Mental Health Status during COVID-19 Pandemic and its Relationship with Economic Hardship and Financial Threat among Rural Population in Sarawak, Malaysia

Amirah N, Rahman MM

Department of Community Medicine and Public Health

Faculty of Medicine and Health Sciences,

Universiti Malaysia Sarawak,

94300 Kota Samarahan, Sarawak, Malaysia.

Corresponding Author

Md Mizanur Rahman

Department of Community Medicine and Public Health

Faculty of Medicine and Health Sciences,

Universiti Malaysia Sarawak,

94300 Kota Samarahan, Sarawak, Malaysia

E-mail: rmmizanur@unimas.my, aniqm@hotmail.com

Citation

Amirah N, Rahman MM. Mental Health Status during COVID-19 Pandemic and its Relationship with Economic Hardship and Financial Threat among Rural Population in Sarawak, Malaysia. *Kathmandu Univ Med J.* 2023;82(2):149-55.

ABSTRACT

Background

During the COVID-19 pandemic, job and income loss, social isolation may aggravate mental health, particularly among the most vulnerable groups.

Objective

To assess the current mental health situation among the rural population in Samarahan district and determine the relationship between economic hardships, financial threats, and mental health status.

Method

This study was a cross-sectional study conducted among the 530 households in the Samarahan district. A multistage cluster sampling technique was used to select the participants in this study. Data were collected by face-to-face interview using a structured questionnaire. The mental health status was assessed by using a validated and translated DASS-21 scale. Data analysis was done by SPSS version 27.0. A p-value of ≤ .05 was considered statistically significant.

Result

Analysis showed that two-thirds of the respondents (66.6%) had no mental health problem. Meanwhile, 22.4% had anxiety, 1% had depression, and 0.19% had stress. Anxiety and depression accounted for 5.8% and stress and anxiety 1.3%. However, 2.64% had stress, anxiety, and depression. In bivariate analysis, age, monthly income, type of job, economic hardship, and expenditure difference appeared to be significant predictors of mental health problems ($p < .05$).

Conclusion

Depression, anxiety, and stress pose a significant threat to the rural population's health. Therefore, public health practitioners and policymakers need to address this to minimise the pandemic's impact on mental health and provide psychological support, particularly among the most affected group.

KEY WORDS

Economic hardship, Financial threat, Mental health, Sarawak

INTRODUCTION

In March 2020, World Health Organization (WHO) declared the outbreak of 2019-nCov as a pandemic.[1] The newly identified coronavirus originated from Wuhan, China, in late December 2019 and is now known as Coronavirus disease 2019 (COVID-19).[2] Likewise, Malaysia is the 5th Asian country that have recorded the highest cases.[3] Following the rise of COVID-19 cases in Malaysia, national restriction movement control order was implemented on 18 March.[4] The global public health crisis during COVID-19 may trigger feelings of fear and uncertainty and result in adverse mental health outcomes.[5] A study in the UK showed that mental health prevalence had increased following the emergence of COVID-19.[6] Among the most affected people who experience mental health problems are those living in the rural areas.[7] The reduced sources of income, termination from work, and debts have created economic hardship and financial threats.[8] Multiple studies proved that the increase in financial threat and economic hardship is associated with poor mental health outcomes.[9-11] Despite many problems that may arise due to COVID-19, the intensive study has been conducted particularly among the vulnerable population in rural areas. Therefore, this study aims to determine the relationship between sociodemographic factors, economic hardship, and the financial threat to mental health among the rural population in Samarahan, Sarawak, during the COVID-19 pandemic. It is assumed that the prolonged pandemic impact might cause a more significant effect on the economy and mental health of the rural population.

METHODS

This cross-sectional study was conducted among the 530 households within the Samarahan district from February until May 2021. All the permanent residents in the Samarahan district aged 18 years and above, irrespective of gender and ethnicity, were included in the study population. However, only consented participants and either one of the main family breadwinners was chosen from each household. A single proportion with a finite population correction formula was considered to estimate the mental health status. All households in the Samarahan district were considered as the target population in this research. To attain the precise estimate of mental health, a percentage of 35.8% was considered as the base prevalence of Sarawak's mental health status for sample size calculation.[12] The required sample size would be 353, multiplied by the design effect (here considered as 1.5), which amounted to 530. A multistage cluster sampling technique was used to select the participants in this study. Using systematic random sampling method, a total of 18 villages in Samarahan district and the participants in each village were selected. Data were collected by face-to-face interview in Malay language using a structured questionnaire. The questionnaire was translated from English, the original version, to Malay. The questionnaire consists of four parts, and each respondent completed part one to part four.

Sociodemographic characteristics: This part consists of 10 questions. The information collected from this section includes age, gender, race, religion, education level, family size, income, employment status, type of job, and whether he or she is the sole breadwinner for the household.

Economic Hardship Questionnaire: Economic hardship can be due to income loss, loss of a job, or cumulative debts calculated 10. The questionnaire consists of 12 questions based on a four-point scale ranging from 1= never to 4= very often to determine the respondent's limitation degree on their lifestyle due to their economic hardship for the past six months. The last two questions asked on their economic hardship level in the current and past six months. The higher score reflects economic deterioration.

Household expenditure: The household expenditures were assessed based on the 18 items expenditure during and before the Movement Control Order (MCO). In this study, the item for household expenditure is calculated during and before the MCO. The items are categorised into two components; 1= with hardship, 2= no hardship. If the expenditure decrease, there is a hardship. If it remains the same or increases, there is no hardship.

Financial Threat Scale: The financial threat is the feeling of fear, uncertainty, stability, adequacy, and security of own financial resources that can be mediated by economic hardship due to income loss, loss of job, or depts 10. The financial threat was assessed based on five questions with a 4-point scale covering the uncertainty, risk, perceived threat, worry, and cognitive preoccupation with one's current personal finances. A four-point Likert scale ranging from 'never' to 'very often' determined the degree of financial threat. For interpretation, the score was converted into a percentage. Then it was classified into quartiles with the 25th percentile in each group.

Depression, Anxiety, Stress Scale: The depression, anxiety, and stress were assessed separately based on the DASS-21 scale. It consists of 21 items with three self-reported scales to measure the depression, anxiety, and stress range from 0 scores 'does not apply to me' and 'applied to me very much time' scored 3.[13] The 21 items cover three symptoms groups. The sum of the items was calculated based on the respondent's answer. Then, the symptom severity was calculated and further categorised into normal, mild, moderate, severe, and extremely severe.

Data received from the respondents were keyed into Microsoft Excel with a validation check. The data were then imported to an SPSS worksheet. An exploratory data analysis was done to determine any inconsistency or missing data. Upon validation, a descriptive analysis was conducted and presented in frequency tables. Pearson's chi-square test of

independence was done in which mental health status was the dependent variable. The variable was dichotomised into 'yes' and 'no.' Respondents' characteristics, economic hardship, financial threat, and expenditure difference were taken as independent variables. An adjusted standardised cell value greater than 1.96 appeared to be significant evidence of independence. Phi and Cramer's V value was the strength of association of the dependent, and the independent variables in the Chi-square test were also examined.[14] The analysis was conducted using IBM SPSS version 27.0.[15] A p-value of less than .05 was considered statistically significant.

Ethical approval for this study was obtained from the Ethical Committee of Universiti Malaysia Sarawak (Ref: FME/21/15). The permission to use the household list data in Kota Samarahan was obtained from the resident office and each head village (Ketua Kampung). An informed consent was obtained from the respondents before the data collection. All the information and details about this study were enclosed in the information sheet. Respondents were also informed on data confidentiality and the right to withdraw from the study at any point of time without being affected in any way.

RESULTS

The data were collected from adults aged 18 years and above from February until May 2021 in rural areas in Samarahan districts. A total of 530 data were analysed with a response rate of 86.88%.

Characteristics of the respondents

The mean age of the respondent was 38.48 years with a standard deviation of 8.63 years. The gender of the respondent was almost equal, with the male respondents at 53.4% and the female at 46.6%. Most of the respondents were at the secondary school level of education (50%), followed by a diploma (35.1%), degree (6.6%), primary school (4.5%), no formal education (3.4%), and others (0.4%). The mean (SD) of the monthly income was Malaysian Ringgit (MYR) 599.45 (1004.221), with a minimum of MYR 700 and a maximum of MYR 8000. Most respondents' monthly income ranged from MYR 2001-3000 (41.9%), followed by MYR 1001-2000 (38.1%). All of the respondents were employed (100%), with the majority having a professional occupation (51.7%), Non-professional (48.1%), and others (0.2%). The mean (SD) of the family size was 4.23 (1.546), among which most of the respondent family sizes were at 1-5 (83.2%), followed by 6-10 (16.6%). The highest percentage of the respondents were Malays (27.5%), followed by others (23.4%), Iban (23.2%), Chinese (22.5%), and Indian (3.4%) (Table 1).

Table 1. Characteristics of the respondents (N= 530)

Characteristics	n	%	Statistics
Age in years			
< 30	116	21.9	Mean= 38.48 yrs SD= 8. 63 yrs Min= 22 yrs Max= 59 yrs
31-40	221	41.7	
41-50	131	24.7	
> 51	62	11.7	
Gender			
Male	283	53.4	
Female	247	46.6	
Level of education			
No formal education	18	3.4	
Primary School	24	4.5	
Secondary School	265	50.0	
Diploma	186	35.1	
Degree	35	6.6	
Others	2	0.4	
Monthly income (MYR)			
< 1000	6	1.1	Mean= MYR 2599.45 SD= MYR1004. 221 Min= MYR 700 Max= MYR 8000
1001-2000	202	38.1	
2001-3000	222	41.9	
3001-4000	65	12.3	
> 4001	35	6.6	
Employment status			
Employed	530	100.0	
Unemployed	0	0.0	
Family size			
< 0	0	0.0	Mean= 4.23 SD= 1.546 Min= 1 Max= 12
1-5	441	83.2	
6-10	88	16.6	
> 11	1	0.2	
Ethnicity			
Malay	146	27.5	
Chinese	119	22.5	
Indian	18	3.4	
Iban	123	23.2	
Others	124	23.4	
Occupation			
Professional	274	51.7	
Non-Professional	255	48.1	
*Others	1	0.2	

*Others includes labourer, industrial workers, farmers etc,

Overall mental health status

Analysis revealed that two-thirds of the respondents (66.6%) had no mental health problem, i.e., free from stress, anxiety, and depression. Among them, 22.4% had anxiety, 1% had depression, and 0.19% had stress. However, anxiety and depression accounted for 5.8% where as stress and anxiety are at 1.3%. However, 2.64% were shown to have had stress, anxiety, and depression.

Factors affecting the mental health status during MCO: bivariate analysis

Pearson's chi-square test for independence analysis revealed a statistically significant association between

mental health status and sociodemographic characteristics such as age, monthly income, type of job, economic hardship, and expenditure difference ($p < .05$). Data analysis showed respondents aged 31-40 years old were more affected (40.7%) as compared to other aged groups. Next, those with monthly income of less than MYR2500 (39.1%) had more mental problems than those with monthly income of MYR2500 (28.4%). Following that, respondents with non-professional jobs (37.95%) had more mental problems as compared to respondents with professional job (29%). Similarly, the fourth quartile respondents for economic hardship (44.4%) and facing substantial decreases in expenditure difference (45%) were more affected with mental health problems. On the other hand, Pearson's chi-square test of independence analysis revealed no statistically significant association between mental health and sociodemographic characteristics for gender, ethnicity, religion, level of education, family size, and financial threat ($p > .05$). Data analysis of gender showed that male respondents (33.9%) had more mental problems than female respondents (32.8%). For ethnicity and religion, Malay (37.7%) and Islam (37.4%) had more mental problems than other ethnicities and religions. Respondents at the secondary school level of education (35.5%) had more mental problems. Regarding the family size, 1-4 (34.6%) had more mental problems as compared to families with five and above (31.6%) family size. Finally, the first quartile financial threat (38.2%) had more mental problems than others. The effect size was calculated for the factors affecting mental problems, whereby data analysis showed a small effect for the age, monthly income, economic hardship, and expenditure difference to the mental problems of the respondents with an effect size of 0.1. Other than that, there was no significant effect size between other factors and the respondent's mental problems (Table 2).

Table 2. Factors affecting the mental health status during Covid-19 pandemic (N=530): Bi-variate analysis

Characteristics	Total	Mental problem				p value	Effect size
		No		Yes			
		n	%	n	%		
Age in years							
< 30	116	76	65.5	40	34.5	.005	.156
31-40	221	131	59.3	90	40.7*		
41-50	131	101	77.1*	30	22.9		
> 51	62	45	72.6	17	27.4		
Gender							
Male	283	187	66.1	96	33.9	.783	.012
Female	247	166	67.2	81	32.8		
Ethnicity							
Malay	146	91	62.3	55	37.7	.259	.071
Other bumi	247	164	66.4	83	33.6		
Others	137	98	71.5	39	28.5		
Religion							
Islam	222	139	62.6	83	37.4	.132	.087
Christian	188	126	67.0	62	33.0		
Others	120	88	73.3	32	26.7		
Level of education							
No formal education	42	29	69.0	13	31.0	.789	.015
Secondary School	265	171	64.5	94	35.5		
Diploma	186	128	68.8	58	31.2		
Degree	37	25	67.6	12	32.4		
Family size							
1-4	318	208	65.4	110	34.6	.475	.031
≥ 5	212	145	68.4	67	31.6		
Monthly income (MYR)							
< 2500	248	151	60.9	97	39.1*	**.009**	.114
≥ 2500	282	202	71.6*	80	28.4		
Type of job							
Professional	274	194	70.8*	80	29.2	**.034**	.092
Non-Professional	256	159	62.1	97	37.9*		
Economic hardship							
Quartile 1	151	107	70.9	44	29.1	**.008**	.149
Quartile 2	177	124	70.1	53	29.9		
Quartile 3	51	38	74.5	13	25.5		
Quartile 4	151	84	55.6	67	44.4		
Financial threat							
Quartile 1	212	131	61.8	81	38.2	.129	.088
Quartile 2	0	0	.0	0	.0		
Quartile 3	227	156	68.7	71	31.3		
Quartile 4	91	66	72.5	25	27.5		
Expenditure different							
Substantial decreased	140	77	55.0	63	45.0*	**.001**	.173
Somewhat decreased	125	86	68.8	39	31.2		
Somewhat increased	161	123	76.4*	38	23.6		
Substantial increased	104	67	64.4	37	35.6		

p-value obtained from Chi-square test of independence
*p<.05, **p<.01, ***p<.001
Effect size Small= .1, Medium= .3, Large= .5 and above

Table 3 summarises potential predictors of mental health status during COVID-19. Analysis revealed that the age of the respondents, monthly household income, and economic hardship appeared to be significant predictors for anxiety and depression ($p < .05$). Type of job and expenditure difference is found to be important predictors for anxiety ($p < .05$). The financial threat appeared to be a single predictor for depression ($p < .05$). However, no variables significantly influence stress ($p > .05$). Gender, ethnicity, religion, level of education, and family size had no impact on an individual's mental health ($p > .05$).

Table 3. **Factors affecting mental health status by selected variables: significant predictors**

Characteristics	Predictors	Stress	Anxiety	Depression	Overall
Age in years	(Age 31-40 yrs.)	.699	.003**	.007**	.005
Gender	-	.156	.616	.613	.783
Ethnicity	-	.848	.158	.210	.259
Religion	-	.723	.114	.069	.132
Level of education	-	.333	.529	.859	.789
Family size	-	.722	.519	.762	.475
Monthly income	MYR <2500	.457	.009**	.010*	.009
Type of job	-	.871	.013*	.582	.034*
Economic hardship	Quartile - 4	.879	.002**	.035*	.008
Financial threat	-	.050	.197	.018	.129
Expenditure difference	decreased	.237	.001***	.875	.001

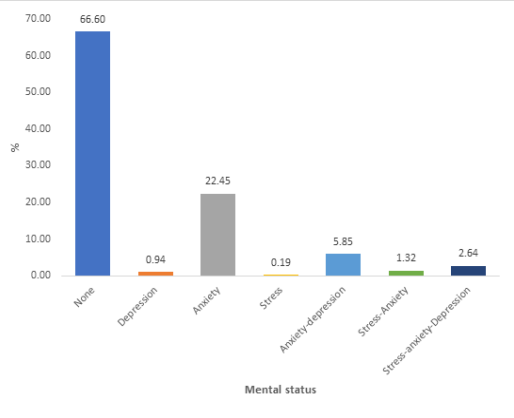

Figure 1. **Prevalence of mental health status**

DISCUSSION

The movement control order was found to have a negative effect on mental health.[16] Our analysis revealed that gender, ethnicity, religion, level of education, and family size had no impact on mental health. Nonetheless, the age of the respondents, monthly household income, and economic hardship appeared to be significant predictors for anxiety and depression ($p < .05$). Type of job and expenditure difference are important predictors for anxiety ($p < .05$), whereas financial threat appeared to be a single predictor for depression ($p < .05$). However, there was no correlation between all these factors to stress. Indeed, different groups of people showed different stress, anxiety, and depression levels.[17] The rural population with limited resources such as medical supply, infrastructure, and connectivity may impede the prevention and control for public protection, leading to more challenging aftermath due to COVID-19.[18] A study among adult residents in China found that the rural population had higher mental health problems than urban, whereby anxiety was reported to be the major problem.[19,20] In our study, the mean income during the movement control order was MYR 2599.46, lower than the mean household gross income in Samarahan 2019 at MYR 6789 before the movement control order.[21] Given this point, the loss of income, unpaid leave, job loss might be precipitated during the pandemic. Eventually, these problems create fear and lead to adverse mental health outcomes.[22] The majority of the respondents in our study were employed. However, it is important to realise that employment does not spare individuals from experiencing mental health problems. The only difference could be severe. For example, Zivin et al. stated that mental health during an economic crisis involves the overall population.[23] Even so, the effect towards unemployed was more severe compared to the employed population. A University of Oxford study stated that economic hardship due to COVID-19 was predictive for anxiety and depression, particularly among the low occupational and income status.[24] Inadequate supply of necessity, medicine, and lifestyle modification thus affect expenditure spending during the COVID-19 could further trigger the mental problem.[25,26] Our analysis found that the mean age of wage earners was 38 years, in which (41.7%) were within the working-age group of 31 to 40 years. A few US households study stated that the younger age group was a risk factor for the economic crisis and psychological problems.[11,27] For instance, the younger group (< 25 years old) and middle-aged group are more likely to be affected by anxiety and depression.[9,28] The main reason might be due to the perception of the future financial crisis and financial stressors. The younger age was likely unemployed as compared to the older age group. Besides, graduates' oversupply and the lack of working experience could also be a contribution.[29] When comparing them to the older age group, older age's group maturity and survival experience influence them to be less anxious in dealing with major live events.[27] However, some studies showed that financial threat and hardship are related to older individuals.[10] The absence of financial support with chronic illness could explain the increase in threat and hardship among older people, leading to poor mental health outcomes.[27] However, this contradicts with other studies in China and India, reporting no association of age with mental health.[20,30] Our study showed a significant association between financial threat and depression ($p < .05$). The quarantine order triggered job insecurity, stressful living,

unexpected events, income, financial threat, fear of being contact with COVID-19, and other impacts on daily living were mainly associated to a reduction in mental health outcomes.[31-33] Therefore, if the pandemic prolonged, economic stressors were predicted to increase and worsen mental health. Despite showing no significant association between mental health and other factors, some of the findings have shown that there are a few factors that have a correlation to mental health. After all, the study was conducted during the early phase of the movement control order. Thus, the effect may not be significant as it was still in early stage. Moreover, no coping mechanism was studied, which may further explain the non-significant association. Apart from, there were several limitations encountered during this study. Firstly, the study was conducted to assess the effect during the first phase of the movement control order. Therefore, as the pandemic persists with several other movement control orders phases, restrictions of movement, further uncertainties, and economic hardship may produce different results if conducted in a different phases. In addition, as the targeted population was only among the rural community, comparison with the urban population is not possible. As this study only focuses on one rural location, the result could not be generalised to other rural areas in Sarawak or Peninsular Malaysia. One is due to the small sample size, and another is the lack of representation of other demographic patterns possible across Malaysia.

CONCLUSION

The result in this study could be used in understanding mental health issues and their relationship to economic hardship and financial threat during the pandemic. Therefore, public health practitioners could use the finding to plan for appropriate public health research, public policies, health promotion, and education.

ACKNOWLEDGEMENTS

We gratefully acknowledge the support from Universiti Malaysia Sarawak (UNIMAS) for conducting the study. We acknowledge the support and help of the Dean, Faculty of Medicine and Health Sciences, UNIMAS. We would also like to extend our gratitude to the Resident Officer, Samarahan Division, the village chief, and all the villagers in the Samarahan district for their cooperation.

REFERENCES

1. World Health Organization. Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). 2020.
2. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. *J Adv Res*. 2020;24:91-8.
3. Ministry of Health M. Situasi terkini COVID-19 Malaysia. 2020.
4. Prime Minister's Office M. The Prime Minister's Special Message on COVID-19 – 16 March 2020. 2020.
5. Pfefferbaum B, North CS. Mental Health and the Covid-19 Pandemic. *N Engl J Med*. 2020 Aug 6;383(6):510-512.
6. Browning MHEM, Larson LR, Sharaievska I, Rigolon A, McAnirlin O, Mullenbach L, et al. Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLoS One*. 2021 Jan 7;16(1):e0245327.
7. Lakhani HV, Pillai SS, Zehra M, Sharma I, Sodhi K. Systematic Review of Clinical Insights into Novel Coronavirus (CoVID-19) Pandemic: Persisting Challenges in U.S. Rural Population. *Int J Environ Res Public Health.* 2020 Jun 15;17(12):4279.
8. Frasquilho D, Matos MG, Salonna F, Guerreiro D, Storti CC, Gaspar T, et al. Mental health outcomes in times of economic recession: a systematic literature review. *BMC Public Health*. 2016 Feb 3;16:115.
9. Sultana MS, Khan AH, Hossain S, Islam T, Hasan MT, Ahmed HU, et al. The Association Between Financial Hardship and Mental Health Difficulties Among Adult Wage Earners During the COVID-19 Pandemic in Bangladesh: Findings From a Cross-Sectional Analysis. *Front Psychiatry.* 2021 Sep 20;12:635884.
10. Marjanovic Z, Fiksenbaum L, Greenglass E. Financial threat correlates with acute economic hardship and behavioral intentions that can improve one's personal finances and health. *J Behav Exp Econ.* 2018;77:151-7.
11. Mamun MA, Akter S, Hossain I, Faisal MTH, Rahman MA, Arefin A, et al. Financial threat, hardship and distress predict depression, anxiety and stress among the unemployed youths: A Bangladeshi multi-city study. *J Affect Disord*. 2020 Nov 1;276:1149-58.
12. Ministry of Health Malaysia. Malaysian Mental Healthcare Performance: Technical report 2016. Putrajaya, Kuala Lumpur: Malaysian Healthcare Performance Unit; 2017.
13. Lovibond. Depression Anxiety Stress Scale (DASS). 1995.
14. Ialongo C. Understanding the effect size and its measures. Biochemia Medica 2016;26(2):150-63.
15. IBM SPSS Statistics for Windows [computer program]. Version 27. Armonk, NY, USA: IBM SPSS; 2020.
16. Perveen A, Hamzah H, Othamn A, Ramlee F. Prevalence of Anxiety, Stress, Depression among Malaysian Adults during COVID-19 Pandemic Movement Control Order Corresponding Author Citation Article Cycle. *Indian J Comm Health*. 2020;32:579-585.
17. Wang GY, Tang SF. Perceived psychosocial health and its sociodemographic correlates in times of the COVID-19 pandemic: a community-based online study in China. *Infect Dis Poverty.* 2020;9(1):148.
18. Wang J, Yuan B, Li Z, Wang Z. Evaluation of Public Health Emergency Management in China: A Systematic Review. *Int J Environ Res Public Health.* 2019;16(18):3478.
19. Shi L, Lu ZA, Que JY, Huang XL, Liu L, Ran MS, et al. Prevalence of and Risk Factors Associated With Mental Health Symptoms Among the General Population in China During the Coronavirus Disease 2019 Pandemic. *JAMA Netw Open*. 2020 Jul 1;3(7):e2014053.
20. Zhang Y, Chen YP, Wang J, Deng Y, Peng D, Zhao L. Anxiety Status and Influencing Factors of Rural Residents in Hunan During the Coronavirus Disease 2019 Epidemic: A Web-Based Cross-Sectional Survey. *Front Psychiatry.* 2020 Nov 24;11:564745.

21. Department of Statistics Malaysia. Department of Statistics Malaysia Official Portal; 2020.
22. Panchal N, Kamal R, Cox C, Garfield R. The Implications of COVID-19 for Mental Health and Substance Use. USA: Kaiser Family Foundation,; 2021.
23. Zivin K, Paczkowski M, Galea S. Economic downturns and population mental health: research findings, gaps, challenges and priorities. *Psychol Med*. 2011;41(7):1343-1348.
24. University of Oxford. COVID-19 inequality: poorest workers hit by worse outcomes: University of Oxford,; 2020.
25. Fitzgerald DA, Wong GWK. COVID-19: A tale of two pandemics across the Asia Pacific region. *Paediatr Respir Rev*. 2020 Sep;35:75-80.
26. Son C, Hegde S, Smith A, Wang X, Sasangohar F. Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *J Med Internet Res.* 2020 Sep 3;22(9):e21279.
27. Mirowsky J, Ross CE. Age and the effect of economic hardship on depression. *J Health Soc Behav.* 2001 Jun;42(2):132-50. PMID: 11467249.
28. Alnazly E, Khraisat OM, Al-Bashaireh AM, Bryant CL. Anxiety, depression, stress, fear and social support during COVID-19 pandemic among Jordanian healthcare workers. *PLoS One*. 2021 Mar 12;16(3):e0247679.
29. Bell DNF, Blanchflower DG. Young people and the Great Recession. Oxford Review of Economic Policy. 2011;27(2):241-67.
30. Ahmad A, Rahman I, Agarwal M. Factors Influencing Mental Health During Covid-19 Outbreak: An Exploratory Survey Among Indian Population. *medRxiv.* 2020:2020.2005.2003.20081380.
31. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*. 2020;395(10227):912-920.
32. Maideen SFK, Sidik SM, Rampal L, Mukhtar F. Prevalence, Associated Factors and Predictors of Depression among Adults in the Community of Selangor, Malaysia. *PLoS One*. 2014;9(4):e95395.
33. Wilson JM, Lee J, Fitzgerald HN, Oosterhoff B, Sevi B, Shook NJ. Job Insecurity and Financial Concern During the COVID-19 Pandemic Are Associated With Worse Mental Health. *J Occup Environ Med.* 2020 Sep;62(9):686-91.