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Social Network of Urban and Rural Elderly with Disability in Indonesia

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Abstract

Purpose: This study aimed to compare the social network between rural and urban elderly with disability.
Methodology: The study participants were community dwelling rural and urban elderly with disability. Disability was assessed using Washington Group Short Set of questions on functioning and social network was rated using the Lubben Social Network Scale. Data were analysed using ANOVA test and crosstabulation to gain a deeper understanding with demographic variables.
Results: A total of 115 (55 rural and 60 urban) elderly with disability aged 60-95 years participated in this study. Rural elderly with disability are more involved in social networking. Urban elderly women seem to experience higher rates of isolation. Rural men exhibit higher level of social networking compared to urban men and women in both rural and urban settings. Elderly who have education have higher social network than those without education. Married elderly, particularly in rural areas, have higher levels of social networking and lower rates of isolation compared to those who are single. Single elderly, especially in urban areas, are more vulnerable to social isolation.
Applications/Originality/Value: Rural older people with disability have higher social networking than their urban counterparts. The findings that sociodemographic and geographic factors shape social network of elderly with disability emphasize the needs of social policies and community-based programs targeting urban elderly with disability, particularly women, those who are single or have lower education.

Introduction

The global population of elderly keeps increasing. The United Nations predicts that the number of people aged 60 years and older will double by 2050, reaching approximately 2.1 billion (UNDESA Population Division, 2020). This demographic change can be found globally, but it is more prominent in developing countries, in which 80% of older people are projected to live by 2050. Indonesia, as the fourth most populous country in the world, has the similar trend. The proportion of elderly population in Indonesia has been steadily growing, from 7.59% in 2010 to 9.92% in 2020, and is projected to rise to 19.90% by 2045 (Badan Pusat Statistik, 2023). The increase poses significant challenges to healthcare systems, social support structures, and policy planning, particularly as health issues and disability become more prevalent.

Aging is associated with physiological, cognitive, and functional changes that increase the risk of disability among older adults (WHO, 2023;Luo, Su and Zheng, 2021). The age-related physiological changes can be found in all organs and cause various systemic alterations, including decreased lean body mass, muscle mass, increased adipose tissue, impacting cardiovascular, respiratory, gastrointestinal, and musculoskeletal systems, with clinical significance in disease management and elder care. There are sensory declines, affecting vision, hearing, taste, smell, and touch, potentially impacting daily life and safety. Aging is also accompanied by cognitive decline, that can manifest as difficulties with thinking, memory, concentration, and other brain functions. Declines in cognitive function, physical abilities (like strength and balance), and sensory functions can impact their ability to perform daily tasks, and independence in conducting daily activities.

The World Health Organization (WHO) defines disability as any impairment, activity limitation, or participation restriction resulting from a health condition, which may manifest as physical, sensory, cognitive, or emotional difficulties (WHO, 2001). In Indonesia, musculoskeletal disorders, cardiovascular diseases, and diabetes are among the

most common conditions that contribute to disability among the elderly (WHO, 2024). These conditions often lead to reduced mobility, loss of independence, and increased reliance on others for daily activities.

The prevalence and severity of disability in urban elderly populations is lower than those in rural populations due to differences in healthcare access, educational level and social network (Qiao et al., 2022). Rural older adults often face more significant challenges due to limited healthcare services and resources, lower socioeconomic status and environmental factors contributing to higher disability rates compared to their urban counterparts (Cohen and Greaney, 2023). Rural elderly have fewer healthcare services available, impacting their access to medical treatment and care. Lower economic status and lower educational level adversely affect their wellbeing. Proper housing, transportation and accessible infrastructure are also more limited in rural areas. Rural older adults may experience lower loneliness and stronger community ties, which could potentially compensate for these disparities in some ways (Rey-Beiro and Martínez-Roget, 2024). However, urbanization and modernization may weaken these traditional support systems. Rural people, particularly the young ones move to work in the cities. Urban development attracts people from rural areas to leave their villages to find better life in the city.

Social network is defined as relationships that an individual has, encompassing family, friends, and broader community contacts (Lubben, 1988). This concept includes the number of people one interacts with, the types of relationships within these connections, and the frequency and quality of interactions. For older adults, these networks often become crucial as their health and functional abilities decline. Social support and informal caregivers help elderly who are no longer able to do their daily activities independently to be able to fulfill their basic necessities and live in dignity.

Social networks play an important role in supporting the health and well-being of older adults, particularly those with disability. Research has consistently shown that strong social ties are associated with better physical and mental health outcomes, including reduced risks of depression, improved cognitive function, and lower rates of morbidity and mortality (Holt-Lunstad, 2022;Holt-Lunstad, 2024). For elderly individuals with disability, social networks provide essential support, such as assistance with daily activities, access to healthcare services, and emotional support, which are critical for maintaining their independence and quality of life.

For older adults with disability, the availability and strength of social networks can significantly influence their ability to manage their conditions and maintain their well-being. A robust social network can enhance the ability of elderly individuals to access health services, adhere to medical treatments, and receive necessary care. In contrast, limited social support has been associated with poorer health outcomes, increased hospitalization rates, and higher mortality among older adults with disability (Bhatia et al., 2024;Liao et al., 2015).

Research has shown notable differences in the social networks between elderly individuals living in urban and those living in the rural areas. A study in China reports that urban elderly populations often have access to a wider range of services and resources, including healthcare facilities, social welfare programs, and community activities that foster social connections (Fang, Wang and Ouyang, 2019). However, these advantages may not always translate into stronger social networks, as urban environments may also be associated with social isolation due to high population density, mobility constraints, and weaker neighborhood cohesion (Nguyen et al., 2024).

In contrast, older adults in rural areas often report stronger community ties and a greater sense of belonging. Studies in Asian countries have indicated that rural elderly populations tend to have more frequent interactions with neighbors and extended family members compared to their urban counterparts (Kim, Chang and Kim, 2021;Bincy, Logaraj and Anantharaman, 2022) . However, rural older adults also face challenges such as geographic isolation, lack of transportation, and limited access to formal support services. Unlike the densely populated cities, rural areas are more sparsely populated. People living in the villages have spacious yard, so they have to make the effort and time to visit their neighbors. Moreover, public transportation is poorer in the rural areas. Formal support services, such as therapists, social workers, or healthcare providers, to address specific needs or challenges are not usually available for villagers. Those factors can undermine the overall strength and utility of the social networks of people living in the rural areas.

While there is substantial research on the social networks of older adults in general, studies specifically focusing on elderly individuals with disability are less common, particularly in developing countries like Indonesia. Therefore, the present study aimed to address this gap by comparing the social networks of urban and rural elderly individuals with disability in Indonesia, providing insights into how environmental and social factors intersect to shape support systems for this vulnerable population.

Method

This research was a cross-sectional study. The study participants were community dwelling elderly with disability aged 60 years and over. The urban participants lived in Yogyakarta City, while the rural ones lived in Gunungkidul Regency. The inclusion criteria were those without apparent cognitive impairment. The sampling method was purposive sampling. Data were collected from April to June 2021.

The demographic data of the respondents included age, sex, marital status, educational status, and living arrangement (living alone or with family). The cognitive function was verified using the Mini Mental State Examination (MMSE). Hogervorst et al(2011) has conducted a study of Indonesian elderly and reported that an MMSE score higher than 23 can rule out possible cognitive impairment.(Hogervorst et al., 2011).

Disability was assessed using the Washington Group Short Set of questions on functioning (WG-SS) (Washington Group on Disability Statistics, 2020). The questionnaire has six questions asking if the respondent has any difficulty in seeing, walking or climbing steps, hearing, remembering or concentrating, doing self-care, and communicating. Each question has four choices of answer: no difficulty, some difficulty, a lot of difficulty, and cannot do at all. If the answer indicates any level of difficulty, the respondent is classified as having functional limitations or disability. This questionnaire has been translated into many languages including Indonesian (Sloman and Margaretha, 2018).

The Lubben Social Network Scale (LSNS-10) was used to collect data on social network status. It contains ten questions that reflect relationship with family and friends. The LSNS-10 score is categorized into four groups: ≤ 20 – Isolated; 21-25 – High risk for Isolation; 26-30 – Moderate risk for Isolation; and ≥ 31 – Low risk for Isolation. A higher LSNS-10 score indicates a greater level of social network. The Indonesian version of the Lubben Social Network Scale-10 has been tested for internal validity and reliability. The reliability tests yielded Cronbach's alpha value of $\alpha = 0.740$.

Statistical analyses was conducted to generate univariate data describing the demographics of the rural and urban elderly participating in this study. An ANOVA test was used to analyze social network data of rural and urban elderly people with disability. Then, crosstabs were used to further compare social networks between rural and urban elderly people based on other demographic factors.

The current study obtained ethical clearance from the Ethics Committee for Health Research, Faculty of Medicine, Universitas Kristen Duta Wacana, Yogyakarta, Indonesia. The study protocols were explained to the study participants in plain language and all of them gave their written consent.

Results and Discussion

The total number of respondents in this study were 115 community dwelling older people with disability: 55 lived in rural area and 60 lived in urban area. The demographic data of the respondents are presented in Table 1. There are some differences in the demographic profiles between the rural and urban study participants. Most of the rural elderly with disability waged between 70-74 years, while the highest percentage of urban older adults with disability were within the 60-69 aged range. However, the age group difference between the two groups was not significant. Table 1 shows significant differences in the sex, educational level and marital status between the two groups. Regarding their sex, there were more female elderly with disabiity in the rural group, but more males in the urban group. Urban elderly with disability had significantly higher educationa attainment than their rural counterparts. This finding indicates better access to education for people living in urban areas. Marital status also varied: within the rural group, a majority of elderly individuals with disability were married, while in the urban group, more participants were single, widowed, or divorced. Almost all elderly with disability both living in the rural and urban residence lived with family, less than 10% lived alone. There was a higher percentage of rural older adults with disability who were still married than that of the urban elderly with disability, but the difference was significant. All rural elderly who participated in this study had mobility limitation, while more than 98% urban participants had difficulty in their mobility. More than half of the study participants, either the rural or the urban elderly with disability had multiple disability. People with mobility, hearing and visual impairment had the highest percentage compared to the other types of disability. There was no significant difference in the type of disability between the two subject groups.

Table 1. Demographic and Social Network data of the Respondents

Variables		Rural (n=55)	Urban (n=60)	t-test (t)/ ANOVA (F)		
		%	%	t	%	%
Age					1.758	.190
	60-69	29.1%	53.3%			
	70-74	40.0%	33.3%			
	>75	30.9%	13.3%			
Sex				-1.981		.050
	Male	60.0%	41.7%			
	Female	40.0%	58.3%			
Educational background				-3.575		.001
	Never went to school	54.5%	23.3%			
	Had some schooling	45.5%	76.7%			
Lived with				.381		.704
	None	5.5%	6.7%			
	Family	94.5%	93.3%			
Marital status				2.449		.016
	Single/widowed/divorced	32.7%	55.0%			
	Married	67.3%	45.0%			
Disability					-.782	.436
	Mobility, hearing, visual impairment	47.3%	38.3%			
	Mobility, hearing impairment	36.4%	23.3%			
	Visual impairment	14.5%	31.7%			
	Mobility, visual, hearing, speech impairment	0.0%	3.3%			
	Mobility impairment	1.8%	1.7%			
	Visual, speech impairment	0.0%	1.7%			

The social network of the rural and urban elderly is presented in Figure 1. It can be seen that rural elderly individuals with disability had significantly larger social networks than the urban elderly with disability. This finding might appear counterintuitive, as more diverse social opportunities and infrastructure for community engagement are usually found in urban areas. However, rural communities might have unique characteristics that contribute to stronger social networks among older adults.

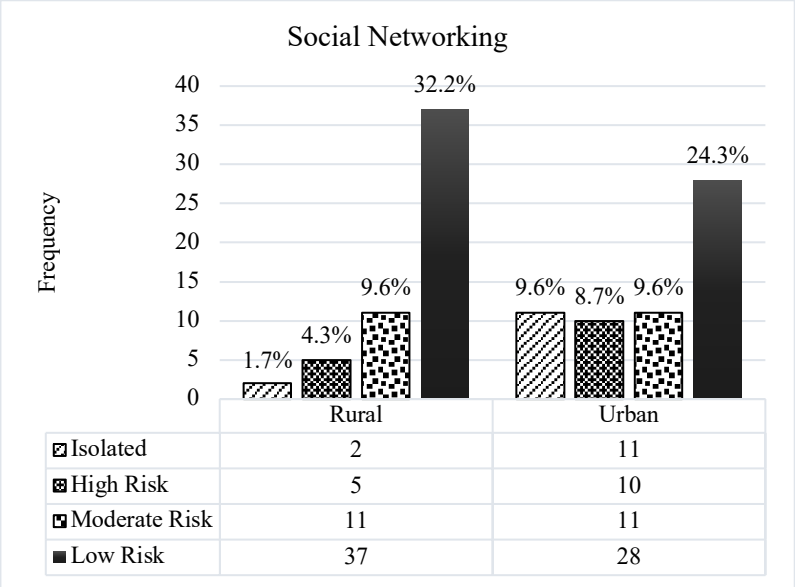

Figure 1. Social network of rural and urban elderly with disability

People who live in rural areas tend to have stronger social ties, with a stronger sense of community (Halliday et al., 2022). The rural communities have traditions that value communal support and mutual aid. Rural older adults with disability need support in their daily activities and they may rely more heavily on their neighbors and community networks. In contrast, urban elderly with disability may foster a more individualistic lifestyle, which could hinder the development of close social networks (Alam, 2022).

Urban living, with its fast-paced lifestyle, can lead to increased feelings of loneliness and isolation, especially for women who usually bear additional domestic and caregiving responsibilities (Site et al., 2022). Rural communities often have stronger social networks, particularly among men as they may be more involved in traditional community activities (Ruan et al., 2022).

In order to gain a deeper understanding, further analyses were conducted to understand the specific factors driving these trends by making crosstabulation with sex, education, and marital status. The data comparing the social network of rural and urban elderly based on their sex, education and marital status, are shown in Figure 2, Figure 3 and Figure 4.

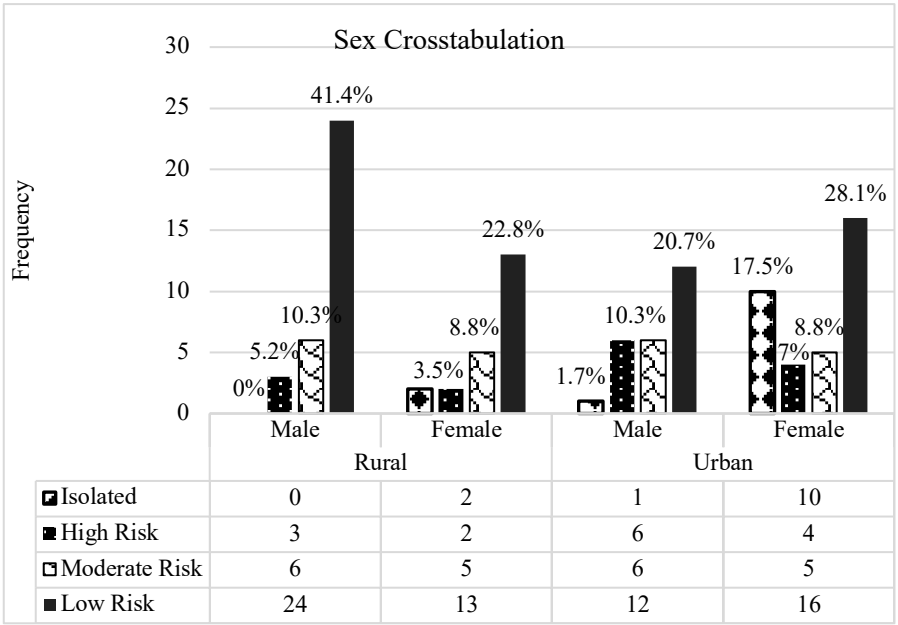

Figure 2. Crosstabulation of LSNS and Sex of Rural and Urban Elderly with Disability

Figure 2 indicates that older men with disability, regardless of their residential place, had stronger social networks compared to older women with disability. This finding is consistent with that of a prior research, reporting older men with disability have lower social isolation than women (Guo et al., 2021). Besides, there are societal expectations and gender roles that may influence social interactions and isolation. In rural areas, women may be more confined to domestic roles, while in urban areas, they may have more opportunities for social engagement but face unique challenges (M. A. Ali & Kamraju, 2023). In Indonesia there are social and cultural norms that may partly explain these findings, as men are often encouraged to maintain connections outside the family, while women are frequently relegated to domestic roles, that may potentially limit their social interactions and network size (Setyonaluri et al., 2021). Men traditionally participate more actively in social gatherings, community activities, and local organizations, often due to their occupational and civic responsibilities already established earlier in life. While women, particularly in rural areas, may have fewer opportunities to develop external social ties as they gave caregiving responsibilities, and then compounded by limited mobility in older age due to their disability. These dynamics are likely to play a role in constraining women's social network expansion. Considering the importance of social networks for mental health and support, these findings underscore the need to develop programs promoting social inclusion among older women with disability, particularly those living in urban areas where social isolation may be more prevalent.

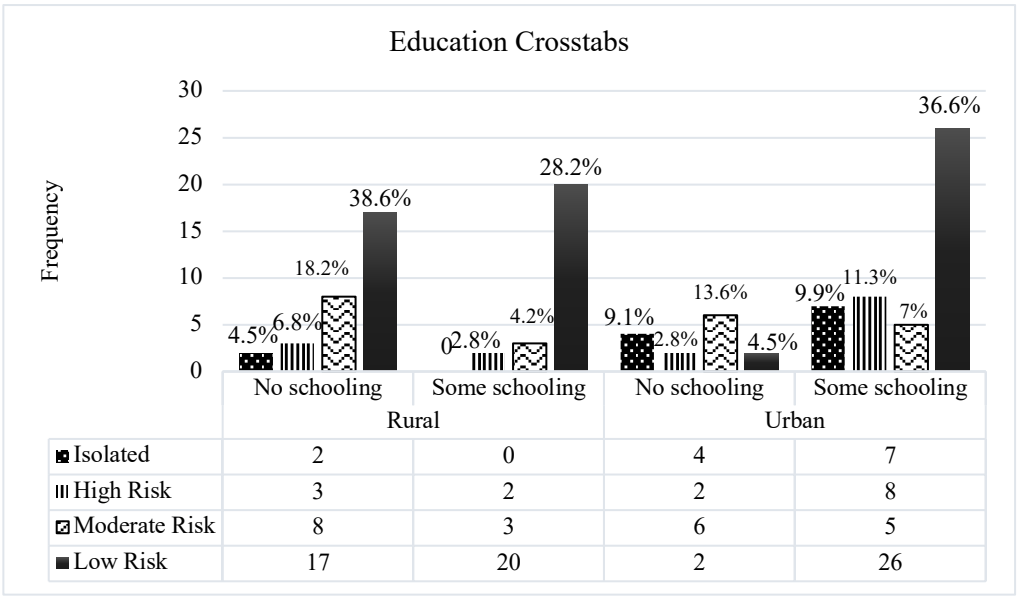

Figure 3. Crosstabulation of LSNS and Education of Rural and Urban Elderly with Disability

Figure 3 shows that older adults with disability with some level of formal education exhibited larger social networks than those without schooling, irrespective of their geographic location. Education is often correlated with broader social networks (T. Ali et al., 2022). Educational attainment may also expand access to information resources. This finding indicates that educational attainment may provide individuals with more opportunities or resources to build and maintain social relationships, which could be particularly beneficial for those living with disability.

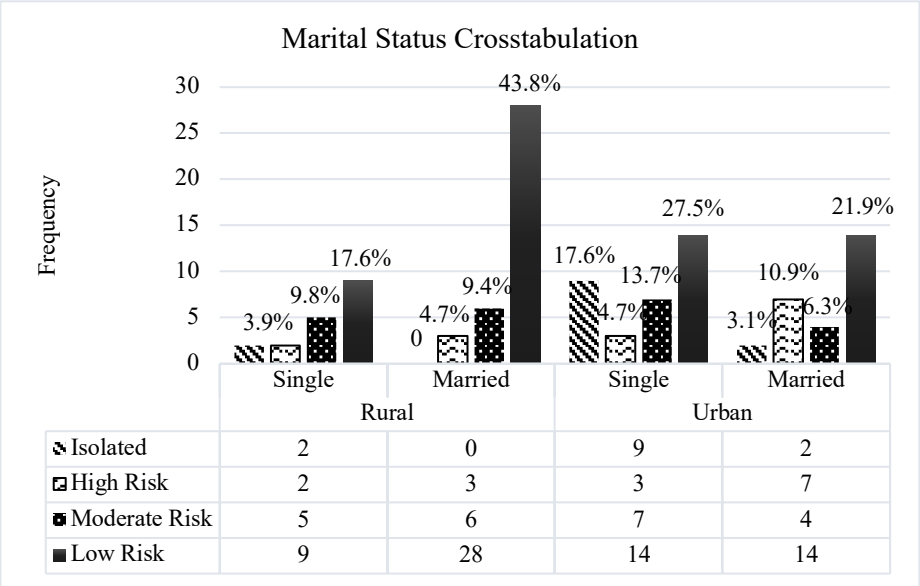

Figure 4. Crosstabulation of LSNS and Marital Status of Rural and Urban Elderly with Disability

Figure 4 provides an understanding that rural married elderly with disability exhibit higher levels of social networking compared to their urban counterparts. This suggests that marriage can be a protective factor against social isolation in rural areas. Urban single individuals are more likely to be isolated, while rural single individuals, although less socially networked, are less likely to be isolated. Married elderly, particularly in rural areas, have higher levels of social networking and lower rates of isolation. This finding is consistent with the result of another research , which shows the protective effect of marriage on social networks and social support among the elderly (Dahlberg et al., 2022). Married individuals receive the companionship, emotional support, and social resources from their partners, which can protect them from the isolating effects of disability and aging. Single elderly with disability, especially those living in urban areas, are more vulnerable to social isolation. This may be due to factors such as lack of family support, limited social networks, and increased loneliness (Kumar et al., 2022). This finding shows the potential importance of spousal support, which may provide additional social network for elderly with disability.

The findings of this study provide evidence for targeted intervention programs to support the social networks of older adults with disability in Indonesia. First, the gender disparities in social networks needs to be addressed. Policies and programs should encourage older women with disability, particularly those living in urban areas to be socially engaged. Community centers or social clubs should be specifically designed to be friendly to older women with disability so that they feel comfortable and safe to have social interaction, and this can potentially broaden their networks. Programs should be designed to be gender sensitive.

Second, the study emphasizes the importance of education for social network development. Lifelong learning programs or community-based trainings targeting elderly with limited education could be developed to improve their social engagement. Such programs could help older adults with disability, particularly in rural areas, enhance their social skills and provide information on available community resources. This may develop and maintain wider social networks.

Finally, social support programs are needed to target single, widowed, or divorced older adults with disability. The programs should consider their unique needs related to their disability. Urban community-based programs that facilitate regular social interaction among single, widowed, or divorced elderly with disability can help reduce their risk of isolation. Home visits, support groups, and family involvement initiatives can help these individuals stay connected despite their circumstances. Provision of assisted transportation can encourage single, widowed, or divorced elderly with disability to go out and meet other people to reduce their isolation.

This rural-urban disparity points to the need for policy interventions and programs that support older adults with disability in urban areas to be socially engaged. Activities taking place at community centers, accessible social gatherings, and peer-support groups could help reduce the social isolation of urban residents with disability. Programs that encourage community-based care and promote inclusive social activities can also foster the social networks of urban elderly with disability.

Conclusions

This study provides valuable insights into the social networks of older adults with disability in Indonesia, revealing significant differences between rural and urban settings. Older adults with disability in rural areas tend to have stronger social networks compared to their urban counterparts. The research also highlights how sociodemographic and geographic factors shape these networks, emphasizing the need for targeted social policies and community-based interventions. Such efforts are particularly crucial in urban areas, where the risk of social isolation among older adults with disability is more pronounced. These findings stress the importance of fostering inclusive and supportive social environments for this vulnerable population.

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