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SOME SYMPTOMS OF MENTAL DISORDERS AMONG SARS-COV 2 PATIENTS IN A FIELD HOSPITAL: A PILOT STUDY

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Abstract

The risk of mental disorders has been recognized in SARS-CoV 2 infected patients. This article presents some results of a cross-sectional research conducted on 54 SARS-CoV 2 infected patients in a field hospital at Dong Thap province, with the aim to understand the prevalence of some mental disorders and their associated factors in SARS-CoV 2 infected patients. A self-report scale was used: Hospital Anxiety Depression Scale (HADS). The results of research showed that clinically meaningful psychological symptoms were found in 14.8% of patients for anxiety symptoms; 11.4% for depression symptoms; 5.6% for both anxiety and depression symptoms. The associated factors for anxiety symptoms included the duration of SARS-CoV 2 infectivity and anger while infected. There was a significant difference in the association between the duration of SARS-CoV 2 infectivity and the prevalence of depressive symptoms. So, the prevalence of the mental disorder in SARS-CoV 2 infected patients was higher than community; These mental symptoms could be recovered gradually over time. Further studies are needed to clarify this issue.

Keywords: *Mental disorder*, *SARS-CoV 2, associated factors*.

1. Introduction

Mental health is an integral part of health and well-being, as reflected in the definition of health in the Constitution of the World Health Organization: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Mental health, like other aspects of health, can be affected by a range of socioeconomic factors that need to be addressed through comprehensive strategies for promotion, prevention, treatment and recovery in a whole-of-government approach.(World Health Organization, 2021a)

In December 2019, a series of pneumonia of unknown cause emerged in Wuhan, Hubei, China, which were subsequently identified as being caused by a novel coronavirus termed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Disease onset may result in progressive respiratory failure owing to alveolar damage and even death (Zhou et al., 2020) (Huang et al., 2020). Following World Health Organization, until 27th January 2022, 360 578 392 SARS CoV 2 infected cases were recorded in almost country in the world.(World Health Organization, 2021b) In Vietnam, there was 2 203 208 SARS-CoV 2 infected cases, 1 946 611 recovered case and 37 291 dead as for 27th January 2022. (Vietnam Ministry of Health, 2021)

The results of infected SARS-CoV-2 are not only having physical symptoms like fever (87.9%), fatigue (69.6%), dry cough (67.7%) but also symptoms of mental disorders. (Han et al., 2020) During the acute illness, common symptoms among patients admitted to hospital for SARS-CoV-2 included anxiety symptoms (9.4%), depressive symptoms (40%), sleep disturbances (28.8%).(Thaweerat et al., 2021)(Chakrabarti S, 2021) Ju W.K et al. realized that clinically meaningful psychological symptoms were found in 18% patients for anxiety, 39% for depression, 30% for insomnia, 9% for suicidal tentative. (Kim et al., 2020) According to the other research being conducted by Ebru Sahan et al., the percentage of significant levels of anxiety and depression were 34.9 and 42%, respectively.(Şahan et al., 2021) There are three main reasons for neuropsychiatric symptoms in SARS-CoV-2 infected patients. Firstly, the virus can invade the brain then affect it by cytokines, interplay of inflammation.(Boldrini et al., 2021) Secondly, drugs used to treat SARS-CoV-2 infected patients like some kind of antibiotics, corticoid.(Sheng et al., 2005) And the final is psychological stresses caused by social distancing situation, worrying about spreading and negative health consequences of virus, job loss and economic fallout, …

In this article, we investigated some symptoms of mental disorders and its associated factors among SARS-CoV-2 infected patients in a field hospital.

2. Methods

2.1. Participants and procedure

This pilot, cross-sectional study was conducted in 54 SARS-CoV 2 infected in-patients with asymptomatic and mild disease who were hospitalized during the fourth wave of Covid-19 pandemic in Vietnam during August 2021 in a field hospital at Dong Thap province. The inclusion of participants was anonymous and voluntary. Patients with asymptomatic SARS-CoV 2 means they had a positive sample in Real-time Polymerase Chain Reaction but no symptoms. Patients with mild symptoms, no oxygen requirement and with s stable oxygen saturation maintained at SpO2 95 and above at room atmosphere were categorized as to be having the mild disease.

About Socio-Demographic information, 25 participants were men (46.3%); The mean age of the participants was 30.2, lowest and highest were 8 and 60 years old respectively. The percentage of asymptomatic infected patients was 87%, the rest of the participants had mild symptoms like mild fever and fatigue. There was no participant having background diseases such as cancer, diabetes, hypertension, chronic heart disease, asthma, chronic kidney disease. About the career of participants, the percentage of self-employed person was highest, at 59.3%, followed by the student, with 14.8%. Farmers career was taking up 14.8% while the civil servant was lowest, only 5.6%.

The education level of participants included 46.3% secondary, 42.6% high school and 11.1% university/college. In this sample size, the rate of single and married was equal, with 46.3%, followed by divorce status, at 7.4%.

2.2. Collection

A total of 54 SARS-CoV 2 positive in-patient with asymptomatic and mild disease who were under quarantine in the covid wards were requested to fill in the Google questionnaire form. Patients were asked to fill in the Google form using their smartphones. All participants were clearly explained about the nature and purpose of the study and were provided necessary assurances about the confidentially of the data being collected. Voluntary informed consent was taken from each SARS-CoV 2 positive patient before their participation.

2.3. Hospital anxiety and depression scale

The hospital Anxiety and Depression Scale (HADS) was originally developed by Zigmond and Snaith (1983). This is a self-report scale that has been developed and found to be a reliable instrument for detecting states of depression and anxiety in the setting of a hospital medical clinic, specially developed for use in patients with somatic comorbidity. This instrument consists of 7-items subscales for both depression and anxiety. The anxiety and depressive subscales are also valid measures of the severity of the emotional disorder. Each item is scored from 0 to 3 and this means that a person can score between 0 and 21 for either anxiety or depression. The HADS manual indicates that a score between 0 and 7 is “normal”, between 8 and 10 “mild”, between 11 and 14 “moderate” and between 15 and 21 “severe”. Bjelland et al. (2002) through a literature review of many studies identified a cut-off point of 8/21 for anxiety or depression. For anxiety, this gave a specificity of 0.78 and a sensitivity of 0.9. For depression, this gave a specificity of 0.7 and a sensitivity of 0.83. (Bjelland et al., 2002)

In this study, HADS and its sub-scales get an α significance >0.8, so this instrument can be used to measure exactly (Table 1).

Table 1. An α significance of the HADS and its sub-scales.

Scale / sub-scales	A number of items	α
HADS	***14***	***0.89***
Anxiety sub-scale	7	0.86
Depression sub-scale	7	0.87

2.4. Statistical analysis

The data were analyzed using Statistical Package for Social Science (SPSS) Version 25.0 for Mac. The descriptive statistics (i.e., means, frequencies, percentages) were used for socio-demographics information and distribution of the variables in SARS-CoV 2 infected patients. Inferential statistics (ed, chi-square tests) were performed to identify a significant relationship between outcome variables (symptoms of anxiety and depression) and the independent variables like the socio-demographic factors, some psychological features in patients.

3. Results

3.1. Prevalence of anxiety and depression among SARS-CoV 2 infected patients in a field hospital

Table 2. Prevalence of anxiety and depression among SARS-CoV 2 infected patients.

Symptoms	Means	Standard Deviation	Min	*Max*	Normal		Having symptoms of anxiety/depression	
					n	*%*	*n*	*%*
Anxiety	4.50	3.14	0	11	46	85.2	8	14.8
Depression	3.48	3.02	0	12	48	88.9	6	11.1
Both of anxiety and depression					51	94.4	3	5.6

Notes: *cut-off points at 8.*

In the sub-scale for anxiety, the means was 4.5 ± 3.14, min 0 and max 11 points. The percentage of patients having symptoms of anxiety was 14.8%.

In the sub-scale for depression, the means was 3.48 ± 3.02, min 0 and max 12 points. The percentage of patients having symptoms of depression was lower anxiety at 11.1%.

3.2. The associated factors of anxious symptoms among SARS-CoV 2 infected patients in a field hospital

Table 3. The associated factors of anxious symptoms among SARS-CoV 2 infected patients.

	Normal (n=46)	Anxiety (n=8)	p
Gender			
- Male	19 (35.2%)	6 (11.1%)	.125
- Female	27 (50%)	2 (3.7%)	
Age	29.96 ± 12.19	31.75 ± 10.4	.696
Educational Status			
- Elementary/Middle school	21 (38.9%)	4 (7.4%)	.31
- High school	21 (38.95)	2 (3.7%)	
- Graduate	4 (7.4%)	2 (3.7%)	
Duration of SARS-CoV 2 infected	12.89 ± 3.72	8.75 ± 4.23	**.006****
Number of relatives got SARS-CoV 2 infected	1.37 ± 1.65	3 ± 2.98	.171
Feelings of guilt			
- Yes	19 (35.2%)	4 (7.4%)	.711
- No	27 (50%)	4 (7.4%)	
Worrying about Sars-CoV 2 infected			
- Yes	17 (31.5%)	1 (1.9%)	.245
- No	29 (53.7%)	7 (13.0%)	
Anger cause by getting SARS-CoV 2			
- Yes	23 (42.6%)	8 (14.8%)	
- No	23 (42.6%)	-	**.015***
Satisfaction with medical care			
- Yes	45 (83.3%)	8 (14.8%)	1
- No	1 (1.9%)	-	

Analysis at significance level = .05, we realized that duration of SARS-CoV 2 infected, feelings of anger cause of getting SARS-CoV 2 in relation with symptoms of anxiety and risk factors which can lead to anxiety significantly in SARS-CoV 2 positive patients. Patients getting symptoms of anxiety were more likely belonging to shorter duration of SARS-CoV 2 infected group (p=.006) and feelings of anger caused by getting SARS-CoV 2 (p=.015).

3.3. The associated factors of depressive symptoms among SARS-CoV 2 infected patients in a field hospital

Table 4. The associated factors of depressive symptoms among SARS-CoV 2 infected patients.

	Normal (n=46)	Depression (n=8)	p
Gender			
- Male	20 (37%)	5 (9.3%)	.085
- Female	28 (51.9%)	1 (1.9%)	
Age	29.96 ± 12.19	31.75 ± 10.4	.647
Educational Status			
- Elementary/Middle school	21 (38.9%)	4 (7.4%)	.395
- High school	22 (40.7)	1 (1.9%)	
- Graduate	5 (9.3%)	1 (1.9%)	
Duration of SARS-CoV 2 infected	12.94 ± 3.6	8 ± 3.69	**.000****
Number of relatives got SARS-CoV 2 infected	1.56 ± 1.96	2 ± 2.1	.61
Feelings of guilt			
- Yes	22 (40.7%)	1 (1.9%)	.224
- No	26 (48.1%)	5 (9.3%)	
Worrying about Sars-CoV 2 infected			
- Yes	16 (29.6%)	2 (3.7%)	1
- No	32 (59.3%)	4 (7.4%)	
Anger cause by getting SARS-CoV 2			
- Yes	28 (51.9%)	3 (5.6%)	
- No	20 (37%)	3 (5.6)	1
Satisfaction with medical care			
- Yes	45 (83.3%)	8 (14.8%)	1
- No	1 (1.9%)	-	

Analysis at significance level = 0.05, we realized that duration of SARS-CoV 2 infected in relation with symptoms of depression and risk factors which can lead to depression significantly in SARS-CoV 2 positive patients. Patients getting symptoms of depression were more likely belonging to shorter duration of the SARS-CoV 2 infected group (p= .000).

4. Discussion

Through an online survey in this study with 54 SARS CoV 2 infected patients, we found out that the percentages of in-patients having symptoms of anxiety and depression were 14.8% and 11.1%, respectively. These figures were much lower than figures which were collected in Ho Chi Minh Covid-19 resuscitation Hospital, at 53.3% accounting for anxiety and 20% for depression.(HCMC resuscitation hospital, 2021) The difference is made by the severity of SARS CoV 2 infected patients, drugs used to treat in this study, patients recruited in HCMC Covid-19 resuscitation hospital were severe with many medicines like corticosteroid, antibiotics and physical procedures. On the other hand, our finding was in mild and asymptomatic patients who only were impacted by Covid-19 inflammation and psychological distress. Which can reflect more exactly the impact of psychological stress by SARS-CoV 2 infected situation. The prevalence of some symptoms of mental disorders in others research was the same as our finding such as anxiety 9.4% (Wajana et al., 2021), 15.2% for anxiety and 29.3% for depression (Xueyi Li, 2021). Although these figures seem to be different, it's much higher prevalence which were estimated in the community (anxiety 3.8% and depression 3.4%). (Thaweerat et al., 2021)(Saloni Dattani et al., 2021)

About risk factors, we found out that 2 factors were the duration of SARS-CoV 2 infection and anger caused getting this virus. Duration of SARS-CoV 2 infected in anxiety comorbid group was lower. We can explain this in several ways. Firstly, most symptoms of SARS-CoV 2 appear in the first 10 days like fiver, couch, fatigue, muscle and body aches,… then disappear after; these symptoms made a sense of worrying and destress in patients. (McQuaid et al., 2021); Secondly, in the early period of infection, SARS-Co V 2 patients can not adjust to new situations, they had to admit to a field hospital, separating from family members, stopping their work. After that, they can deal with new situations, being familiar with isolated environment in a hospital. Finally, SARS-CoV 2 invades the central nervous system and create the strongest inflammation response in the first week then gradual decline until 4 weeks. Reducing the central nervous system can minimize anxiety response.(Nalbandian et al., 2021) The feeling of anger caused by getting SARS-CoV 2 is a characteristic of stress, unstable emotion in infected patients which will lead to psychological distress and worrying. Furthermore, the duration of SARS CoV 2 infected was a risk factor of depressive symptoms in patients. Depressive responses were higher in the early time, then fall slowly.

5. Conclusion

In mild and asymptomatic SARS-CoV 2 infected patients, the prevalence of some symptoms of mental disorders is still higher than in the community and these symptoms can be recovered slightly. The feeling of anger caused by getting SARS-CoV 2 is a risk factor for anxiety symptoms.

6. Limitation

Our research had some limitations. The first weakness point is a small sample size. Secondly, a cross-sectional study cannot descript the progression of mental disorder symptoms. Finally, bios cause by self-answer of patients via an online survey through Google form.

References

Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research*, *52*(2), 69–77. https://doi.org/10.1016/S0022-3999(01)00296-3

Boldrini, M., Canoll, P. D., & Klein, R. S. (2021). How COVID-19 Affects the Brain. *JAMA Psychiatry*, *78*(6), 682–683. https://doi.org/10.1001/jamapsychiatry.2021.0500

Chakrabarti S. (2021). Mental Health in Hospitalised COVID 19 Patients in Quarantine During Second Wave in a South Indian Private Teaching Hospital. *J Multidiscip Healthc*, *14*, 2777–2789.

Han, Q., Lin, Q., Jin, S., & You, L. (2020). Coronavirus 2019-nCoV: A brief perspective from the front line. *The Journal of Infection*, *80*(4), 373–377. PubMed. https://doi.org/10.1016/j.jinf.2020.02.010

HCMC resuscitation hospital. (2021). HCMC: 20% of COVID-19 got depression, 66.7% got anxiety. *Https://Moh.Gov.Vn/*.

Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., … Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, *395*(10223), 497–506. https://doi.org/10.1016/S0140-6736(20)30183-5

Kim, J.-W., Stewart, R., Kang, S.-J., Jung, S.-I., Kim, S.-W., & Kim, J.-M. (2020). Telephone based Interventions for Psychological Problems in Hospital Isolated Patients with COVID-19. *Clinical Psychopharmacology and Neuroscience: The Official Scientific Journal of the Korean College of Neuropsychopharmacology*, *18*(4), 616–620. PubMed. https://doi.org/10.9758/cpn.2020.18.4.616

McQuaid, C., Brady, M., & Deane, R. (2021). SARS-CoV-2: Is there neuroinvasion? *Fluids and Barriers of the CNS*, *18*(1), 32. https://doi.org/10.1186/s12987-021-00267-y

Nalbandian, A., Sehgal, K., Gupta, A., Madhavan, M. V., McGroder, C., Stevens, J. S., Cook, J. R., Nordvig, A. S., Shalev, D., Sehrawat, T. S., Ahluwalia, N., Bikdeli, B., Dietz, D., Der-Nigoghossian, C., Liyanage-Don, N., Rosner, G. F., Bernstein, E. J., Mohan, S., Beckley, A. A., … Wan, E. Y. (2021). Post-acute COVID-19 syndrome. *Nature Medicine*, *27*(4), 601–615. https://doi.org/10.1038/s41591-021-01283-z

Şahan, E., Ünal, S. M., & Kırpınar, İ. (2021). Can we predict who will be more anxious and depressed in the COVID-19 ward? *Journal of Psychosomatic Research*, *140*, 110302–110302. PubMed. https://doi.org/10.1016/j.jpsychores.2020.110302

Saloni Dattani, Hannah Ritchie, & Max Roser. (2021). Mental Health. *Published Online at OurWorldInData.Org.*

Sheng, B., Cheng, S. K. W., Lau, K. K., Li, H. L., & Chan, E. L. Y. (2005). The effects of disease severity, use of corticosteroids and social factors on neuropsychiatric complaints in severe acute respiratory syndrome (SARS) patients at acute and convalescent phases. *European Psychiatry: The Journal of the Association of European Psychiatrists*, *20*(3), 236–242. PubMed. https://doi.org/10.1016/j.eurpsy.2004.06.023

Thaweerat, W., Pongpirul, W. A., & Prasithsirikul, W. (2021). Assessment of anxiety and depression among hospitalized COVID-19 patients in Thailand during the first wave of the pandemic: A cross-sectional study. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*, *57*(1), 106–106. PubMed. https://doi.org/10.1186/s41983-021-00362-9

Vietnam Ministry of Health. (2021, September 26). *Vietnam Ministry of Health* [Https://covid19.gov.vn].

World Health Organization. (2021a). *Comprehensive Mental Health Action Plan 2013-2030*. World Health Organization.

World Health Organization. (2021b, September 24). *Coronavirus disease (COVID-19) pandemic* [Https://www.who.int].

Zhou, P., Yang, X., Wang, X.-G., Hu, B., Zhang, L., Zhang, W., Si, H.-R., Zhu, Y., Li, B., Huang, C.-L., Chen, H.-D., Chen, J., Luo, Y., Guo, H., Jiang, R.-D., Liu, M.-Q., Chen, Y., Shen, X.-R., & Wang, X. (2020). A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature*, *579*. https://doi.org/10.1038/s41586-020-2012-7