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# Rural nutrition and dietetics research—Future directions

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## Abstract

**Aim:** The aim of this study was to summarise key evidence from recent Australian rural nutrition research and provide recommendations for future nutrition and dietetics research with rural communities.

**Context:** Clear evidence demonstrates that diet plays a role in the health gap between rural and metropolitan Australia. Despite the opportunity to address the health of rural Australians through better nutrition, alarmingly low investment in nutrition and dietetics research has occurred historically, and over the past decade.

**Approach:** A review of the evidence was undertaken by rural nutrition and dietetics leaders to provide a commentary piece to inform future rural nutrition research efforts.

**Conclusion:** Establishing strong, collaborative place-based nutrition and dietetics research teams are necessary to combat the significant gaps in the scientific knowledge of solutions to improve nutrition in rural Australia. Further, dietitians and nutritionists who live in and understand the rural contexts are yet to be fully harnessed in research, and better engaging with these professionals will have the best chance of successfully addressing the nutrition-related disease disparity between rural and metropolitan Australia.

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## KEYWORDS

health inequities, nutrition, place-based research, rural health

## 1 | NUTRITION AND RURAL HEALTH INEQUITIES IN AUSTRALIA

Over one in four Australians (28%) live outside of a major city.<sup>1</sup> This population experiences unequal health compared to their metropolitan counterparts, including higher rates of nutrition-related disease such as cardiovascular disease, obesity and diabetes.<sup>2,3</sup> Action is urgently needed to address health in non-metropolitan areas to prevent widening of existing inequities.<sup>2,3</sup> Clear evidence exists that demonstrates the role good nutrition plays in location-based health gaps within Australia.<sup>4,5</sup> More recent evidence also recognises the important role that place-based dietitians, nutritionists and researchers have in addressing this issue<sup>5</sup> due to the ability to apply contextual knowledge to research and translation. However, the recognition has not yet translated to real life practice.

Despite the opportunity to address the health of rural Australians through better nutrition, alarmingly low investment in nutrition and dietetics research has occurred over the past decade.<sup>6</sup> Importantly, research on 'vulnerable populations', such as those living outside of metropolitan areas, is considered by nutrition and dietetic leaders to be a key priority area for the next decade.<sup>7</sup> In this article, we summarise key evidence from Australian rural nutrition research and provide recommendations for future research with rural communities. It is critical that future opportunities are maximised in these low-resourced areas to increase the likelihood of improving nutrition-related rural health issues both now and into the future. The term 'rural' refers to areas defined as Modified Monash Areas 3–5.<sup>8</sup> Over the past decade, there has been an advancement in knowledge around the role of nutrition in the health gaps observed between metropolitan and rural Australia.<sup>5,9</sup> For example, up to 38% of the gap in cardiovascular disease mortality between rural and metropolitan areas could be reduced if modifiable risk factors, such as fruit and vegetable intake, could be improved.<sup>4,5</sup>

## 2 | EVIDENCE ON KEY GAPS IN RURAL NUTRITION RESEARCH

In this commentary paper, we have synthesised recent systematic reviews to analyse key gaps in rural nutrition research in Australia, to enable evidence-informed recommendations for future nutrition and dietetics research in

rural areas. These reviews published between 2020 and 2023 (including 94 unique studies) together, highlight significant gaps in rural nutrition and dietetics research to date in Australia and generate extensive data to inform considerations for future research.<sup>4,6,10–13</sup> Specifically, there has been a lack of dietary intervention research in rural Australian communities<sup>11</sup> or in rural communities globally,<sup>14</sup> incomplete dietary intake data collected in these populations, a lack of exploration on how environmental sustainability could impact rural nutrition, as well as an under-utilisation of rural dietitians in this research.<sup>11,12</sup> Further, minimal food environment interventions specific to rural areas have been conducted either in Australia or globally<sup>15</sup> despite the evidence that rural food environments are less healthy and have minimal promotion of healthy foods.<sup>16,17</sup> Rural areas can experience significant issues that compromise food security, such as poor physical and financial access to food, and the relatively lower availability and higher cost of healthy food.<sup>13,17</sup> Consequently, the prevalence of food insecurity is higher in rural areas,<sup>13,18–20</sup> with this disparity exacerbated through 'shocks' to food supply systems caused by crises like pandemics or disasters impacting environmental sustainability.<sup>21</sup> As such, there is growing support from rural dwelling Australians for initiatives to address local food supply systems and nutrition-related interventions in rural areas.<sup>22</sup>

The lack of involvement of place-based nutrition and dietetics experts in rural research,<sup>6,11,12</sup> along with significant gaps in our knowledge around rural-specific solutions, has been identified as a major factor that limits progress in addressing the rural health gaps attributable to poor dietary intake in Australia.<sup>9,11,12,15</sup> For example, substantial opportunities have been lost, where dietary intake data have been collected from rural populations but has not been presented separately from metropolitan data. This means that new knowledge is lost for these communities of high need and we do not have nutrition-related knowledge to inform concerted efforts to improve the health of these communities and reduce preventable disease.<sup>11,12</sup>

Evidence from the reviews suggests that the expertise and capacity of rural dietitians and nutritionists needs to be fully harnessed to best address the nutrition-related health issues in rural areas.<sup>4,5,7,9,11,15</sup> Building local research capacity is recognised as an important factor in improving rural health broadly,<sup>23–27</sup> and evidence illuminates the opportunity available to build on nutrition research capacity in rural Australia<sup>28</sup> particularly through rural-based University Departments of

Rural Health. An important next step is to build local nutrition and dietetics research capacity, which will lead to place-based solutions for addressing the diet-related health inequalities in rural Australia. Further, recognition from multidisciplinary teams around the important role and expertise of nutrition and dietetics is needed to ensure opportunities to collect dietary data in rural areas are maximised.

### 3 | THE OPPORTUNITY AND RECOMMENDATIONS FOR STRENGTHENING THE FUTURE OF RURAL NUTRITION RESEARCH

Given the scarcity of nutrition-related research funding<sup>6</sup> and the limited involvement of dietitians and nutritionists in rural Australia,<sup>11,12</sup> it is essential that nutrition and dietetics form strong collaborations in rural and remote areas, and align with rural research agendas (see

Figure 1). Collaborations between rural nutrition and dietetics professionals and nutrition researchers will ensure research is strategic and consistent, maximise the generation of evidence and inform advocacy to highlight nutrition issues unique to rural communities. It is widely acknowledged by rural health leaders such as Australian health policy-makers,<sup>29,30</sup> and the Office of the National Rural Health Commissioner,<sup>31</sup> that place-based researchers are a priority in rural areas, and nutrition and dietetics researchers need to be driving research agendas that are responsive to local issues. Involvement of place-based and rural dietitians and nutritionists in research that contains data from rural areas may prevent 'data wastage' (i.e. where rural data are pooled with metro data), and assists in ensuring the rural population benefits from the research, even if it is also focussed on metropolitan populations. At a minimum, these data could be fed back to local governments, rural health services and the community to inform translation and evidence informed change on the ground.

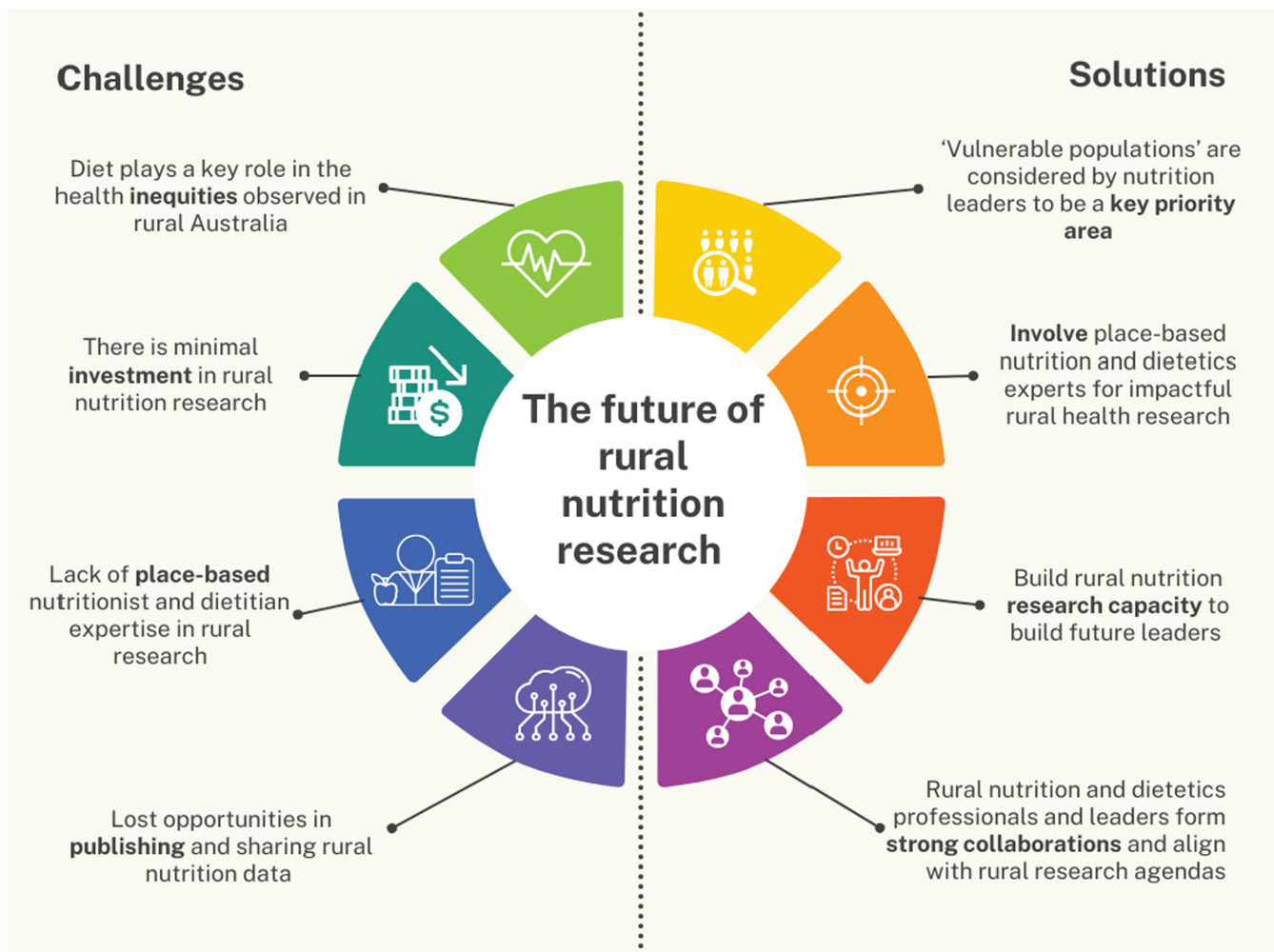


FIGURE 1 Challenges and solutions for the future of rural nutrition research.

Further, we need advancements in science beyond applying metropolitan-based tools to rural areas, which are often unsuitable for rural contexts.<sup>12</sup> This has not served rural areas, evident in the persistent health inequalities we observe. It is well documented that rural areas differ in characteristics, age profiles, geography, physical environments, health service access and literacy,<sup>2</sup> and the development of rural specific tools is urgently needed, especially for dietary intake data<sup>12</sup> and the assessment of food environments.<sup>15,16</sup> A review from 2019 also showed that pre-existing metro-centric tools are not valid in rural settings.<sup>32</sup>

Despite the clear evidence on the role improved nutrition plays in the health of rural communities, and the potential of nutrition and dietetics professionals to have high impact; there has been minimal investment in this area of research. Establishing strong, collaborative place-based research teams are necessary to combat the significant gaps in the scientific knowledge of solutions to address this. It is time that policy-makers, academics and other health disciplines recognise that dieticians and nutritionists who live in and understand the rural contexts have the best chance of successfully addressing the nutrition-related disease disparity in their communities. This will ultimately assist with improving rural health outcomes.

#### AUTHOR CONTRIBUTIONS

**Laura Alston:** Conceptualization; formal analysis; methodology; investigation; writing – review and editing; writing – original draft. **Susan Heaney:** Conceptualization; writing – original draft; writing – review and editing; methodology. **Katherine Kent:** Conceptualization; writing – original draft; writing – review and editing; methodology. **Stephanie Godrich:** Conceptualization; methodology; writing – review and editing; writing – original draft. **Lucy Kocanda:** Conceptualization; methodology; writing – review and editing; writing – original draft. **Jaimee Herbert Bch:** Conceptualization; methodology; writing – review and editing; writing – original draft. **Tracy Schumacher:** Conceptualization; methodology; writing – review and editing; writing – original draft. **Leanne J. Brown:** Conceptualization; methodology; writing – review and editing; writing – original draft.

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#### CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interests.

#### ETHICS STATEMENT

None.

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