DEPRESSIVE STATUS AND SOME ASSOCIATED FACTORS IN GERIATRIC INPATIENTS AT CAN THO HOSPITAL OF TRADITIONAL MEDICINE DURING THE FOURTH WAVE OF THE COVID-19

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ABSTRACT

Background: *The fourth wave of the COVID-19 had severe impact on the health of Vietnamese people. The COVID pandemic increased the rate of depression in various populations, especially the elderly. Surveying the rate of depression in this group during the COVID-19 outbreak was necessary for improving patients' life quality.* ***Objectives:*** *To determine the rate of depression and some associated factors in elderly inpatients at Can Tho Hospital of Traditional Medicine using the*

PHQ-9 scale. ***Materials and methods:*** *A cross-sectional descriptive study was conducted on 201 inpatients at age 60 or older from September 2021 to March 2022. The prevalence of depression was measured using the PHQ-9 scale. Some demographic factors and medical conditions were analyzed in relation. SPSS software was used to process the data.* ***Results:*** *132 patients (65.67%) participating in the study suffered from depression. The results showed that the minimum level of depression accounted for 25.37%; mild depression 22.39%; moderate depression 12.44%; and severe depression 5.47%. Associated factors including place of residence (OR = 0.441; p = 0.008), no health insurance (p <0.05), COVID infection (OR = 0.574; p < 0.001), patient income (OR = 3.51; p = 0.032), field hospital healthcare (OR = 0.390, p<0.05) had statistical significance related to depression.* ***Conclusions****: Depression is a common mental health problem in older people with underlying medical conditions, which tended to worsen during the COVID-19 period. The present finding provides an alarm signal to hospitals in general and Can Tho Hospital of Traditional Medicine in particular about the comorbidities of depression when treating elderly patients with COVID-19. More research on the treatment of depression for elderly patients after COVID-19 infection needs to be done on the field of traditional medicine. Depression's symptoms need to be studied and compared with "Constraint syndrome" in traditional medicine to provide combination therapy.*

Keywords: *depression, elderly, period of COVID-19, traditional medicine*

I. INTRODUCTION

In 2020, the World Health Organization recognized the acute respiratory infection caused by the SARS-CoV-2 virus as a coronavirus disease 2019 (COVID-19) pandemic. In Vietnam, as of March 2022, more than 7 million infections and more than 41,000 deaths have been reported [1]. Although there are no official statistics, most of the deaths and severe cases of COVID occur in people over the age of 65. The elderly, especially those with underlying medical conditions were generally the most vulnerable during the pandemic. Therefore, they are the first to suffer physically and mentally from COVID-19 infection. Determining the rate of depression and some associated factors in elderly inpatients at Can Tho Hospital of Traditional Medicine during COVID-19 would be helpful in practical and scientific value. It is also a trustworthy reference for psychologists and medical professionals to provide treatment coordination. On July 23, 2021, the Steering Committee for COVID-19 prevention and control in Can Tho city issued Decision No. 115/QD-BCD on establishing field hospital No. 3 at Can Tho Hospital of Traditional Medicine. This hospital is mainly for the elderly [2]. We conducted the project with two objectives: (1) To determine the rate of depression status in geriatric inpatients at Can Tho Hospital of Traditional Medicine during COVID-19 using the PHQ-9 scale; (2) To find out some associated factors in geriatric inpatients at Can Tho Hospital of Traditional Medicine during COVID-19.

II. MATERIALS AND METHODS

2.1. Study subjects

The participants were geriatric inpatients aged 60 or older at Can Tho Hospital of Traditional Medicine during COVID-19 pandemic from September 2021 to March 2022. Patients with hearing and speech impairment, decreased consciousness, mental problems, or problems that prevent them from answering the questions correctly, and those refusing to participate in the survey were excluded from the study.

2.2. Methods

A cross-sectional descriptive study with analysis of 201 inpatients over 60 years old was conducted from September 2021 to March 2022. To construct a research case based

on the research objective, the Patient Health Questionnaire - 9 (PHQ-9) scale was used to screen for depression [3].

PHQ-9 is the depression module, which scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day); possible scores range from 0 to 21. Depression levels were defined as follows: 0 - 4: non-depression; 5 - 9: mild; 10 - 14: moderate; 15 - 19: moderately severe; 20 – 21: severe.

The collected data were analyzed using SPSS 22.0 software. Specifically, descriptive statistics (frequency and percentages) were applied. The results were used to compare the rate of depression and calculate the correlation between depression and associated factors.

III. RESULTS

3.1. General characteristics

Table 1. General characteristics

General characteristics		Frequency (n)	Rate (%)
Sex	Male	80	39.8
	Female	121	60.2
Age	60-69 years old	127	63.2
	70-79 years old	57	28.4
	>80 years old	17	8.5
Academic level	Elementary, Secondary school	145	72.1
	Above secondary school	56	27.9
Residence	Urban	90	44.8
	Rural	111	55.2
Income	Low	33	16.4
	Middle	136	67.7
	High	32	15.9

The table showed that the average age was 68.61±6.687 years. 60.2% of participants were female. The majority of patients living in rural areas was 55.8%. Patients' incomes fell within the low-to-mid income range.

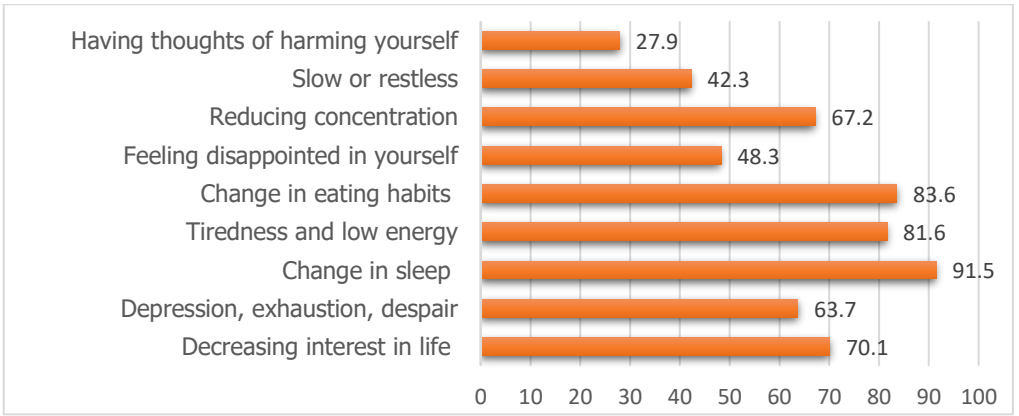

Figure 1. The geriatric inpatients' depressive symptoms during the fourth wave of the COVID - 19

The most common depressive symptoms in geriatric inpatients are change in sleep (91.5%), change in eating habits (83.6%), tiredness and low energy (81.6%), decreased interest in life (70.1%).

Table 2. Clinical characteristics

Characteristics		Frequency (n)	Rate (%)
Health insurance	Yes	173	86.1
	No	28	13.9
During the fourth wave of the COVID- 19	Yes	39	19.4
	No	162	80.6
Marital status	Married	186	92.5
	Single/divorced/widowed	15	7.5
BMI	Underweight	10	5.0
	Normal weight	153	76.1
	Overweight	38	18.9
Number of comorbidities	No comorbidity	33	16.4
	1 of comorbidity	85	47.3
	≥ 2 of comorbidities	73	36.3
Relatives' mental and neurological diseases	Yes	38	18.9
	No	163	81.1

Most patients had health insurance with 86.1%. During the research period, there were 39 cases of COVID-19, accounting for 19.4%. Regarding body mass index, 76.1% of patients had normal weight; 5.0% were underweight and 18.9% were overweight. In terms of the total amount of comorbidities, 83.6% of patients had more than one disease, while 16.4% of patients had none. 18.9% of patients had a family history of associated neurological and mental illnesses.

3.2. Percentage of patients with depression

Table 3. Percentage of patients with depression

		COVID-19		Non-COVID-19			
		n	%	n	%	n	%
Depression	Yes	39	29.5	93	70.5	132	65.67
	No	0	0	69	100	69	34.33
Total		39		162		201	100%

An estimated 65.67% of people reported having depression; the percentage of depressive patients with COVID-19 was 29.5% and non-COVID-19 was 70.5%. It is also demonstrated that depression was identified in all individuals with COVID-19.

Table 4. Distribution of depression

		COVID -19		Non-COVID-19		Total	
		n	%	n	%	n	%
Depression	Non-depression	0	0.0	69		69	34.33
	Mild	7	13.7	44		51	25.37
	Moderate	19	42.2	26		45	22.39
	Moderate severe	11	44.0	14		25	12.44
	Severe	2	18.2	9		11	5.47
Total		39	100%	162	100%	201	100%

Regarding the distribution of depression, among 201 subjects, the prevalence of depression was 65.67% ranging from mild to severe with severe depression being 5.47%.

3.3. Factors associated with depression

Table 5. Factors associated with depression

Characteristics		Depression				OR (95% CI)	p
		Depression		Non-Depression			
		n	%	n	%		
Age	< 70 years old	87	68.5	40	31.5	0.713 (0.392-1.298)	0.268
	≥ 70 years old	45	60.8	29	32.9		
Gender	Female	82	67.8	39	32.3	1.262 (0.698-2.280)	0.441
	Male	50	62.5	30	37.5		
Residence	Urban area	68	75.6	22	24.4	0.441 (0.239-0.811)	0.008
	Rural area	64	57.7	47	42.3		
Health Insurance	No	25	89.3	3	10.7	5.140 (1.493-17.696)	<0.05
	Yes	107	61.8	66	38.2		
Education	> high school	36	64.3	20	35.7	1.088 (0.571-2.076)	0.797
	≤ high school	96	66.2	49	33.8		
COVID – 19 infection	Yes	39	100	0	0.0	0.574 (0.503-0.655)	<0.001
	No	93	57.4	69	42.6		
Time	COVID-19 pandemic	40	80.0	10	20.0	0.390 (0.181-0.839)	<0.05
	After COVID-19 pandemic	92	60.9	59	39.1		
Marital status	Single/divorced/widowed	12	80.0	3	20.0	2.200 (0.599-8.075)	0.224
	Married	120	64.5	66	35.5		
Income	Low	20	60.6	13	39.4	3.510 (1.076-11.451)	0.032
	Middle	85	62.5	51	37.5		
	High	27	84.4	5	15.6		
BMI	Underweight	6	60.0	4	40.0	1.444 (0.343-6.086)	0.615
	Normal weight	100	65.4	53	34.6		
	Overweight	26	64.8	12	31.6		
Number of comorbidities	No comorbidity	24	72.7	9	27.3	0.603 (0.245-1.482)	0.268
	1 comorbidity	63	66.3	32	33.7		
	≥ 2 comorbidities	45	61.6	28	38.4		

There correlation depression and place of residence, health insurance, COVID-19 infection, and time of hospitalization. Patients living in urban area had a depression rate which was 0.441 times as high as patients living in rural area did, p =<0.008. Regarding health insurance, patients without health insurance were 5,140 times higher than those with health insurance, p<0.05. There were 0.574 times as patients hospitalized for COVID-19 had a

depression rate as those without COVID-19, p<0.001. On average, patients with low income had an anxiety rate 3.51 times, which was higher than patients with high income (p=0.032).

IV. DISCUSSION

4.1. Depression status in elderly inpatients at Can Tho Hospital of Traditional Medicine

The current study on 201 subjects using a screening scale of PHQ-9, which is widely used in Vietnam [3], showed a very high number of patients who have mild or higher depression (65.67%). Among 29.5% of patients with COVID-19, all were diagnosed as being at mild of depression or higher (39/39 patients).

A study by Vo Kim Anh (2022) showed that out of 235 cancer patients surveyed to assess depression. The prevalence of depression was 37.2% in a total of 102 patients aged over 60. These results, support the external validity of our study.The difference in the rate of depression compared to our study is that we assessed it at the time of the COVID epidemic, and anxiety about the COVID infection probably caused the depression rate to be higher than normal.

This is primarily due to statistical data indicating that the death toll and severe consequences disproportionately affect people over the age of 60 [5].

4.2. Some related factors in elderly inpatients at Can Tho Hospital of Traditional Medicine

The prevalence of depression by gender shows that women were more prone to depression than men. The study (2021) on the rate of depression and depression by Nguyen Thai Thong et al on hypertensive and diabetic patients found that the percentage of female patients who had depression was three times greater than the percentage of male patients (72.1% and 27.9% respectively) [6]. This could be due to women having unfavorable characteristics such as biological factors (developmental process, hormonal changes, etc.) and psychological factors. Social roles (including gender discrimination, roles in the family and society, and men's and women's relative lack of social support) increase the risk of depression, particularly during times of social withdrawal.

Regarding the relationship between the place of residence and the rate of depression, the results in table 5 showed that the number of patients in urban areas with depression is 75.6%, which is significantly higher than those in rural areas. However, when we compared the rate of patients in rural and urban area with symptoms of depression, the results showed that the place of residence did not significantly affect the rate of depression.

In terms of the relationship between health insurance and the rate of depression, we discovered that while the number of uninsured patients presenting for examination and treatment was not very high (28/201 patients). This subject had a high rate of depression (89.3%), which is significantly higher than that of patients with health insurance (61.8%) with $p < 0.05$. This may assist in clarifying the concern that high healthcare costs increase the prevalence of depression, especially when the COVID pandemic is slowing the economy and patients' wages may be significantly reduced [7].

In the relationship between education level and depression, patients with lower secondary school education make up the majority (72.1%). Though, the results showed that education level does not affect the rate of depression.

Although numerous research has demonstrated that patients with higher levels of education are more prone to experience depression [4], [8]. Tran Thi Ha An (2016), in a study on some clinical features of depression and depression in patients with diabetes, demonstrated

that the higher the education level, the greater the likelihood of depression [8]. The fact that most elderly patients in the Mekong Delta do not have advanced degrees, and there are not many participants who completed secondary school or higher, makes the data meaningless.

In the relationship between COVID-19 and depression, all patients hospitalized with COVID-19 positivity had a depression rate of mild or higher compared to patients without COVID-19, who had a depression rate (57.4%) with $p<0.001$. Patients admitted when the hospital was a field hospital had a depression rate (80.0%) that was 0.390 times higher (95% CI: 0.181-0.839) than patients admitted during the new normal time. This prevalence of depression in our study has similarities to other research which show the percentages of depression in people who have been exposed to COVID-19 patients in an isolation area that demonstrated the virus's profound effects on aspects of mental health [9].

In addition, our results showed that there are differences but not statistically significant between the relation of depression and marital status, income, BMI, number of comorbidities, family history of mental and neurological diseases. This could explain why our sample size was not large enough or patients may have been more focused on their own well-being than other difficulties throughout the pandemic.

We discovered that the percentages in Figure 1 show that the most common depressive symptoms in geriatric inpatients are there is a direct connection between depressive disorders and "Constraint syndrome" in traditional medicine [9]. This is also a limitation of the study when there is no analysis of the symptoms of patients studied according to traditional medicine to find out the relationship and make recommendations in consultation and treatment according to traditional medicine.

V. CONCLUSIONS

Depression is a fairly common disease in elderly patients with underlying medical conditions, and this condition tends to increase very quickly during the COVID epidemic period. Most patients had depressive symptoms ranging from mild to moderate severe; a small number of patients have severe depressive disorder. Especially, all the elderly patients with COVID-19 were at mildly depressed. There was correlation between depression and some associated factors, such as living in urban areas, no health insurance, being infected with COVID-19, and being admitted to the hospital during the fourth wave of COVID-19. Therefore, building a mental health care system for elderly patients after the COVID period is a matter of concern. With traditional medicine's strength in the overall treatment, it also needs more research to support treatment-resistant depression.

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