




BMJ Open Systematic review of health and social outcomes among Indigenous People exposed to the child welfare system: a protocol

Flint D. Schwartz ¹, Tara M. Pride ², Sherry H. Stewart,³ Sean P. Mackinnon,¹ Margaret Robinson ⁴

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¹Psychology and Neuroscience, Dalhousie University, Halifax, Nova Scotia, Canada

²Occupational Therapy, University of Western Ontario, London, Ontario, Canada

³Psychiatry, Psychology and Neuroscience, Dalhousie University - Halifax Campus, Halifax, Nova Scotia, Canada

⁴Sociology and Social Anthropology, Dalhousie University, Halifax, Nova Scotia, Canada

Correspondence to

Dr. Flint D. Schwartz;
fschwartz@dal.ca

ABSTRACT

Introduction The link between parent-child separation through child welfare systems and negative health and social outcomes is well documented. In contrast, despite the over-representation of Indigenous children and youth in child welfare systems, the relationship between child welfare system involvement and health and social outcomes among Indigenous populations has not been systematically reviewed. Our objective is to assess whether Indigenous People who have been exposed to a child welfare system personally or intergenerationally (ie, parents and/or grandparents) within Canada, Australia, New Zealand and the USA (CANZUS countries) and the circumpolar region are at an increased risk for negative health and social outcomes compared with other exposed and non-exposed groups.

Methods and analysis We will undertake a comprehensive exploration of literature documenting health and social outcomes for Indigenous individuals with personal or intergenerational exposure to a child welfare system. The search will encompass nine databases, including Ovid MEDLINE, APA PsycINFO, Bibliography of Native North Americans, CINAHL, EMBASE, Public Affairs Index, Scopus, Social Work Abstracts and Sociological Abstracts. Additionally, reference lists of included studies will be examined. The literature search will include studies up to 4 October 2024 and will adhere to Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines. Findings will be presented in summary tables through narrative synthesis, and if feasible, a meta-analysis will quantify the impact of child welfare exposure on health and social outcomes.

Ethics and dissemination The results of this systematic review will synthesise current evidence regarding health and social outcomes related to personal and intergenerational child welfare exposure among Indigenous populations in CANZUS countries and circumpolar regions. This information could help support future policy and practice decision-making. Findings will be widely disseminated through peer-review publications and community presentations aimed at various interested parties, including policymakers, professional practitioners and clinicians, and service users (ie, clients, family members, caregivers).

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STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This will be the first systematic review of whether Indigenous individuals, personally or intergenerationally exposed to a child welfare system, face an elevated risk of adverse health and social outcomes.
- ⇒ The protocol includes a broad search strategy with an international focus across nine databases, designed in consultation with experienced librarians.
- ⇒ Results will be reported according to Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines.
- ⇒ Co-authors and scholars from Indigenous (Mi'kmaw) communities have played a pivotal role in guiding and co-developing the protocol.
- ⇒ This systematic review is limited by a focus on quantitative, peer-reviewed studies.

INTRODUCTION

Links between assimilationist colonial policies, such as Indian residential schools and intergenerational health and social inequities, have been well documented in Canada.¹⁻⁶ Similar colonial policies in international contexts (eg, Indian boarding schools in the USA, Sámi boarding schools in Norway and Stolen Generations in Australia) have likewise been connected to increased adversity and health inequities experienced by Indigenous Peoples.^{1 7-9} Many scholars have suggested that such colonial policies led to the current over-representation of Indigenous Peoples in child welfare systems internationally.¹⁰⁻¹⁷ A growing body of literature also links parent-child separation through child welfare (eg, foster care, residential care) to negative health and social outcomes. These negative outcomes include elevated psychological distress and psychopathology,¹⁸⁻²⁰ chronic hypothalamic-pituitary-adrenocortical axis (HPA) dysregulation,²¹ increased rates of substance use and substance use disorders²² and elevated rates of involvement

in the justice system.^{22–24} The breadth of literature linking child welfare involvement to negative health and social outcomes calls into question present day child welfare practices and policy orientation.

Systematic reviews and meta-analyses across diverse demographic groups and regions indicate that individuals with a history of out-of-home care, regardless of their background, face significantly higher risks of poor mental health,^{22 25–29} substance use problems,²² substance use disorders,³⁰ poorer educational and employment outcomes, as well as increased risk of justice involvement.²² Meta-analyses reveal prevalence estimates for lifetime mental disorders range from 30% among adults formerly in out-of-home care in longitudinal studies²⁸ to 49% among children and adolescents in child welfare systems in epidemiological studies.²⁹ Young adults in out-of-home care in Nordic countries face higher risks for adversities compared with the general population, even when controlling for their birth parents' socioeconomic, demographic and mental health-related factors.³¹ In a systematic review, Carr *et al*³² found significant associations between child abuse in long-term institutional care and poorer mental health, physical health and social outcomes across the lifespan for both children and adult survivors. Relatively few studies have evaluated racial and ethnic differences in physical health among children in foster care, as highlighted in a systematic review by Lee *et al*.³³

Several scoping reviews on the involvement of Indigenous families in child welfare systems have been published in North America^{34 35} and internationally.^{12 17} The literature underscores the significant impact of child welfare systems on Indigenous populations, particularly in relation to historical and ongoing assimilative policies. Bennett *et al*³⁴ provide a review detailing how Christian churches, residential schools and child welfare systems have enforced federal government policies aimed at assimilation, disrupting Indigenous familial structures in Canada. Bennett *et al*³⁴ discuss a movement towards First Nations self-governance over child welfare services, recognising the inherent rights of Indigenous nations. Haight *et al*,³⁵ through a scoping review, reveal that Indigenous families involved in North American child welfare systems encounter unique challenges and potential racial biases, calling attention to the need for culturally based practices and policies. Sinha *et al*¹⁷ reviewed Indigenous child welfare involvement internationally, emphasising the necessity for more comprehensive, locally grounded research and Indigenous control in child welfare policy development. Gatwiri *et al*¹² stress the importance of culturally safe and trauma-informed interventions for Indigenous children and youth in residential care, advocating for tailored approaches. Collectively, these studies point to the critical need for systemic change, Indigenous jurisdiction over child welfare, and culturally informed practices to address the unique challenges faced by Indigenous communities within child welfare systems. There is a general lack of reviews and meta-analyses focused on

individuals with a history of child welfare system involvement. The relationship between child welfare system involvement with health and social outcomes specific to Indigenous populations has yet to be systematically reviewed in any country.

Understanding how past generations' involvement with child welfare may influence current outcomes is also important, particularly when considering the impact of cumulative trauma and systemic factors, which can perpetuate cycles of disadvantage and poor outcomes across generations. Anglo-settler nations of Canada, Australia, New Zealand and the USA (CANZUS) share a similar legacy of European colonisation, widespread coercive parent-child separation by the state (eg, residential schools) and comparable justice systems and child welfare system structures.^{36–38} Indigenous People in the circumpolar region (eg, Sámi) also endured forced assimilation and separation of children from families and communities through state-run boarding schools, with deleterious health and social effects.^{8 39} These historical injustices and their lasting effects raise critical questions about how the legacies of colonial child welfare practices continue to impact the health and social well-being of Indigenous populations today.

The main objective of this systematic review is to assess whether Indigenous People who have been personally or intergenerationally exposed to a child welfare system in their country of residence, face a heightened risk of negative health and social outcomes. Articles will be included if they compare these risks to either Indigenous People who were not exposed to child welfare and/or non-Indigenous people across categories of exposure and non-exposure. Given differences in experiences of colonisation internationally³⁶ and our aim to answer questions related to commonalities in systemic experiences, we are limiting our systematic review to countries with similar patterns of colonisation in CANZUS countries and the circumpolar region. We expect the systematic review will demonstrate a strong association between exposure to child welfare systems among Indigenous People and both negative health and negative social outcomes. Summarising these issues may inform decolonisation and reconciliation efforts within child welfare systems.

Currently in Canada and many other CANZUS countries there is a dynamic growing public policy debate and ongoing activism related to child welfare systems and Indigenous Peoples. This systematic review may help to inform the work of Indigenous communities, policy-makers, advocacy organisations and academics working in this field, both in Canada and abroad, by filling a gap in the research. It is the hope of the research team that this systematic review can be part of a growing evidence base on this topic and serve as a useful tool to help advance equity and Indigenous self-determination over child welfare.

METHODS

The reporting of this systematic review will be guided by the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines.⁴⁰ See online supplemental file 1 for the completed PRISMA checklist. The systematic review is prospectively registered with the International Prospective Register of Systematic Reviews (PROSPERO), an open access online database of systematic review protocols, to increase transparency and help prevent unintended duplication. Any important amendments of the protocol will be documented and published in PROSPERO (CRD 42023434543; https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=434543).

Inclusion criteria

Peer-reviewed studies that report quantified associations between child welfare involvement and health/social outcomes in Indigenous People from CANZUS countries or the circumpolar region will be eligible. We will use a population, exposure, comparator and outcome (PECO) framework⁴¹ to guide the inclusion and exclusion criteria and interpretation of the review. The dates covered by the review will be 4 October 2024 to the earliest date within the literature.

Population

Studies under review will include Indigenous individuals from CANZUS countries or the circumpolar region. Studies investigating multiple ethnic groups will be included if a separate quantitative analysis was provided for the Indigenous sample, or if Indigenous identity was included as a moderator of the association between child welfare and health/social outcomes and the magnitude of the association in the Indigenous subsample was provided. If a study collect data required for inclusion but did not report the effects of interest, we will write to the authors with two reminders and include the data if we obtain information about associations between the health/social outcomes of Indigenous People and child welfare involvement in the target regions.

Exposure

Personal exposure to a child welfare system will be defined as being formally separated from both biological parents for any length of time by child welfare (eg, foster care, out-of-home care, residential care, group home, adoption) before the age of majority in the country of residence. Intergenerational exposure to child welfare will be defined as having at least one parent and/or grandparent who were personally exposed to child welfare (as defined above).

Comparator(s)

The following comparison groups will be included: (a) Indigenous People not exposed to child welfare, (b) non-Indigenous people exposed to child welfare and/or (c) non-Indigenous people not exposed to child welfare.

Outcome

The review will include peer-reviewed, quantitative research assessing associations between child welfare and any mental health outcomes (eg, depression, anxiety, suicide ideation, substance use, substance use-related problems, well-being), physical health outcomes (eg, chronic disease, emergency department presentations) and/or social outcomes (eg, housing, educational attainment, employment status, income, social connection).

Exclusion criteria

Articles that involve participants not personally or intergenerationally exposed to a child welfare system are beyond the scope of this review and will be excluded. Protocols of forthcoming literature meeting criteria and theses that otherwise meet criteria will be tallied but excluded from review. Articles using peer-reviewed, qualitative analyses will be excluded but retained for future examination.

Search strategy

The search was designed in consultation with librarians MH and SM at Dalhousie University. Guidance on terminology for the Indigenous search was provided by SA (Indigenous Services Librarian, Dalhousie University) and LB (Senior Evidence Synthesis Consultant, Maritime SPOR SUPPORT Unit). We aim to use appropriate and accurate Indigenous terminology, including group descriptors, preferred by Indigenous Peoples (eg, Mi'kmaq; Sámi; Haudenosaunee) as well as including other non-preferred terms that appear in the literature to be comprehensive in our search.

The search strategy, initially conducted on 11 October 2021, was developed in Ovid MEDLINE (see PROSPERO registration for search terms), then translated to other databases (APA PsycINFO, Bibliography of Native North Americans, CINAHL, EMBASE, Public Affairs Index, Scopus, Social Work Abstracts and Sociological Abstracts). The search will include studies up to 4 October 2024. Reference lists will also be examined for potentially qualifying studies not identified by the search. Intervention studies will be excluded to prevent potential confounding effects caused by the interventions themselves. Grey literature, including dissertations, conference papers, presentations, or other unpublished or non-peer-reviewed research, case reports, non-peer-reviewed epidemiological reports, or qualitative studies will not be included. Qualitative research will be excluded from this review due to the challenges of integrating it with quantitative data while maintaining a manageable scope. While the decision to only include quantitative studies provides a systematic and statistically robust analysis of the harms associated with family separation, it is nonetheless a potential limitation, as it may overlook important lived experiences and contextual insights that qualitative studies could provide. Grey literature will not be included in this review; however, it may offer different insights and should be reviewed in a subsequent study. Specifically,

government reports will not be included to avoid introducing bias through reports authored by colonial structures that may be actively involved in paying restitution for colonial policies related to parent-child separation. Searches will be re-run prior to the final analysis and any further studies identified will be retrieved and assessed for eligibility. Citations will be imported into COVIDENCE systematic review management software⁴² for screening and document selection by two reviewers, with co-reviewer votes obscured. Duplicates identified by COVIDENCE will be verified by a team member; duplicates not identified by the software that become apparent during review will be removed. For identical articles published in different years, only the most recent published version of the article will be retained. There will not be a restriction on language of publication to decrease selection bias. The search strategy template can be found at: https://www.crd.york.ac.uk/PROSPEROFILES/434543_STRATEGY_20230612.pdf

Authors FDS and TMP will independently screen all articles. Articles retained in the first stage of screening will be independently reviewed in full by two reviewers to determine if they meet inclusion criteria. Disagreements in both stages of screening will be resolved by consensus, or a third reviewer selected from one of the co-authors as needed. Papers included after full-text review will be extracted into COVIDENCE using a standardised form created by FDS in consultation with the co-authors, then independently pilot-tested with 10 articles. The data extraction form will be modified as required and approved by co-authors. The remaining articles will be extracted and synthesised into the finalised data extraction form.

Data extraction

The data extraction process will encompass study characteristics, participant details and outcomes. This includes study design, year of study, geographic location, sample size of population and comparator(s), sampling procedure, type, timing, measurement of child welfare exposure, population and comparison group(s) characteristics (age, sex and/or gender), outcome measurement and measures of effect. We will also report on the extent of reported Indigenous engagement in the research, including reported involvement of Indigenous communities, leadership by Indigenous scholars and adherence to Indigenous-specific ethical protocols. Study investigators will be contacted for unreported data or additional details needed to complete analyses. See online supplemental file 2 for a flow chart illustrating the full process for the review.

Analysis

Assessment of study quality and bias

The quality of studies included in the review will be evaluated independently and critically by two authors using the Newcastle-Ottawa Scale,⁴³ a widely used quality assessment tool for non-randomised studies. Two authors will independently assess the risk of bias in included studies

using the ROBINS-E tool.⁴⁴ ROBINS-E includes a rating for potential confounding factors, measurement, selection bias, missing data and selection of reported result. Meta-regression analysis will be used to detect publication bias. Discrepancies between quality and risk of bias ratings will be resolved by consensus. If consensus cannot be reached, a third review author selected from one of the co-authors will make the final determination. Studies rated as low quality and/or as having a high risk of bias on one or more categories will not be excluded from the meta-analysis, but sensitivity analyses will be conducted to determine any effect of their inclusion.⁴⁵

Systematic review

We will present key study characteristics and synthesis results in narrative summary tables using Synthesis Without Meta-analysis (SWiM) guidelines.⁴⁶ We will summarise group characteristics and the strength of the association between Indigenous People exposed to child welfare and health and/or social outcomes with the following comparison groups: (a) Indigenous People not exposed to child welfare, (b) non-Indigenous people exposed to child welfare and/or (c) non-Indigenous people not exposed to child welfare. Health and social outcomes will be grouped according to mental health, physical health and social outcome categories and subcategories. Categorisation will reflect the health and social outcomes in the studies identified in the literature review. If meta-analysis is not feasible, we will summarise the type of statistically significant, quantified associations (positive, negative and none/negligible) between child welfare exposure and specific mental health outcomes (eg, depression, anxiety, suicide ideation, substance use, substance use-related problems, well-being), physical health outcomes (eg, chronic disease, emergency department presentations) and social outcomes (eg, housing, educational attainment, employment status, income, social connection). Feasibility for meta-analysis will be defined as a minimum of three studies for a particular outcome measure, a threshold commonly used in the literature as a practical solution given only a small number of studies with similar outcomes. This approach is frequently applied in health-related meta-analyses.⁴⁷ Effect mediators and/or moderators and covariates of the associations will also be qualitatively summarised. We will also qualitatively summarise the role of resilience and protective factors. In addition, we will critically examine potential confounding factors and the temporal sequencing of exposures and outcomes.

Meta-analysis

Extracted data will be inspected, and if feasible, will be quantified through meta-analysis. We will conduct pairwise comparisons for three contrasts between Indigenous People exposed to child welfare with the following groups: (a) Indigenous People not exposed to child welfare, (b) non-Indigenous people exposed to child welfare and/or (c) non-Indigenous people not exposed

to child welfare. We will calculate standardised mean differences for continuous outcome variables and ORs for dichotomous outcome variables, with their 95% CI. Our plan is to maintain the separation of meta-analyses for continuous and dichotomous variables. However, in the event of a limited number of studies, we will consider combining estimates where appropriate, following the guidelines outlined by Chinn.⁴⁸ Estimated effect sizes and CI will be summarised and presented in forest plots. If there are multiple measures of the same construct, we will select the measure designated as a primary outcome. If no primary outcome is indicated, we will select the first reported. If a study includes multiple outcomes measuring distinct constructs, each relevant analysis will be included separately in the corresponding meta-analysis for that outcome. Therefore, the same study will only be included once within each separate meta-analysis to avoid dependency. We anticipate using random effects models with the Hartung-Knapp/Sidik-Jonkman approach^{49 50} to calculate summary effect sizes using meta for: a meta-analysis package for R software.⁵¹ We will construct funnel plots to visualise possible publication bias when there are at least 10 included studies.⁵² Heterogeneity will be explored through the I^2 statistic,⁵³ τ^2 and Q statistic.

Patient and public involvement

Patients and/or the public were not involved in this study.

Ethics and dissemination

Ethics approval is not required since this research solely involves reviewing existing empirical data and does not entail primary data collection. Optimally, we would consult a national Indigenous ethics or advisory committee because the work originates in Canada and the Canadian portion of the data we will analyse is national in scope. In the absence of such a Canadian national review mechanism, the first author consulted with the Indigenous Research Support Team (IRST) at the University of Calgary in the area the work was led from, within the traditional territory of the Blackfoot Confederacy, made up of the Siksika, Piikani, Amskaapiikani and Kainai First Nations; the Îethka Nakoda Wicastabi First Nations, comprised of the Chiniki, Bears paw and Goodstoney First Nations; and the Tsuut'ina First Nation. The territory is also the homeland to the Métis Nation of Alberta, Region III. The IRST ethics advisory provided consultation and guidance on the project and community engagement protocols. Additionally, the protocol has been co-developed and fully reviewed by co-authors and Indigenous (Mi'kmaq) scholars Dr Margaret Robinson (Lennox Island First Nation) and Dr Tara Pride (Sipekne'katik First Nation). The first author is consulting with an Elder at the Calgary Public Library's Elders Guidance Circle. Engagement is ongoing and will inform the project, including interpretation of data, and will progress at the pace that is convenient for the Indigenous advisory partners. The results from this review will be widely disseminated via peer-reviewed publications and community

presentations targeting a diverse audience, which includes policymakers, professionals, clinicians, clients, family members and caregivers residing in Canada, with a focus on reaching First Nations, Inuit and Métis leadership and experts within these groups.

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Contributors FDS conceptualised and designed the review, wrote the original draft, contributed to all aspects of the protocol and is the guarantor for the work. TMP and SHS contributed to planning the project. FDS and TMP co-developed the search strategy with reference librarians. SPM contributed to the design and verified the analytical methods. MR contributed content expertise and supervised the project. All authors contributed to revised and approved the final version of the manuscript.

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Competing interests None declared.

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ORCID iDs

Flint D. Schwartz <http://orcid.org/0000-0002-5356-1501>

Tara M. Pride <http://orcid.org/0000-0002-7989-2106>

Margaret Robinson <http://orcid.org/0000-0002-2677-0607>

REFERENCES

- 1 Australian Institute of Health and Welfare. Aboriginal and Torres Strait Islander Stolen Generations and descendants: Numbers, demographic characteristics and selected outcomes. 2018.
- 2 Gone JP, Hartmann WE, Pomerville A, *et al*. The impact of historical trauma on health outcomes for Indigenous populations in the USA and Canada: a systematic review. *Am Psychol* 2019;74:20–35.
- 3 Hackett C, Feeny D, Tompa E. Canada's residential school system: measuring the intergenerational impact of familial attendance on health and mental health outcomes. *J Epidemiol Community Health* 2016;70:1096–105.
- 4 Kaspar V. The lifetime effect of residential school attendance on Indigenous health status. *Am J Public Health* 2014;104:2184–90.

- 5 Chief Moon-Riley K, Copeland JL, Metz GAS, *et al.* The biological impacts of Indigenous residential school attendance on the next generation. *SSM Popul Health* 2019;7:100343.
- 6 Wilk P, Maltby A, Cooke M. Residential schools and the effects on Indigenous health and well-being in Canada-a scoping review. *Public Health Rev* 2017;38:8.
- 7 Breathett K, Sims M, Gross M, *et al.* Cardiovascular health in American Indians and Alaska Natives: a scientific statement from the American Heart Association. *Circulation* 2020;141:e948–59.
- 8 Friberg O, Sørli T, Schei B, *et al.* Do childhood boarding school experiences predict health, well-being and disability pension in adults? A SAMINOR study. *J Cross Cult Psychol* 2020;51:848–75.
- 9 Running Bear U, Thayer ZM, Croy CD, *et al.* The impact of individual and parental American Indian boarding school attendance on chronic physical health of Northern Plains Tribes. *Fam Community Health* 2019;42:1–7.
- 10 Blackstock C, Libesman T, King J, *et al.* Decolonizing First Peoples child welfare. In: *The Routledge Int Handbook on Decolonizing Justice*. 2023. Available: <https://doi.org/10.4324/9781003176619-33>
- 11 di Tomasso L, de Finney S. A discussion paper on Indigenous custom adoption Part 1: severed connections – historical overview of Indigenous adoption in Canada. *fpcfr* 2015;10:7–18.
- 12 Gatwiri K, McPherson L, Parmenter N, *et al.* Indigenous children and young people in residential care: a systematic scoping review. *Trauma Violence Abuse* 2021;22:829–42.
- 13 Lyons AJ, Hirschak KA, Kordas G, *et al.* Factors associated with child removal among American Indian and Alaska Native People in an alcohol intervention study. *Child Maltreat* 2023;28:599–607.
- 14 McKenzie HA, Varcoe C, Browne AJ, *et al.* Disrupting the continuities among residential schools, the Sixties Scoop, and child welfare: an analysis of colonial and neocolonial discourses. *ijpj* 2016;7.
- 15 McQuaid RJ, Schwartz FD, Blackstock C, *et al.* Parent-child separations and mental health among First Nations and Métis Peoples in Canada: links to intergenerational residential school attendance. *Int J Environ Res Public Health* 2022;19:6877.
- 16 Bombay A, McQuaid RJ, Young J, *et al.* Familial attendance at Indian Residential School and subsequent involvement in the child welfare system among Indigenous adults born during the Sixties Scoop era. *fpcfr* 2020;15:62–79.
- 17 Sinha V, Caldwell J, Paul L, *et al.* A review of literature on the involvement of children from Indigenous communities in Anglo child welfare systems: 1973–2018. *ijpj* 2021;12:1–43.
- 18 Egelund T, Lausten M. Prevalence of mental health problems among children placed in out-of-home care in Denmark. *Child & Family Social Work* 2009;14:156–65.
- 19 Ford T, Vostanis P, Meltzer H, *et al.* Psychiatric disorder among British children looked after by local authorities: comparison with children living in private households. *Br J Psychiatry* 2007;190:319–25.
- 20 Räikkönen K, Lahti M, Heinonen K, *et al.* Risk of severe mental disorders in adults separated temporarily from their parents in childhood: the Helsinki birth cohort study. *J Psychiatr Res* 2011;45:332–8.
- 21 Pesonen A-K, Räikkönen K, Feldt K, *et al.* Childhood separation experience predicts HPA axis hormonal responses in late adulthood: a natural experiment of World War II. *Psychoneuroendocrinology* 2010;35:758–67.
- 22 Gypen L, Vanderfaeillie J, De Maeyer S, *et al.* Outcomes of children who grew up in foster care: systematic-review. *Child Youth Serv Rev* 2017;76:74–83.
- 23 Malvaso CG, Delfabbro PH, Day A. Risk factors that influence the maltreatment-offending association: a systematic review of prospective and longitudinal studies. *Aggress Violent Behav* 2016;31:1–15.
- 24 Yoon M, Bender AE, Park J. The association between out-of-home placement and offending behavior among maltreated youth: A systematic review. *Child Youth Serv Rev* 2018;95:263–81.
- 25 Havlicek JR, Garcia AR, Smith DC. Mental health and substance use disorders among foster youth transitioning to adulthood: past research and future directions. *Child Youth Serv Rev* 2013;35:194–203.
- 26 Oswald SH, Heil K, Goldbeck L. History of maltreatment and mental health problems in foster children: a review of the literature. *J Pediatr Psychol* 2010;35:462–72.
- 27 Engler AD, Sarpong KO, Van Horne BS, *et al.* A systematic review of mental health disorders of children in foster care. *Trauma Violence Abuse* 2022;23:255–64.
- 28 Seker S, Boonmann C, Gerger H, *et al.* Mental disorders among adults formerly in out-of-home care: a systematic review and meta-analysis of longitudinal studies. *Eur Child Adolesc Psychiatry* 2022;31:1963–82.
- 29 Bronsard G, Alessandrini M, Fond G, *et al.* The prevalence of mental disorders among children and adolescents in the child welfare system: a systematic review and meta-analysis. *Medicine (Balt)* 2016;95:e2622.
- 30 Braciszewski JM, Stout RL. Substance use among current and former foster youth: a systematic review. *Child Youth Serv Rev* 2012;34:2337–44.
- 31 Kääriälä A, Hiilamo H. Children in out-of-home care as young adults: a systematic review of outcomes in the Nordic countries. *Child Youth Serv Rev* 2017;79:107–14.
- 32 Carr A, Duff H, Craddock F. A systematic review of reviews of the outcome of noninstitutional child maltreatment. *Trauma Violence Abuse* 2020;21:828–43.
- 33 Lee JY, Kirsch J, Presley S, *et al.* Racial and ethnic disparities in the physical health outcomes of children in foster care: a systematic review. *Trauma Violence Abuse* 2024;25:197–214.
- 34 Bennett M. A literature review and annotated bibliography on aspects of Aboriginal child welfare in Canada. In: *Society*. 2005.
- 35 Haight W, Waubanasum C, Glesener D, *et al.* A scoping study of Indigenous child welfare: the long emergency and preparations for the next seven generations. *Child Youth Serv Rev* 2018;93:397–410.
- 36 Paradies Y. Colonisation, racism and Indigenous health. *J Pop Res* 2016;33:83–96.
- 37 Smallwood R, Woods C, Power T, *et al.* Understanding the impact of historical trauma due to colonization on the health and well-being of Indigenous Young Peoples: a systematic scoping review. *J Transcult Nurs* 2021;32:59–68.
- 38 Voaklander B, Rowe S, Sanni O, *et al.* Prevalence of diabetes in pregnancy among Indigenous women in Australia, Canada, New Zealand, and the USA: a systematic review and meta-analysis. *Lancet Glob Health* 2020;8:e681–98.
- 39 Lenert Hansen K, Minton SJ, Friberg O, *et al.* Discrimination amongst Arctic Indigenous Sami and non-Sami populations in Norway. *J North Stud* 2016;10:45–84.
- 40 Page MJ, McKenzie JE, Bossuyt PM, *et al.* The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;71.
- 41 Morgan RL, Whaley P, Thayer KA, *et al.* Identifying the PECO: a framework for formulating good questions to explore the association of environmental and other exposures with health outcomes. *Environ Int* 2018;121:1027–31.
- 42 Veritas Health Innovation. Covidence systematic review software, Veritas Health Innovation, Melbourne, Australia. Available at www.covidence.org. 2024.
- 43 Wells GA, Shea B, O'Connell D, *et al.* The Newcastle-Ottawa Scale (nos) for assessing the quality of nonrandomised studies in meta-analyses. 2021. Available: https://www.ohri.ca/programs/clinical_epidemiology/oxford.asp [Accessed 23 Oct 2024].
- 44 Higgins JPT, Morgan RL, Rooney AA, *et al.* A tool to assess risk of bias in non-randomized follow-up studies of exposure effects (ROBINS-E). *Environ Int* 2024;186:S0160-4120(24)00188-0:108602.
- 45 Viswanathan M, Patnode CD, Berkman ND, *et al.* Recommendations for assessing the risk of bias in systematic reviews of health-care interventions. *J Clin Epidemiol* 2018;97:26–34.
- 46 Campbell M, McKenzie JE, Sowden A, *et al.* Synthesis without meta-analysis (SWiM) in systematic reviews: reporting guideline. *BMJ* 2020;16890.
- 47 Davey J, Turner RM, Clarke MJ, *et al.* Characteristics of meta-analyses and their component studies in the Cochrane Database of Systematic Reviews: a cross-sectional, descriptive analysis. *BMC Med Res Methodol* 2011;11:160.
- 48 Chinn S. A simple method for converting an odds ratio to effect size for use in meta-analysis. *Stat Med* 2000;19:3127–31.
- 49 Lin L, Aloe AM. Evaluation of various estimators for standardized mean difference in meta-analysis. *Stat Med* 2021;40:403–26.
- 50 Int'Hout J, Ioannidis JPA, Borm GF. The Hartung-Knapp-Sidik-Jonkman method for random effects meta-analysis is straightforward and considerably outperforms the standard DerSimonian-Laird method. *BMC Med Res Methodol* 2014;14:25.
- 51 Viechtbauer W. Conducting meta-analyses in R with the metafor package. *J Stat Softw* 2010;36:1–48.
- 52 Page MJ, Higgins JP, Sterne JA, *et al.* Chapter 13: assessing risk of bias due to missing results in a synthesis. In: *Cochrane Handbook for Systematic Reviews of Interventions version 6.4*. 2023: 6. 4.
- 53 Higgins JPT, Thompson SG. Quantifying heterogeneity in a meta-analysis. *Stat Med* 2002;21:1539–58.