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Keywords:	OPHTHALMOLOGY, optometry, service delivery, eye care, Indigenous peoples, Healthcare access

Eye care delivery models to improve access to eye care for Indigenous peoples in high income countries: protocol for a scoping review

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Competing Interests: None declared.

Patient and Public Involvement Statement: As this was a review of existing literature, this research was done without patient involvement.

Data sharing statement: Data generated from this review will be available upon reasonable request from Jacqueline Ramke (j.ramke@auckland.ac.nz)

Keywords: Eye care, service delivery, Indigenous peoples, healthcare access, ophthalmology, optometry

Word count: 1858

ABSTRACT

Introduction

Globally, there are an estimated 370 million Indigenous people across 90 countries. Indigenous people experience worse health compared to non-Indigenous people, including higher rates of avoidable visual impairment in some settings. A major reason for this inequality in visual impairment is differential access to eye care services. Countries such as Australia and Canada have service delivery models aimed at improving access to eye care and reducing visual impairment among Indigenous peoples. We will conduct a scoping review to identify and summarise service delivery models to improve access to eye care for Indigenous peoples in high-income countries.

Methods and analysis

An information specialist will conduct searches on MEDLINE, Embase and Global Health. All databases will be searched from their inception date with no language limits used. In addition, we will search the grey literature via websites of relevant government and service provider agencies (e.g. National Aboriginal Community Controlled Health Organisation). Field experts will be contacted to identify additional articles, and reference lists of relevant articles will be searched. All quantitative and qualitative study designs will be eligible if they describe a model of eye care service delivery aimed at Indigenous populations. Two reviewers will independently screen titles, abstracts, and full-text articles; and complete data extraction. For each service delivery model, we will extract data on the context, inputs, outputs, Indigenous engagement and enabling health system functions. Where models were evaluated, we will extract details. We will summarise findings using descriptive statistics and thematic analysis.

Ethics and dissemination

Ethical approval is not required, as our review will only include published and publicly accessible data. This review is part of a project to improve access to eye care services for Māori in Aotearoa New Zealand. The findings will be useful to policymakers, health service managers and clinicians responsible for eye care services in New Zealand, as well as in other high-income countries with Indigenous populations. We will publish our findings in a peer-reviewed journal and develop an accessible summary of the results for website posting and stakeholder meetings.

Article Summary

Strengths and Limitations

- This study will be the first to provide a comprehensive overview and description of service delivery models to improve access to eye care for Indigenous peoples in high-income countries.
- The review will be comprehensive, including published and grey literature of all study designs, without time period or language restrictions.
- A potential limitation could be the small number of articles in the literature, particularly those that assess effectiveness of the service delivery models.

INTRODUCTION

Rationale

In 2009, there were an estimated 370 million Indigenous people living in 90 countries.[1] Historically, many Indigenous peoples have borne both colonization and assimilation polices, and today, throughout the world, Indigenous peoples continue to be marginalised due to contemporary colonialism and institutionalised racism. Consequently, Indigenous people tend to die younger than non-Indigenous people, and disproportionately experience poverty and poor health.[2]

Indigenous peoples face a range of barriers to accessing health care. These barriers include a lack of facilities in or near Indigenous communities, cultural and language differences with health care providers, marginalisation leading to reduced engagement with non-Indigenous services, and financial barriers.[3] In 2015, the United Nations Permanent Forum on Indigenous Issues (UNPFII) reiterated the need for models of care that ensure health care services are culturally, linguistically and geographically appropriate for Indigenous peoples.[3] The UNFPII report also outlined the need for participation by Indigenous peoples in the design and implementation of health policies and programs so that all people are able to exercise their right to receive good health care and achieve equitable health outcomes.[3]

The barriers to health care outlined above apply to Indigenous people in need of eye care services. Surveys of blindness and visual impairment rarely report information on indigeneity—a recent systematic review identified 19 studies from 12 countries that compared visual impairment in Indigenous and non-Indigenous people (in Australia, New Zealand, Canada, United States, Brazil, Mexico, Paraguay, Ecuador, Fiji, Malaysia, Egypt and Kenya). The studies were heterogeneous in relation to participant age groups, visual acuity assessment and methodological rigour, but a common finding was that a high proportion of vision loss experienced by Indigenous people was due to avoidable causes of cataract and uncorrected refractive error.[4] In Australia, researchers attribute the worse eye health among Indigenous people to their reduced access to eye care—particularly spectacles and cataract surgery—compared to the non-Indigenous population.[5,6] Several studies have described service delivery models to improve access to eye services for Indigenous peoples,[7,8,9] but no synthesis of these different models has yet been carried out.

The aim of this scoping review is to summarise the nature and extent of the existing literature on service delivery models to improve access to eye care for Indigenous peoples in high-income countries. We chose to undertake a scoping review rather than an alternative evidence synthesis approach because this topic has not previously been explored and we wished to identify and map the available evidence, which we anticipate will be heterogeneous.[10,11–14] We chose to limit the review to high-income countries because findings from the review will inform a project to improve access to eye care services for Māori in Aotearoa New Zealand. Therefore, evidence from high-income countries will be most relevant to translate to the New Zealand health system context.

Definitions

Indigenous peoples are defined by the United Nations Permanent Forum on Indigenous Issues by the following criteria:[15]

1. self-identification as Indigenous peoples by individuals and acceptance as such by their community;
2. historical continuity and land occupation before invasion and colonization;
3. strong links to territories including land and water and related natural resources;
4. distinct social, economic or political systems;
5. distinct language, culture, religion, ceremonies and beliefs;
6. tendency to form nondominant groups of society;
7. resolution to maintain and reproduce ancestral environments and systems as distinct peoples and communities; and
8. tendency to manage their own affairs separate from centralized state authorities.

For this review we will include all studies reporting findings for Indigenous populations regardless of the definition used, as long as none of the eight elements above are contradicted.

We have defined *eye care service delivery models* as any organised programme designed to provide or improve eye care services, ranging from non-specialised primary health care to tertiary ophthalmic care. Delivery models are used to ensure services can reach all peoples, or to establish bespoke services to overcome existing barriers to access.

Our review will be guided by the conceptual framework of health care *access* outlined by Levesque et al.[16] (reproduced in Figure 1). The authors describe access as "the opportunity to reach and obtain appropriate health care services in situations of perceived need for care", and the framework emphasises the importance of considering access from the perspective of both patients (demand side) and health services (supply side). In the framework, health service access is described by five dimensions—acceptability, accessibility, availability, affordability and appropriateness. These five dimensions interact with the corresponding abilities of the population to interact with health services i.e. ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage.

Figure 1: A Conceptual framework for access to healthcare reproduced from Levesque et al[16]

METHODS AND ANALYSIS

This protocol for this scoping review is reported according to the relevant sections of the PRISMA-ScR guidelines[8].

Scoping review questions

We aim to answer the following questions:

1. What service delivery models to improve access to eye care for Indigenous populations in high-income countries have been described in the published or grey literature?
2. What service delivery models to improve access to eye care for Indigenous populations in high-income countries have been evaluated in the published or grey literature?
3. For each model found in questions 1 and 2 above,
    - What is the context in which the model is implemented? (e.g. target population and distribution, geographic area, health practitioner availability and distribution);
    - What is the nature and extent of Indigenous engagement and leadership during development and implementation? (e.g. use of a rights-based approach, level of Indigenous peoples decision-making and input);
    - What service inputs were modified in the model? (e.g. human resources, medicines, surgeries, spectacles, facilities/location, ophthalmic equipment);
    - What were the enabling health system functions? (e.g. financing, governance, monitoring and evaluation, demand generation);
    - What access dimensions from the Levesque access model (Figure 1) were addressed? (both demand and supply side);
    - What were the service outputs? (e.g. number of consultations, number of spectacles dispensed, number of surgeries performed);
    - In cases where the model was evaluated:
        - How was it evaluated?
        - What was the effect on access?

Eligibility criteria

This scoping review will include primary research studies describing eye care service delivery models to improve access for Indigenous peoples according to the definitions outlined above. The review will include qualitative, quantitative and mixed methods studies of all study designs. There will no time limit on publication dates and no language limitations. Studies will be limited to those taking place in high-income countries as defined by the World Bank.[17] Only studies where the full text is available will be included.

Search strategy

We will search MEDLINE, Embase and Global Health using search strategies developed by Cochrane Eyes and Vision's Information Specialist (IG). The search strategies for all databases are included in the Appendix. All databases will be searched from their inception date and no language limits will be used. We will examine reference lists of all includable articles to identify further potentially relevant reports of studies. In addition, we will search the grey literature via websites of relevant government and service provider agencies (e.g. National Aboriginal Community Controlled Health Organisation). Field experts will be contacted to identify additional articles.

Study selection

Two reviewers (two of HB, JR, JB, LH or AB) will independently screen the titles and abstracts of identified studies to exclude publications that clearly do not meet the inclusion criteria. The full text article will be retrieved for review if the citation seems potentially relevant and two of these reviewers will independently assess each article against the inclusion and exclusion criteria. Any discrepancies between the reviewers will be resolved by discussion, and a third reviewer will be consulted if necessary. A PRISMA flow diagram will be completed to summarise the study selection process.

Data charting

A custom form will be developed in Excel for data charting. The form will be piloted on five studies by each of HB, JR, JB, LH and AB, and required amendments agreed by consensus. We anticipate a broad scope of included studies, so data charting will be an iterative process throughout the review and the data charting form will be amended as required. These amendments will be discussed by the reviewers and the form amended at each stage where necessary. Each included study will be charted independently by at least two reviewers. Any discrepancies between the reviewers will be resolved by discussion, and a third reviewer will be consulted if necessary.

We plan to contact study authors in the case of unclear information and will make up to three attempts by email.

Data items

The following data items will be collected during the data charting process:

1. Publication characteristics: title, year of publication, study design, country of origin, study setting;
2. Characteristics of service delivery model:
    a. Context (e.g. geographic area, target population and distribution, health practitioner availability and distribution);
    b. Indigenous engagement and leadership (e.g. nature and extent of engagement during development and implementation, use of a rights-based approach, level of Indigenous peoples decision-making and input);
    c. Inputs identified in the model (e.g. Human resources, medicines, surgeries, spectacles, facilities/location, ophthalmic equipment);
    d. Enabling health system functions (e.g. financing, governance, monitoring and evaluation, demand generation);
    e. Access dimensions from the Levesque model (fig. 1) that were addressed by the model;
3. Service outputs of the model (e.g. number of consultations, number of spectacles dispensed, number of surgeries performed);
4. If the model was evaluated, how was it evaluated and what was the effectiveness.

Data synthesis

The data will be summarised numerically using descriptive statistical methods, and qualitatively using thematic analysis. The study findings will be grouped into different types of service delivery models according to the context, inputs, health system functions, and access dimensions outlined above. This will enable us to identify themes across the included studies and summarise what service delivery models have been suggested, and where evaluated, what strengths and weaknesses have been identified.

CONCLUSION

The aim of this review is to summarise the nature and extent of the existing literature on service delivery models to improve access to eye care for Indigenous peoples in high-income countries. To our knowledge, there has been no previous synthesis of this literature. This review is part of a project to improve access to eye care services for Māori in Aotearoa New Zealand. We will use the findings in a Delphi process involving Māori eye care service users, policymakers, health service managers and clinicians to identify the most promising strategies to improve access to eye care services for Māori. In subsequent research we intend on implementing and assessing the effectiveness of the prioritised strategy. Beyond New Zealand, we believe the findings of this review will be useful to policymakers, health service managers and clinicians responsible for eye care services in other countries with Indigenous populations.

Ethics and dissemination

Ethical approval is not required, as our review will only include published and publicly accessible data. We will publish our findings in an open-access, peer-reviewed journal and develop an accessible summary of the results for website posting and stakeholder meetings. Data generated from this review will be made available upon reasonable request.

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Appendix: Search strategy

MEDLINE (Ovid)

1. exp Ophthalmology/
2. exp Eye Diseases/
3. (trachoma$ or tracoma$ or trichiasis).tw.
4. (cataract$ or phaco$ or phako$).tw.
5. ((diabet$ or proliferat$) adj3 retinopath$).tw.
6. (keratoconus or ectasia).tw.
7. (amblyop$ or strabismus).tw.
8. exp Vision Tests/
9. Optometry/
10. (myop$ or hyperop$ or hypermetrop$ or anisometrop$ or ammetrop$ or astigmati$ or presbyop$).tw.
11. (refractive adj1 error$).tw.
12. Eyeglasses/
13. (spectacle or spectacles or glasses).tw.
14. (eyeglasses or eye glasses).tw.
15. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 exam$).tw.
16. ((eye$ or vision or visual$ or retinopathy or ophthalm$) adj2 assess$).tw.
17. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 test$).tw.
18. (eye$ adj2 (care or health or service$)).tw.
19. ((eye$ or vision or visual$) adj5 (culture$ or cultural$ or inequalit$ or inequit$ or disparit$ or equit$ or disadvantage$ or depriv$ or marginali$ or minorit$)).tw.
20. or/1-19
21. HEALTH SERVICES, INDIGENOUS/
22. OCEANIC ANCESTRY GROUP/
23. Indigenous.tw.
24. Aborigin$.tw.
25. ATSI.tw.
26. Torres Strait Islander.tw.
27. ((first or native) adj1 people).tw.
28. (pacific adj2 island$).tw.
29. Maori$.tw.
30. Polynesian$.tw.
31. Hawaiian.tw.
32. (Oceanic adj2 ancest$).tw.
33. american native continental ancestry group/
34. ((American or native$) adj2 Indian$).tw.
35. (native adj2 Alaska$).tw.
36. inuits/
37. (Inuit$ or Aleut$ or Eskimo$ or Inupiat$ or Kalaallit$ or Metis$).tw.
38. (first adj1 (nation or nations)).tw.
39. or/21-38
40. 20 and 39
41. (Indigenous adj3 (plant$ or flora or tree$ or material$ or equip$ or product$ or produce$ or bateria$ or infect$)).tw.

42. (gene or genes or genotyp$ or mutation$ or sequenc$).tw.
43. ROP.tw.
44. chlamydia.tw.
45. or/41-44
46. 40 not 45
47. exp case reports/
48. (case adj1 report$).tw.
49. 47 or 48
50. 46 not 49

Embase (Ovid)

1. ophthalmology/
2. exp eye disease/
3. (trachoma$ or tracoma$ or trichiasis).tw.
4. (cataract$ or phaco$ or phako$).tw.
5. ((diabet$ or proliferat$) adj3 retinopath$).tw.
6. (keratoconus or ectasia).tw.
7. (amblyop$ or strabismus).tw.
8. vision test/
9. visual system examination/
10. optometry/
11. (myop$ or hyperop$ or hypermetrop$ or anisometrop$ or ammetrop$ or astigmati$ or presbyop$).tw.
12. (refractive adj1 error$).tw.
13. spectacles/
14. (spectacle or spectacles or glasses).tw.
15. (eyeglasses or eye glasses).tw.
16. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 exam$).tw.
17. ((eye$ or vision or visual$ or retinopathy or ophthalm$) adj2 assess$).tw.
18. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 test$).tw.
19. (eye$ adj2 (care or health or service$)).tw.
20. ((eye$ or vision or visual$) adj5 (culture$ or cultural$ or inequalit$ or inequit$ or disparit$ or equit$ or disadvantage$ or depriv$ or marginali$ or minorit$)).tw.
21. or/1-20
22. indigenous health care/
23. transcultural care/
24. indigenous people/
25. Oceanic ancestry group/
26. Indigenous.tw.
27. Aborigin$.tw.
28. ATSI.tw.
29. Torres Strait Islander.tw.
30. ((first or native) adj1 people).tw.
31. (pacific adj2 island$).tw.
32. Maori$.tw.
33. Polynesian$.tw.

34. Hawaiian.tw.
35. (Oceanic adj2 ancest$).tw.
36. american native continental ancestry group/
37. ((American or native$) adj2 Indian$).tw.
38. (native adj2 Alaska$).tw.
39. exp Eskimo/
40. (Inuit$ or Aleut$ or Eskimo$ or Inupiat$ or Kalaallit$ or Metis$).tw.
41. (first adj1 (nation or nations)).tw.
42. or/22-41
43. 21 and 42
44. (Indigenous adj3 (plant$ or flora or tree$ or material$ or equip$ or product$ or produce$ or bateria$ or infect$)).tw.
45. (gene or genes or genotyp$ or mutation$ or sequenc$).tw.
46. ROP.tw.
47. chlamydia.tw.
48. or/44-47
49. 43 not 48
50. exp case report/
51. (case adj1 report$).tw.
52. 50 or 51
53. 49 not 52

Global Health (Ovid)

1. eyes/
2. eye diseases/
3. vision/
4. vision disorders/
5. (trachoma$ or tracoma$ or trichiasis).tw.
6. (cataract$ or phaco$ or phako$).tw.
7. ((diabet$ or proliferat$) adj3 retinopath$).tw.
8. (keratoconus or ectasia).tw.
9. (amblyop$ or strabismus).tw.
10. (myop$ or hyperop$ or hypermetrop$ or anisometrop$ or ammetrop$ or astigmati$ or presbyop$).tw.
11. (refractive adj1 error$).tw.
12. (spectacle or spectacles or glasses).tw.
13. (eyeglasses or eye glasses).tw.
14. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 exam$).tw.
15. ((eye$ or vision or visual$ or retinopathy or ophthalm$) adj2 assess$).tw.
16. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 test$).tw.
17. (eye$ adj2 (care or health or service$)).tw.
18. ((eye$ or vision or visual$) adj5 (culture$ or cultural$ or inequalit$ or inequit$ or disparit$ or equit$ or disadvantage$ or depriv$ or marginali$ or minorit$)).tw.
19. or/1-18
20. indigenous people/
21. aborigines/ or alaska natives/ or american indians/ or inuit/ or pacific islanders/

22. Indigenous.tw.
23. Aborigin$.tw.
24. ATSI.tw.
25. Torres Strait Islander.tw.
26. ((first or native) adj1 people).tw.
27. (pacific adj2 island$).tw.
28. Maori$.tw.
29. Polynesian$.tw.
30. Hawaiian.tw.
31. (Oceanic adj2 ancest$).tw.
32. exp Oceania/
33. ((American or native$) adj2 Indian$).tw.
34. (native adj2 Alaska$).tw.
35. Pacific Islands/
36. (Inuit$ or Aleut$ or Eskimo$ or Inupiat$ or Kalaallit$ or Metis$).tw.
37. (first adj1 (nation or nations)).tw.
38. or/20-37
39. (Indigenous adj3 (plant$ or flora or tree$ or material$ or equip$ or product$ or produce$ or bateria$ or infect$)).tw.
40. (gene or genes or genotyp$ or mutation$ or sequenc$).tw.
41. ROP.tw.
42. chlamydia.tw.
43. or/39-42
44. 19 and 38
45. 44 not 43
46. man.od.
47. 45 and 46
48. animals.od.
49. birds.od.
50. plants.od.
51. or/48-50
52. 47 not 51
53. case reports/
54. (case adj1 report$).tw.
55. 53 or 54
56. 52 not 55

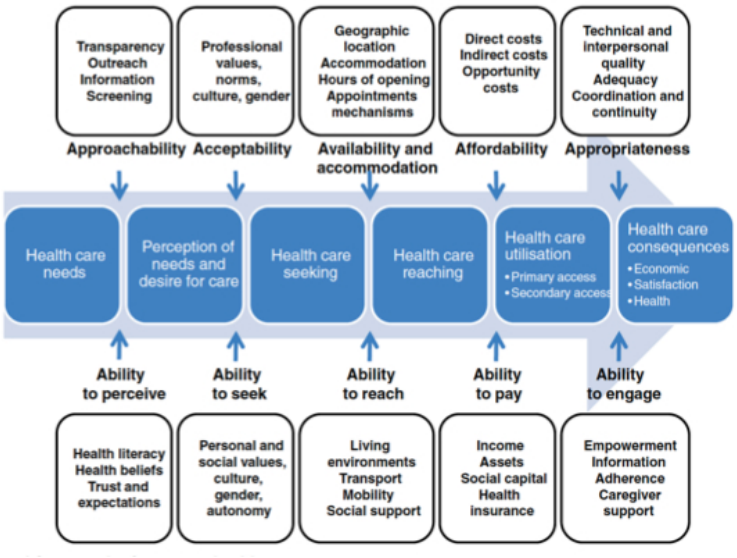

Figure 1: A Conceptual framework for access to healthcare reproduced from Levesque et al16

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	3
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	3
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	4
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	5
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	5
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	10
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	6
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	6
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	7

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Click here to enter text.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Click here to enter text.
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Click here to enter text.
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Click here to enter text.
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Click here to enter text.
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Click here to enter text.
Limitations	20	Discuss the limitations of the scoping review process.	Click here to enter text.
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	7
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	1

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med. ;169:467–473. doi: 10.7326/M18-0850

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Eye care delivery models to improve access to eye care for Indigenous peoples in high income countries: protocol for a scoping review

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Eye care delivery models to improve access to eye care for Indigenous peoples in high-income countries: protocol for a scoping review

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Competing Interests: None declared.

Patient and Public Involvement Statement: As this was a review of existing literature, this research was done without patient involvement.

Data sharing statement: Data generated from this review will be available upon reasonable request from Jacqueline Ramke (j.ramke@auckland.ac.nz)

Keywords: Eye care, service delivery, Indigenous peoples, healthcare access, ophthalmology, optometry

Word count: 1858

ABSTRACT

Introduction

Globally, there are an estimated 370 million Indigenous people across 90 countries. Indigenous people experience worse health compared to non-Indigenous people, including higher rates of avoidable visual impairment. Countries such as Australia and Canada have service delivery models aimed at improving access to eye care for Indigenous peoples. We will conduct a scoping review to identify and summarise these service delivery models to improve access to eye care for Indigenous peoples in high-income countries.

Methods and analysis

An information specialist will conduct searches on MEDLINE, Embase and Global Health. All databases will be searched from their inception date with no language limits used. We will search the grey literature via websites of relevant government and service provider agencies. Field experts will be contacted to identify additional articles, and reference lists of relevant articles will be searched. All quantitative and qualitative study designs will be eligible if they describe a model of eye care service delivery aimed at Indigenous populations. Two reviewers will independently screen titles, abstracts, and full-text articles; and complete data extraction. For each service delivery model, we will extract data on the context, inputs, outputs, Indigenous engagement and enabling health system functions. Where models were evaluated, we will extract details. We will summarise findings using descriptive statistics and thematic analysis.

Ethics and dissemination

Ethical approval is not required, as our review will include published and publicly accessible data. This review is part of a project to improve access to eye care services for Māori in Aotearoa New Zealand. The findings will be useful to policymakers, health service managers and clinicians responsible for eye care services in New Zealand, and other high-income countries with Indigenous populations. We will publish our findings in a peer-reviewed journal and develop an accessible summary of results for website posting and stakeholder meetings.

Article Summary

Strengths and Limitations

- This study will be the first to provide a comprehensive overview and description of service delivery models to improve access to eye care for Indigenous peoples in high-income countries.
- The review will be comprehensive, including published and grey literature of all study designs, without time period or language restrictions.
- A potential limitation could be the small number of articles in the literature, particularly those that assess effectiveness of the service delivery models.

INTRODUCTION

Rationale

In 2009, there were an estimated 370 million Indigenous people living in 90 countries.[1] Historically, many Indigenous peoples have borne both colonization and assimilation polices, and today, throughout the world, Indigenous peoples continue to be marginalised due to contemporary colonialism and institutionalised racism. Consequently, Indigenous people tend to die younger than non-Indigenous people, and disproportionately experience poverty and poor health.[2]

Indigenous peoples face a range of barriers to accessing health care. These barriers include a lack of facilities in or near Indigenous communities, cultural and language differences with health care providers, marginalisation leading to reduced engagement with non-Indigenous services, and financial barriers.[3] In 2015, the United Nations Permanent Forum on Indigenous Issues (UNPFII) reiterated the need for models of care that ensure health care services are culturally, linguistically and geographically appropriate for Indigenous peoples.[3] The UNFPII report also outlined the need for participation by Indigenous peoples in the design and implementation of health policies and programs so that all people are able to exercise their right to receive good health care and achieve equitable health outcomes.[3]

The barriers to health care outlined above apply to Indigenous people in need of eye care services. Surveys of blindness and visual impairment rarely report information on indigeneity—a recent systematic review identified 19 studies from 12 countries that compared visual impairment in Indigenous and non-Indigenous people (in Australia, New Zealand, Canada, United States, Brazil, Mexico, Paraguay, Ecuador, Fiji, Malaysia, Egypt and Kenya). The studies were heterogeneous in relation to participant age groups, visual acuity assessment and methodological rigour, but a common finding was that a high proportion of vision loss experienced by Indigenous people was due to avoidable causes of cataract and uncorrected refractive error.[4] In Australia, researchers attribute the worse eye health among Indigenous people to their reduced access to eye care—particularly spectacles and cataract surgery—compared to the non-Indigenous population.[5,6] Several studies have described service delivery models to improve access to eye services for Indigenous peoples,[7,8,9] but no synthesis of these different models has yet been carried out.

The aim of this scoping review is to summarise the nature and extent of the existing literature on service delivery models to improve access to eye care for Indigenous peoples in high-income countries. We chose to undertake a scoping review rather than an alternative evidence synthesis approach because this topic has not previously been explored and we wished to identify and map the available evidence, which we anticipate will be heterogeneous.[10–14] We chose to limit the review to high-income countries because findings from the review will inform a project to improve access to eye care services for Māori in Aotearoa New Zealand. Therefore, evidence from high-income countries will be most relevant to translate to the New Zealand health system context.

Definitions

Indigenous peoples are defined by the United Nations Permanent Forum on Indigenous Issues by the following criteria:[15]

1. self-identification as Indigenous peoples by individuals and acceptance as such by their community;
2. historical continuity and land occupation before invasion and colonization;
3. strong links to territories including land and water and related natural resources;
4. distinct social, economic or political systems;
5. distinct language, culture, religion, ceremonies and beliefs;
6. tendency to form nondominant groups of society;
7. resolution to maintain and reproduce ancestral environments and systems as distinct peoples and communities; and
8. tendency to manage their own affairs separate from centralized state authorities.

For this review we will include all studies reporting findings for Indigenous populations regardless of the definition used, as long as none of the eight elements above are contradicted.

We have defined *eye care service delivery models* as any organised programme designed to provide or improve eye care services, ranging from non-specialised primary health care to tertiary ophthalmic care. Delivery models are used to ensure services can reach all peoples, or to establish bespoke services to overcome existing barriers to access.

Our review will be guided by the conceptual framework of health care *access* outlined by Levesque et al.[16] (reproduced in Figure 1). The authors describe access as "the opportunity to reach and obtain appropriate health care services in situations of perceived need for care", and the framework emphasises the importance of considering access from the perspective of both patients (demand side) and health services (supply side). In the framework, health service access is described by five dimensions—acceptability, accessibility, availability, affordability and appropriateness. These five dimensions interact with the corresponding abilities of the population to interact with health services i.e. ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage.

METHODS AND ANALYSIS

This protocol for this scoping review is reported according to the relevant sections of the PRISMA-ScR guidelines[11].

Scoping review questions

We aim to answer the following questions:

1. What service delivery models to improve access to eye care for Indigenous populations in high-income countries have been described in the published or grey literature?
2. What service delivery models to improve access to eye care for Indigenous populations in high-income countries have been evaluated in the published or grey literature?
3. For each model found in questions 1 and 2 above,

- What is the context in which the model is implemented? (e.g. target population and distribution, geographic area, health practitioner availability and distribution, duration of model);
- What is the nature and extent of Indigenous engagement and leadership during development and implementation? (e.g. use of a rights-based approach, level of Indigenous peoples decision-making and input);
- What service inputs were modified in the model? (e.g. human resources [number, cadre, frequency of service], medicines, surgeries, spectacles, facilities/location, ophthalmic equipment, language of delivery [including translation if appropriate]);
- What were the enabling health system functions? (e.g. financing, governance, monitoring and evaluation, demand generation);
- What access dimensions from the Levesque access model (Figure 1) were addressed? (both demand and supply side);
- What were the service outputs? (e.g. number of consultations, number of spectacles dispensed, number of surgeries performed);
- In cases where the model was evaluated:
  - How was it evaluated?
  - What was the effect on access?

Eligibility criteria

This scoping review will include primary research studies describing eye care service delivery models to improve access for Indigenous peoples according to the definitions outlined above. The review will include qualitative, quantitative and mixed methods studies of all study designs. There will no time limit on publication dates and no language limitations. Studies will be limited to those taking place in high-income countries as defined by the World Bank.[17] Only studies where the full text is available will be included.

Search strategy

We will search MEDLINE, Embase and Global Health using search strategies developed by Cochrane Eyes and Vision's Information Specialist (IG). The search strategies for all databases are included in Supplementary File 1. All databases will be searched from their inception date and no language limits will be used. We will examine reference lists of all includable articles to identify further potentially relevant reports of studies. In addition, we will search the grey literature via websites of relevant government and service provider agencies (e.g. National Aboriginal Community Controlled Health Organisation). Field experts will be contacted to identify additional articles.

Study selection

Two reviewers (two of HB, JR, JB, LH or AB) will independently screen the titles and abstracts of identified studies to exclude publications that clearly do not meet the inclusion criteria. The full text article will be retrieved for review if the citation seems potentially relevant and two of these reviewers will independently assess each article against the inclusion and exclusion criteria. Any discrepancies

between the reviewers will be resolved by discussion, and a third reviewer will be consulted if necessary. A PRISMA flow diagram will be completed to summarise the study selection process.

Data charting

A custom form will be developed in Excel for data charting. The form will be piloted on five studies by each of HB, JR, JB, LH and AB, and required amendments agreed by consensus. We anticipate a broad scope of included studies, so data charting will be an iterative process throughout the review and the data charting form will be amended as required. These amendments will be discussed by the reviewers and the form amended at each stage where necessary. Each included study will be charted independently by at least two reviewers. Any discrepancies between the reviewers will be resolved by discussion, and a third reviewer will be consulted if necessary.

We plan to contact study authors in the case of unclear information and will make up to three attempts by email.

Data items

The following data items will be collected during the data charting process:

1. Publication characteristics: title, year of publication, study design, country of origin, study setting;
2. Characteristics of service delivery model:
    a. Context (e.g. geographic area, target population and distribution, health practitioner availability and distribution, duration of model);
    b. Indigenous engagement and leadership (e.g. nature and extent of engagement during development and implementation, use of a rights-based approach, level of Indigenous peoples decision-making and input);
    c. Inputs identified in the model (e.g. Human resources, medicines, surgeries, spectacles, facilities/location, ophthalmic equipment, language);
    d. Enabling health system functions (e.g. financing, governance, monitoring and evaluation, demand generation);
    e. Access dimensions from the Levesque model (fig. 1) that were addressed by the model;
3. Service outputs of the model (e.g. number of consultations, number of spectacles dispensed, number of surgeries performed);
4. If the model was evaluated, how was it evaluated and what was the effectiveness.

Data synthesis

The data will be summarised numerically using descriptive statistical methods, and qualitatively using thematic analysis. The study findings will be grouped into different types of service delivery models according to the context, inputs, health system functions, and access dimensions outlined above. This

will enable us to identify themes across the included studies and summarise what service delivery models have been suggested, and where evaluated, what strengths and weaknesses have been identified.

CONCLUSION

The aim of this review is to summarise the nature and extent of the existing literature on service delivery models to improve access to eye care for Indigenous peoples in high-income countries. To our knowledge, there has been no previous synthesis of this literature. This review is part of a project to improve access to eye care services for Māori in Aotearoa New Zealand. We will use the findings in a Delphi process involving Māori eye care service users, policymakers, health service managers and clinicians to identify the most promising strategies to improve access to eye care services for Māori. In subsequent research we intend on implementing and assessing the effectiveness of the prioritised strategy. Beyond New Zealand, we believe the findings of this review will be useful to policymakers, health service managers and clinicians responsible for eye care services in other countries with Indigenous populations.

Ethics and dissemination

Ethical approval is not required, as our review will only include published and publicly accessible data. We will publish our findings in an open-access, peer-reviewed journal and develop an accessible summary of the results for website posting and stakeholder meetings. Data generated from this review will be made available upon reasonable request.

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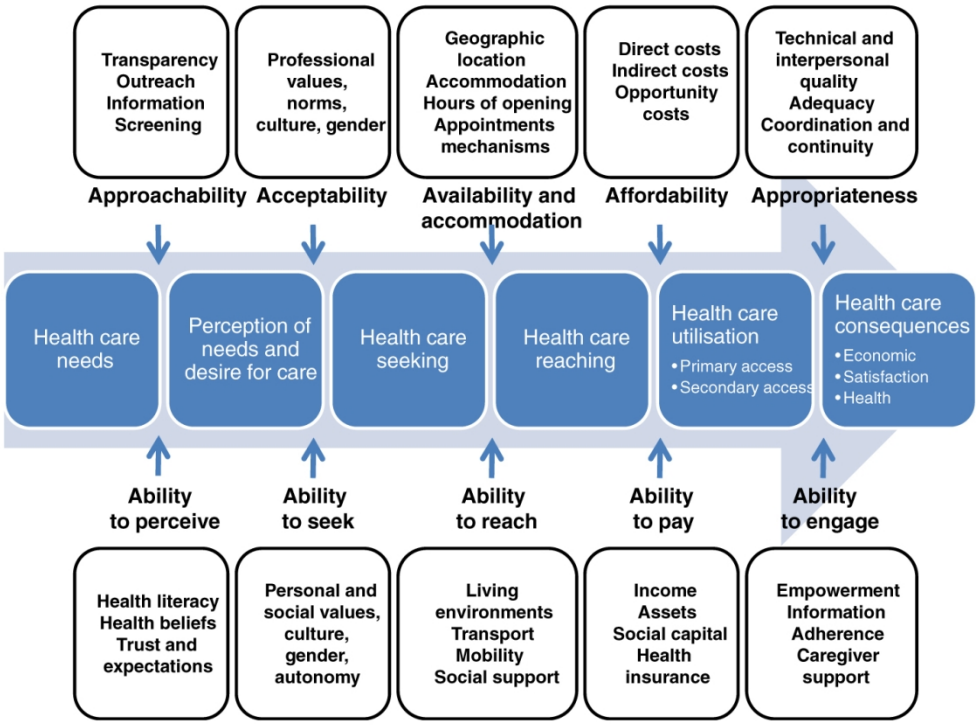

Conceptual framework for access to healthcare

123x91mm (300 x 300 DPI)

Supplementary File 1: Search strategy

MEDLINE (Ovid)

1. exp Ophthalmology/
2. exp Eye Diseases/
3. (trachoma$ or tracoma$ or trichiasis).tw.
4. (cataract$ or phaco$ or phako$).tw.
5. ((diabet$ or proliferat$) adj3 retinopath$).tw.
6. (keratoconus or ectasia).tw.
7. (amblyop$ or strabismus).tw.
8. exp Vision Tests/
9. Optometry/
10. (myop$ or hyperop$ or hypermetrop$ or anisometrop$ or ammetrop$ or astigmati$ or presbyop$).tw.
11. (refractive adj1 error$).tw.
12. Eyeglasses/
13. (spectacle or spectacles or glasses).tw.
14. (eyeglasses or eye glasses).tw.
15. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 exam$).tw.
16. ((eye$ or vision or visual$ or retinopathy or ophthalm$) adj2 assess$).tw.
17. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 test$).tw.
18. (eye$ adj2 (care or health or service$)).tw.
19. ((eye$ or vision or visual$) adj5 (culture$ or cultural$ or inequalit$ or inequit$ or disparit$ or equit$ or disadvantage$ or depriv$ or marginali$ or minorit$)).tw.
20. or/1-19
21. HEALTH SERVICES, INDIGENOUS/
22. OCEANIC ANCESTRY GROUP/
23. Indigenous.tw.
24. Aborigin$.tw.
25. ATSI.tw.
26. Torres Strait Islander.tw.
27. ((first or native) adj1 people).tw.
28. (pacific adj2 island$).tw.
29. Maori$.tw.
30. Polynesian$.tw.
31. Hawaiian.tw.
32. (Oceanic adj2 ancest$).tw.
33. american native continental ancestry group/
34. ((American or native$) adj2 Indian$).tw.
35. (native adj2 Alaska$).tw.
36. inuits/
37. (Inuit$ or Aleut$ or Eskimo$ or Inupiat$ or Kalaallit$ or Metis$).tw.
38. (first adj1 (nation or nations)).tw.
39. or/21-38
40. 20 and 39
41. (Indigenous adj3 (plant$ or flora or tree$ or material$ or equip$ or product$ or produce$ or bateria$ or infect$)).tw.
42. (gene or genes or genotyp$ or mutation$ or sequenc$).tw.
43. ROP.tw.
44. chlamydia.tw.
45. or/41-44
46. 40 not 45
47. exp case reports/
48. (case adj1 report$).tw.
49. 47 or 48
50. 46 not 49

Embase (Ovid)

1. ophthalmology/
2. exp eye disease/
3. (trachoma$ or tracoma$ or trichiasis).tw.
4. (cataract$ or phaco$ or phako$).tw.
5. ((diabet$ or proliferat$) adj3 retinopath$).tw.
6. (keratoconus or ectasia).tw.
7. (amblyop$ or strabismus).tw.
8. vision test/
9. visual system examination/
10. optometry/
11. (myop$ or hyperop$ or hypermetrop$ or anisometrop$ or ammetrop$ or astigmati$ or presbyop$).tw.
12. (refractive adj1 error$).tw.
13. spectacles/
14. (spectacle or spectacles or glasses).tw.
15. (eyeglasses or eye glasses).tw.
16. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 exam$).tw.
17. ((eye$ or vision or visual$ or retinopathy or ophthalm$) adj2 assess$).tw.
18. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 test$).tw.
19. (eye$ adj2 (care or health or service$)).tw.
20. ((eye$ or vision or visual$) adj5 (culture$ or cultural$ or inequalit$ or inequit$ or disparit$ or equit$ or disadvantage$ or depriv$ or marginali$ or minorit$)).tw.
21. or/1-20
22. indigenous health care/
23. transcultural care/
24. indigenous people/
25. Oceanic ancestry group/
26. Indigenous.tw.
27. Aborigin$.tw.
28. ATSI.tw.
29. Torres Strait Islander.tw.
30. ((first or native) adj1 people).tw.
31. (pacific adj2 island$).tw.
32. Maori$.tw.
33. Polynesian$.tw.
34. Hawaiian.tw.
35. (Oceanic adj2 ancest$).tw.
36. american native continental ancestry group/
37. ((American or native$) adj2 Indian$).tw.
38. (native adj2 Alaska$).tw.
39. exp Eskimo/
40. (Inuit$ or Aleut$ or Eskimo$ or Inupiat$ or Kalaallit$ or Metis$).tw.
41. (first adj1 (nation or nations)).tw.
42. or/22-41
43. 21 and 42
44. (Indigenous adj3 (plant$ or flora or tree$ or material$ or equip$ or product$ or produce$ or bateria$ or infect$)).tw.
45. (gene or genes or genotyp$ or mutation$ or sequenc$).tw.
46. ROP.tw.
47. chlamydia.tw.
48. or/44-47
49. 43 not 48
50. exp case report/
51. (case adj1 report$).tw.
52. 50 or 51
53. 49 not 52

Global Health (Ovid)

1. eyes/
2. eye diseases/
3. vision/
4. vision disorders/
5. (trachoma$ or tracoma$ or trichiasis).tw.
6. (cataract$ or phaco$ or phako$).tw.
7. ((diabet$ or proliferat$) adj3 retinopath$).tw.
8. (keratoconus or ectasia).tw.
9. (amblyop$ or strabismus).tw.
10. (myop$ or hyperop$ or hypermetrop$ or anisometrop$ or ammetrop$ or astigmati$ or presbyop$).tw.
11. (refractive adj1 error$).tw.
12. (spectacle or spectacles or glasses).tw.
13. (eyeglasses or eye glasses).tw.
14. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 exam$).tw.
15. ((eye$ or vision or visual$ or retinopathy or ophthalm$) adj2 assess$).tw.
16. ((eye$ or vision or visual$ or retina$ or ophthalm$ or retinopathy) adj2 test$).tw.
17. (eye$ adj2 (care or health or service$)).tw.
18. ((eye$ or vision or visual$) adj5 (culture$ or cultural$ or inequalit$ or inequit$ or disparit$ or equit$ or disadvantage$ or depriv$ or marginali$ or minorit$)).tw.
19. or/1-18
20. indigenous people/
21. aborigines/ or alaska natives/ or american indians/ or inuit/ or pacific islanders/
22. Indigenous.tw.
23. Aborigin$.tw.
24. ATSI.tw.
25. Torres Strait Islander.tw.
26. ((first or native) adj1 people).tw.
27. (pacific adj2 island$).tw.
28. Maori$.tw.
29. Polynesian$.tw.
30. Hawaiian.tw.
31. (Oceanic adj2 ancest$).tw.
32. exp Oceania/
33. ((American or native$) adj2 Indian$).tw.
34. (native adj2 Alaska$).tw.
35. Pacific Islands/
36. (Inuit$ or Aleut$ or Eskimo$ or Inupiat$ or Kalaallit$ or Metis$).tw.
37. (first adj1 (nation or nations)).tw.
38. or/20-37
39. (Indigenous adj3 (plant$ or flora or tree$ or material$ or equip$ or product$ or produce$ or bateria$ or infect$)).tw.
40. (gene or genes or genotyp$ or mutation$ or sequenc$).tw.
41. ROP.tw.
42. chlamydia.tw.
43. or/39-42
44. 19 and 38
45. 44 not 43
46. man.od.
47. 45 and 46
48. animals.od.
49. birds.od.
50. plants.od.
51. or/48-50
52. 47 not 51
53. case reports/
54. (case adj1 report$).tw.
55. 53 or 54
56. 52 not 55

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	3
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	3
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	4
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	5
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	5
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Supplementary File
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	6
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	6
Critical appraisal of individual	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe	7

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
sources of evidence§		the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Click here to enter text.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Click here to enter text.
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Click here to enter text.
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Click here to enter text.
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Click here to enter text.
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Click here to enter text.
Limitations	20	Discuss the limitations of the scoping review process.	Click here to enter text.
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	7
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	1

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

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