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Research Article

Experiences of COVID - 19 Recovered Among University Stakeholders: A Mixed - Method Inquiry with A Controlled Interview using IES-R plus DASS-21 Thai version and an In-depth Interview

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Abstract

Background: COVID-19 outbreak had led Thailand to strict disease control. Post-COVID-19 experience may bring about the Post-Traumatic Stress Disorder (PTSD) after infection.

Method: This research was established to test the psychological adjustment after the pandemic among post COVID-19 infection. The Impact of Events Scale-Revised (IES-R) and the Depression Anxiety and Stress Scales -21 Items (DASS-21) were used to assess the symptoms of PTSD from two groups, both COVID-19 infected and uninfected as a controlled. All subjects were prospective randomly recruited as per ID number from the Western University. A face-to-face interview assessment with IES-R and DASS-21 for all groups were conducted by trained interviewers separately. The reliability test of the IES-R and DASS-21 Thai version reflected the Cronbach's Alpha Internal Consistency Correlation Coefficient of 0.895 and 0.902 respectively. The controlled subjects (N=104) whom had no COVID-19 infection were compared with the COVID-19 infected subjects (N=56). In-depth interviews were later conducted with 12 subjects with the highest total score of both IES-R and/or DASS-21.

Results: We found that the Mean, 95% CI of IES-R total score (15.3791, 13.0573-17.7010 vs 14.7440, 12.7656-16.7224, p=0.599), Intrusion subscore (5.7847, 3.4.9165-6.6528 vs 5.3095, 4.5693-6.0497, p=0.923), Hyperarousal subscore (4.3375, 3.5037-5.1712 vs 3.8750, 3.2059-4.5440, p=0.994) and Avoidance subscore (5.2569, 4.4135-6.1003 vs 5.5595, 4.7979-6.3210, p=0.177) of IES-R for the control versus COVID-19 infected subjects were not significant difference with the Mann-Whitney U test. Similarly, the Mean, 95% CI total score of DASS-21 (10.9583, 8.6538-13.2628 vs 11.9387, 9.8570-14.0204, p=0.236), Stress subscore (4.6696, 3.6955-5.6437 vs 4.6071, 3.8354-5.3788, p=0.512), Anxiety subscore (3.3452, 2.5204-4.1700 vs 4.2448, 3.3645-5.1252, p=0.105) and Depression subscore (2.9434, 2.1086-3.7782 vs 3.0867, 2.2854-3.8880), p=0.431) for the same were not significantly different with the Mann-Whitney U test. An in-depth interview of 12 subjects with COVID-19 infection reflected main shortcomings such as serious fatigue, changed perception to food taste and stressful day to day life event during the infection self-isolation.

Conclusion: COVID-19 infection did not induce PTSD as assessed with IES-R and DASS-21 though some individual with infection experienced inadequate physical strength and mental coping skills which may not be relevant to PTSD.

Keywords: COVID-19 Infection, IES-R, DASS -21, In-depth interview, PTSD

Introduction

Coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an infectious disease with global pandemic [1-5]. The Covid-19 pandemic among health professional had been reporting with an impact on mental, physical, and social well-being including the challenges of work-life imbalance in terms of work-from home and hospitals [6-10]. It is worth noting that post COVID-19 pandemic had some deteriorating impacts on higher education institutions. As a results, this may possibly cause the education quality especially teaching-learning with poor learning outcomes due to Post-Traumatic Stress Disorder (PTSD) [11]. In early studies, the PTSD symptoms occurring after COVID-19 infections were ranging from 12.2% to 50% [12-14]. We raise the possibility of mental health impacts among the faculty members, students and stakeholders leading to the development of PTSD among infected individuals. We assumed that the same may probably render the health outcomes especially PTSD among our university stakeholders. As such, we investigated with main hypothesis should the COVID-19 infected cause PTSD or other mental health impacts among members of COVID-19 infected stakeholder of the Western University. The research protocols were developed, simultaneously permission for this investigation was granted by the institutional review board of the Western University.

Material and Methods

The IES-R Thai version [15,16] and DASS-21 Thai version [17] as the personal interview scale were obtained with permission from the authors. These Thai translation versions were validated by Thai language specialist. However, the original IES-R and DASS-21 are standardized global personal interview scales available elsewhere [15,17]. The training course for employing both IES-R and DASS-21 was conducted by psychiatrist with two interviewers to ensure that interviewers can assess the IES-R and DASS-21 with ease and intuitively during the face-to-face interviews. Participants recruitments were announced in the university news media and participation for the research process was by voluntarily which enrolled 270 subjects during 15 January 2023 to 31 March 2023. They were all informed in detail with respect to purpose of the interviews. The procedure and step forward in the research process were well communicated between the participants and research team members. Thereafter, an informed consent (IFC) for participation were countersigned by each participant. All participants were randomly assigned into two groups, the post-COVID 19 infected and the uninfected group. There were 104 COVID-19 uninfected participants and 56 post-COVID 19 infected participants whereas 110 participants were excluded as non-compliance who declined to countersign the IFC. Each interviewer for either IES-R and DASS-21 were conducted separately by two interviewers.

All participants were informed that they were freely allowed to withdraw from the interviews at any time if need. The IES-R and DASS-21 scoring were conducted separately by another researcher after the interview. There were 12 participants who reflected the highest IES-R/or DASS-21 score. They were later appointed by the research team members to proceed for an in-depth interview. The in-depth interview employed an opened question successfully performed and reported elsewhere [18]. The special training for interviewing procedure for research team members proceed before an interview each of 12 participants separately. Each of the interviewing participants were audio recorded separately. The audio-recordings then were transcribed and indexing for further analysis as per in-depth interview procedure. The null hypothesis testing should the COVID-19 infected cause PTSD or other mental health impacts assessed by IES-R and DASS-21 different from the uninfected control individual. The hypothesis testing employs the Mann-Whitney U test for mean rank score and 95% confidence with report of statistically significant difference at p-value <0.05.

Results

Overall, 270 pre-screened volunteer participants were obtained from the university administration. There were only 160 volunteer participants agreed to provide a countersigned informed consent at the time of recruitment. There were two groups of participants with 104 uninfected COVID-19 and 56 COVID-19 infected. The demography and characteristics of these participants were provided in Table 1. It is worth noting that majority of COVID-19 infected were identified as home isolation 57.2% as compared with community and hotel isolation of 25.0 % and 17.8% respectively. Moreover, for COVID-19 infected individuals, the inactivated vaccinations injection was 5.3% as compared with 1.8% for both viral vector and mRNA vaccination respectively. Nevertheless, COVID-19 infected participants were vaccinated with only 5 out of 56 participants or 8.9% as compared with 94 out of 104 participants or 90.4% for uninfected participants. The former reassured the COVID-19 prevention efficacy of vaccination regardless of the type of vaccine.

The comparison of IES-R for both the COVID-19 infected and uninfected as control were given in Table 2. The result confirmed that there was no statistically significant difference for the total score (p-value =0.599), intrusion sub score (p-value =0.923), hyperarousal sub score (p-value =0.994) and avoidance sub score (p-value = 0.177) respectively as details of the Mann- Whitney U test were given in Table 2. By this context, participants with post-COVID-19 infection and uninfected individual reflected no difference impacts on psychological quality as assessed by using the IES-R.

The comparison of DASS-21 for both the COVID-19 infected and uninfected control were given in Table 3. The results confirmed that

there was no statistically significant difference for the total score (p-value =0.236), Stress sub score (p-value =0.512), Anxiety sub score (p-value =0.105) and depression sub score (p-value = 0.431 respectively as details of the Mann-Whitney U test were given in Table 3. Similarly, in this context, participants with post-COVID-19 infection and uninfected individual reflected no difference impacts on psychological quality as assessed by using the DASS-21.

Table 1: Participants demography and characteristics.

	COVID-19 Un-Infected (104)	COVID-19 Infected (56)
Male number (%)	38 (36.5)	22 (39.3)
Female number (%)	66 (63.5)	34 (60.7)
Age in Years	**Number (%)**	
15 - 24	78 (75.0)	44 (78.6)
25 - 34	17 (16.3)	9 (16.1)
35 - 44	4 (3.9)	2 (3.6)
44 and over	5 (4.8)	1 (1.7)
During Infection	**Number (%)**	
Home isolation	None	32 (57.2)
Hotel isolation	None	10 (17.8)
Community Isolation	None	14 (25.0)
Vaccination	Number (%)	
Inactivated vaccines	19 (18.3)	3 (5.3)
Viral vector vaccines	67(64.4)	1 (1.8)
mRNA vaccines	18(17.3)	1 (1.8)
Reported Symptoms	**Number of reported incidence (%)**	
Cough	42 (40.4)	39 (69.6)
Runny nose	22 (21.2)	30 (53.6)
Sore throat	18 (17.3)	16 (28.6)
Fever	10 (9.6)	46 (82.1)
Muscle aching	N/A	28 (25.0)
Tasteless	N/A	38 (67.8)
Breathless	N/A	45 (80.4)
Smelling peculiar	N/A	20 (35.7)
Medication	**Number (%)**	
Anti-viral A	None	56(100)
Herbal medicine B	30	30(53.6)
Anti-pyretic C	None	56(100)
Others D	None	56(100)

A=Favipiravir, Molnupiravir, Remdesivir; B= Andrographolide products; C= Paracetamol, Ibuprofen; D= Chlorpheniramine, Fexofenadine, Dextromethorphan, Oral-Dehydration Solution

Table 2: Comparison of the IES-R score for the control and the COVID-19 infected participants.

	COVID-19 Un-Infected, CONTROL (N=104)	COVID-19 Infected (N=56)	p-Value*
	Mean Score, (95% CI) **		
IES-R Intrusion sub-score	5.7847, (3.4.9165-6.6528)	5.3095, (4.5693-6.0497)	0.923
IES=R Hyper arousal sub-score	4.3375, (3.5037-5.1712)	3.8750, (3.2059-4.5440)	0.994
IES-R Avoidance sub-score	5.2569, (4.4135-6.1003)	5.5595, (4.7979-6.3210)	0.177

IES-R Total score	15.3791, (13.0573-17.7010)	14.7440, (12.7656-16.7224)	0.599
p-Value* is a Mean Rank among comparison group by the Mann-Whitney U Test ** Mean Score, 95% CI is mean score for each category.			

Table 3: Comparison of DASS-21 score for the control and the COVID-19 infected participants.

	COVID-19 Un-Infected, CONTROL (N=104)	COVID-19 Infected (N=56)	p-Value*
	Mean Score, (95% CI) **		
DASS-21 Stress sub score	4.6696, (3.6955-5.6437)	4.6071, (3.8354-5.3788)	0.512
DASS-21 Anxiety sub score	3.3452, (2.5204-4.1700)	4.2448, (3.3645-5.1252)	0.105
DASS-21 Depression sub score	2.9434, (2.1086-3.7782)	3.0867, (2.2854-3.8880)	0.431
DASS-21 Total score	10.9583, (8.6538-13.2628)	11.9387, (9.8570-14.0204)	0.236
p-Value* is a Mean Rank among comparison group by the Mann-Whitney U Test ** Mean Score, 95% CI is mean score for each category.			

The in-depth interview procedure in this context had employed 7 exploration questions with an exit question. The questions were provided in the Table 4. An analysis of the in-depth interview using the transcription from each of the audio-recordings for 12 COVID-19 infected subjects had been performed separately. The analysis of the results as per physical, mental and social impacts before and after COVID-19 infection among 12 participants were provided in Figure. In short, the post-COVID-19 experience reflected mainly the impacts on physical deterioration such as serious fatigue, changed perception to food taste and stressful life event during the infection self-isolation. From an in-depth interview, the COVID-19 infection among the stakeholders of the Western University did not induce mental deterioration inadequately with subsequent PTSD as assessed with IES-R and DASS-21. Although some individual with infection experienced inadequate physical strength and limits mental coping skills thereby may not be relevant to PTSD.

Table 4: An in-depth interview exploration questions for 12 COVID-19 infected participants with highest score of IES-R and/or DASS-21.

Item	Exploration Question Description
1	What changes did you notice in your mental health pre-COVID-19 and post-COVID-19 infection?
2	What came into your mind when you found out that you got infected with COVID-19?
3	How did you feel during your recovery period?
4	What are your hesitations after you recovered from COVID-19?
5	How did you feel when you got back to work?
6	How were your social interactions and activities affected by your experience of having COVID-19?
7	How did you cope with how you feel after your recovery?

Discussion

There are reasons to belief should PTSD had deteriorated consequence among university stakeholder, especially impacts on quality of education which had been reported elsewhere [4-7]. This investigation sought to explore experience of COVID-19 among university stakeholders. The investigation assumed the null hypothesis should the COVID-19 infected individual, among university stakeholders per se, by test the response both to IES-R and DASS-21 questionnaires The IES-R and DASS-21 may be sufficient to explain psychiatric symptoms like the PTSD different from the un-infected as controlled. Both IES-R and DASS-21 are the valid patient-centred questionnaires widely used elsewhere whereas both IES-R and DASS-21 Thai versions are reliable and recognized by local expert. The scorings are valid with high internal consistency, in particular these questionnaires are specific to predict PTSD. Although, this investigation may reflect minor shortcoming in terms of recall bias since the interviews were conducted over 3-6 months post-COVID 19 infections. This investigation allows us to reject the null hypothesis that COVID-19 infection may cause PTSD among university stakeholders in our investigation by comparing IES-R and DASS-21 between the COVID-19 uninfected as compared with COVID-19 infected participants. Additional investigation with an

in-depth interview also reassured our finding due to the mental impacts of COVID-19 infected are less deteriorated than probable clinical PTSD. Our finding provides our confidence to support that the COVID-19 infected individual experience indifference to normal individual in terms of effect on post-COVID-19 infection PTSD, as suggested by overlapping 95% CI estimate between the group and significant at p-value <0.05 (Table 2&Table 3).

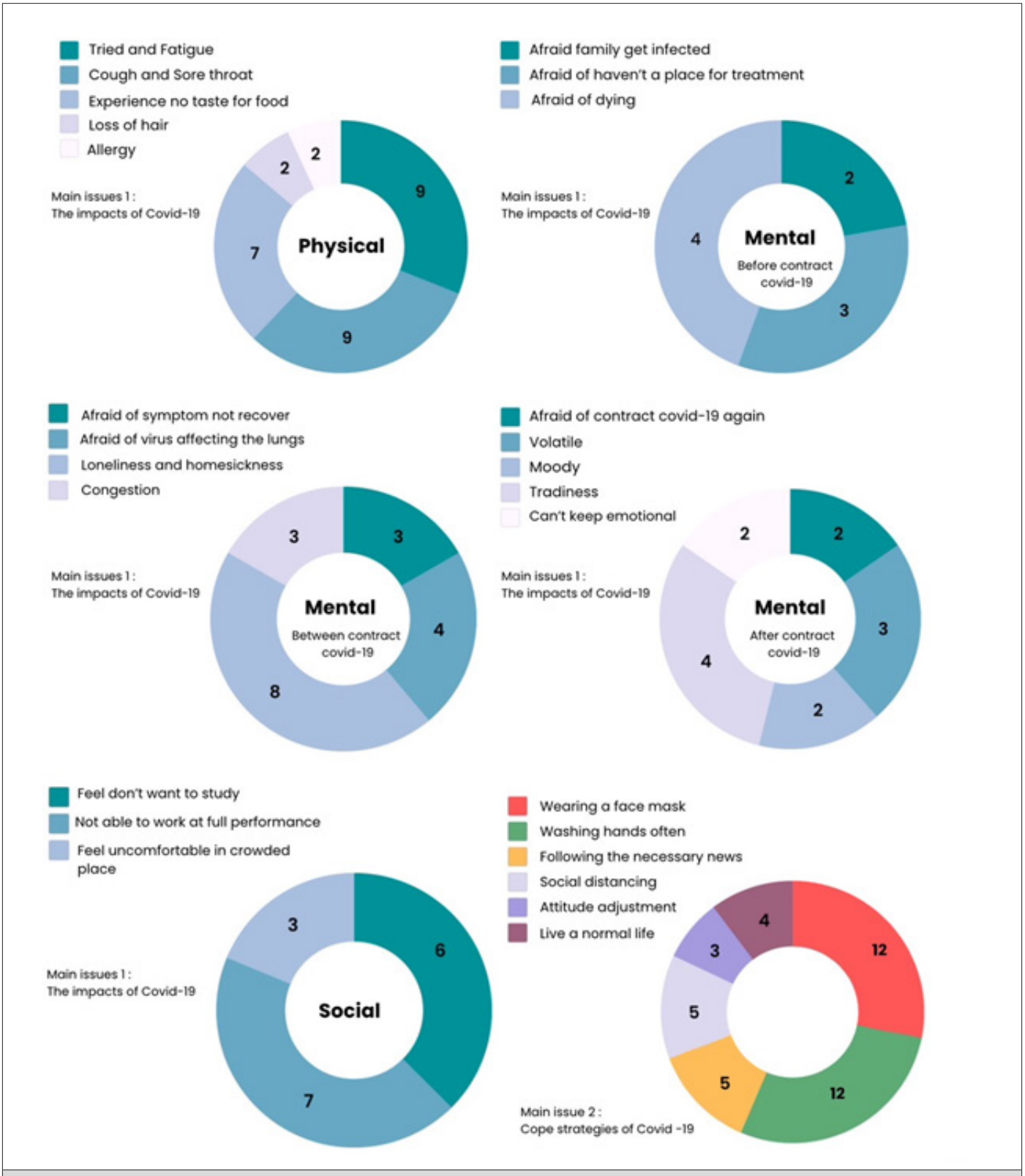

Figure : Analysis of the in-depth interview from 12 participants.

Conclusions

COVID-19 infection did not induce PTSD as assessed with IES-R and DASS-21 though some individual with infection experienced inadequate physical strength and mental coping skills which may not be relevant to PTSD.

Conflict of Interest

All authors declared no conflict of interest for this research.

Author's Contribution

AU, WR conducted literature review and proposed research protocol before proceeding to overall feasibility study. WM and PD interviewed all recruited participants and performed statistical analysis. AU drafted the manuscript. WR liaised in the overall research. WR, PD and WM review manuscript for submission.

Ethics approval, informed consent, and data privacy protection.

This study on human subjects was ethically approved. The data collection procedures obtained data with secured personal data privacy with protection. All participants participated in the study had read, understood, and provided signed inform consent.

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References

1. Synowiec A, Szczepański A, Barreto Duran E, Lie LK, Pyrc K (2021) Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2): a Systemic Infection. Clin Microbiol Rev 34(2): e00133-20.
2. Sheha E, Hassan H, Elsherbeny E, Elgendy A (2021) Integrated Intervention Program for Pregnant Women toward ZIKA Virus Infection in Upper Egypt. International Journal of Studies in Nursing 6(1): 36-53.
3. Mostafa H, Hassan H, Atea Sh, Ahmed M (2024) Families' Perception toward Application of Infection Control Precautions with Corona Virus at Home. Egyptian Journal of Health Care 15(2): 511-533.
4. Sheha E, Hassan H, Genedy A, Hassanine Sh (2020) Effect of educational program on mother's knowledge and practice regarding Hepatitis C Virus in rural areas. American Journal of Nursing Research 8(3): 303-310.
5. Elgendy A, Hassan H, Elsaid F, EL-Sherbeny E (2018) Nurses' Awareness Regarding Zika Virusin Beni-Suef Governorate. American Research Journal of Public Health 1(1): 30-42.
6. Putri NK, Melania MKN, Fatmawati SMY, et al. (2023) How does the work-life balance impact stress on primary healthcare workers during the COVID-19 pandemic? BMC Health Serv Res.
7. Hassan H (2020) Evidence-Based Practice in Midwifery and Maternity Nursing for Excellent Quality of Care Outcomes. American Journal of Nursing Research. 8(6): 606-607.
8. Hassan H (2019) The Impact of Evidence-Based Nursing as The Foundation for Professional Maternity Nursing Practices. Open Access Journal of Reproductive System and Sexual Disorder 2(2): 195-197.
9. Hassan H (2016) Infertility profile, psychological ramifications, and reproductive tract infection among infertile women, in northern Upper Egypt. Journal of Nursing Education and Practice 6(4): 92-108.
10. Hassan H, Malk R, Abdelhamed A, Genedy A (2020) Infection Control Knowledge and Practices: Program Management in Labor Units According to Standard Infection Control Precautions in Northern Upper Egypt. American Journal of Nursing Research; 8(4): 412-425.
11. Bozkurt A, Karakaya K, Turk M, Karakaya O, Castellanos-Reyes D (2022) The Impact of COVID-19 on Education: A Meta-Narrative Review. TechTrends 66(5): 883-896.
12. Janiri D, Carfì A, Kotzalidis GD, Bernabei R, Landi F, Sani G Gemelli (2021) Against COVID19 Post-Acute Care Study Group. Posttraumatic Stress Disorder in Patients After Severe COVID-19 Infection. JAMA Psychiatry 78(5): 567-569.
13. Grover S, Sahoo S, Mishra E, Gill KS, Mehra A, et al. (2021) Fatigue, perceived stigma, self-reported cognitive deficits, and psychological morbidity in patients recovered from COVID-19 infection. Asian J Psychiatr.
14. Jakhar K, Lone KY, Gupta R, Srivastava A, Solanki HK (2022) A Cross-Sectional Study on the Psychological Impact of Stress, Anxiety and Depressive Symptoms in COVID-19 Patients Cureus. 14(8): e27724.
15. Weiss DS (2007) The Impact of Event Scale-Revised. In J.P. Wilson, & T.M. Keane (Eds.) Assessing psychological trauma and PTSD: a practitioner's handbook pp.168-189.
16. Padungkiet Chawanakrasaesin, Isra Rukskul, Amnat Ratanawilai (2011) Validity and Reliability of Thai Version of the Posttraumatic Stress disorder Checklist, J Psychiatr Assoc Thailand 56(4): 395-402.
17. Oei TP, Sawang S, Goh YW, Mukhtar F (2013) Using the depression anxiety stress scale 21 (DASS-21) across cultures. International Journal of Psychology 48(6): 1018-1029.
18. Carascal MB, Capistrano PE, Figueras MDL, Cataylo OLAC, Zuñiga SMS, Reyes MES, Medriano KKS, Gamo AT, Mendoza PD (2022) Macalipay SLB. Experiences of COVID-19- Recovered Healthcare Workers in a Tertiary Hospital in the Philippines: A Mixed-Method Inquiry.