**Psychosocial Impacts of COVID-19 and 2014-16 Ebola Virus Disease Outbreaks on Australian - Based West Africans: A Narrative Summary, conclusion and recommendations**

**Abstract**

**Introduction**: The ongoing research has been on the impact of COVID-19 pandemic, from the lens of West African migrants in Australia who witnessed a prior Ebola virus disease (EVD) epidemic. The study has been based on seven questions (7-RQ) that were separately discussed, and the objective of this paper is to summary of discussion, conclusions and recommendations.

**Methods**: These were designed to follow a narrative approach involving sequential mixed-method and underlying methodological principles have been separately published. The focus here is to narrate a succinct storyline of the study including a synthesis of the findings.

**Results**: A total of 68 persons in Victoria, Australia initially subscribed to the online survey, out which 36 qualified for inclusion in analysis and 9 of the 36 participated in qualitative interview. Nine manuscripts were produced including demographic characteristics of participants, qualitative interview analysis, and 7-papers covering the 7-RQ. Death constituted the most memory history of trauma experienced by participants. Family was a major social support form of coping strategies during EVD epidemic in West Africa, but government support played a major role in Australia with seemingly better effect by comparison with West Africa. The EVD experience influenced elevated levels of psychological distress, but coping strategies enhanced satisfaction with life during the COVID-19 pandemic.

**Conclusion**: Findings showed that past events traumatised participants and there were more illnesses during the COVID-19 period but more deaths occurred during the EVD period. They utilised past coping strategies during the COVID-19 pandemic especially when government supports were provided in Victoria – Australia.

**Keywords:** Illness, deaths, Ebola Virus disease, COVID-19

1. **INTRODUCTION**

**1.1 Research proposal and objective**

The purpose of this study is to explore the psychosocial impact of the COVID-19 pandemic on West African migrants living in Victoria who had experienced the EVD epidemic in 2014–16 while residing in West Africa. The study has been conceptualized to contribute to knowledge and practice regarding seven phenomenon of interests (Fig 1). This concept is supported by existing knowledge that the concerns of outbreak of the COVID-19 pandemic (Biddle et al., 2022; Western & Tomaszewski, 2016), as well as the Ebola virus disease (EVD) epidemic (James et al., 2019; Siedner et al., 2015). The concerns revolved around psychosocial distress and wellbeing (James et al., 2019; World Health Organization, 2020). Therefore, the proposal explored the questions as specific objectives.

Fig 1: The research concept and associated 7-phenomena of interests

**1.2 Literature review**

The literature was investigated to develop a background understanding of the frequency and scale of previous infectious disease outbreak. The objective was to determine if published articles addressed the proposed research questions i.e., related to our research topic. The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) method, as well as the JBI and McMaster critical appraisal tools for systematic reviews were therefore, adopted. That is, the literature review protocol followed the PRISMA extension for scoping review (PRISMA-ScR) method (Tricco et al., 2018). The review was done in two parts including focus on EVD in part 1 and COVID-19 in part 2.

The review exploring the psychosocial impacts of the 2024-2026 EVD epidemic on West African population living in Australia focused on trauma, social support and coping mechanisms and 24 literatures were selected. The findings show that EVD survivors endured significant psychosocial distress often with limited access to government support. This lack of support requires further exploration, due to the potential for the issues to exacerbate the critical gaps in social and mental health support. Further, care resources for epidemic survivors underscores the need for research to inform support strategies in future health emergencies. The West African survivors of EVD epidemic, lacking government support, employed a variety of coping strategies, but the scarcity of literature addressing the challenges of the epidemic raises concern and calls for more studies. However, dearth of literature was noteworthy “that notwithstanding abundance of research on the impact of the COVID-19 pandemic, knowledge gaps still existed in the literatures” including primary healthcare services for infectious disease outbreaks (Alhaji et al., 2018; Ferro et al., 2021; Olowookere et al., 2015; Simen-Kapeu et al., 2021).

The second part of the review, which is on COVID examined the published studies related to the psychosocial impact of the pandemic on the West African cohort through a scoping review. The review was achieved using SPICE framework, the PRISMA-ScR process and the McMaster critical appraisal, and 33 studies were selected from a search of 232,159, and of these 76% were predominantly quantitative. Of the studies reviewed, 33% examined social support and 24% explored coping strategies. Few studies analysed life satisfaction (15%), past trauma histories (9%), and memory of previous trauma events (1%). Consequently, the scoping review notes a gap regarding the impact of past trauma and strong memories of traumatic events. The finding could inform on mental health policies and trauma-informed care for migrant communities, offering hope for improved mental and social health outcomes. For instance, the literature update indicates of the need to study the impact of COVID-19 on subsets Australian population such as African cohorts to allow future outbreak responses(James et al., 2023). There was affirmation of the infection control measures during the pandemic increased psychosocial distress and this was prominent in young adults, females, Victorians and those with low income (Biddle et al., 2022).

Putting the two systematic reviews together to make a narrative summary, the findings show a significant lack of information on this important topic, indicating the need for further research. Studies report that continuous trauma can have mental health ramifications long after the event (Ogden & Gachon, 2019). Further, high levels of trauma and psychological distress have been reported among Australians but not on West Africans who survived EVD epidemic (Biddle et al., 2022; Jalloh et al., 2018), indicating gaps in the literature on this topic hence, this study will address these gaps identified by these researchers.

1. **METHODS**

**2.1 Methodology**

The options of research methods were given due considerations and the principles of qualitative and quantitative research methods vividly reviewed (Mandoh et al., 2024), which provide a comprehensive understanding of the chosen theories, paradigms, concepts and the sequential mixed-method designs. Thus, current and standard research methods were adopted (Johnson et al., 2007; Park et al., 2020; Tanlaka et al., 2019). Studies highlight that mixed-methods nullify the individual weaknesses of qualitative or quantitative methods (Brown et al., 2015; Regnault et al., 2017), while sequential exploratory mixed method provides nuance in investigating a complex phenomenon (Edmonds & Kennedy, 2016; Gogo & Musonda, 2022; Ivankova et al., 2006; Johnson et al., 2007; Onwuegbuzie & Collins, 2007).

Consequently, this study adopted different methodologies that underpin the research objectives (Table 1).The demographic data captured fields utilized e.g., in studies in West Africa (Betancourt et al., 2020; Keita et al., 2017; Mohammed et al., 2015; Nuriddin et al., 2018).

Table 1: Research objectives and tools utilized

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Research objective | Method/Tool | Reference |
| 1. | Trauma experience prior to EVD | Trauma History Screen | (Carlson et al., 2011) |
| 2. | Strongest memory of EVD epidemic | Adoptions from literature | (Azizeh et al., 2018; Mohammed et al., 2015) |
| 3 | Influence of surviving EVD |
| 4. | Social supports during | Oslo social support scale (OSSS-3) | (Kocalevent et al., 2018) |
| 5. | Coping strategies | Brief-Cope | (Carver, 1997; García et al., 2018) |
| 6. | Psychological distress | Kessler 6 Psychological Distress Measure | (Kessler et al., 2002; Sunderland et al., 2012) |
| 7. | Life satisfaction | Global Life Satisfaction (GLS) | (Cummins, 2015; Xu & Roberts, 2010) |

**2.2 Study protocol**

This study followed the sequential mixed-method exploratory approach of West Africans that experienced EVD epidemic in West Africa and COVOD-19 pandemic in Australia. Thus, sequential, because volunteer participants in the second component were recruited from the first component. That is, the online survey in the first component provided empirical data for quantitative analysis as well as some text-based qualitative dataset (Table 2). In the second step, the participants who progressed to interview provided a reinforced and detailed description of their experiences. It is known that qualitative data enables a deeper understanding of participants’ perspectives (Morse, 2010), hence the mixed-methods design provides nuance in answering the research questions (Gbenga, 2023; Gogo & Musonda, 2022; McBride et al., 2019). The third step was triangulation to ensure comprehensive exploration of the phenomena of interest (Valencia, 2022). The online data collection method (SurveyMonkey) is yet another established research tool (Gordon, 2002).

.

Table 2: Distribution of online 35-item† survey questionnaire‡

|  |  |  |  |
| --- | --- | --- | --- |
| **Item #** | **Research questions covered** | **Quantitative** | **Qualitative** |
| 1 | Trauma | 31 | - |
| 2 | Strongest memory (EVD) | 11 | 32 |
| Strongest memory (COVID) | 20 | 34 |
| 3 | Influence of surviving the event | - | 33 |
| 4 | Social support (EVD) | 22 – 24 | - |
| Social support (COVID-19) | 26 – 28 | - |
| 5 | Coping strategies (EVD) | 21 | - |
| Coping strategies (COVID-19) | 25 | - |
| 6 | Psychosocial distress | 29 & 30 | - |
| 7 | Life satisfaction | 35 | - |

†Demographic questions: #1 – 10, and #12 – 19.

‡Full details of each question and responses are in published repository (Mandoh et al., 2025)

**2.3 Limitations to the Study**

It is pertinent to note that considering lockdowns during the COVID-19 pandemic, a conservatively limited sample size of N≤30 was considered to be realistic and sufficient. In this consideration, cognizance is given to justifying inclusion factor in systematic reviews (Lusardi et al., 2017); and confidence that among the expected ‘N = 256’ respondents will be more than 30 (i.e., migrated to Australia after) who experienced the EVD epidemic; including at least 3volunteers for interviews that would satisfy sequential mixed methods design (Onwuegbuzie & Collins, 2007).

1. **RESULTS**

**3.1 Demography of participants**

This study investigated how the West Africans who survived Ebola virus disease (EVD) epidemic 10-years ago, but now living in Australia, perceived the psychosocial impact of COVID-19. The majority (60%) of the participants were 18-40 years and 47% are males. This report aims to provide a detailed narrative of the demographic characteristics of the participants, a crucial aspect of the understanding of the topic. The study was conducted using a sequential mixed methods approach, which involved an online survey questionnaire followed by in-depth qualitative interviews, ensuring a comprehensive understanding of the participant’s experiences. Sixty-eight participants initially subscribed to the online survey including approximately 53% women. The distribution of participants into stratified age groups, education, marital status and occupation, among other demographic characteristics, provides valuable insights into the phenomenon of interest.

**3.2 Qualitative interview analysis**

The qualitative component of the study included three open-ended items in online survey questionnaire and 13-item open-ended interview questions. The five stages of qualitative data analysis were utilised (Bingham, 2023). The online survey component involved ‘N=36’ individuals and of these 9 went further to participate in the interviews. The thematic results include trauma of burials/deaths in family and lockdown restrictions, psychological distress, government and social support, and coping strategies in West Africa and Australia during EVD epidemic and COVID-19 pandemic, respectively and well as life satisfaction in Australia. Psychosocial distress including anxiety, depression, fear of infection and nightmares were reported to be similar in COVID-19 pandemic as during EVD epidemic. Coping strategies during the COVID-19 pandemic was by utilising their previous experiences. However, life satisfaction seems better during the COVID pandemic in Australia relative to the time of EVD epidemic in West Africa. Studies show that such observations, albeit qualitative, would add further understanding of participants’ perspectives (Morse, 2010),.

1. **DISCUSSION**

**4.1 Graphical overview**

Fig 2: Flowchart of 4-themes incorporating the 7-RQ

***4.2 Summaries of discussion on research objectives***

***Trauma***: To determine the experiences of trauma from past events,data was collected with survey instrument comprised of Trauma History Screen and qualitative questions, followed by qualitative interview. Participants included in this part of exploration were N=29. Results show that 75% of participants endured feelings deaths of family and friends, and experienced symptoms including fear, stress, distress, depression, flashbacks, and altered sleep patterns. The observations highlight the significance of assessments of their mental health into the future and are in line with reports from EVD studies (Bah et al., 2020; Jalloh et al., 2018). Such findings could help in designing programmes to mitigate these sequelae.

***Strongest memory of events***: The exploration of this second objective was on the backdrop that disease outbreaks cause post-traumatic stress disorder (PTSD) potentially remaining in memory for long periods.Responses from 36 participants and 9/36 volunteers from the survey and interview, respectively, were analysed. Results show that 69% of participants experienced death in family during the EVD in West Africa, and a separate 69% had relatives who survived COVID-19 in Australia. The respondents who directly contracted but survived EVD and COVID-19 infection were 6% and 15%, respectively. Such observations imply that participants have varying memories. Reports of death-in-family observed in this study are higher than the findings in other report from West Africa (Bah et al., 2020). This therefore, underscores the need ongoing need for continuous assessments and interventions, especially considering that causes of PTSD are varied.

***Influence of surviving EVD***: To investigate how EVD survivors residing in Victoria-Australia were influenced by the epidemic, the 36 participants and 9/36 volunteers from the survey and interview, respectively, were also analysed. The findings of the study identified strong willingness to embrace infection prevention and control procedures is paramount. Other notable influence appears to be beliefs in divine interventions during EVD, but greater trust in the healthcare system during COVID-19. The observation of greater trust in the healthcare system during COVID-19 resonates with reported opinion in the literature that the healthcare systems response at the EVD epicentres were inadequate (Gershon et al., 2016), although there are other opinions that distrust in West African may have been due to inconsistent messaging and lack of supports from the governments (Murray et al., 2021; Rabelo et al., 2016). This observation highlights the significance of considering for instance, spiritual beliefs and issues of trust in mental health evaluations.

***Social support***: To investigate the levels of social support which participants received during the 2014-16 EVD epidemic and COVID-19 pandemic, 32 respondents were included in quantitative data and 9/32 in the interviews. Results show that 44% of participants had 3-5 people in their support network, while 56% had difficulties finding help during the EVD epidemic. During the COVID-19 pandemic, 48% reported that getting help was difficult. These findings are in agreement with existing literature (Mohammed et al., 2015; Rabelo et al., 2016), albeit that even though participants had families and friends they relied on, those looking up to the government for social support needed enlightenment and education of the disease, among others (Mohammed et al., 2015; Murray et al., 2021).

***Coping strategies***: To determine the coping strategies which participants used during the EVD epidemic and COVID-19 pandemic, N=32 participants were included. the quantitative data showed that 97% took positive actions utilising various methods of coping with stress, and 94% got emotional support during the EVD epidemic. The positive actions included taking work and belonging to survivors’ family networks. Comparatively, all the participants took positive actions during COVID-19 pandemic.Most participants took actions to improve their situations during the 2014-16 EVD epidemic and COVID-19 pandemic. These observations are in line with the literature that coping strategies include engagement with associations and activities such as religious faith (James et al., 2019). During the COVID, the engagement coping strategy included alcohol consumption, especially given the movement restrictions (Stanton et al., 2020).

***Psychosocial distress***: To evaluate the levels of distress among EVD survivors in Victoria during the COVID-19 pandemic, the Kessler-6 psychological distress scale. A sequential exploratory mixed methods collected online quantitative data and interview qualitative data. Descriptive quantitative and five stages qualitative analysis were done. The weighted average shows among respondents; the prevalence of elevated levels of nervousness (90%), restless and fidgety (78%), hopelessness (70%) and depression (53%). These high levels of prevalence contribute to existing reports from Australia, including the State of Victoria (Jiang et al., 2022). The prevalences are also comparable to reports on EVD epidemic (Bah et al., 2020; Jalloh et al., 2018; Mohammed et al., 2015). Interview data findings showed elevated distress levels, although they did not seek professional help, but depended on mass media information for support. This observation is in line with another report from Australia (Biddle et al., 2020) and, will be helpful to governments and healthcare systems. That is, psychological and mental health services can enhance mass media information into service delivery, which is possible these days with e.g., telehealth and tailored apps.

***Life satisfaction***: To evaluate how satisfied people are with life during the COVID-19 pandemic in Victoria, one global life satisfaction (GLS) question “how satisfied are you with your life?” was used in Likert scale to collect quantitative data in online survey. Twenty-seven participants provided data for this question. Additionally, 9 volunteers participated in the qualitative interview that employed the same GLS question in an open-ended format. It was observed that on average, the subpopulation had a 6.2/10 i.e., 62% score for life satisfaction, and 2/27 respondents had a score of 1/10. The qualitative interview highlights that those participants felt that life was better in Australia. These observations mean that despite the socioeconomic difficulties and concerns about wellbeing during the COVID-19 pandemic (Biddle et al., 2022), participants were relatively more satisfied with life overall. The implication for healthcare lies in past clients’ history and service providers can use past experiences as part of client management.

1. **CONCLUSION AND RECOMMENDATIONS**

**5.1 Conclusion**

The purpose of this study was to determine the psychosocial impacts of the COVID-19 pandemic among Australian based West Africans who survived the 2014-16 Ebola epidemic. This study assessed various concepts and highlighted the gaps in literature pertaining to the topic. Of significance, participants reported previous trauma experiences and how they were impacted by the EVD epidemic. The reported symptoms, especially fears and anxieties, highlight the significance of assessments of their mental health into the future, which would help in designing programmes to mitigate these sequelae. Additionally, though there were more deaths during the EVD epidemic than during the COVID-19 pandemic, a fewer participants had the EVD than COVID-19 and, participants experienced post-traumatic stress disorder symptoms during both events. This underscores the ongoing need for continuous assessments and interventions to mitigate their fears.

The beliefs in divine interventions during EVD epidemic might have been out of helplessness due to limited trust in their government and healthcare system. This is evident from their greater trust in the Australian systems during the COVID pandemic. Thus, highlighting the significance of considering spiritual beliefs in mental health evaluations. Findings further showed that participants had people whom they relied on such as family for support during the EVD but, contrastingly found it challenging during the COVID-19 pandemic. Mass media information was supportive and the EVD experience helped influence their coping strategies during COVID-19. Therefore, it will be helpful for the policy makers and mental health providers if the principles of PTSD management and trauma-informed care are reinforced in psychological and mental healthcare services during infectious disease outbreaks.

It suffices to conclude that this study identified elevated levels of trauma, strong memory of past events and participants’ behaviours were influenced by experiences during the EVD epidemic. Even though they reported elevated levels of psychological distress, it is noteworthy that some participants are unable or unwilling to seek professional help for their psychosocial distress. They coped well and the coping strategies enhanced their satisfaction with life during the COVID-19 pandemic (Fig 3).

Fig 3: Graphical summary of main themes

**5.2 Recommendations**

* Considering the emergence and speedy dispersal of infectious diseases in recent times, further exploration of the negative impacts on minority migrant groups may be helpful.
* Continuous assessment and provision of social support services for those psychosocially challenged by these events can mitigate the complications of negative experiences.

CONSENT AND ETHICAL APPROVAL It is not applicable.

DISCLAIMER (ARTIFICIAL INTELLIGENCE) Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTEREST Authors have declared that no competing interests exist

**References**

Alhaji, N. B., Yatswako, S., & Oddoh, E. Y. (2018). Knowledge, risk perception and mitigation measures towards Ebola virus disease by potentially exposed bushmeat handlers in north-central Nigeria: Any critical gap? *Zoonoses Public Health*, *65*(1), 158-167. <https://doi.org/10.1111/zph.12384>

Azizeh, N., Mohamed, F. J., Erika, M., Rebecca, B., Franklin, A. B., Mohammad, B. J., Paul, S., Kathy, M. H., Dianna, D. C., Lansana, C., & Oliver, M. (2018). Trust, fear, stigma and disruptions: community perceptions and experiences during periods of low but ongoing transmission of Ebola virus disease in Sierra Leone, 2015. *BMJ Glob Health*, *3*(2), e000410. <https://doi.org/10.1136/bmjgh-2017-000410>

Bah, A. J., James, P. B., Bah, N., Sesay, A. B., Sevalie, S., & Kanu, J. S. (2020). Prevalence of anxiety, depression and post-traumatic stress disorder among Ebola survivors in northern Sierra Leone: a cross-sectional study. *BMC Public Health*, *20*(1), 1391. <https://doi.org/10.1186/s12889-020-09507-6>

Betancourt, T. S., Thomson, D. L., Brennan, R. T., Antonaccio, C. M., Gilman, S. E., & VanderWeele, T. J. (2020). Stigma and Acceptance of Sierra Leone's Child Soldiers: A Prospective Longitudinal Study of Adult Mental Health and Social Functioning. *Journal of American Academy of Child and Adolescent Psychiatry 59*(6), 715-726. <https://doi.org/10.1016/j.jaac.2019.05.026>

Biddle, N., Edwards, B., Gray, M., & Sollis, K. (2020). Hardship, distress, and resilience: The initial impacts of COVID-19 in Australia. <https://doi.org/10.26193/HLMZNW>

Biddle, N., Gray, M., & Rehill, P. (2022). *Mental health and wellbeing during the COVID-19 period in Australia. In.: Australia National University Centre for Social Research and Methods*. The ANU Centre for Social Research and Methods. Retrieved 15th Sep 2024 from <https://csrm.cass.anu.edu.au/sites/default/files/docs/2024/11/Mental_health_and_wellbeing_during_the_COVID-19_period.pdf>

Bingham, A. J. (2023). From data management to actionable findings: A five-phase process of qualitative data analysis. *International Journal of Qualitative Methods*, *22*, 16094069231183620. <https://doi.org/10.1177/16094069231183620>

Brown, K. M., Elliott, S. J., Leatherdale, S. T., & Robertson-Wilson, J. (2015). Searching for rigour in the reporting of mixed methods population health research: a methodological review. *Health Education Research*, *30*(6), 811-839. <https://doi.org/10.1093/her/cyv046>

Carlson, E. B., Smith, S. R., Palmieri, P. A., Dalenberg, C., Ruzek, J. I., Kimerling, R., Burling, T. A., & Spain, D. A. (2011). Development and validation of a brief self-report measure of trauma exposure: the Trauma History Screen. *Psychological assessment*, *23*(2), 463-477. <https://doi.org/10.1037/a0022294>

Carver, C. S. (1997). You want to measure coping but your protocol's too long: consider the brief COPE. *Int J Behav Med*, *4*(1), 92-100. <https://doi.org/10.1207/s15327558ijbm0401_6>

Cummins, R. A. (2015). Understanding quality of life in medicine: A new approach. *J Am Coll Nutr*, *34 Suppl 1*, 4-9. <https://doi.org/10.1080/07315724.2015.1080099>

Edmonds, W. A., & Kennedy, T. D. (2016). Explanatory-Sequential Approach. In (Second ed., pp. 196). SAGE Publications, Incorporated. <https://doi.org/10.4135/9781071802779.n17>

Ferro, M. A., Meyer, S. B., Yessis, J., Reaume, S. V., Lipman, E., & Gorter, J. W. (2021). COVID-19-related psychological and psychosocial distress among parents and youth with physical illness: A longitudinal study. *Front Psychiatry*, *12*, 761968. <https://doi.org/10.3389/fpsyt.2021.761968>

García, F. E., Barraza-Peña, C. G., Wlodarczyk, A., Alvear-Carrasco, M., & Reyes-Reyes, A. (2018). Psychometric properties of the Brief-COPE for the evaluation of coping strategies in the Chilean population. *Psicologia: Reflexão e Crítica*, *31*(1), 22. <https://doi.org/10.1186/s41155-018-0102-3>

Gbenga, M. O. (2023). Re: In a sequential exploratory mixed methods research, how many participants can be engaged in the first stage of qualitative data collection?. In (9/04/2024 ed.). Researchgate,.

Gershon, R., Dernehl, L. A., Nwankwo, E., Zhi, Q., & Qureshi, K. (2016). Experiences and psychosocial impact of West Africa Ebola deployment on US health care volunteers. *PLoS Curr*, *8*. <https://doi.org/10.1371/currents.outbreaks.c7afaae124e35d2da39ee7e07291b6b5>

Gogo, S., & Musonda, I. (2022). The Use of the Exploratory Sequential Approach in Mixed-Method Research: A Case of Contextual Top Leadership Interventions in Construction H&S. *International journal of environmental research and public health*, *19*(12), 7276. <https://doi.org/10.3390/ijerph19127276>

Gordon, A. (2002). SurveyMonkey.com—Web-based survey and evaluation system: <http://www.SurveyMonkey.com>. *The Internet and Higher Education*, *5*(1), 83-87. <https://doi.org/https://doi.org/10.1016/S1096-7516(02)00061-1>

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, *18*, 3-20. <https://doi.org/10.1177/1525822X05282260>

Jalloh , M. F., Li, W., Bunnell, R. E., Ethier, K. A., O'Leary, A., Hageman, K. M., Sengeh, P., Jalloh, M. B., Morgan, O., Hersey, S., Marston, B. J., Dafae, F., & Redd, J. T. (2018). Impact of Ebola experiences and risk perceptions on mental health in Sierra Leone, July 2015. *British Medical Journal Global Health*, *3*(2), e000471. <https://doi.org/10.1136/bmjgh-2017-000471>

Jalloh, M. F., Li, W., Bunnell, R. E., Ethier, K. A., O'Leary, A., Hageman, K. M., Sengeh, P., Jalloh, M. B., Morgan, O., Hersey, S., Marston, B. J., Dafae, F., & Redd, J. T. (2018). Impact of Ebola experiences and risk perceptions on mental health in Sierra Leone, July 2015. *BMJ Glob Health*, *3*(2), e000471. <https://doi.org/10.1136/bmjgh-2017-000471>

James, P. B., Gatwiri, K., Mwanri, L., & Wardle, J. (2023). Impacts of COVID-19 on African Migrants’ Wellbeing, and Their Coping Strategies in Urban and Regional New South Wales, Australia: a Qualitative Study. *Journal of Racial and Ethnic Health Disparities*, Available at:. <https://doi.org/10.1007/s40615-023-01806-z>

James, P. B., Wardle, J., Steel, A., & Adams, J. (2019). Post-Ebola psychosocial experiences and coping mechanisms among Ebola survivors: a systematic review. *Trop Med Int Health*, *24*(6), 671-691. <https://doi.org/10.1111/tmi.13226>

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. *J Int Med Res*, *50*(11), 3000605221134466. <https://doi.org/10.1177/03000605221134466>

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112-133. <https://doi.org/10.1177/1558689806298224>

Keita , M. M., Taverne, B., Sy Savane, S., March, L., Doukoure, M., Sow, M. S., Toure, A., Etard, J. F., Barry, M., & Delaporte, E. (2017). Depressive symptoms among survivors of Ebola virus disease in Conakry (Guinea): preliminary results of the PostEboGui cohort [Affective Disorders 3211]. *BioMedical Central Psychiatry*, *17*. <https://doi.org/10.1186/s12888-017-1280-8>

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, *32*(6), 959-976. <https://doi.org/10.1017/S0033291702006074>

Kocalevent, R. D., Berg, L., Beutel, M. E., Hinz, A., Zenger, M., Härter, M., Nater, U., & Brähler, E. (2018). Social support in the general population: standardization of the Oslo social support scale (OSSS-3). *BMC Psychol*, *6*(1), 31. <https://doi.org/10.1186/s40359-018-0249-9>

Lusardi, M. M., Fritz, S., Middleton, A., Allison, L., Wingood, M., Phillips, E., Criss, M., Verma, S., Osborne, J., & Chui, K. K. (2017). Determining risk of falls in community dwelling older adults: A systematic review and meta-analysis using posttest probability. *J Geriatr Phys Ther*, *40*(1), 1-36. <https://doi.org/10.1519/jpt.0000000000000099>

Mandoh, S. L., Bwititi, P. T., & Nwose, E. U. (2024). Psychosocial impacts of COVID-19 pandemic on West Africans based in Victoria Australia who survived the 2014-16 Ebola epidemic: The methodological approach. *Journal of Complementary and Alternative Medical Research*, *25*(12), 31-47. <https://doi.org/10.9734/jocamr/2024/v25i12595>

Mandoh, S. L., Bwititi, P. T., & Nwose, E. U. (2025). Chapter 5: The psychosocial impact of COVID-19 pandemic as perceived by Australian-based West Africans who survived the 2014-2016 Ebola virus disease epidemic – Survey data. *Figshare*. Retrieved 01 Feb 2025, from <https://doi.org/10.6084/m9.figshare.28270322.v2>

McBride, K. A., MacMillan, F., George, E. S., & Steiner, G. Z. (2019). The Use of Mixed Methods in Research. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 695-713). Springer Singapore. <https://doi.org/10.1007/978-981-10-5251-4_97>

Mohammed , A., Sheikh, T. L., Gidado, S., Poggensee, G., Nguku, P., Olayinka, A., Ohuabunwo, C., Waziri, N., Shuaib, F., Adeyemi, J., Uzoma, O., Ahmed, A., Doherty, F., Nyanti, S. B., Nzuki, C. K., Nasidi, A., Oyemakinde, A., Oguntimehin, O., Abdus-Salam, I. A., & Obiako, R. O. (2015). An evaluation of psychological distress and social support of survivors and contacts of Ebola virus disease infection and their relatives in Lagos, Nigeria: a cross sectional study--2014. *BioMed Central Public Health*, *15*, 824. <https://doi.org/10.1186/s12889-015-2167-6>

Mohammed, A., Sheikh, T. L., Gidado, S., Poggensee, G., Nguku, P., Olayinka, A., Ohuabunwo, C., Waziri, N., Shuaib, F., Adeyemi, J., Uzoma, O., Ahmed, A., Doherty, F., Nyanti, S. B., Nzuki, C. K., Nasidi, A., Oyemakinde, A., Oguntimehin, O., Abdus-Salam, I. A., & Obiako, R. O. (2015). An evaluation of psychological distress and social support of survivors and contacts of Ebola virus disease infection and their relatives in Lagos, Nigeria: a cross sectional study--2014. *BMC Public Health*, *15*, 824. <https://doi.org/10.1186/s12889-015-2167-6>

Morse, J. (2010). Simultaneous and Sequential Qualitative Mixed Method Designs. *Qualitative Inquiry - QUAL INQ*, *16*, 483-491. <https://doi.org/10.1177/1077800410364741>

Murray, R. T., Drew, L. B., Memmott, C., Bangura, Y. M., & Maring, E. F. (2021). A community's experience during and after the Ebola epidemic of 2014-2016 in Sierra Leone: A qualitative study. *PLoS Negl Trop Dis*, *15*(2), e0009203. <https://doi.org/10.1371/journal.pntd.0009203>

Nuriddin, A., Jalloh, M. F., Meyer, E., Bunnell, R., Bio, F. A., Jalloh, M. B., Sengeh, P., Hageman, K. M., Carroll, D. D., Conteh, L., & Morgan, O. (2018). Trust, fear, stigma and disruptions: community perceptions and experiences during periods of low but ongoing transmission of Ebola virus disease in Sierra Leone, 2015. *BMJ global health*, *3*(2), e000410. <https://doi.org/10.1136/bmjgh-2017-000410>

Ogden, N. H., & Gachon, P. (2019). Climate change and infectious diseases: The challenges: Climate change and infectious diseases: What can we expect? *Canada Communicable Disease Report*, *45*(4), 76. <https://doi.org/10.14745/ccdr.v45i04a01>

Olowookere, S. A., Abioye-Kuteyi, E. A., Adepoju, O. K., Esan, O. T., Adeolu, T. M., Adeoye, T. K., Adepoju, A. A., & Aderogba, A. T. (2015). Knowledge, Attitude, and Practice of Health Workers in a Tertiary Hospital in Ile-Ife, Nigeria, towards Ebola Viral Disease. *J Trop Med*, *2015*, 431317. <https://doi.org/10.1155/2015/431317>

Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report*, *12*(2), 281-316. <https://doi.org/10.46743/2160-3715/2007.1638>

Park, Y. S., Konge, L., & Artino, A. R., Jr. (2020). The ositivism paradigm of research. *Acad Med*, *95*(5), 690-694. <https://doi.org/10.1097/acm.0000000000003093>

Rabelo, I., Lee, V., Fallah, M. P., Massaquoi, M., Evlampidou, I., Crestani, R., Decroo, T., Van den Bergh, R., & Severy, N. (2016). Psychological distress among Ebola survivors discharged from an Ebola treatment unit in Monrovia, Liberia - A qualitative study. *Front Public Health*, *4*, 142. <https://doi.org/10.3389/fpubh.2016.00142>

Regnault, A., Willgoss, T., & Barbic, S. (2017). Towards the use of mixed methods inquiry as best practice in health outcomes research. *Journal of Patient Reported Outcomes*, *2*(1), 19. <https://doi.org/10.1186/s41687-018-0043-8>

Siedner, M. J., Gostin, L. O., Cranmer, H. H., & Kraemer, J. D. (2015). Strengthening the detection of and early response to public health emergencies: lessons from the West African Ebola epidemic. *Public Library of Science medicine*, *12*(3). <https://doi.org/10.1371/journal.pmed.1001804>

Simen-Kapeu, A., Lewycka, S., Ibe, O., Yeakpalah, A., Horace, J. M., Ehounou, G., Boima, T., & Wesseh, C. S. (2021). Strengthening the community health program in Liberia: Lessons learned from a health system approach to inform program design and better prepare for future shocks. *J Glob Health*, *11*, 07002. <https://doi.org/10.7189/jogh.11.07002>

Stanton, R., To, Q. G., Khalesi, S., Williams, S. L., Alley, S. J., Thwaite, T. L., Fenning, A. S., & Vandelanotte, C. (2020). Depression, anxiety and stress during COVID-19: Associations with changes in physical activity, sleep, tobacco and alcohol use in Australian adults. *Int J Environ Res Public Health*, *17*(11). <https://doi.org/10.3390/ijerph17114065>

Sunderland, M., Hobbs, M. J., Anderson, T. M., & Andrews, G. (2012). Psychological distress across the lifespan: examining age-related item bias in the Kessler 6 Psychological Distress Scale. *International psychogeriatrics*, *24*(2), 231-242.

Tanlaka, E. F., Ewashen, C., & King-Shier, K. (2019). Postpositivist critical multiplism: Its value for nursing research. *Nurs Open*, *6*(3), 740-744. <https://doi.org/10.1002/nop2.306>

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., . . . Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Ann Intern Med*, *169*(7), 467-473. <https://doi.org/10.7326/m18-0850>

Valencia, A. M. M. (2022). Principles, Scope, and Limitations of the Methodological Triangulation. *Investigación y Educación en Enfermería*, *40*(2). <https://doi.org/10.17533/udea.iee.v40n2e03>

Western, M., & Tomaszewski, W. (2016). Subjective wellbeing, objective wellbeing and inequality in Australia. *PLoS One*, *11*(10), e0163345. <https://doi.org/10.1371/journal.pone.0163345>

World Health Organization. (2020). *Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020*. World Health Organization. <https://www.who.int/publications/i/item/WHO-2019-nCoV-MentalHealth-2020.1>

Xu, J., & Roberts, R. E. (2010). The power of positive emotions: it's a matter of life or death--subjective well-being and longevity over 28 years in a general population. *Health Psychol*, *29*(1), 9-19. <https://doi.org/10.1037/a0016767>