**Psychological distress of COVID-19 pandemic among survivors of the 2014-16 Ebola epidemic residing in Victoria, Australia**

**Abstract**

**Background:** The COVID-19 pandemic and the infection prevention measures disrupted socio-economic activities, which negatively impacted the physical and mental health of individuals. These impacts caused anxiety, stress, depression and nightmares, which were indicative of psychosocial distress.

**Objective:** To assess the levels of psychological distress of the COVID-19 pandemic among survivors of the 2014-16 Ebola epidemic who are residing in Victoria-Australia.

**Method:** This sequential exploratory mixed methods research utilised the Kessler-6 psychological distress scale for quantitative data in an online survey. This was followed by two Zoom interview questions which gathered data from 9 individuals. Descriptive quantitative data analysis and the five-stage qualitative data analysis were done for both data sets. Results and findings were integrated and thematically reported.

**Results:** The majority (60%) of the 30 participants in the Kessler-6 questions were within the age range 18-40 years and most (47%) are males. Further, 9 participants provided data for the interviews. The weighted average shows that responses such as everything was an effort represented 83%, elevated levels of nervousness (90%), restless and fidgety (78%) hopelessness (70%) and depression (53%). Interview findings showed majority of the participants were distressed but did not seek professional help and they depended on mass media information.

**Conclusion:** Results found elevated levels of psychological distress among participants, but most did not seek professional care. This study has unveiled the stress levels among this cohort. It will be helpful to the participants if they are provided with psychological and mental healthcare to forestall additional mental health problems.

**Keywords:** Psychological distress, EVD survivors, COVID-19 pandemic, socioeconomic, lockdown

**Introduction**

The world was taken by surprise when a pneumonia-like disease called SARS CoV2 henceforth COVID-19 broke out in Wuhan China (Bogoch et al., 2020). This new coronavirus disease rapidly became global resulting to many mental health conditions (Zangani et al., 2022), physical illnesses, deaths and socioeconomic devastation on a scale that was difficult to contend with (Jiang et al., 2022; Xiong et al., 2020).

In Australia especially Victoria, various strict infection prevention and control (IPC) measures were enforced resulting in social isolation, community lockdowns, fewer contacts, banning of many social activities, among others and these measures appeared to hurt the mental health of residents (Jiang et al., 2022). Additionally, public places including schools and other learning institutions, cultural activities, and even face-to-face medical consultations were curtailed just to minimise contact and the risk of infection (Rahman et al., 2022).

These actions which were to reign in the spread of the disease, unsuspectingly negated normal lifestyles and mental health to the displeasure of some people, and this resulted in physical health and psychological problems (Biddle et al., 2022; Nunn and Fitzgerald, 2025). Psychological distress is defined as “a set of painful mental and physical symptoms that are associated with normal fluctuations of mood in most people” (American Psychological Association, 2022). Survivors negatively impacted by disasters are likely to experience symptoms, which include fear, anxiety, stress, distress and nightmares that are indicative of psychological distress (Heanoy & Brown, 2024). Sufferers of psychological distress are vulnerable people, and this includes West Africans who survived the 2014-16 EVD and people with other mental health conditions that could risk being exacerbated by the additional COVID-19 trauma (Rahman et al., 2022; Rahman et al., 2020; Venkatesan et al. 2021).

Although studies have reported on the scale of psychological distress among Australians in general, literature included in this study indicates that none has been done for survivors of the 2014-2016 EVD epidemic who reside in Victoria-Australia and survived the COVID-19 pandemic. This current study is part of a large study on West Africans living in Victoria-Australia who survived the epidemic in West Africa and the pandemic in Australia (Mandoh et al., 2024; Mandoh et al., 2020). This part of the study assesses the level of psychological distress, which potentially undermines survivors’ satisfaction with life.

**Broad objective:** To assess the levels of psychological distress of the COVID-19 pandemic among survivors of the 2014-16 EVD epidemic who are residing in Victoria-Australia.

**Specific objectives:** Set out to assess the levels of psychological distress by asking participants to respond to the following:

* During the past 30 days, please indicate how often you have felt what are indicated in Table 2.
* On how many days or occasions in the past 30 days did your participants experience the points indicated in Table 3?
* Times when you find it difficult to manage your distress?

**Methodology**

**Design:** This study is a sequential exploratory mixed methods research which utilised an online survey. It included a quantitative online survey and qualitative semi-structured interview components using Zoom online (Meeting). The participants in this online survey were provided with a research information sheet that outlined the participants' rights which included the right to skip any questions that were not comfortable for them and to have someone for support whilst responding to either the survey questions or the interview. The reason was that some of the questions risked stirring emotions during the data collection processes. Details of the method are as described previously (Mandoh et al., 2024).

**Setting:** This study was done in Victoria-Australia**.**

**Inclusion and exclusion criteria**: The inclusion criteria were those who were 18 years and above, those who lived in a country in West Africa that had EVD and were residents in Victoria-Australia.

**Data collection:** The first question focused on consent to participate in the survey and to utilise the findings in the study. Second, question 2 inquired about participants’ residence during the West African 2014-16 EVD epidemic. Furthermore, 68 individuals attempted to participate in the survey but 36 were qualified to participate in the study. Out of the 36 remaining participants, the majority were within the age range of 18-40 years and, 52% of the 36 were female. However, those who provided data for this study were 30. The quantitative aspect of this study utilised the Kessler-6 Psychological Trauma tool and an additional set of three questions as shown in Tables 2 and 3 respectively to collect data. One qualitative question was included to collect more data on the phenomenon of interest. Data collection for both quantitative and qualitative components of this study was based on the questions in Table 1.

**Table 1 representing research questions utilised in this study**

The quantitative aspect of this study utilised the Kessler-6 Psychological Trauma tool and an additional set of three questions as shown in Tables 2 and 3, respectively. Data collection for both quantitative and qualitative components of this study was based on the questions in Table 1.

**Table 1: Research questions utilised in this study**

|  |  |  |  |
| --- | --- | --- | --- |
| **Serial number** | **Design** | **Description** | **Research questions** |
| 1 | Quantitative | Survey question (Online Survey Monkey) | During the past 30 days, please indicate how often you have felt (Table 2) |
| 2 | Quantitative | Survey question (Online Survey Monkey) | On how many days or occasions in the past 30 days (Table 3) |
| 3 | Qualitative | Interview question (on Zoom) | Are there times when you find it difficult to manage your distress? |

The initial number of semi-structured interviewees involved 9 participants who provided qualitative data that was electronically transcribed, collated and analysed according to the five stages of qualitative data analysis. Both sets of quantitative and qualitative data collection instruments were piloted before the survey and interviews. Quantitative results are presented in the order of the numerical strength of the weighted average in the survey instrument that is contained in the online survey regarding psychological distress.

**Results**

This section reports on the findings from questions in Table 1.

**Quantitative results**

**During the past 30 days, please indicate how often you have felt like what is highlighted in Table 2.**

Table 2 shows that as participants considered everything which they were doing as an effort, they frequently experienced nervousness, restlessness, hopelessness, depression and worthlessness, are the primary indicators of psychological distress.

**Table 2: Responses on “…** *psychological distress indicators during the COVID pandemic”(N=30)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Serail**  **number** | **Distress questions** | **Not**  **at all** | **A little of**  **the time** | **Sometimes** | **A lot of**  **the time** | **All the**  **time** | **Weighted average** |
| 1 | Nervous | 10.00% | 33.33% | 33.33% | 20.00% | 3.33% | 2.73 |
| 2 | Hopeless | 30.00% | 16.67% | 36.67% | 16.67% | 0.00% | 2.40 |
| 3 | Restless or fidgety | 23.33% | 30.00% | 30.00% | 13.33% | 3.33% | 2.43 |
| 4 | So depressed that nothing  could cheer you up | 46.67% | 13.33% | 23.33% | 16.67% | 0.00% | 2.10 |
| 5 | Everything was an effort | 16.67% | 10.00% | 43.33% | 26.67% | 3.33% | 2.90 |
| 6 | Worthless | 46.67% | 10.00% | 40.00% | 3.33% | 0.00% | 2.00 |

**Number of days or occasions in the past 30 days did the participants take any of the actions highlighted in Table 3.**

A few of the participants could only conduct half of their everyday tasks as shown in serial number 2 in Table 3. While some did not have such experiences at all, a small percentage did have, and these signal underlying psychological health problems which include psychological distress. There is also a high proportion of the participants did not see a doctor or any health professional for any of the symptoms as shown in Table 2, point number 3.

**Table 3: Responses to “…** *actions taken based on responses to questions in Table2” (N=30)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Serail number** | **Response questions** | **0** | **1-2** | **3-5** | **6-10** | **More than 10** | **Weighted average** |
| 1 | Were you unable to work or do anything because of  the feelings mentioned in the last question | 36.67% | 36.67% | 10.00% | 3.33% | 13.33% | 2.20 |
| 2 | Were you able to only do half of what you would  normally be able to do because of these feelings | 26.67% | 46.67% | 10.00% | 6.67% | 10.00% | 2.27 |
| 3 | Did you see a doctor or other health professional  about these feelings | 66.67% | 26.67% | 0.00% | 3.33% | 3.33% | 1.50 |

**Qualitative findings**

**Times when participants find it difficult to manage their distress**

Findings in the qualitative part of the study shows that although a few of the participants reported that they did not find it difficult to manage their psychological distress, such as this participant who stated that:

*Hmm not really, not really, because during this pandemic am all am always having people to talk with whether its family members, whether it friends. (006)*

Majority did report that there were indeed times when they found it difficult to manage their distress, and this is further stated in by the participants that:

*Yes. there have been multiple times, multiple times especially when it seems like the lockdowns will not end, and you kno*w. *(Participant 010)*

*Yes, sometime very difficult because being the only provider in the family and I have family overseas in Liberia and Guinea that are looking up to me for survival. So sometimes yeh it just I can’t just cope with these things when I once I think on them. Yeah, is very difficult for me sometimes (008)*

*I have had times when I have really struggled to manage my distress. (Participant 005)*

Participants further reported that they relied on mass media for updated information on the pandemic as they usually did in West Africa during the EVD epidemic.

**Discussion**

**Quantitative**

**During the past 30 days, please indicate how often you have felt highlighted points in Table 2.**

**Observation:** The responses from the adapted Kessler-6 psychological distress scale in Table 2 show a significant increase in psychological distress indicators among participants. Features observed include considering what they would normally do as making an effort, experiencing nervousness, restlessness, hopelessness, depression and worthlessness during the COVID-19 pandemic.

**Inference:** The feeling of isolation, being trapped and helpless, may have been increased either due to the fear of infection with COVID-19 or the introduction of stringent IPC measures and the range of consequences, which included financial challenges that followed the pandemic and may have left some people psychologically distressed.

**Implication:** The elevated levels of psychological distress among these participants and its health consequences in the short term may be known but long terms complications of such reports may not be fully understood soon.

**Supporting literature:** Jiang et al.,(2022) and Fisher et al., (2020) observed high levels of psychological distress among Victorian-Australians during the COVID-19 pandemic. Similar to these, Holton et al., (2023) reported elevated distress levels especially during the COVID-19 lockdowns in Victoria-Australia. Equally, Biddle et al. (2020) observed elevated levels of anxiety and worries among their study participants.

**Significance:** As the results of this study are not diagnostic, the measurement tool which is the Kessler-6 has been validated and used before in Australian studies such as in the Australian National University hardship and distress survey by Biddle et al. (2020) and produced reliable results. Therefore, as this study has shown elevated levels of psychological distress among this cohort, this is evidence that calls for more probing assessments to mitigate the deterioration of the mental health of Victorian Australians.

**Health issue in focus:** Even when elevated levels of psychological distress were observed among West Africans who survived the 2014-16 EVD epidemic and are residing in Victoria-Australia, most reported in Table 3 that they did not seek medical help for their experiences.

**Educational advancement:** This finding can be a learning material for disaster survivors’ mental health and necessary remediating actions to forestall and dire mental health consequences.

**Adaptability of knowledge gained:** Knowledge from this study can be used by psychologists and sociologists in designing disaster or infectious outbreak relief approaches that lead psychologically distressed Victorians to seek professional help early.

**Relevance of practice:** This finding is relevant to practice in the sense that, it can guide evidence-based decisions concerning further research and practice.

**The number of days or occasions in the past 30 days when the participants took any of the actions highlighted in Table 3.**

**Observation:** Mostof the participants were either unable to work or were not able to do all of what they will normally do because of the psychological distress, which they experienced, but, despite their conditions, they did not seek professional or medical help.

**Inference:** Even when the impacts of the COVID-19 pandemic might have been difficult to contend with, seeking help from healthcare professionals, which most of the participants did not (Table 3) may been due to fear related behaviours in relation to experiences of isolation, social distancing and lockdown requirements that restricted movements. It is also possible that some may have preferred the face-to-face consultations with healthcare professionals, which was limited at the peak of the pandemic.

**Implication:** Their refusal to access professional healthcare attention, left them at risk of worsened mental health conditions or delayed recovery either in the short or long run. Further, not seeking care for a mental health issue adds to those who might be at higher risk of unrecognised deteriorating mental health which may increase the need for more care in the long term.

**Supporting literature:** Zhao et al. (2022) observed poor mental health among Australians during the COVID-19 pandemic, and Rahman et al. (2022) noted that the pandemic could likely undermine the mental health of those with underlying mental health conditions. However, Rahman et al., (2022) maintains that with the prohibition of face-to-face consultations at that time of the pandemic, the risk for severe mental health problems increased, especially in those with existing morbidities.

**Significance:** This study gives an indication that EVD survivors in Victoria- Australia during COVID pandemic had high levels of psychological distress.

**Health issue in focus:** The focus is the refusal to take professional mental health care actions to mitigate the effect of the COVID-19 pandemic on their mental health reflect and the need for community mental health outreach to identify those at risk of mental health complications**.**

**Educational advancement:** Though the immediate impacts of the COVID pandemic have been reported, the long-term mental health effects of this pandemic on West African 2014-16 EVD survivors living in Victoria-Australians is yet to be fully determined.

**Adaptability of knowledge gained:** This finding can be adapted for use together with other screening tools to identify people at risk of psychological distress.

**Relevance of practice:** This knowledge can be utilised to guide further assessments of the psychological health of other migrant groups who have experienced life-challenging events such as wars, and disease outbreaks before migrating to Australia or might have survived other outbreaks other than COVID-19.

**Qualitative findings**

**Times when participants found it difficult to manage their distress**

**Observation:** The participants did not find it difficult to manage their distress and depended on mass media especially radio and television for information to manage their psychological distress.

**Inference:** This response may have come from participants’ consideration that the Australian government could manage the pandemic and would provide timely and accurate information regarding actions to mitigate the severe impacts of the pandemic. Such level of confidence could be supportive of the government’s efforts in controlling the pandemic.

**Implication:** The implication is that many 2014-16 EVD survivors were distressed by the COVID-19 pandemic. Despite that finding, most participants who did not seek professional help for their experiences, presented a risk of more people living with undiagnosed and treated mental health issues that could have emanated from the consequences of the social distancing, community lockdowns and other related regulations.

**Supporting literature:** Biddle et al. (2020) observed that despite the apprehension and fears about the COVID-19 pandemic, Australians in general trusted information from mass media especially the radio and television for accurate, timely and updated information regarding the pandemic.

**Significance:** The significance of this finding is that **t**rust is the bedrock of infection prevention and control. This, demonstrates that trust in the form of compliance with IPC measures created ease in rolling out subsequent supportive interventions such as the provision of vaccines and treatments for the COVID-19 pandemic.

**Health issue in focus:** The focus is that despite the psychological distress, they reported during the pandemic, trust in the healthcare delivery and institutions is supportive of the IPC efforts.

**Educational advancement:** Mass media outlets such as radio and television have a significant role to play in disseminating health information, which helps to provide a reliable platform for learning. Additionally, this finding is an eye-opener to the attitude of peoples’ attitudes towards positive health-seeking behaviours in times of crisis.

**Adaptability of knowledge gained:**  Findings from this study could be shared with persons or organisations charged with the responsibility of managing the sociological knowledge, attitudes and practices of survivors of disaster intervention and management impacts.

**Relevance of practice:** Participants’ ability to manage distress could provide that calm and tranquillity that would be helpful in investigating their problems and planning focused interventions.

**Limitations:** Though this a mixed methods research that may have neutralised some of the study biases, this study acknowledges that participants were purposively selected, which can lead to selection bias. Moreover, as qualitative methods of investigation provide rich data that take into account participants' nuanced expressions, interviews recount experiences from participants' memory which can affect the correctness of the data provided and therefore a recall bias may occur.

**Conclusion:**  The current findings included high levels of psychological distress, but participants did not seek professional care which may have been related to the factors associated with the consequences of IPC regulations in Victoria-Australia. Further study of this outcome can be done to highlight the impacts of timely and trusted information sharing on the well-being of this cohort.

**CONSENT**: Participants consent was given in writing before the study commenced.

**ETHICAL APPROVAL**: Approval given by the Charles Sturt University, New South Wales, Australia (Approval number H20325).

**COMPETING INTERESTS DISCLAIMER:**

**Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.**

**References**

American Psychological Association. (2022). Trauma. <https://www.apa.org/topics/trauma> Biddle, N., Edwards, B., Gray, M., & Sollis, K. (2020). *Hardship, distress, and resilience: The initial impacts of COVID-19 in Australia. Available at:*. <https://csrm.cass.anu.edu.au/research/publications/hardship-distress-and-resilience-initial-impacts-covid-19-australia-1>

Biddle, N., Gray, M., & Rehill, P. (2022). *Mental health and wellbeing during the COVID-19 period in Australia*. Center for Research Methods Australia National University. Available at:. <https://csrm.cass.anu.edu.au/research/publications/mental-health-and-wellbeing-during-covid-19-period-australia>

Bogoch, II, Watts, A., Thomas-Bachli, A., Huber, C., Kraemer, M. U. G., & Khan, K. (2020). Pneumonia of unknown aetiology in Wuhan, China: potential for international spread via commercial air travel. *J Travel Med*, *27*(2). <https://doi.org/10.1093/jtm/taaa008>

Fisher, J. R. W., Tran, T. D., Hammarberg, K., Sastry, J., Nguyen, H., Rowe, H., Popplestone, S., Stocker, R., Stubber, C., & Kirkman, M. (2020). Mental health of people in Australia in the first month of COVID-19 restrictions: a national survey. *Medical Journal of Australia*, *213*(10), 458-464. Available at:. <https://doi.org/10.5694/mja2.50831>

Heanoy, E. Z., & Brown, N. R. (2024). Impact of Natural Disasters on Mental Health: Evidence and Implications. *Healthcare (Basel)*, *12*(18). <https://doi.org/10.3390/healthcare12181812>

Holton, S., Wynter, K., Considine, J., Street, M., Hutchinson, A., Khaw, D., Stephenson, P., Hutchinson, A., Ockerby, C., Nankevis, K., Crowe, S., Trueman, M., Bruce, S., & Rasmussen, B. (2023). Psychosocial impact of the COVID-19 pandemic on Australian nurses and midwives: a cross-sectional study. . *Australian Journal of Advance Nursing*(Vol. 40 No. 1 (2023): December 2022 – February 2023), Available at:. <https://doi.org/10.37464/2023.401.638>

Jiang, J., Akhlaghi, H., Haywood, D., Morrissey, B., & Parnis, S. (2022). Mental health consequences of COVID-19 suppression strategies in Victoria, Australia: a narrative review. *Journal of International Medical Research*, *50*(11), 03000605221134466. <https://doi.org/10.1177/03000605221134466>

Mandoh , S. L., Bwititi, P. T., & Nwose, E. U. (2024). Study protocol for psychosocial impacts of COVID-19 pandemic on Australian based West Africans who survived the 2014-2016 Ebola epidemic. *Protocol.io*, Available:. <https://www.protocols.io/view/study-protocol-for-psychosocial-impacts-of-covid-1-5qpvokzk9l4o/v1>

Mandoh, S. L., Bwititi, P. T., & Nwose, E. U. (2024). Systematic Review of the Psychosocial Impacts of the COVID-19 Pandemic on West African Migrants in Victoria, Australia. *Journal of Complementary and Alternative Medical Research*(48-69). <https://doi.org/10.9734/jocamr/2024/v25i12596>

Mandoh, S. L., Rossiter, R., Bwititi, P., & Nwose, E. U. (2020). *Psychosocial impacts of COVID-19 on Australia-based West Africans who survived Ebola epidemic: A Descriptive cross-sectional survey* 7th Western NSW Health Research Network Symposium, NSW Online <https://researchoutput.csu.edu.au/en/publications/psychosocial-impact-of-the-covid-19-pandemic-as-perceived-by-aust>

Rahman , M. A., Ford, D., Sousa, G., Hedley, L., Greenstock, L., Cross, W. M., & Brumby, S. (2022). Mental health at the COVID-19 frontline: An assessment of distress, fear, and coping among staff and attendees at screening clinics of rural/regional settings of Victoria, Australia. *The Journal of Rural Health*, *38*(4), 773-787. Available at:. <https://doi.org/10.1111/jrh.12638>

Rahman, M. A., Ford, D., Sousa, G., Hedley, L., Greenstock, L., Cross, W. M., & Brumby, S. (2022). Mental health at the COVID-19 frontline: An assessment of distress, fear, and coping among staff and attendees at screening clinics of rural/regional settings of Victoria, Australia. *Journal of Rural Health*, *38*(4), 773-787. <https://doi.org/10.1111/jrh.12638>

Rahman, M. A., Hoque, N., Alif, S. M., Salehin, M., Islam, S. M. S., Banik, B., Sharif, A., Nazim, N. B., Sultana, F., & Cross, W. (2020). Factors associated with psychological distress, fear and coping strategies during the COVID-19 pandemic in Australia. *Globalization and Health*, *16*(1), 95. Available at:. <https://doi.org/10.1186/s12992-020-00624-w>

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *J Affect Disord*, *277*, 55-64. <https://doi.org/10.1016/j.jad.2020.08.001>

Zangani, C., Ostinelli, E. G., Smith, K. A., Hong, J. S. W., Macdonald, O., Reen, G., Reid, K., Vincent, C., Syed Sheriff, R., Harrison, P. J., Hawton, K., Pitman, A., Bale, R., Fazel, S., Geddes, J. R., & Cipriani, A. (2022). Impact of the COVID-19 Pandemic on the Global Delivery of Mental Health Services and Telemental Health: Systematic Review. *JMIR Ment Health*, *9*(8), e38600. <https://doi.org/10.2196/38600>

Zhao, Y., Leach, L. S., Walsh, E., Batterham, P. J., Calear, A. L., Phillips, C., Olsen, A., Doan, T., LaBond, C., & Banwell, C. (2022). COVID-19 and mental health in Australia – a scoping review. *BioMed Central Public Health*, *22*(1), 1200. Available at:. <https://doi.org/10.1186/s12889-022-13527-9>

Venkatesan, K., Alshahrani, S. H., Paulsamy, P., Qureshi, A. A., Alshahrani, Z., & Fahad, H. Z. A. (2021). Assessment of Psychological Stress among Quarantined COVID-19 Patients. Journal of Pharmaceutical Research International, 33(44A), 502–507. <https://doi.org/10.9734/jpri/2021/v33i44A32643>

Nunn, K., & Fitzgerald, D. A. (2025). Longer term psychological trauma following the COVID-19 pandemic for children and families. Paediatric Respiratory Reviews. <https://doi.org/10.1016/j.prrv.2024.12.002>