

Depression Levels Among Bedridden and Non-Bedridden Older Adults in a Residential Care Facility: A Cross-Sectional Comparative Study

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ABSTRACT

Depression is one of the most common mental health disorders among older adults and is frequently associated with reduced mobility and functional dependence. Older adults who are bedridden often experience limited physical activity, decreased social interaction, and increased dependence on caregivers, all of which may contribute to poorer psychological well-being. However, evidence comparing depression levels between bedridden and non-bedridden older adults living in residential care facilities remains limited, particularly in Indonesia. This study aimed to compare depression levels between bedridden and non-bedridden older adults residing at Husnul Khatimah Residential Care Facility, Malang Regency, Indonesia. A cross-sectional comparative study was conducted involving 110 older adults selected through purposive sampling, consisting of 55 bedridden and 55 non-bedridden participants. Depression levels were assessed using the 15-item Geriatric Depression Scale (GDS-15). Descriptive statistics were used to summarize participant characteristics, and differences in depression levels between the two groups were analyzed using the Mann–Whitney U test. The results demonstrated that bedridden older adults had significantly higher depression scores than non-bedridden older adults ($p < 0.001$). These findings indicate a significant association between bedridden status and depression levels among older adults. The study highlights the importance of routine psychological assessment, psychosocial support, and interventions aimed at maintaining functional independence to promote the mental well-being of older adults residing in long-term care facilities.

Keywords: older adults, depression, bedridden status, residential care facility, Geriatric Depression Scale

INTRODUCTION

Population ageing has become a global public health concern as improvements in healthcare and living standards have substantially increased life expectancy. Consequently, the number of older adults requiring long-term health and social care continues to rise, presenting significant challenges for healthcare systems worldwide, particularly in addressing age-related physical and mental health conditions. Depression is one of the most prevalent mental health disorders among older adults and is associated with reduced quality of life, functional decline, increased healthcare utilization, and higher mortality (Ikrima & Ronoatmodjo, 2022). Despite its substantial impact, depression remains underdiagnosed and undertreated in older populations because depressive symptoms are often considered a normal consequence of ageing or coexist

with chronic physical illnesses. In addition, depression can also cause emotional suffering, but it can also interfere with the healing process of illness, decrease motivation for life, and even increase the risk of death.

Various data support that depression in the elderly is a serious problem that needs more attention. Globally, the prevalence of depression among older adults has been estimated at approximately 31.7%, with considerably higher rates reported in developing countries than in developed countries (Zenebe et al., 2021). Based on the 2018 In Indonesia, data from the 2018 Basic Health Research (Riskesdas) showed that the prevalence of depression increases with advancing age, reaching 8.9% among adults aged 75 years and older (Ikrima & Ronoatmodjo, 2022). Regional reports further indicate that depression remains an important public health issue among older adults in East Java, including Malang Regency. Previous studies have consistently reported that depression among older adults is associated with chronic diseases, physical disability, reduced activities of daily living, and functional dependence. However, previous studies have primarily investigated depression among older adults with functional impairment without directly comparing bedridden and non-bedridden older adults residing in the same long-term care facility. Furthermore, evidence from Indonesia examining this comparison remains scarce. This knowledge gap limits understanding of whether bedridden status itself is associated with higher depression levels independent of the residential care environment. Therefore, this study aimed to compare depression levels between bedridden and non-bedridden older adults residing at Husnul Khatimah Residential Care Facility, Malang Regency, Indonesia.

At the regional level, Riskesdas in 2018 recorded that the prevalence of depression in the elderly in East Java Province reached 4.53%, while in Malang Regency itself as many as 6.1% of the elderly aged 60 years and above experienced depression. This data shows that depression in the elderly is a public health problem that needs to be addressed immediately with evidence-based interventions.

One of the main risk factors that contribute to the increase in depression rates in the elderly is physical disability, especially bedrest conditions. The process of depression in the elderly bedrest takes place gradually and chronologically. Elderly people who experience severe physical disorders such as strokes, falls, or chronic diseases often have to undergo bedtime for a long time. This situation causes them to no longer be able to carry out activities independently, leading to restrictions on social interaction and increased dependence on others

(Muzakki et al., 2023). As social interaction declines and meaningful activities begin to disappear, the elderly begin to feel bored, useless, and lose hope in life. These feelings develop into psychological distress that gradually triggers depressive symptoms. If not treated, this condition will get worse and have an impact on the physical and mental of the elderly as a whole.

Older adults with prolonged bedridden status frequently experience physical deconditioning, functional dependence, social isolation, and reduced participation in daily activities, all of which have been identified as important risk factors for depressive symptoms.

Elderly people who experience decreased body function have difficulty performing daily activities so that they have the potential to experience depression due to reduced capacity to carry out activities independently (Aliyah, et al., 2025). Deterioration in physical condition is related to the dependence of the elderly on others. These conditions increase the risk of anxiety and depression because the elderly are vulnerable to significant changes in their lives. Prolonged bed rest may result in impaired physical function, sleep disturbances, anxiety, and psychological distress, thereby increasing the risk of depressive symptoms among older adults (Sastika & Sinaga, 2024).

METHODS

This study employed an analytical observational design with a cross-sectional approach to compare depression levels between bedridden and non-bedridden older adults residing at Husnul Khatimah Residential Care Facility, Malang Regency, Indonesia. Because data on exposure status (bedridden vs. non-bedridden) and depression levels were collected simultaneously, the study was designed to identify associations rather than causal relationships. This study compared depression levels between bedridden and non-bedridden older adults.

This research was conducted at Griya Lansia Husnul Khatimah, Wajak District, Malang Regency, East Java with an estimated collection of research data in November 2025. In this study, the population used was all elderly people living and being cared for at Griya Lansia Husnul Khatimah which amounted to 159.

The study population consisted of 159 older adults living at Husnul Khatimah Residential Care Facility. Participants were selected using purposive sampling based on predefined inclusion and exclusion criteria. Purposive sampling was chosen because only residents meeting the study eligibility criteria, particularly bedridden status and cognitive ability to complete the

assessment, were considered suitable for inclusion. A total of 110 participants were enrolled, comprising 55 bedridden and 55 non-bedridden older adults. Although purposive sampling may limit the generalizability of the findings, it ensured that participants were appropriate for addressing the study objectives

The independent variable was mobility status, categorized as bedridden and non-bedridden. The dependent variable was depression level measured using the 15-item Geriatric Depression Scale (GDS-15). The dependent variable in this study was the incidence of depression (Irewati, 2025).

Depression was assessed using the validated 15-item Geriatric Depression Scale (GDS-15), while participant demographic and clinical characteristics were obtained from observation sheets and institutional records. The research observation sheet was used to collect relevant respondent characteristic data as supporting data for statistical analysis.

The GDS-15 has demonstrated acceptable validity and reliability for assessing depressive symptoms among older adults and has been widely used in geriatric research. The second research instrument was a questionnaire *Geriatric Depression Scale* (GDS). This instrument has undergone validity and reliability tests in previous studies and was declared feasible to be used to measure the level of depression in the elderly. The results of the validity test showed a correlation coefficient value (r) of 0.81, which indicated that the instrument had strong validity. Meanwhile, the reliability test yielded a Cronbach's Alpha value of 0.81, indicating that the instrument had good internal consistency (Sari & Tasalim, 2024). GDS is considered reliable and valid for use in this study.

The data collection procedure is an important stage and must be adjusted to the design and research method so that the data collected is valid, reliable, and supports the achievement of research objectives (Rusdian et al., 2023). Data collection in this study was carried out through three stages, namely research ethics test, research permits, and data collection processes. Data processing methods are a series of procedures carried out by researchers to process raw data into structured, systematic, and ready-to-analyze data so that it can provide answers to research questions or test hypotheses that have been determined (Widodo et al., 2023). The data processing process includes the examination stage (Editing), coding (Coding), to the presentation of data (tabulating) in the form of tables or diagrams that are in accordance with the purpose of the analysis.

Data analysis is a systematic process of processing, interpreting, and drawing conclusions from the data that has been collected in a study (Rafles & Nasution, 2024). In this study, data analysis was carried out to Knowing and analyzing the difference in depression levels between the elderly who experience bedrest and the elderly who do not experience bedrest (non-bedrest). The data analysis to be carried out is univariate and bivariate data analysis.

Descriptive statistics were used to summarize participant characteristics and depression categories. Data normality was assessed using the One-Sample Kolmogorov–Smirnov test. Because the data were not normally distributed ($p < 0.05$), differences in depression scores between bedridden and non-bedridden participants were analyzed using the Mann–Whitney U test. Statistical significance was set at $p < 0.05$, and all analyses were performed using IBM SPSS Statistics version 27.

RESULTS

Respondent Characteristics

This study involved 110 elderly people who were divided into 2 groups, namely 55 elderly people in the Bed Rest group and 55 elderly people in the Non-Bed Rest group.

Table 1. General Respondent Data

Characteristics	Elderly Bed Rest		Elderly Non-Bed Rest	
	n	%	n	%
Age				
60-69 years old	24	43,6	24	43,6
70-79 years old	23	41,9	24	43,6
>80 years old	8	14,5	7	12,8
Gender				
Male	20	36,4	20	36,4
Women	35	63,6	35	63,6
Final Education				
No School	13	23,6	18	32,7
Elementary School	32	58,2	20	36,4
Middle School	4	7,3	6	10,9
High School	3	5,5	7	12,7
University	3	5,5	4	7,3
Disease History				
No history	7	12,7	41	74,5
Stroke	23	41,8	9	16,4
General Weakness	20	36,4	0	0
Dementia	5	9,1	5	9,1
Have a Family				
Yes	26	47,3	34	61,8
No	29	52,7	21	38,2

Characteristics	Elderly Bed Rest		Elderly Non-Bed Rest	
	n	%	n	%
Barthel Index of Seniors				
100-80 (Independent)	0	0	55	100
79-35 (Moderate Relief)	30	54,5	0	0
<35 (Full Assistance)	25	45,5	0	0
Score GDS				
0-4 (Not Depressed)	5	9,1	48	87,3
5-8 (Mild Depression)	21	38,2	4	7,3
9-11 (Moderate Depression)	19	34,5	2	3,6
12-15 (Major Depression)	10	18,2	1	1,8

Table 1. shows that out of a total of 110 elderly respondents, each group consisted of 55 elderly bed rest and 55 elderly Non-Bed Rest. In both groups, the majority of respondents were in the age range of 60–69 years, namely 24 respondents (43.6%), with the proportion of gender dominated by women as many as 35 respondents per group (63.6%) and male 20 respondents per group (36.4%). The last level of education in the bed rest group was 32 respondents (58.2%), while in the Non-Bed Rest group, the respondents' education was more varied although it was still dominated by 20 respondents (36.4%).

Based on disease history, the elderly bed rest had the most history of stroke, namely 23 respondents (41.8%) and General Weakness 20 respondents (36.4%), while in the Non-Bed Rest group, most of the respondents had no history of disease, namely 14 respondents (74.5%). The presence of families in the Non-Bed Rest group was more than that of bed rest 34 vs 26 (61.8% vs 47.3%). In terms of independence, all elderly Non-Bed Rest are in the independent category of 55 respondents (100%), while the elderly bed rest all need moderate to full assistance. The results of the GDS score showed that the majority of the elderly were not depressed, namely 48 respondents (87.3%), while the majority of the elderly bed rest experienced mild depression, namely 21 respondents (38.2%) and moderate depression (34.5%), to severe depression, namely 10 respondents (18.2%).

Table 2. Cross-Testing General Data of Respondents with Depression Levels

Respondent Characteristic	Depression Rate				Total
	Not Depressed	Mild Depression	Moderate Depression	Major Depression	
Age					
60-69 years old	24(50%)	9(18,8%)	12(25%)	3(6,3%)	100%
70-79 years old	23(48,9%)	14(29,8%)	6(12,8%)	4(8,5%)	100%
>80 years old	6(48,2%)	2(13,3)	3(20%)	4(26,7%)	100%
Gender					
Male	18(45%)	12(30%)	6(15%)	4(10%)	100%
Women	35(50%)	13(18,6%)	15(21,4%)	7(10%)	100%

Respondent Characteristic	Depression Rate				Total
	Not Depressed	Mild Depression	Moderate Depression	Major Depression	
Final Education					
No School	17(54,8%)	4(12,9%)	7(22,6%)	3(9,7%)	100%
Elementary School	21(40,4%)	16(30,8%)	8(15,4%)	7(13,5%)	100%
Middle School	5(50%)	3(30%)	2(20%)	0(0%)	100%
High School	6(60%)	2(20%)	2(20%)	0(0%)	100%
University	4(57,1%)	0(0%)	2(28,6%)	1(14,3%)	100%
Disease History					
No history	38(79,2%)	4(8,3%)	5(10,4%)	1(2,1%)	100%
Stroke	10(31,3%)	12(37,5%)	7(21,9%)	3(9,4%)	100%
General Weakness	1(5%)	8(40%)	6(30%)	5(25%)	100%
Dementia	4(40%)	1(10%)	3(30%)	2(20%)	100%
Have a Family					
Yes	31(51,7%)	15(25%)	10(16,7%)	4(6,7%)	100%
No	22(44%)	10(20%)	11(22%)	7(14%)	100%
Barthel Index of Seniors					
100-80 (Independent)	48(87,3%)	4(7,3%)	2(3,6%)	1(1,8%)	100%
79-35 (Moderate Relief)	1(3,3%)	16(53,3%)	11(36,7%)	2(6,7%)	100%
<35 (Full Assistance)	4(16%)	5(20%)	8(32%)	8(32%)	100%

Table 2. It shows that based on age, the elderly 60–69 years are mostly in the non-depressed category, namely 24 respondents (50%), while at the age of 70–79 years almost half are also not depressed as many as 23 respondents (48.9%). However, in the age group of >80 years, the proportion of severe depression was seen to be high, namely 4 respondents (26.7%). Based on gender, men were more in the non-depressed category as many as 18 respondents (45%), while women experienced moderate depression as many as 15 respondents (21.4%) and severe depression as many as 7 respondents (10%).

Based on education, respondents with elementary education experienced the most non-depression, namely 21 respondents (40.4%), while severe depression was also found in respondents with elementary education, namely 7 respondents (13.5%). Judging from the history of the disease, the elderly without a history of dominant disease were not depressed as many as 38 respondents (79.2%), the elderly with a history of dominant stroke experienced mild depression as many as 12 respondents (37.5%), the elderly with a history of general weakness experienced severe depression the most from other histories, namely 5 respondents (25%), while the elderly with dementia had the proportion of severe depression of 2

respondents (20%). The elderly who have more families are not depressed as many as 31 respondents (51.7%) while those who do not have a dominant family experience moderate depression as many as 11 respondents (22%), and based on the Barthel Index, the independent elderly (score 80–100) are mostly not depressed, namely 48 respondents (87.3%), while the elderly with full assistance experience more severe depression as many as 8 respondents (32%).

Normality Test

This study uses the One-Sample Kolmogorov-Smirnov Test normality test because the relatively large number of research samples ($n=110$) needs to be tested for normality assumptions before selecting the right comparative test. Data normality was assessed using the One-Sample Kolmogorov–Smirnov test. The analysis indicated that depression scores were not normally distributed ($p < 0.001$). Therefore, the Mann–Whitney U test was used to compare depression scores between bedridden and non-bedridden older adults.

Table 3. Comparison of Depression Scores Between Bedridden and Non-bedridden Older Adults Using the Mann–Whitney U Test

Status Bed rest	N	Mean Rank	Z	p-value	Effect Size (r)
Bedridden	55	79.11	-7.796	<0.001	0.74
Non-Bedridden	55	31.89			
Total	110				

The Mann–Whitney U test demonstrated a statistically significant difference in depression scores between bedridden and non-bedridden older adults ($Z = -7.796$, $p < 0.001$). Bedridden participants had substantially higher mean ranks (79.11) than non-bedridden participants (31.89), indicating greater depressive symptoms among bedridden older adults. The calculated effect size was large ($r = 0.74$), suggesting that the observed difference was not only statistically significant but also clinically meaningful.

DISCUSSION

This study found a significant association between bedridden status and depression levels among older adults residing in a residential care facility. Older adults in the bedridden group demonstrated higher depression scores than those in the non-bedridden group, suggesting that functional dependence may be associated with poorer psychological well-being. Given the cross-sectional nature of this study, the findings should be interpreted as an association rather than evidence of a causal relationship. Nevertheless, the results highlight the importance of considering mobility status as one of several factors related to depression among institutionalized older adults (Wang et al., 2024).

The present findings are consistent with previous studies demonstrating that functional dependence is closely associated with depressive symptoms among older adults. Research conducted in long-term care facilities has consistently reported that residents with limited mobility tend to experience higher levels of depression than those who remain physically active. Reduced independence in performing activities of daily living has been identified as an important determinant of emotional well-being because it increases reliance on caregivers and decreases opportunities for meaningful engagement in daily activities. Similar findings have also been reported in studies from Europe and Asia, suggesting that the relationship between mobility limitations and depression is observed across different cultural and healthcare settings (Yoon & Jee, 2026).

Several biological mechanisms may explain this association. Prolonged immobility contributes to muscle atrophy, reduced cardiovascular endurance, impaired balance, and chronic low-grade inflammation, all of which are common among bedridden older adults. In addition, physical inactivity has been associated with alterations in neuroendocrine function, sleep disturbances, and reduced production of neurotransmitters such as serotonin and dopamine, which play important roles in mood regulation. These physiological changes may increase susceptibility to depressive symptoms in vulnerable older populations (Moreno-Martin et al., 2022).

Psychosocial factors may also contribute substantially to the higher depression levels observed among bedridden residents. Functional dependence often limits opportunities for social interaction, recreational activities, and participation in decision-making, resulting in feelings of loneliness, helplessness, and loss of autonomy. Moreover, dependence on caregivers for basic daily activities may reduce self-esteem and increase emotional distress. Previous studies have shown that social isolation and perceived loss of independence are among the strongest predictors of depression in institutionalized older adults, highlighting the complex interaction between physical disability and mental health.

The findings of this study have important implications for geriatric healthcare practice. Routine screening for depressive symptoms should be incorporated into the comprehensive assessment of bedridden older adults in residential care facilities. Healthcare professionals should not only focus on physical rehabilitation but also implement psychosocial interventions, including regular emotional support, structured social activities, family involvement, and mental health counseling. Early identification and multidisciplinary management of depression may

contribute to improved quality of life and overall well-being among older adults with functional limitations (Atchison et al., 2025).

Several limitations should be considered when interpreting these findings. First, the cross-sectional design precludes conclusions regarding temporal or causal relationships between bedridden status and depression. Second, participants were recruited using purposive sampling from a single residential care facility, which may limit the generalizability of the findings to other populations or care settings. Finally, potential confounding variables, such as cognitive impairment, severity of chronic illness, medication use, duration of bedridden status, and level of family support, were not fully evaluated and may have influenced depression levels. Future multicenter longitudinal studies with larger and more diverse populations are recommended to further clarify these relationships.

Overall, the present study provides additional evidence that bedridden status is associated with higher depression levels among older adults living in residential care facilities. Although causality cannot be established, the findings underscore the importance of integrating physical rehabilitation with psychological and social support to promote healthy aging and improve mental well-being among older adults with limited mobility (Efendi et al., 2023).

LIMITATIONS

This study has several limitations. First, its cross-sectional design precludes conclusions regarding causal relationships between bedridden status and depression. Second, participants were recruited using purposive sampling from a single residential care facility, which may limit the generalizability of the findings. Finally, several potential confounding variables, such as cognitive impairment, duration of bedridden status, medication use, and social support, were not fully assessed. Future multicenter longitudinal studies involving more diverse populations are recommended to provide stronger evidence regarding the relationship between mobility status and depression.

CONCLUSION

This study demonstrated a significant association between bedridden status and depression levels among older adults residing in a residential care facility. Older adults with bedridden status exhibited higher levels of depressive symptoms than their non-bedridden counterparts. Although the cross-sectional design does not permit causal inference, the findings emphasize

the importance of routine depression screening and comprehensive psychosocial care for older adults with functional dependence. Integrating physical rehabilitation with psychological and social support may help improve the mental well-being and quality of life of older adults living in residential care facilities.

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