

Original Research

## The Relationship Between Stress and Loneliness with Depression in the Elderly People



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Article Info	Abstract
Article history: Received: 30 May 2023 Accepted: 26 July 2023	<p><b>Introduction:</b> Depression is a condition that can cause elderly people to experience mental or emotional disorders due to stress and loneliness. Stress is something that can disturb the elderly caused by anxiety and loneliness due to changes in roles in the family or in their lives. The purpose of this study was to determine the relationship between stress and loneliness with depression in elderly people in Banjar Kawan, Tampaksiring, Bali.</p> <p><b>Methods:</b> This study used a cross-sectional design with 68 elderlies recruited as respondents based on inclusion criteria by using purposive sampling techniques. The instruments used included the Perceived Stress Scale (PSS-10), UCLA Loneliness Scale Version 3, and Geriatric Depression Scale (GDS). The results of this study showed that most of the respondents aged 64 years, female, last education was elementary school, marital status was married with an income of &lt; IDR 500,000.</p> <p><b>Results:</b> The correlation results showed a significantly weak positive correlation between stress and depression (<math>r = 0.284</math>, <math>p = 0.019</math>) and loneliness with depression (<math>r = 0.254</math>, <math>p = 0.037</math>). The results of multiple linear regression showed that stress (<math>\beta = 0.266</math>) has the most effect on the occurrence of depression compared to loneliness (<math>\beta = 0.039</math>) so the higher the stress felt, the higher the symptoms of depression in the elderly.</p> <p><b>Conclusion:</b> It is hoped that the elderly could improve their health by actively participating in many activities in order to prevent the symptoms of depression from getting worse.</p>
Keywords: depression, elderly, loneliness, stress	

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## INTRODUCTION

Depression is associated with common mental disorders and is noticed by decreased appetite, headaches, sleep disturbances, and excessive anxiety so it is prone to experiencing loss of interest in carrying out daily activities [1], [2]. Depression is often experienced by elderly people due to increasing age (aging), left behind by partners and children so that they feel lonely [3]. The prevalence of elderly people in the world will continue to grow by around 1.2 billion and 840 million come from developing countries, while the prevalence of the elderly people in Indonesia reached 28 million people (10.7%) and is estimated to increase by about 19.9% in 2045. Bali Province has an elderly population of 10.71%, and according to data from Puskesmas I Tampaksiring, Banjar Kawan Tampaksiring is one of the areas that has quite a large number of elderly as many as 74 people, which is predicted to continue to increase every year so that it is very vulnerable to elderly people to face depression [4]–[6]. At an increasing age, the elderly will be very vulnerable to the onset of health problems, one of which is depression caused by internal and external factors [7], [8]. Stress and loneliness experienced by elderly people can be a cause of depression [9], [10]. Therefore, it is necessary to do early identification related to factors that can cause stress in elderly people. Stress is a condition of feeling depressed, anxious, and the mind becomes tense so that it can interfere activities both at home and social environment that if left unchecked, will lead to depression and even to

life-threatening behavior [11],[12]. This needs to be identified regarding things that can cause someone to experience stress and the need to provide support so that individuals do not feel alone. Another factor that can cause depression is loneliness. Loneliness is a condition when individuals lose their role in life, separated from their families and children, left dead by their spouse so that they feel neglected by their families and social environment [13]–[15]. It is needed to do early identification so that loneliness felt in elderly people does not cause depression.

Bali Province has 9 regencies/cities, one of them is Gianyar Regency with the lowest percentage of health service coverage for the elderly people, at 6,76 % so the elderly people are vulnerable to health problems [16]. Tampaksiring village is one of the villages in Gianyar Regency where the coverage of promotive and preventive services for the elderly is still relatively low [16]. There were 10 elderly people in Banjar Kawan, Tampaksiring, Bali being interviewed. It showed that 7 people (70%) have signs and symptoms of depression such as difficulty sleeping, frequent headaches, often feeling anxious, and 6 people (60%) experienced stress and loneliness seen by the elderly are not very active in participating social activities due to lack of support from their families. Based on the interview, the elderly people revealed that they earn money for their meals and they get less attention from their families, both from their children or in-laws. As many as 6 elderly people also stated that they are only a burden for their families so that they felt lonelier every day and tended

to occasionally work or sell something at the markets with their old ages to meet their daily needs. Based on the problems experienced by the elderly people and the undiscovered and limited research in Bali, researchers are interested in investigating the relationship between stress and loneliness with depression in elderly people in Banjar Kawan, Tampaksiring, Bali.

## **METHODS**

This research was a correlation descriptive research using a cross-sectional design with purposive sampling technique. The population of elderly people in Banjar Kawan, Tampaksiring were 74. The purposive sampling technique was used to recruit the respondents based on inclusion criteria, such as elderly people who can read and write, elderly people aged 60-74 years and live in the research location so that 68 elderly people were obtained as respondents.

Data were collected using the Geriatric Depression Scale (GDS) to assess depression. The questionnaire had 15 items where the results are valid and reliable. The Cronbach's alpha for GDS in Indonesian version was  $> 0,714$ . The stress measurement tool used the Perceived Stress Scale 10 (PSS 10) which consisted of 10 items and had been tested valid and reliable. The Cronbach's alpha for PSS 10 in Indonesian version was  $> 0,919$ . Loneliness was measured using the University of California, Los Angeles "version 3" questionnaire (UCLA Loneliness Scale version 3) which consisted of 20 questions, and the test results stated that the measurement tool was valid and reliable. The

Cronbach's alpha in Indonesian version was  $> 0,879$ .

The data collection process in this study started by explaining the purpose and the benefits of the study, and giving informed consent sheet to the elderly in advance. The elderly who were willing to participate were given the questionnaires to be filled and automatically included in this study. However, those who refused were excluded from the study. After the data were collected, the data processing was carried out such as coding, and entering data into Excel and statistics analysis software, before finally conducting a normality test. It was found that the data were normally distributed, so bivariate analysis tests using the Pearson's Product-Moment and multivariate tests using Multiple Linear Regression were performed. The present study obtained the approval of the ethics committee of the Faculty of Medicine, Udayana University No. 338/UN14.2.2.VII.14/LT/2023.

## **RESULTS**

The research was conducted from February until March 2023 with a total of 68 respondents.

Based on Table 1, most of the elderly people were over 65 years old (52.9%) where the youngest was 60 years old and the oldest was 74 years old. Judging from the gender data, the majority of the elderly people in Banjar Kawan, Tampaksiring are women, as many as 53 people (51.5%) with the last elementary school education as many as 31 people (45.6%). From marital status, as many as 51 elderly people (75.0%) are still married

(have a spouse). The income earned by the elderly every month is <500,000 thousand (66.2%) and the most depressive symptoms experienced by the elderly are headaches (39%). Based on Table 2, results showed from the overview of stress in elderly people with an average score of 35.54. From the stress category, as many as 68 elderly people (100%) experienced severe depression. Based on the table above, the average loneliness in the elderly people in Banjar Kawan, Tampaksiring was obtained with a value of 60.40 with minimum and maximum values ranging from 42-80. Judging from the number of elderly people, most elderly people were in the category of severe loneliness, namely 30 people (43.9%). Based on the results, the average overview of depression in elderly people obtained is 7.75 with the smallest score of 2, and the largest with a score of 15. Most of the elderly in Banjar Kawan, Tampaksiring, around 22 elderly people were depressed. The correlation results in Table 3 using the Pearson's Product-Moment test showed that there was a relationship between stress and depression in the elderly people in Banjar Kawan, Tampaksiring with a p-value of < 0.05 and an

r value = 0.28 with a positive direction and weak relationship strength. While the correlation results of loneliness with depression obtained a p-value of < 0.05 and r value = 0.25 showed that there was a relationship with a weak relationship strength and the direction of the positive relationship. It can be concluded that the heavier the stress and loneliness felt, the higher the depression felt by the elderly people in Banjar Kawan, Tampaksiring. The results obtained based on the value of the coefficients in Table 4 showed that stress and loneliness significantly predicted 13.5% of depressive symptoms in the elderly ( $R^2 = 135$ ,  $F = 5,051$ ,  $p = .009$ ). There were 86.5% of other factors that caused depressive symptoms outside the measured variables showed in the elderly people in Banjar Kawan, Tampaksiring.

The results based on the beta value found that stress ( $\beta = 0.266$ ) was higher than loneliness ( $\beta = 0.039$ ) which means that stress was the most powerful variable affecting the occurrence of depression in the elderly people in Banjar Kawan, Tampaksiring compared to the loneliness variable.

**Table 1**

Characteristics of the elderly people according to age, gender, recent education, marital status, monthly income and symptoms experienced (n=68)

<b>Demographic Characteristics</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
<b>Age</b>		
≤ 65	32	47,1
≥ 65	36	52,9
<b>Gender</b>		
Male	33	48,5
Female	35	51,5
<b>Last Education</b>		
Not attending school	0	0,0
Elementary School	31	45,6
Junior High School	20	29,4
Senior High School	11	16,2
University	6	8,8
<b>Marital Status</b>		
Married	51	75,0
Not Married	2	2,9
Widow	11	16,2
Widower	4	5,9
<b>Income per month</b>		
< 500.000	45	66,2
500.000-1.000.000	15	22,1
> 1.000.000	8	11,8
<b>Symptoms experienced</b>		
Headache	27	39
Stomach ache	1	2
No appetite	3	4
Back pain	2	3
Often exhausted	3	4
High tension	9	13
Walk difficulty	1	2
Sleep difficulty	23	33

**Table 2**

Overview of Stress, Loneliness and Depression in the Elderly People in Banjar Kawan, Tampaksiring

Variable Characteristics	Mean±SD	Min-Max	Category	n (%)
<b>Stress</b>	35,54±2,22	31-40	Mild Stress	0 (0,0)
			Moderate stress	0 (0,0)
			Severe stress	68 (100)
<b>Loneliness</b>	60,40±13,3	42-80	Not Lonely	0 (0,0)
			Light Loneliness	21 (30,9)
			Moderate loneliness	17 (25,2)
			Heavy Loneliness	30 (43,9)
<b>Depression</b>	7,75±4,52	2-15	No Depression	22 (32,4)
			Mild depression	17 (25)
			Moderate depression	9 (13,3)
			Major depression	20 (29,4)

**Table 3**

Results of the Relationship between Stress and Loneliness with Depression in the Elderly People in Banjar Kawan, Tampaksiring (n=68)

Research Variables	1	2	3
Stress	1		
Loneliness	0,77	1	
Depression	0,28*	0,25*	1

**Table 4**

Test the Relationship between Stress and Loneliness with Depression in the Elderly People in Banjar Kawan, Tampaksiring (n=68)

Variable	b	S.Eb	Beta	t	p-value
Stress	0,541	0,236	.266	2.296	.025
Depression	0,079	0,039	.039	2.014	.048
R = .367, R <sup>2</sup> = .135, F = 5.051, p = .009					

## DISCUSSION

The results of the study based on demographic data obtained from 68 elderly people, the majority of elderly aged  $\geq 65$  years (52.9%). Elderly is someone aged 60-74 years [16]. Older age causes a decrease in various functions in the body. Therefore, the older we get, the more prone we are to depression [7], [17]. The income of most elderly people every month is <500,000 thousand. Stated that the lower amount of income causes the elderly people to be vulnerable to stress due to demands to meet their daily needs [18]. Judging from the results of preliminary studies conducted, most of the elderly people just stay at home and occasionally go to earn money to meet their daily needs. Based on the gender, elderly women were more than elderly men, as many as 35 (51.5%). The women are more susceptible to depression caused by many demands, less stress control, and have a very unstable personality [7], [8]. Based on research data on the elderly people, stress coping conducted by women is still lower than men [17]. Most of the elderly, namely 31 people (45.6%) had elementary school education background. Lower education greatly affects depression in the elderly people. The low level of education causes stress and depression that is felt to be severe [18]. Low levels of education can cause the information received to be inappropriate and the lack of handling stress and loneliness that can be caused by a lack of information [19]. The elderly people in Banjar Kawan, Tampaksiring, as many as 51 elderly people (57%) still had the status of still having a spouse. The elderly people who are left

behind by their spouse are more vulnerable to get depression [8]. In elderly people who are still married and have a spouse, the level of depression felt is not as heavy as the elderly people who do not have a spouse, widow / widower [20]. It is because the elderly people still have a place to exchange stories or share if there are problems in their life so that the depression felt by the elderly people reduced. The results of this study showed elderly people experience more headaches caused by perceived stress and the consequences of economic demands to meet their daily needs.

Stress in this study was in the category of severe stress. Severe stress in the elderly people is caused by low economic factors where in their old age they still have to earn money to meet their needs in life. The elderly people are in the category of severe stress caused by physical fatigue due to demands in daily life that must be met [23]. Severe stress felt by the elderly people is caused by aging. [22], [24]. This causes difficulty sleeping and eat, becomes disturbed, headaches, therefore in this case, the better the economic and physical status of the elderly people, the less often they are exposed to stress, on the contrary, the lower the health condition of the elderly people, the easier it is for the elderly people to experience stress [25]. In this study, it was found that the majority of elderly people experienced severe loneliness. Severe loneliness in this study is a result of a lack of support from family. Elderly people are lonely due to lack of support, the elderly people are not active in their social environment. When seen from the average value of loneliness, it can be categorized into mild loneliness which is in line with [28] where mild loneliness is

influenced by daily activities [14], [26], [27]. In elderly people research, sometimes they have done activities such as gymnastics and making offerings. Although most of the elderly people less active in social activities such as Integrated Healthcare Centre or participate in activities in their social environment (banjar), they could meet when the elderly people would go to the market to buy their daily needs and this could create positive coping in the elderly people. In this study, most elderly people were not depressed. Most elderly people do not experience depression due to the education of the elderly people which is not too low and most of the elderly do not have a chronic diseases history [29], [30]. Where most of the elderly people are not depressed because they are still married (have a spouse) and the feeling of loneliness is light [27]. Based on the results of the research, it was found that most of the elderly people did not experience depression, this is because the coping of the elderly people in Banjar Kawan, Tampaksiring was good. Moreover, most of the elderly people were still married so they still have a place to exchange ideas on what they feel.

The results of the research showed that there was a significant positive correlation between stress and depression as well as loneliness and depression in elderly people in Banjar Kawan, Tampaksiring. Those correlations were in the same direction, meaning that high stress and loneliness can significantly increase symptoms of depression in the elderly. Stress is related to depression where if stress is left unchecked it can cause depression to get worse [31], [32]. Loneliness has a relationship with perceived

depressive symptoms [33], [34]. Based on the results of multiple linear regression tests where the assumptions had been determined, it was found that stress was related to depression, loneliness was related to depression and stress was the variable that most influences the occurrence of depression in the elderly. In addition to stress and loneliness, other factors that can influence the occurrence of depression are having high anxiety, excessive inferiority complex, having a bad past, and excessive fear of something. In accordance with the hypothesis that had been set, it showed that there was a relationship between stress and loneliness with depression in elderly people in Banjar Kawan, Tampaksiring. [10], [35], [36], [37]. All three variables indicated a positive relationship direction and stress was the independent variable that most strongly predicts depression in the elderly people.

## **CONCLUSION AND RECOMMENDATIONS**

The results of this study found that the majority of respondents were female compared to men with the last education mostly elementary school where the elderly people experienced symptoms of headaches and 75.0% of the elderly people were married. The elderly people in Banjar Kawan, Tampaksiring who experienced stress were 68 elderly people with severe stress category with an average value of 35.54 (SD = 2.22). Elderly people who experienced loneliness in Banjar Kawan, Tampaksiring as many as 30, the elderly people experience severe loneliness with an average value of 60.40 (SD

= 13.3). The overview of depression in elderly people in Banjar Kawan, Tampaksiring as many as 22 elderly people were not depressed with an average value of 7.75 (SD = 4.52) and there was a significant relationship between stress, loneliness and depression in elderly people in Banjar Kawan, Tampaksiring. It was found that stress is the variable that most strongly influenced the occurrence of depression ( $\beta = 0.266$ ). For elderly people, it is hoped that they can increase their knowledge about mental health and participate in all activities carried out by health workers to minimize stress and loneliness in order to prevent the symptoms of depression in elderly people from getting worse in the future.

#### LIMITATION

This study used a small sample size and used purposive sampling so the result of this study limited the representativeness and generalizability of the larger elderly population in Indonesia.

#### ACKNOWLEDGMENT

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#### CONFLICT OF INTEREST

The authors declared no potential conflicts of interest in this study.

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