How to Cite:
Diniari, N. K. S. (2022). Mental disorders elderly in rural areas during COVID-19 pandemic in Bali Indonesia: A cross sectional study. *Linguistics and Culture Review*, *6*(S4), 139-147. https://doi.org/10.21744/lingcure.v6nS4.2105

Mental Disorders Elderly in Rural Areas During COVID-19 Pandemic in Bali Indonesia: A Cross Sectional Study

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Abstract
Background. The COVID-19 pandemic has an impact on various sectors, not only focusing on physical health, the COVID-19 pandemic also has a direct impact on mental health. The elderly is vulnerable to mental disorders such as anxiety, stress, depression, and sleep disturbances during the COVID-19 pandemic.
Methods. Detection of mental disorders in the elderly are using the Abbreviated Mental Test (AMT) screening/questionnaire, Depression Anxiety Stress Scale (DASS), Geriatric Depression Scale (GDS), Pittsburgh Sleep Quality Index (PSQI) and Visual Analog Scale (VAS) and/or or based on structured interviews.
Results. From 85 elderly as a participant, 65 people (76.4%) had a good cognitive, 10 (11.7%) moderate cognitive, and 5 severe cognitive (5.8%), but their daily activities were still good. The results of the screening GDS showed 70 people with mild depression (82.4%), moderate depression in 13 people (15.3%) and 2 people with severe depression (2.3%). The results of the screening with DASS show 15 elderly people with depression (17.5%), 55 people with anxiety (65%) and 15 people experiencing stress (17.5%). Screening for elderly sleep quality with the PSQI for elderly showed 60 people with disrupted sleep quality (70.5%) and 15 people with good sleep quality (17.6%). A 68 people elderly (80%) complained of mild pain and 17 people (20%) with moderate pain, there were differences in the quantity of the pain scale and the degree of depression ($p<0.0001$).
Conclusions. The most common mental disorders in the elderly during the COVID-19 pandemic were anxiety, sleep disturbances, depression, stress, and various pain complaints. There is a significant relationship between complaints of pain felt by the elderly with depression.
Keywords---COVID-19, elderly, mental disorders, screening, sectional study.

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Manuscript submitted: 27 Oct 2021, Manuscript revised: 18 Dec 2021, Accepted for publication: 09 Jan 2022

Introduction

The COVID-19 pandemic affects all aspects of life, physically, mentally, socially and culturally. From an offline life shifting to online life, from easy access of services to obstructed access such as health services, from the community's economic stability to economic/financial difficulties, and various government policies such as social distancing, use of personal protective equipment, restrictions on going out of the house. Various psychosocial factors experienced by the community, including the elderly during the COVID-19 pandemic, affect their physical and mental health status. Rural elderly people with low socioeconomic status, low education, lack of ability to understand COVID-19, and lack of access to health services during a pandemic increase the risk to get mental disorders (Al-Zahrani, 2021).

COVID-19 infects people regardless of age. So far, it has been recorded that the highest mortality rate in the world due to COVID-19 occurs in elderly people aged 70 years (Kim & Su, 2020; Vaishya et al., 2020). With declining cognitive abilities, physiological functions, physical fitness and immunity, senior citizens with these physical illnesses have a significantly higher vulnerability than other populations. This include vulnerability to experiencing the psychosocial impact of the COVID-19 pandemic. Various factors like biological factors such as the direct effect of the SARS Cov-2 virus, comorbid diseases and psychological factors such as fear of contracting the virus, death, uncertainty, as well as social problems such as government policies, access to services, and economic burdens, social distancing contribute to the psychosocial impact on the elderly (Aki, 2020).

During the COVID-19 pandemic, there was an increase in mental disorders in the elderly such as depression as much as 20-37%, anxiety 30-70%, sleep disturbances 64-87%, Post-traumatic stress disorder 30-32.2%, dementia and delirium 25 -60%, sleep disturbances, and even suicide increase in the elderly over the age of 85 years (Seethaler et al., 2021). Being alone and isolated can put a person in unsafe situations. The existence of social distancing can cause emotional distance between family, friends, friends, or during worship to be able to support each other (Parlapani et al., 2020).

Method

This study used a cross-sectional analytic design for all elderly members of the posyandu in Banjar Sandan Dauh Yeh, Tabanan Regency, Bali Province. All elderly who came were screened using the Abbreviated Mental Test (AMT), Depression Anxiety Stress Scale (DASS), Geriatric Depression Scale (GDS), Pittsburgh Sleep Quality Index (PSQI), and Visual Analog Scale (VAS) and/or based on structured interviews. The elderly who had complete screening and interview data were included in the study sample, as many as 85 people (Prince et al., 1997; Rockwood & Mitnitski, 2006).

Results

To find out the characteristics of the elderly living in the villages on the slopes of Mount Batukaru at Sandan village Tabanan Bali, some activities such as mental health services, food donations, counseling on early detection of mental disorders, and health procedures were carried out to prevent the transmission of COVID-19 (Lund et al., 2018; Ansseau et al., 2004). The event was continued with screening and structured interviews. The results of the characteristics of the elderly obtained are the average age of the elderly is 64 years (range 59-70 years), the number between men and women is almost the same (approaching 50%), the highest level of education is elementary school (62%), the most occupation is as a farmer (56%), lived only with their partner (53%), and as many as 68 people (80%) complained of various physical complaints such as ulcers, arthralgia, myalgia, cephalgia, and vertigo (Table 1).

Table 1
Characteristics of the elderly in rural areas in Tabanan-Bali

Variable	N = 85 (%)
Age* (year), median	64 (59-70)
Gender	
Male	44 (51,8 %)
Female	41 (48,2 %)
Education	
Primary School	62 (72,9 %)
Junior High School	15 (17,6 %)
Senior High School	7 (7,2 %)
Bachelor	1 (1,2 %)
Occupation	
Does not work	15 (17,6 %)
Farmer	48 (56,5 %)
Businessman	14 (16,5 %)
Retired	6 (7,1 %)
Religious figures	2 (2,4 %)
Living with	
Couple	45 (53 %)
Children and grandchildren	26 (30 %)
Alone	10 (12 %)
Entrusted to neighbor	4 (5 %)
Physical Complaint	
Diabetes Mellitus	7 (8,2 %)
Hipertensi	9 (10,6 %)
Gastritis	6 (7,1 %)
Arthralgia	11 (12,9 %)
Myalgia	27 (31,8%)
Cefalgia	4 (4,7 %)
Vertigo	4 (4,7 %)

From the results of screening using the Abbreviated Mental Test (AMT), it was found that most of the elderly with good cognitive ability were 65 people (76.4%), moderate cognitive impairment was 11.7%, and severe cognitive impairment was

5.8%. Assessment using the Depression Anxiety Stress Scale (DASS) found that 15 people complained of depression (17.5%), which was later confirmed by the Geriatric Depression Scale (GDS) screening (Grimes & Schulz, 2002; Eckert & Bajorath, 2007). The results were not much different i.e. 70 people with mild depression (82.4%), 13 people with moderate depression (15.3%), and 2 people with severe depression (2.3%). In addition, complaints and screening with DASS found that most of the patients experienced anxiety as many as 55 people (65%) and stress as many as 15 people (17.5%). Complaints of difficulty sleeping or insomnia are common among the elderly at the time of this service. Furthermore, screening was carried out with the Pittsburgh Sleep Quality Index (PSQI). The results obtained were as many as 60 people (70.5%) experienced insomnia, 15 people (17.6%) had good sleep quality, and 10 people (11.7%) experienced mild insomnia. Based on interviews with perceived complaints and pain screening using the Visual Analog Scale (VAS), the average VAS score was 2 (1-5) with a total of 68 people (80%). These patients complained of pain and wanted treatment for their pain Table 2).

From the results of structured interviews, the elderly who complain of pain experience depression and feel pressured by the situation of the COVID-19 pandemic. In the Kruskal Wallis test, there were differences in levels of pain scale (VAS) and the degree of depression ($p<0.0001$). Furthermore, a post hoc test was performed with the Mann Whitney test, which found a difference in pain scale between mild vs moderate depression ($p < 0.0001$) and mild vs severe depression ($p = 0.013$). Meanwhile, for moderate vs severe depression, there was no significant difference ($p=0.571$) (Table 3).

Table 2
The screening mental disorders for elderly during the pandemic COVID-19

Screening	Category	n (%)
AMT	Normal	65 (76,4%)
	Moderatecognitive impairment	10 (11,7%)
	Severe cognitive impairment	5 (5,8%)
DASS	Depression	15 (17,5%)
	Anxiety	55 (65%)
	stress	15 (17,5%)
PSQI	Good quality sleep	15 (17,6%)
	Sometime difficult sleep	10 (11,7%)
	Insomnia	60 (70,5%)
VAS	Median, VAS	2 (1-5)
	Pain (Mild-moderate)	68 (80%)
GDS	Mild	70 (82,4 %)
	Moderate	13 (15,3 %)
	Severe	2 (2,3 %)

Table 3
The difference between the pain score (VAS) and the degree of depression in the elderly

		N	VAS	*P value*
Depression	Mild	70	2 (1-5)	<0,0001
	Moderate	13	4 (1-5)	
	Severe	2	4,5 (4-5)	

From the box plot, it can be seen that there was a difference in the pain scale between mild to moderate and severe depression. Meanwhile, there was no difference between moderate and severe depression (figure 1).

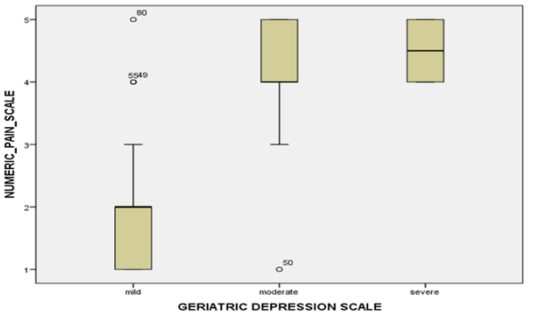

Figure 1. Box Plot about association between Numeric Pain Scale with Geriatric Depression Scale

Discussion

The characteristics of the elderly in rural areas who come for services and early detection of mental disorders in the elderly are as many as 85 people, with a balanced gender between male and female elderly, the average age is 64 years, and have low education (Brooks et al., 2020; Indonesia, 2008). This is in accordance with the characteristics of the rural population in Indonesia. Most of their work is farming and not working. In addition, most of the people in the area live only with their spouses or with their families who also work as farmers. This is related to various reasons why they often feel anxious and stressed. In 53% of the elderly who usually live alone, feelings of anxiety and stress arise because their children lose their jobs in the city and return to the village due to the decline in the economic and tourism sectors in Bali as a result of the COVID-19 pandemic. They also complain of various physical complaints, where almost 80% of the elderly need comprehensive treatment. Data from the Multicountry Global Burden of Disease shows that the problems experienced by most of the elderly are chronic and non-communicable diseases (Avendano et al., 2009). Chronic pain and depression are health problems that cause disability in the elderly (Aboderin & Beard, 2015). The ratio of dependence both physically and psychosocially in rural areas is higher than in urban areas, each at 14.09 compared to 11.40. Older women are mostly borne by the productive age population. The dependence of elderly women (13.59) was reported to be higher than that of elderly men (11.83) (Badan Pusat Statistik, 2014).

Most of the elderly with good cognitive can be present in the community area (village hall) (Banerjee, 2020; Lee et al., 2019; Fischli et al., 1998). This elderly group logically went to the service post to get therapy and donations. Most of the elderly in this group can come alone and some of them are brought by their families. There are two people who do home care by the health volunteers involved (Feroze et al., 2012; Barnett et al., 2012). These two cases, dementia overlapping with delirium, experienced increasingly severe symptoms due to limited access to health services due to the COVID-19 pandemic. Various physical diseases such as diabetes, heart disease, lung disease, or pre-existing immunodeficiency disease cannot be controlled properly. This is due to self-isolation, fear of leaving the house, no one to deliver, or government policy programs (Kennedy et al., 2020). The presence of anxiety and stress is reported to be quite high, namely two-thirds experienced by the elderly during the COVID-19 pandemic. Factors that cause anxiety and stress include financial difficulties, social distancing, difficulties in accessing health services, fear of being exposed to COVID-19, news of COVID (infodemic), and due to family members being treated or died due to COVID-19. Elderly women who are older, live alone, and with low socioeconomic status are reported to experience higher anxiety and stress (Mistry et al., 2021).

Sleep disturbances are almost experienced by most of the elderly during the COVID-19 pandemic. The impact of insomnia on the elderly causes the large use of sleeping pills in this population (Grossman et al., 2021; Sadock et al., 2015). During the COVID-19 pandemic, more elderly people complained of sleep disturbances due to reduced physical activity, lack of mobility, feelings of burn-out, or as a result of conditions such as anxiety, stress, and depression (Aki, 2020). Almost all the elderly in this village want to get therapy for sleep disorders and pain. Feelings of loneliness, isolation, and uncertainty about when the COVID-19 pandemic will end lead to stress, anxiety, and sleep disturbances (Robb et al., 2020).

The relationship between depression, pain, and coexisting medical illness can be two-way. Medical problems such as chronic pain can predispose to depression and depression can be associated with worsening pain symptoms. At the time of early detection of pain using the Visual Analog Scale (VAS), most cases were mild to moderate pain (Tanwete & Kombinda, 2020; Nyandra et al., 2018). The characteristics of the pain felt vary, such as pain in the joints, muscles, legs, or body, which is felt for a long time. Total of 68 people (80%) elderly felt mild to moderate pain. 17 people (20%) among them said they prefer to use over-the-counter drugs when pain occurs to relieve the complaints. There is a significant relationship between various pain complaints and the incidence of depression in elderly patients. The COVID-19 pandemic has increased the incidence of anxiety and depression (Das et al., 2021). The elderly often show the same physical pain complaints. This can vary and is accompanied by depression, anxiety, and delays in thinking. Changes in the elderly who experience depression consist of physical changes, changes in thinking, and changes in feelings, and changes in behavior (Konwar et al., 2022; Dewi et al., 2022). Physical changes include changes in appetite, which cause weight loss or gain; sleep disturbances; easy to feel tired; agitated or restless; as well as various pain complaints such as headache, muscle aches, joint pain, numb, and stomach disorders such as constipation (Amir, 2016).

Conclusion

The most common mental disorders in the elderly during the COVID-19 pandemic were anxiety disorders, sleep disorders, depression, stress, and various pain complaints (Kourkouta et al., 2015; Nogueira et al., 2013). There is a significant relationship between felt pain and depression that occurs. Policies are needed from various parties, especially the government, to provide services that favor the elderly in order to obtain welfare, especially mentally welfare during this COVID-19 pandemic (Kasni & Budiarta, 2021; Kanca et al., 2020).

Research Limitation

This study did not assess the mental disorders of the elderly before the pandemic COVID-19.

Ethical Statement

This study has been approved by Ethical Commission of Faculty of Medicine, Udayana University with the letter number: 2085/UN14.2.2.VII.14/LT/2021.

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