

# BMJ Open Approaches to the development of new mental well-being screening tools for Indigenous peoples: a systematic mixed studies review protocol

Kathryn Meldrum <sup>1</sup>, Ellaina Andersson,<sup>1</sup> Valda Wallace,<sup>1</sup> Torres Webb,<sup>1</sup> Rachel Quigley <sup>1</sup>, Edward Strivens <sup>1,2</sup>, Sarah Russell <sup>1</sup>

**To cite:** Meldrum K, Andersson E, Wallace V, *et al.* Approaches to the development of new mental well-being screening tools for Indigenous peoples: a systematic mixed studies review protocol. *BMJ Open* 2022;**12**:e063710. doi:10.1136/bmjopen-2022-063710

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2022-063710>).

Received 10 April 2022  
Accepted 29 July 2022



© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

<sup>1</sup>College of Medicine and Dentistry, James Cook University, Cairns, Queensland, Australia

<sup>2</sup>Queensland Health, Cairns and Hinterland Hospital and Health Service, Cairns, Queensland, Australia

## Correspondence to

Dr Kathryn Meldrum;  
[kathryn.meldrum@jcu.edu.au](mailto:kathryn.meldrum@jcu.edu.au)

## ABSTRACT

**Introduction** Indigenous peoples' world views are intricately interrelated and interconnected with those of their communities and the environments where they live. Consequently, Indigenous peoples have a holistic view of their health, which contrasts with the dominant Western biomedical paradigm. However, the mental well-being of Indigenous peoples is predominately screened using tools developed using the Western paradigm that may not be culturally appropriate. The objective of this systematic mixed studies review (SMSR) is to assess the extent of the literature related to approaches used to develop new tools to screen the mental well-being of Indigenous adults.

**Methods and analysis** This SMSR will be conducted in accordance with the method proposed by Pluye *et al.* It will include studies that describe the development of any type of tool or approach to screen for mental well-being in Indigenous adults, globally. Searches will be limited to the English language and literature published since January 2000. Databases to be searched include: CINAHL, Medline, PsycINFO, PubMed and Scopus. Only published studies will be included in the SMSR. Data that answers the research questions will be extracted from the literature and recorded on the associated data charting form. A sequential synthesis method will be used to analyse data from qualitative, quantitative and mixed-method studies. Data will be presented graphically, diagrammatically or in tabular form depending on what approach best conveys its meaning.

**Ethics and dissemination** The SMSR will describe the approach to developing new tools for screening the mental well-being of Indigenous peoples across the globe. It will support researchers, clinicians and practitioners to consider both their approach to new tool development or, if they are using a previously developed tool, how reliable and valid it is for the population that they intend to use it with. Peer-reviewed publications will be used to disseminate SMSR findings.

## INTRODUCTION

Descendants of original populations who inhabited a country or region prior to colonisation are Indigenous peoples.<sup>1</sup> 'Indigenous' is a widely used term, although many Indigenous peoples use alternate terms that

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This will be the first systematic mixed studies review (SMSR) that describes approaches to the development of new tools used to screen mental well-being of Indigenous peoples globally.
- ⇒ The identification and analysis of data will cover a broad range of health and psychology databases and citation searches.
- ⇒ Data collection will be limited to English-language publications, which will mean that studies written in other languages will not be part of the SMSR dataset.

are often interchangeable.<sup>1</sup> For example, in Aotearoa New Zealand, Māori,<sup>2,3</sup> in Canada, First Nations,<sup>1,4</sup> Métis and Inuit,<sup>4</sup> in the USA, American Indian or Alaskan Native,<sup>5</sup> in the Scandinavian countries, Sámi,<sup>6,7</sup> and in Australia the terms First Nations or Australian Aboriginal and Torres Strait Islander peoples are used. For the purposes of this protocol and the subsequent systematic mixed studies review (SMSR), the term Indigenous will be respectfully adopted to be inclusive of global populations who identify as being traditional custodians of lands that they lived on prior to colonisation.

## Indigenous peoples and health

Indigenous peoples have world views that are intricately interrelated and interconnected with those of their communities and the environments where they live. Concomitantly, Indigenous conceptualisations of health and well-being are holistic when compared with those of dominant western biomedical paradigm.<sup>1,8</sup> Therefore, mental, physical, psychosocial and spiritual well-being cannot be disconnected from each other.<sup>1,9</sup> The historical and continuing impact of colonialism has negatively affected Indigenous peoples' health and their health outcomes.



Despite this, Indigenous people are often positioned as in deficit.<sup>10</sup> Taking account of Indigenous people's conceptualisations of well-being and the impact of colonialism, many authors<sup>4 8 11–13</sup> have problematised the application of westernised conceptualisations of mental health to these populations.

The holistic nature of health and well-being for Indigenous peoples globally, as well as different terms used to identify it,<sup>14</sup> makes it difficult to adopt one term for this protocol and its associated SMSR. For example, social and emotional well-being is the term used by most Australian Indigenous peoples.<sup>9</sup> Indigenous Americans use wellness. Wellness encompasses mental, physical and spiritual aspects of individuals and communities.<sup>15</sup> In contrast, Indigenous Canadians use different well-being terminology dependent on their cultural affiliation.<sup>14</sup> Well-being is expressed differently, however, as a concept, it is central to all Indigenous people. Additionally, in the extant literature, the word 'mental' as in the phrase 'mental health' still appears in titles or in keyword lists. Consequently, the term mental well-being is used in this protocol. It is hoped that it encapsulates the holistic notion of well-being from an Indigenous worldview, while retaining the use of the term 'mental health', which is still dominant in the literature.

Screening tools are designed to identify signs of disturbance in people's mental well-being. These people potentially need to be referred to a doctor or psychiatrist for diagnosis and treatment.<sup>16</sup> Western (mainstream) screening tools are routinely used to screen for mental well-being in Indigenous peoples.<sup>7 17–19</sup> However, mainstream mental health screening tools may be inappropriate for use with Indigenous peoples due to different cultural conceptualisations of mental well-being and language use.<sup>8 13 20</sup> In response to this critique, researchers have been working to either adapt or develop Indigenous-specific tools. For example, the Kimberly Mums Mood Scale,<sup>21</sup> adapted PHQ9<sup>22 23</sup> and the Here and Now Aboriginal Assessment.<sup>13</sup>

### Context of protocol and SMSR

This protocol and the subsequent SMSR are situated within a broader context of a research project designed to develop culturally appropriate mental well-being screening tools and/or approach for Aboriginal and Torres Strait Islander people living in the Torres Strait and Northern Peninsula Area of the Australian mainland. In this SMSR, a tool is a questionnaire. Whereas an approach is a discussion or yarn about mental well-being. For example, the Here and Now Aboriginal Assessment.<sup>13</sup> This project builds on previous work conducted by the research team that determined the prevalence of dementia in Torres Strait communities.<sup>24 25</sup> During the dementia prevalence study, the researchers experienced difficulties with mainstream mental health screening tools used with participants.<sup>26</sup> Difficulties were related to the unfamiliar and at times, inappropriate, language used in these tools. Consequently, the focus of the SMSR is to

assess the extent of the literature related to approaches used to develop new tools to screen the mental well-being of Indigenous adults, globally.

A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews and JBI Evidence Synthesis was conducted and no current or underway systematic reviews or scoping reviews on the topic were identified. The search also located existing systematic reviews related to screening for social and emotional well-being in Indigenous adults,<sup>8</sup> cultural concepts of distress<sup>27</sup> and mental health in Indigenous populations.<sup>4 20 28–31</sup> All the systematic reviews provided useful background for the intended SMSR, however, they were limited to specific populations. For example, the reviews of Kisely *et al*,<sup>30</sup> and Le Grande *et al*<sup>8</sup> were focused on Indigenous Americans and Australians, respectively. In contrast, Bowen *et al*<sup>27</sup> focused on Indigenous people from a greater number of countries. However, their review was limited to a subsection of the population, perinatal women. Consequently, the objective of this SMSR is to assess the extent of the literature related to approaches used to develop new tools to screen the mental well-being of Indigenous adults.

### METHODS AND ANALYSIS

The proposed SMSR will be conducted in accordance with the eight-stage method proposed by Pluye *et al*.<sup>31</sup> These stages include: (1) formulate review question; (2) define eligibility criteria; (3) sources of information; (4) identify potentially relevant studies; (5) select relevant studies; (6) appraise the quality of studies; (7) extract data and (8) synthesise included studies. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines<sup>32</sup> were used to develop this protocol. The subsequent SMSR will be reported according to the PRISMA 2020 statement.<sup>33</sup> The following sections describe how the SMSR will be conducted using Pluye *et al*,<sup>31</sup> eight-stage method.

#### Stage 1: review question

The research question guiding this SMSR is: What qualitative and quantitative approaches are used to develop new tools to screen for mental well-being in Indigenous adults globally?

Related subquestions used to guide the inclusion criteria for this SMSR are:

1. What are different approaches for developing new tools?
2. How do qualitative, quantitative and mixed methods interact in the development approach?
3. Do subsequent tools demonstrate validity, reliability, clinical utility and acceptability for the population that they are being used with?
4. Is there an overarching development approach?

#### Stage 2: eligibility criteria

Cooke *et al*<sup>33</sup> proposed a framework to assist in developing the inclusion criteria for systematic reviews that

included qualitative and mixed methods studies. This framework has been chosen because qualitative, quantitative and mixed-methods studies will be included in this SMSR. In addition, studies to be included in the sample do not report the results of interventions. Consequently, the sample, phenomenon of interest, design, evaluation and research framework will be used to guide inclusion criteria and search strategy for this SMSR.

### Sample

This SMSR will include studies whose population are Indigenous adults.

### Phenomenon of interest

Studies that describe an approach to the development of any new tool used to screen mental well-being will be included in the sample.

### Design

Study designs including, but not limited to, questionnaires, focus groups, yarning circles, talking circles, interviews etc will be included in the sample.

### Evaluation

Studies that describe and/or quantify the acceptability of a new tool by Indigenous adults will be included in the sample. This also includes published evaluations and follow-up studies.

### Research type

In line with the definition of SMSR<sup>34</sup> studies that use qualitative, quantitative and/or mixed methods will be included in the sample.

### Stage 3: information sources

As previously outlined, this SMSR will consider both experimental and quasi-experimental study designs using quantitative, qualitative, or mixed methods. Critical reviews, literature reviews and systematic reviews will not be included in the sample. However, their reference lists will be reviewed for relevant primary data sources.

Inclusion criteria in order of priority will be:

1. Published literature focused on approaches to developing new mental well-being screening tools used with Indigenous adult populations.
2. Identifies how the tool was developed.
3. Uses primary data sources.
4. Tool developed for use in any setting (acute, primary healthcare, community).
5. Constitutes a complete paper (not an abstract).

### Stage 4: identify potentially relevant studies

The search strategy will aim to locate published studies. An initial limited search of MEDLINE (Ovid) and CINAHL was undertaken to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop a full search strategy tailored to each information source. A pilot search strategy is

illustrated in online supplement appendix A. This stage will be supported by a subject-specific liaison librarian. The reference lists of all included sources of evidence will be screened for additional studies. Additionally, the references list of systematic reviews on the same or similar topic will be scrutinised for appropriate papers, reports or other data sources.

Studies published in the English language and available since the year 2000 to present will be included in the data set. Studies published in English will be sourced because it is the first language of the authors conducting the searches and screening the data set. Literature since 2000 will be used because, prior to 2000 the development of new tools for screening mental well-being were not prominent in the literature.

The databases to be searched include: CINAHL, Embase, Emcare; HealthInfoNet, Informit, Medline (Ovid), PsycINFO, PubMed (Ovid) and Scopus.

### Stage 5: select relevant studies

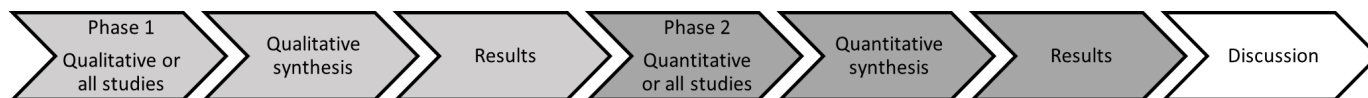
At the commencement of stage 5, all identified citations will be collated and uploaded into EndNote (V.20.1) and data will be subsequently managed according to the method proposed by Peters.<sup>35</sup> Potential records will be screened by two independent reviewers for assessment against the inclusion criteria for the review. Potentially relevant sources will be retrieved in full and subsequently assessed against the inclusion criteria by two independent reviewers.<sup>36</sup> Reasons for exclusion of sources of evidence at full text that do not meet the inclusion criteria will be recorded and reported in the SMSR. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion. Where agreement cannot be achieved through discussion an additional reviewer/s will be asked to review the source. The results of the search and the study inclusion process will be reported in full in the final SMSR and presented in a PRISMA flow diagram.<sup>37</sup>

### Stage 6: appraise study quality

The Mixed-Methods Appraisal tool (MMAT)<sup>38</sup> will be used to assess the quality of included studies. The MMAT has been developed, reliability tested and validated for the quality appraisal of SMSR.<sup>34 36 38</sup> However, according to the method proposed by Pluye *et al.*,<sup>36</sup> studies will not be excluded from the review based on the quality threshold. Where studies are of low quality, they will be highlighted at the data extraction and analysis phases.

### Stage 7: extract data

Data will be extracted from sources included in the SMSR by two independent reviewers using a data extraction tool developed by them. Data extracted from sources will include specific information about the study methods and key findings relevant to the review objective and questions. For example, the initial SMSR data extraction table includes the following headings:



**Figure 1** Sequential synthesis design for this systematic mixed studies review (adapted from Hong *et al* (p9)).<sup>39</sup>

1. Author(s) (including identifying authors that identify as Indigenous peoples).
2. Title.
3. Year of publication.
4. Origin/country of origin (where the source was conducted).
5. Context.
6. Aims/purpose.
7. Population and sample size within the source of evidence (if applicable).
8. Research type.
9. Study design (describe process, including tools used, acknowledged limitations (if any)).
10. Evaluation of clinical utility conducted.
11. Key findings that relate to the review questions.
12. Reviewer comment(s).

However, additional categories may be added as the sources are reviewed. Modifications will be detailed in the SMSR. Any disagreements will be managed in the manner previously discussed. If appropriate, authors of papers will be contacted to request missing or additional data, where required.

### Stage 8: synthesise included studies

A sequential exploratory design will guide the data analysis for this SMSR.<sup>34 39</sup> Consequently, in phase 1 of data analysis, a synthesis of qualitative studies or all study types will be conducted using a quantitative design. This will entail a thematic analysis<sup>40</sup> of approaches to the development, validation, reliability, sensitivity and specificity testing of all new mental well-being screening tools. In phase 2 of data analysis, quantitative analysis of quantitative study designs, or all study designs will be conducted using content analysis.<sup>41</sup> Specifically, quantitative data associated with the approaches to validation, reliability, sensitivity and specificity testing of new mental well-being screening tools will be analysed. Subsequently, data synthesis will be undertaken using a sequential synthesis method<sup>39</sup> as illustrated in [figure 1](#).

Data will be presented graphically, diagrammatically or in tabular form depending on what approach best conveys its meaning. For example, geographically mapping sites where data were collected with Indigenous populations on a world map conveys greater meaning than tabulating it. A narrative summary will accompany the tabulated and/or charted results and will describe how the results relate to the reviews objective and question/s.

### Patient and public involvement

This is an SMSR which will inform participant participation in the subsequent study.

### ETHICS AND DISSEMINATION

This SMSR will assess the extent of the literature related to approaches used to develop new tools to screen the mental well-being of Indigenous adults, globally. Consequently, the findings will be of interest to all stakeholders, especially those who routinely screen mental well-being of Indigenous peoples in acute, primary care or community settings. Issues related to different approaches to tool development and whether they are ethically and culturally appropriate for Indigenous peoples will also be discussed. The researchers intend to disseminate the findings of the SMSR in a relevant peer-reviewed journal. It is hoped that its publication will support researchers, clinicians and practitioners to consider both their approach to new tool development or, if they are using a previously developed tool, how reliable and valid it is for the population that they intend to use it with. Finally, ethical approval is not necessary for this study as it will use publicly available published literature.

**Acknowledgements** Janet Caterall Subject-specific Liaison Librarian.

**Contributors** KM, EA and SR designed the protocol. KM drafted the manuscript. KM, EA, SR, VW, TW, RQ and ES reviewed and approved the final manuscript.

**Funding** This work is supported by the Ian Potter Foundation grant number 31110728. The Ian Potter Foundation grant funds the first author's position.

**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

**Patient consent for publication** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Supplemental material** This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

**Author note** Valda Wallace and Torres Webb are identify as Indigenous Australians.

### ORCID iDs

Kathryn Meldrum <http://orcid.org/0000-0003-1846-1596>  
 Rachel Quigley <http://orcid.org/0000-0002-9943-9384>  
 Edward Strivens <http://orcid.org/0000-0002-7260-508X>  
 Sarah Russell <http://orcid.org/0000-0003-2845-5990>

## REFERENCES

- 1 Wilson K, Richmond C. Indigenous Health and Medicine. In: Kitchin R, Thrift N, eds. *International encyclopedia of human geography*. Oxford, UK: Elsevier, 2009: 365–70.
- 2 Bush A, Campbell W, Ransfield M. Te Ara Waiora a Tāne: a kaupapa Māori mental-health assessment and intervention planning approach. *Australas Psychiatry* 2019;27:337–40.
- 3 Harwood M, Weatherall M, Talemaitoga A, et al. An assessment of the Hua Oranga outcome instrument and comparison to other outcome measures in an intervention study with Maori and Pacific people following stroke. *N Z Med J* 2012;125:57–67.
- 4 Nelson SE, Wilson K. The mental health of Indigenous peoples in Canada: a critical review of research. *Soc Sci Med* 2017;176:93–112.
- 5 Hodge FS, Nandy K. Predictors of wellness and American Indians. *J Health Care Poor Underserved* 2011;22:791–803.
- 6 Sørly R, Mathisen V, Kvernmo S. “We belong to nature”: Communicating mental health in an indigenous context. *Qual Soc Work* 2021;20:1280–96.
- 7 Sørli T, Hansen KL, Friberg O. Do Norwegian SAMI and non-Indigenous individuals understand questions about mental health similarly? A SAMINOR 2 study. *Int J Circumpolar Health* 2018;77:1481325.
- 8 Le Grande M, Ski CF, Thompson DR, et al. Social and emotional wellbeing assessment instruments for use with Indigenous Australians: a critical review. *Soc Sci Med* 2017;187:164–73.
- 9 Dudgeon P, Bray A, D'costa B, et al. Decolonising psychology: validating social and emotional wellbeing. *Aust Psychol* 2017;52:316–25.
- 10 Fogarty W, Lovell M, Langenberg J. Deficit discourse and strengths-based approaches. In: *Changing the narrative of Aboriginal and Torres Strait Islander health and wellbeing*. Melbourne, Victoria: The Lowitja Institute, 2018.
- 11 Brinckley M-M, Calabria B, Walker J, et al. Reliability, validity, and clinical utility of a culturally modified Kessler scale (MK-K5) in the Aboriginal and Torres Strait Islander population. *BMC Public Health* 2021;21:1–15.
- 12 Butler T, Allnutt S, Kariminia A, et al. Mental health status of Aboriginal and non-Aboriginal Australian prisoners. *Aust N Z J Psychiatry* 2007;41:429–35.
- 13 Janca A, Lyons Z, Balaratnasingam S, et al. Here and now Aboriginal assessment: background, development and preliminary evaluation of a culturally appropriate screening tool. *Australas Psychiatry* 2015;23:287–92.
- 14 Sutherland S, Adams M. Building on the definition of social and emotional wellbeing: an Indigenous (Australian, Canadian, and New Zealand) viewpoint. *abOrig* 2019;3:48–72.
- 15 Weaver HN. Perspectives on wellness: journeys on the red road. *J Soc & Soc Welfare* 2002;29:5.
- 16 Cairney J, Veldhuizen S, Wade TJ, et al. Evaluation of 2 measures of psychological distress as screeners for depression in the general population. *Can J Psychiatry* 2007;52:111–20.
- 17 Russell L. *Te Oranga Hinengaro: Report on Māori Mental Wellbeing Results from the New Zealand Mental Health Monitor & Health and Lifestyles Survey*. Wellington: NZ Health Promotion Agency, 2018.
- 18 Esler D, Johnston F, Thomas D, et al. The validity of a depression screening tool modified for use with Aboriginal and Torres Strait Islander people. *Aust N Z J Public Health* 2008;32:317–21.
- 19 Walls M, Pearson C, Kading M, et al. Psychological wellbeing in the face of adversity among American Indians: preliminary evidence of a new population health paradox? *Ann Public Health Res* 2016;3:1034.
- 20 Black EB, Ranmuthugala G, Kondalsamy-Chennakesavan S, et al. A systematic review: identifying the prevalence rates of psychiatric disorder in Australia's Indigenous populations. *Aust N Z J Psychiatry* 2015;49:412–29.
- 21 Carlin E, Atkinson D, Marley JV. 'Having a quiet word': Yarning with aboriginal women in the Pilbara region of Western Australia about mental health and mental health screening during the perinatal period. *Int J Environ Res Public Health* 2019;16. doi:10.3390/ijerph16214253. [Epub ahead of print: 01 11 2019].
- 22 Getting it Right Collaborative Group. Getting it right: validating a culturally specific screening tool for depression (aPHQ-9) in Aboriginal and Torres Strait Islander Australians. *Med J Aust* 2019;211:24–30.
- 23 Almeida OP, Flicker L, Fenner S, et al. The Kimberley assessment of depression of older Indigenous Australians: prevalence of depressive disorders, risk factors and validation of the KICA-dep scale. *PLoS One* 2014;9:e94983.
- 24 Russell SG, Quigley R, Thompson F, et al. Prevalence of dementia in the Torres Strait. *Australas J Ageing* 2021;40:e125–32.
- 25 LoGiudice D, Strivens E, Smith K, et al. The KICA screen: the psychometric properties of a shortened version of the KICA (Kimberley Indigenous cognitive assessment). *Australas J Ageing* 2011;30:215–9.
- 26 Kohrt BA, Rasmussen A, Kaiser BN, et al. Cultural concepts of distress and psychiatric disorders: literature review and research recommendations for global mental health epidemiology. *Int J Epidemiol* 2014;43:365–406.
- 27 Bowen A, Duncan V, Peacock S, et al. Mood and anxiety problems in perinatal Indigenous women in Australia, New Zealand, Canada, and the United States: a critical review of the literature. *Transcult Psychiatry* 2014;51:93–111.
- 28 Black E, Kisely S, Alichniewicz K, et al. Mood and anxiety disorders in Australia and New Zealand's Indigenous populations: a systematic review and meta-analysis. *Psychiatry Res* 2017;255:128–38.
- 29 Jorm AF, Bourchier SJ, Cvetkovski S, et al. Mental health of Indigenous Australians: a review of findings from community surveys. *Med J Aust* 2012;196:118–21.
- 30 Kisely S, Alichniewicz KK, Black EB, et al. The prevalence of depression and anxiety disorders in Indigenous people of the Americas: a systematic review and meta-analysis. *J Psychiatr Res* 2017;84:137–52.
- 31 Pluye P, Hong Q-N, Vendel I. *Toolkit for mixed studies reviews (V3)*. Montreal, Canada: McGill University, 2016. <http://toolkit4mixedstudiesreviews.pbworks.com>
- 32 Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71.
- 33 Cooke A, Smith D, Booth A. Beyond PICO: the spider tool for qualitative evidence synthesis. *Qual Health Res* 2012;22:1435–43.
- 34 Pluye P, Hong QN. Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews. *Annu Rev Public Health* 2014;35:29–45.
- 35 Peters MDJ. Managing and coding references for systematic reviews and scoping reviews in endnote. *Med Ref Serv Q* 2017;36:19–31.
- 36 Moher D, Shamseer L, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev* 2015;4:1–9.
- 37 Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA). PRISMA 2020 flow diagram, 2020. Available: <http://www.prisma-statement.org/PRISMAStatement/FlowDiagram>
- 38 et al Hong Q, Pluye P, Favre S. Mixed Methods Appraisal Tool (MMAT), 2018. Available: <http://mixedmethodsappraisaltoolpublic.pbworks.com/w/page/127425845/Download%20the%20MMAT>
- 39 Hong QN, Pluye P, Bujold M, et al. Convergent and sequential synthesis designs: implications for conducting and reporting systematic reviews of qualitative and quantitative evidence. *Syst Rev* 2017;6:1–14.
- 40 Clarke V, Braun V, Hayfield N. Thematic analysis. *Qualitative psychology: A practical guide to research methods* 2015;222:248.
- 41 Neuendorf KA. *The content analysis guidebook*. Sage, 2017.