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RESEARCH LETTER

Social fragmentation and psychological distress: a geospatial study and survey in rural Australia

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ETHICS APPROVAL

The study obtained ethics approval from the Australian National University Human Ethics Committee (protocol 2019/394)

FULL ARTICLE:

Dear Editor

Residents in communities with high levels of neighbourhood social fragmentation, arising through factors such as a highly mobile residential population and high levels of non-family households, may be more vulnerable to social isolation, which is an important

risk factor for poorer mental health[1]. Studies have shown that greater levels of social fragmentation are associated with impaired mental health both overseas and within Australia[1,2]. However, studies have predominantly focused on urban populations and there is limited information on social fragmentation and mental health in rural areas.

The aims of this study were to investigate whether social fragmentation and psychological distress were associated in a rural area of south-eastern Australia, and to identify spatial hotspots of psychological distress and social fragmentation in the region.

Ethical considerations of the study were approved by the Australian National University (ANU) Human Research Ethics Committee. An online cross-sectional survey of 408 adult (≥18 years) volunteers was conducted across rural south-eastern New South Wales (NSW) from October 2019 to April 2020, unintentionally coinciding with a major bushfire event and the emergence of COVID-19. Promotion of the survey was facilitated using sponsored Facebook posts and flyers placed in general practice clinics affiliated with the Australian National University (ANU) Rural Clinical School. Psychological distress was measured using the Kessler 10 Psychological Distress Scale (K10). Social fragmentation was assessed using the family and mobility components of the Australian Neighbourhood Social Fragmentation Index (ANSFI)[2]. Multilevel logistic regression models were used to assess the associations between social fragmentation and moderate–high (K10=16–50) or high (K10=26–50) levels of psychological distress, accounting for geographic clustering. Spatial analysis was performed to identify any spatial autocorrelation using the Global Moran's I technique.

Most participants lived in inner (45%) or outer regional (53%) areas. The prevalences of moderate and high psychological distress in the sample were 43% and 29%, respectively. There was little evidence for an association between social fragmentation and psychological distress. The strongest association was for the mobility component of ANSFI, with the odds of high psychological distress increasing by 4% (95%CI 0.99–1.09) for each unit increase in the score. There was no significant spatial autocorrelation of psychological distress or social fragmentation (Global Moran's I indices for family and mobility ANSFI components were 0.001 (p=0.51) and 0.01 (p=0.49), respectively).

The prevalence of high psychological distress in this sample exceeded previous rural NSW estimates of 7–9%[3] and social fragmentation was not related to psychological distress in this setting during this time period. There are several potential explanations for these findings. The timing of the survey coincided with a devastating bushfire season in NSW, as well as the start of the COVID-19 outbreak; studies have demonstrated heightened levels of anxiety in relation to these events[4,5]. A convenience sampling method was used to recruit participants and the sample was not representative of the south-eastern rural NSW population; for example, the sample predominantly consisted of females and there was an overrepresentation of participants aged 50–69 years, many of whom were retired. Wider investigation of social fragmentation and mental health from representative rural populations is warranted.

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REFERENCES:

1 Ivory VC, Collings SC, Blakely T, Dew K. When does neighbourhood matter? Multilevel relationships between neighbourhood social fragmentation and mental health. *Social Science and Medicine* 2011; **72(12):** 1993-2002. DOI link, PMid:21632160

2 Bagheri N, Batterham PJ, Salvador-Carulla L, Chen Y, Page A, Calear AL, et al. Development of the Australian neighborhood social fragmentation index and its association with spatial variation in depression across communities. *Social Psychiatry and Psychiatric Epidemiology* 2019; **54(10):** 1189-1198. DOI link, PMid:30989255

3 Kelly BJ, Stain HJ, Coleman C, Perkins D, Fragar L, Fuller J, et al. Mental health and well-being within rural communities: the Australian rural mental health study. *Australian Journal of Rural Health* 2010; **18(1):** 16-24. DOI link, PMid:20136810

4 ADA Dataverse. *ANU Poll 2020: bushfires, the environment, and optimism for the future.* 2020. Available: web link, DOI link (Accessed 27 September 2021).

5 Newby JM, O'Moore K, Tang S, Christensen H, Faasse K. Acute mental health responses during the COVID-19 pandemic in Australia. *PLoS One* 2020; **15(7):** e0236562. DOI link, PMid:32722711