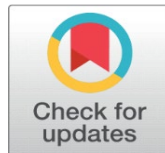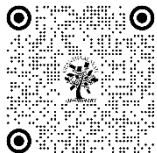# LONELINESS AMONG OLDER ADULTS IN RURAL INDIA: A SOCIO-DEMOGRAPHIC AND HEALTH PERSPECTIVE

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ABSTRACT

Introduction
Loneliness is an emerging public health concern, particularly among older adults in rural settings. It is defined as a distressing subjective experience resulting from deficiencies in social relationships. In India, changing family structures, migration, and socio-economic disparities exacerbate loneliness among the elderly, necessitating targeted research and interventions. This study examines the prevalence of loneliness and its association with demographic, socio-economic, health, and lifestyle factors among older adults in Kurnool district, Andhra Pradesh.

Methodology
A cross-sectional study was conducted among 380 older adults (aged 60 and above) using a multistage sampling method. Data collection involved face-to-face interviews utilizing the UCLA Loneliness Scale (Version 3) and a structured questionnaire addressing demographic, socio-economic, health, and lifestyle factors. Statistical analyses, including t-tests, ANOVA, and regression models, were employed to identify significant predictors of loneliness.

Results and Discussion
The study revealed that women, individuals aged 75 and above, and marginalized caste groups experienced significantly higher loneliness levels. Socio-economic factors, including lower education, unemployment, low income, and lack of savings, were strong predictors of loneliness. Additionally, chronic illnesses, poor sleep quality, and greater dependence on assistance in daily activities contributed to increased loneliness. Lower physical activity and higher social support needs further intensified feelings of loneliness. The discussion underscores the compounded effects of socio-economic disadvantages and health deterioration, emphasizing the role of financial stability, healthcare access, and social networks in mitigating loneliness.

Conclusion
Addressing loneliness in older adults requires multi-dimensional interventions focusing on financial security, healthcare accessibility, and social engagement. The findings provide valuable insights for policymakers, healthcare professionals, and community leaders to enhance elderly well-being in rural India.

Keywords: Loneliness, Older Adults, Socio-economic Factors, Health and Lifestyle, Rural India

1. INTRODUCTION

Loneliness is increasingly recognized as a significant psychological health concern worldwide, affecting the well-being of older adults. From both sociological and psychological perspectives, loneliness is described as a subjective distressing experience resulting from a lack of social connections (Hossain et al., 2019). It differs from social isolation or merely living alone, as it is influenced by both personal and environmental factors. The World Health Organization (WHO,

2021) highlights loneliness as a growing issue, with its prevalence varying across populations due to demographic, socio-economic, and health-related factors.

Studies from different countries indicate varying loneliness levels among older adults. In Malaysia, 35.7% of older adults reported loneliness (Mahmud et al., 2024), while in Thailand, 22.2% experienced incident loneliness, and 30.3% reported persistent loneliness (Pengpid & Peltzer, 2023). In India, nearly 37.25% of older adults reported loneliness, with higher rates among those experiencing multi-morbidity (Ansari et al., 2021). Cultural and economic factors significantly contribute to regional variations, with rural populations often reporting higher loneliness levels due to weaker social support structures and lower financial stability (Srivastava & Srivastava, 2023).

Demographic factors such as gender, age, and marital status influence loneliness. Women, particularly widows, tend to experience higher loneliness due to longer life expectancy and social mobility restrictions (Mahmud et al., 2024). Loneliness also increases significantly among individuals aged 75 and above (Gyasi et al., 2022), while those who are widowed or divorced report higher levels of loneliness compared to married individuals (Awang et al., 2022).

Socio-economic status plays a crucial role in loneliness. Lower education levels are associated with increased loneliness, as education provides better coping mechanisms and social connections (Srivastava & Srivastava, 2023). Financial insecurity and unemployment further limit social participation, increasing feelings of loneliness (Pengpid & Peltzer, 2023). Older adults with chronic illnesses and disabilities, such as diabetes or hypertension, experience loneliness due to reduced mobility and social interactions (Mahmud et al., 2024). Difficulties in performing activities of daily living (ADL) and instrumental activities of daily living (IADL) also contribute to loneliness (Sun et al., 2022).

Lifestyle behaviors, including physical activity, alcohol consumption, and sleep quality, significantly influence loneliness. Regular physical activity is associated with lower loneliness, while poor sleep quality exacerbates it (Jia & Yuan, 2020). Social support and living arrangements also determine loneliness levels, with strong social connections and community engagement acting as protective factors (Hussein et al., 2022). Conversely, older adults living alone or in institutions are more likely to experience loneliness (Savage et al., 2021). Depression and anxiety have a bidirectional relationship with loneliness, making mental health interventions crucial in addressing this issue (Pengpid & Peltzer, 2023).

Addressing loneliness requires a holistic approach, combining social, economic, and healthcare interventions. Community-based programs that promote social participation and physical activity can help reduce loneliness (Smale et al., 2022). Financial support schemes, such as pensions, and integrating mental health services into primary healthcare can further mitigate loneliness (Pengpid & Peltzer, 2023). Additionally, digital technology can bridge social gaps, especially in rural areas where older adults may have limited physical mobility (Wolfers et al., 2021).

2. METHODOLOGY

This study examines loneliness among older adults in rural India, particularly in Kurnool district, Andhra Pradesh. The primary objective is to identify demographic, social, and health-related factors contributing to loneliness. As rural communities undergo social transformations, understanding loneliness in this context becomes essential for developing targeted interventions.

A cross-sectional research design was employed to capture a snapshot of loneliness among older adults at a specific point in time. Kurnool district was selected due to its significant elderly population and the shifting dynamics of traditional family structures. The study involved a sample of 380 older adults (aged 60 and above), selected through a multistage sampling process. First, five Mandals (sub-districts) were randomly chosen, followed by the selection of two villages from each Mandal, resulting in a total of ten villages. Within these villages, participants were identified using a systematic random sampling method to ensure a representative sample.

The study included older adults who resided in their own homes and were willing to participate. However, individuals residing in old-age homes, those absent from their households for extended periods, and those experiencing severe cognitive impairments that could affect their ability to respond were excluded from the study. Before the main data collection, a pilot study involving 20 older adults was conducted to refine the interview schedule, ensuring cultural relevance and clarity. Based on participant feedback, minor modifications were made, and the final version was translated into Telugu to enhance accessibility and comprehension for participants.

Data collection was carried out through face-to-face interviews, each lasting approximately 30–40 minutes. This approach helped build trust with participants and encouraged open discussions about loneliness. The study used the

UCLA Loneliness Scale (Version 3), a widely recognized tool for measuring loneliness, along with additional questions covering social participation, daily activities, and health conditions.

3. RESULTS AND DISCUSSION

The findings of this study provide crucial insights into the demographic, socioeconomic, and health-related factors influencing loneliness among older adults in rural Kurnool, Andhra Pradesh.

Table 1: Demographic Characteristics and Loneliness Scores

Variable	Categories	UCLA Loneliness Scale (Score)			F-/t-Value	p-value
		Mean	**SD**	**N**		
Gender	Male	43.06	12.56	186	2.149*	0.032
	Female	45.73	11.64	194		
Age Group	60 – 64	42.50	13.03	94	5.189***	0.001
	65 – 69	42.63	12.24	109		
	70 – 74	44.68	11.34	94		
	75 +	48.75	10.94	83		
Caste	Scheduled Castes	45.11	12.70	111	8.905***	0.001
	Other Backward Castes	45.82	11.62	205		
	Forward Castes (OC)	38.73	11.38	64		

Note: *, ** and *** = Significant at 0.05, 0.01 and 0.001 levels, respectively

Gender and Loneliness

The findings indicate that females (M = 45.73, SD = 11.64) report higher loneliness scores than males (M = 43.06, SD = 12.56), with a statistically significant difference (t = 2.149, p = 0.032). This aligns with previous research suggesting that women, particularly widows, are more susceptible to loneliness due to longer life expectancy, cultural norms, and restricted mobility (Mahmud et al., 2024; Pengpid & Peltzer, 2023). Women also tend to outlive their male counterparts, increasing their likelihood of losing social support from spouses and family members (Kim & Lee, 2022).

Age and Loneliness

A significant association is observed between age and loneliness (F = 5.189, p = 0.001). Older adults aged 75 and above (M = 48.75, SD = 10.94) exhibit the highest loneliness scores compared to younger age groups (60–64 years: M = 42.50, SD = 13.03; 65–69 years: M = 42.63, SD = 12.24). This finding is consistent with prior studies indicating that loneliness increases with age due to declining social interactions, reduced mobility, and loss of close relationships (Gyasi et al., 2022; Mistry et al., 2022). Additionally, cognitive and physical impairments in advanced age contribute to increased social isolation (Hussein et al., 2022).

Caste and Loneliness:

Caste-based disparities in loneliness are evident (F = 8.905, p = 0.001). Forward caste individuals (M = 38.73, SD = 11.38) report significantly lower loneliness scores than Scheduled Castes (M = 45.11, SD = 12.70) and Other Backward Castes (M = 45.82, SD = 11.62). This disparity may be attributed to socioeconomic differences, as lower-caste individuals often face social exclusion, economic hardships, and reduced access to healthcare and community support systems (Srivastava & Srivastava, 2023; Mistry et al., 2022). Studies suggest that marginalized communities experience higher psychological distress and loneliness due to discrimination and structural inequalities (Ansari et al., 2021).

Table 2: Socioeconomic Factors and Loneliness Scores

Variable	Categories	UCLA Loneliness Scale (Score)			F-/t-Value	p-value
		Mean	SD	N		
Marital Status	Married	43.83	12.08	331	2.56**	0.01
	Widowed/Single /Divorced	48.43	11.99	49		
Education	Illiterate	47.99	10.88	92	7.192***	0.001
	Primary School	44.07	12.06	214		
	Middle School & above	41.42	12.91	74		
Work Status	Not Working	46.96	10.55	77	2.062*	0.040
	Working	43.78	12.46	303		
Annual Income	35,000 & less	46.61	13.28	132	6.641***	0.001
	35,001 – 70,000	44.75	11.27	154		
	70,001 & above	40.81	11.17	94		
Savings	No	44.83	12.08	354	3.556**	0.01
	Yes	38.81	11.94	26		

Note: *, ** and *** = Significant at 0.05, 0.01 and 0.001 levels, respectively

Marital Status and Loneliness

The results indicate a significant difference in loneliness scores based on marital status (t = 2.56, p = 0.01). Widowed, single, and divorced individuals (M = 48.43, SD = 11.99) report significantly higher loneliness than their married counterparts (M = 43.83, SD = 12.08). This finding aligns with previous studies indicating that marriage provides emotional, social, and financial support, which helps mitigate loneliness (Awang et al., 2022; Kim & Lee, 2022). Conversely, widowhood and divorce are associated with increased social isolation and emotional distress, particularly in cultures where family structures play a crucial role in social interactions (Pengpid & Peltzer, 2023).

Education and Loneliness

A significant association exists between education and loneliness (F = 7.192, p = 0.001). Illiterate individuals (M = 47.99, SD = 10.88) report the highest loneliness scores, followed by those with primary education (M = 44.07, SD = 12.06), while individuals with middle school education and above (M = 41.42, SD = 12.91) report the lowest loneliness scores. Education plays a crucial role in reducing loneliness by enhancing communication skills, fostering social networks, and improving problem-solving abilities (Srivastava & Srivastava, 2023; Bai et al., 2021). Higher education also provides better employment opportunities and financial stability, both of which contribute to a reduced sense of loneliness (Guthmuller, 2022).

Work Status and Loneliness

Employment status significantly impacts loneliness (t = 2.062, p = 0.040). Individuals who are not working (M = 46.96, SD = 10.55) report higher loneliness scores compared to those who are working (M = 43.78, SD = 12.46). Employment provides financial independence, a sense of purpose, and opportunities for social interactions, all of which are protective factors against loneliness (Huang et al., 2021). In contrast, unemployment or retirement can lead to social disengagement, loss of routine, and financial stress, contributing to higher loneliness levels (Pengpid & Peltzer, 2023).

Annual Income and Loneliness

There is a strong negative correlation between income and loneliness (F = 6.641, p = 0.001). Individuals earning ₹35,000 or less (M = 46.61, SD = 13.28) experience the highest loneliness levels, followed by those in the ₹35,001 – 70,000 range (M = 44.75, SD = 11.27), while individuals earning ₹70,001 and above (M = 40.81, SD = 11.17) report the lowest loneliness scores. Financial security allows individuals to participate in social activities, access better healthcare,

and maintain a higher quality of life, reducing their risk of loneliness (Smale et al., 2022; Pengpid & Peltzer, 2023). Lower-income individuals often face financial stress, social exclusion, and restricted mobility, exacerbating loneliness (Ansari et al., 2021).

Savings and Loneliness

Having savings is significantly associated with lower loneliness (t = 3.556, p = 0.01). Individuals without savings (M = 44.83, SD = 12.08) experience significantly higher loneliness than those with savings (M = 38.81, SD = 11.94). Financial stability provides security and reduces stress related to healthcare costs, daily expenses, and social participation, all of which are linked to loneliness (Bai et al., 2021; Srivastava & Srivastava, 2023). Lack of savings increases dependence on external support, which may not always be available, contributing to feelings of social isolation (Awang et al., 2022).

Table 3: Lifestyle and Health-Related Factors & Loneliness Scores

Variable	Categories	UCLA Loneliness Scale (Score)			F-/t-Value	p-value
		Mean	SD	N		
Substance Abuse	Lesser Extent	45.66	11.29	178	3.313*	0.037
	Moderate Extent	44.32	12.98	141		
	Higher Extent	41.05	12.17	61		
Physical Activities	Lower Extent	45.91	12.32	169	5.200**	0.01
	Moderate Extent	44.57	11.11	145		
	Higher Extent	40.29	13.14	66		
Social Support Needs	Lower Extent	42.59	12.74	141	3.056*	0.048
	Moderate Extent	44.86	12.58	140		
	Higher Extent	46.41	10.27	99		
Sleep Quality	Very Poor	47.66	7.55	80	4.993**	0.01
	Poor	44.47	11.61	180		
	Normal	42.18	14.88	120		
Presence of NCDs	0 – 1	41.71	11.60	121	10.377***	0.001
	2	44.02	13.01	179		
	3 +	49.43	9.28	80		
Physical Functioning Assistance	Lower Extent	42.41	11.70	110	3.784*	0.024
	Moderate Extent	43.77	12.86	121		
	Higher Extent	46.44	11.67	149		

Note: *, ** and *** = Significant at 0.05, 0.01 and 0.001 levels, respectively

Substance Abuse and Loneliness

A significant association is observed between substance abuse and loneliness (F = 3.313, p = 0.037). Individuals with higher levels of substance use (M = 41.05, SD = 12.17) report lower loneliness scores compared to those with moderate (M = 44.32, SD = 12.98) and lesser substance use (M = 45.66, SD = 11.29). This finding aligns with previous research suggesting that moderate alcohol consumption is sometimes linked to lower loneliness due to its role in social gatherings (Jia & Yuan, 2020; Pengpid & Peltzer, 2023). However, excessive substance use may indicate maladaptive coping mechanisms, potentially masking underlying loneliness rather than addressing it (Devkota et al., 2019).

Physical Activity and Loneliness

There is a significant inverse relationship between physical activity and loneliness (F = 5.200, p = 0.01). Older adults with higher physical activity levels (M = 40.29, SD = 13.14) report lower loneliness scores compared to those with moderate (M = 44.57, SD = 11.11) and lower physical activity levels (M = 45.91, SD = 12.32). Engaging in physical activity fosters social interaction, enhances physical health, and contributes to psychological well-being (Smale et al., 2022; Ansari et al., 2021). Lack of physical exercise, on the other hand, can lead to reduced mobility and social isolation, thereby increasing loneliness (Bai et al., 2021).

Social Support Needs and Loneliness

Social support needs significantly impact loneliness (F = 3.056, p = 0.048). Older adults with higher social support needs (M = 46.41, SD = 10.27) experience greater loneliness than those with moderate (M = 44.86, SD = 12.58) and lower social support needs (M = 42.59, SD = 12.74). This suggests that individuals who feel a greater need for support may lack adequate social connections or emotional bonds, leading to higher loneliness levels (Hussein et al., 2022; Kim & Lee, 2022). Building strong social networks, participating in community activities, and fostering intergenerational relationships can help reduce loneliness (Savage et al., 2021).

Sleep Quality and Loneliness

A significant relationship is found between sleep quality and loneliness (F = 4.993, p = 0.01). Those with very poor sleep quality (M = 47.66, SD = 7.55) report the highest loneliness scores, followed by those with poor sleep (M = 44.47, SD = 11.61) and normal sleep (M = 42.18, SD = 14.88). Sleep disturbances are linked to psychological distress, impaired cognitive functioning, and lower energy levels, all of which contribute to loneliness (Jia & Yuan, 2020; Devkota et al., 2019). Sleep quality interventions, including relaxation techniques, cognitive-behavioral therapy, and structured sleep routines, may help reduce loneliness in older adults (Sun et al., 2022).

Presence of Non-Communicable Diseases (NCDs) and Loneliness

A highly significant association is observed between the number of non-communicable diseases (NCDs) and loneliness (F = 10.377, p = 0.001). Older adults with three or more NCDs (M = 49.43, SD = 9.28) report the highest loneliness scores, followed by those with two NCDs (M = 44.02, SD = 13.01) and one or no NCDs (M = 41.71, SD = 11.60). Chronic illnesses such as diabetes, hypertension, and cardiovascular diseases limit mobility and social engagement, leading to increased loneliness (Mahmud et al., 2024; Bai et al., 2021). Addressing loneliness in individuals with NCDs requires integrated healthcare services, rehabilitation programs, and social support interventions (Gyasi et al., 2022).

Physical Functioning Assistance and Loneliness

A significant association exists between physical functioning assistance needs and loneliness (F = 3.784, p = 0.024). Older adults with higher assistance need (M = 46.44, SD = 11.67) report greater loneliness than those with moderate (M = 43.77, SD = 12.86) and lower assistance needs (M = 42.41, SD = 11.70). The need for assistance in activities of daily living (ADL) and instrumental activities of daily living (IADL) often results in reduced autonomy and social participation, increasing loneliness (Gyasi et al., 2022; Sun et al., 2022). Providing assistive technologies, caregiver support, and community-based rehabilitation programs can help mitigate loneliness in this group (O'Shea et al., 2021).

4. CONCLUSION

Loneliness among older adults is a complex and multifaceted issue influenced by various demographic, socio-economic, health, and lifestyle factors. The findings of this study highlight that loneliness is significantly higher among women, older individuals, and those from marginalized communities, underscoring the need for targeted interventions. Socio-economic factors, including lower education levels, unemployment, financial insecurity, and lack of savings, further exacerbate loneliness, emphasizing the role of economic stability in mitigating social isolation. Additionally, health

conditions such as chronic illnesses, functional limitations, and poor sleep quality contribute to higher loneliness levels, reinforcing the importance of accessible healthcare services.

The results also reveal that strong social support, community participation, and active lifestyles play a crucial role in reducing loneliness among older adults. Those who engage in social and recreational activities, maintain family connections, and participate in community programs report lower loneliness levels. Conversely, individuals living alone or experiencing marital disruptions are more vulnerable to loneliness, highlighting the significance of family and social networks in emotional well-being.

Addressing loneliness among older adults requires a holistic and multi-pronged approach. Community-based initiatives that promote social interaction, economic empowerment, and physical activity can help reduce loneliness. Policymakers should focus on improving financial security through pension schemes, employment opportunities, and accessible healthcare services. Moreover, integrating mental health support into primary healthcare can effectively address the psychological dimensions of loneliness. Leveraging technology to enhance social connectivity, particularly in rural areas, can also be an effective strategy.

To integrating social, economic, and health-related interventions, loneliness among older adults can be significantly reduced, leading to improved well-being and a better quality of life. Future research should explore long-term strategies for loneliness prevention and intervention, particularly in the context of India's rapidly aging population and evolving social structures.

5. IMPLICATIONS OF THE STUDY

- **Policy Interventions:** The findings emphasize the need for government-led programs focusing on elderly care, such as social security schemes, pension support, and community-based care models.
- **Community-Based Initiatives:** Establishing senior citizen clubs, intergenerational bonding programs, and volunteering opportunities can help alleviate loneliness.
- **Healthcare Integration:** Mental health services and counseling should be incorporated into primary healthcare to address psychological distress among older adults.
- **Family Involvement:** Awareness campaigns should be promoted to encourage families to maintain regular interactions with elderly members despite urban migration trends.
- **Technological Inclusion:** Training older adults in digital literacy can help them stay connected with their families and communities through social media and virtual communication platforms.

CONFLICT OF INTERESTS

None.

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