Lawton & Brody, 1969).

Interestingly, observational findings revealed that some elderly individuals continued to attempt performing daily activities independently despite evident physical limitations. This phenomenon highlights a critical dimension often overlooked in purely functional assessments: psychological agency. According to developmental and self-determination theories, older adults possess accumulated life experiences that foster a strong desire for autonomy and self-control, even in the presence of declining physical capacity (Bahriah & Mutmainna, 2023).

This creates a paradox in geriatric care: while independence is generally considered a positive outcome, excessive insistence on self-reliance without adequate support may increase the risk of injury or unmet needs. Therefore, independence should not be interpreted solely as the absence of assistance, but rather as the ability to perform activities safely with appropriate support. This perspective challenges a purely binary classification of “independent” versus “dependent” and underscores the importance of contextual and qualitative interpretation of ADL scores.

The findings of this study extend existing literature by demonstrating that ADL independence among community-dwelling elderly individuals is not only a function of age and physical ability but also reflects psychological resilience and environmental context. While previous studies have largely focused on confirming levels of independence, this study highlights the need to interpret ADL outcomes within a multidimensional framework that integrates physical, psychological, and social dimensions of aging.

From a public health and gerontological perspective, these results suggest that interventions should move beyond maintaining physical function alone and incorporate strategies that enhance safe autonomy, environmental adaptation, and supportive community structures. Such an approach aligns with active aging and age-friendly

community frameworks, which emphasize enabling older adults to remain functionally independent while minimizing risk and dependency.

CONCLUSION

This study aimed to provide an empirical overview of the level of independence in activities of daily living (ADL) among community-dwelling older adults. The findings indicate that more than half of the respondents were able to perform daily activities independently, with independence predominantly observed among individuals aged 60–69 years (pre-elderly category) and among female respondents. These results suggest that functional independence in the early stages of old age remains relatively preserved, supporting theoretical perspectives that view functional decline as a gradual and progressive process rather than an abrupt transition. From an analytical standpoint, the study highlights that ADL independence is closely linked to age-related functional reserve and the capacity for adaptation within a community setting. The presence of a substantial proportion of independent older adults underscores the potential effectiveness of early preventive and health promotion interventions aimed at maintaining functional ability before significant decline occurs. Scientifically, this research contributes to the gerontological and public health literature by providing community-level evidence that complements prior studies predominantly conducted in institutional or clinical settings.

Despite its contributions, this study has several limitations that should be acknowledged. First, the descriptive cross-sectional design limits the ability to identify causal relationships or determine factors influencing independence in daily activities. Second, the research was conducted in a single community area (RW VIII, Kemiri Village, Karanganyar Regency), which restricts the generalizability of the findings to other populations with different socio-demographic and environmental characteristics. Third, the use of a single measurement instrument (Katz Index) focuses on basic ADL and does not capture more complex functional abilities such as Instrumental Activities of Daily Living (IADL) or psychosocial dimensions of independence. Future research is therefore recommended to employ analytical or longitudinal designs with larger and more diverse samples, incorporate additional functional and psychosocial measures, and explore the determinants of independence more comprehensively. Such approaches would strengthen the evidence base for developing targeted, community-based interventions aimed at promoting active aging, sustaining independence, and improving the quality of life of older adults.

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