

Impact of awareness and concerns of climate change on children's mental health: a scoping review protocol

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ABSTRACT

Objective: The purpose of this scoping review is to identify and describe the existing literature on the impact of the overarching awareness and concerns of climate change on children's mental health and well-being.

Introduction: Children are widely acknowledged as being disproportionately at risk to the effects of climate change, yet research overlooks the impact that climate change has on their mental health. Children's overarching awareness of climate change, and its global effects, may influence their mental health and well-being.

Inclusion criteria: This review will include all research that addresses school-aged children's (aged 3-19) mental-health issues stemming from an awareness of climate change. It will not include research that examines direct impacts of climate change on children's mental health, such as trauma from a specific climate-related event.

Methods: Searches will be conducted across eight research databases (Cochrane Database of Systematic Reviews, CINAHL, Embase, GreenFILE, PubMed, PsycINFO, Web of Science, and Scopus) and three unpublished/gray literature databases (ProQuest Dissertations and Theses, GreyLit.org, and OpenGrey). Data will be extracted for author(s), year of publication, country of origin, purpose, population, methodology, concepts of interest, outcomes, and key findings relating to the scoping review objectives. Findings will be presented as a narrative summary.

Keywords Children; climate change; mental health; scoping review; wellbeing

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Introduction

It is well established that the events associated with climate change have affected, and will continue to affect, the state of human health.¹ The United Nations Intergovernmental Panel on Climate Change (IPCC) recently released a report outlining the detrimental impacts of climate change, particularly global warming of 1.5°C above pre-industrial levels, which they predict will lead to unprecedented environmental issues, such as extreme weather, rising sea-levels, species loss and extinction, wildfires, drought, and reduced air quality.² The IPCC (2018) further warned that these events will increase water- and vector-borne diseases, illness and injury, drought, and food insecurity.² Although

often overlooked, climate change not only represents a threat to physical health but also mental health.³⁻⁶ Recently, the American Psychological Association (in conjunction with the organizations Climate for Health and ecoAmerica) released a report outlining that climate change is a fundamental issue for psychological health and well-being.⁷ The impacts of climate change on mental health are extensive, including anxiety, distress, depression, aggression and violence, increased sense of helplessness or fatalism, and intense feelings of loss.^{7,8}

There are three ways that climate change is identified as affecting mental health: direct, indirect, and overarching. Acute climate events can directly impact the mental health of those in affected communities (such as trauma from an extreme weather event). Indirect impact occurs due to changes in social, economic and environmental determinants of mental health, such as stress stemming from reduced income security. People may also suffer

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from emotional distress stemming from the overarching awareness of the imminent threats of climate change and its potential global consequences.^{8,9} These reactions are often considered to be related to the broader concept of “psychoterratic syndromes”, defined broadly as “psychological responses to negative changes to the state of the earth”.^{10(p.48)} Previous reviews and articles have addressed the direct and indirect consequences of climate change on mental health.^{4,6} Clinical psychologists have reported counseling adults dealing with overarching climate change issues,⁷ but we know less about how children and young people are experiencing climate change awareness.

Children and young people are growing up in uncertain times. Children are widely acknowledged as one of the most at-risk groups to the effects of climate change, yet the impact of climate change on the mental health of children is often overlooked.^{3,8} In contemporary society, children grow up hearing about the effect of extreme weather events and projections for the future, and have an awareness of how this affects others. For example, the National Center for Science Education reports that approximately 75% of American children received education about climate change in 2016.¹¹ Simultaneously, media reports on climate change have risen by 78% since 2007.⁵ A 2013 survey of young people in Britain found that 74% felt worried about the effects of climate change on their future and 63% were worried about the impact of climate change on children in developing countries.¹² Thus, while children are increasingly aware of climate change and its detrimental effects, they have reduced agency to see their political will enacted because they are not of voting age, and this may contribute to a sense of helplessness or anger.

In March 2019, hundreds of thousands of students in 2000 cities across 123 countries left school in an action of protest about political inaction regarding climate change.¹ The volume of young people engaging in these strikes, titled Friday Strike #FridaysForFuture, signals the importance of this issue to children. However, this overarching awareness of climate-related issues is not well understood. On one hand, an increased awareness and concern represents a threat to the mental health and well-being of children, but on the other hand, it can trigger pro-environmental behavior for children and their families. For example, children’s awareness

and perceptions of climate change have been found to be a means of intergenerational transfer of knowledge about the changing climate to parents.¹³ Due to the immediate impact that climate change might be having on children’s mental health and well-being, a review of the current state of the literature is timely.

Given the dearth of research into the overarching awareness of climate change and child mental health and well-being, the authors are conducting a global scoping review. Scoping reviews prove useful when the goal is to map the current state of knowledge in a specific research area.¹⁴ A preliminary search was conducted on 10 July 2019 in the *JB I Database of Systematic Reviews and Implementation Reports*, PROSPERO, and the Cochrane Database of Systematic Reviews, and no current or ongoing reviews were found that examined the mental health impacts of the overarching awareness of climate change on children.

Review objectives

The objectives of this review are:

- i) To identify and provide an overview of research regarding the overarching impact of climate change awareness and concerns on young people’s mental health and well-being.
- ii) To summarize and clarify the terminology related to children’s mental health and climate change.
- iii) To make recommendations for areas of future research.

Inclusion criteria

Participants

The proposed review will consider worldwide studies that include school-aged children (aged 3-19). The upper limit is operationally defined in accordance with the World Health Organization (2013) as persons 19 years of age or younger.¹⁵

Concept

The concepts of interest fall under the more broadly defined “psychoterratic syndromes”, which are “psychological responses to negative changes to the state of the earth”.^{10(p.48)} Related mental health issues may include conditions termed ecoanxiety, ecoparalysis, solastalgia, and econostalgia.¹⁰

Context

The primary goal of this review is to examine the overarching influence of climate change on children's mental health and well-being. As such, the context will be global.

Types of sources

Given that this is an emerging topic in the literature and that the purpose of this scoping review is to summarize the evidence about this issue (rather than to identify and present the highest-quality evidence), a broad range of articles and study designs will be considered. This includes, but is not limited to, quantitative (e.g. experimental, quasi-experimental, prospective and retrospective cohort, case-control, cross-sectional), observational (e.g. case series, individual case reports, descriptive cross-sectional studies), qualitative (e.g. phenomenology, ethnography, qualitative description, action research, feminist research), and mixed-methods studies. In addition, systematic reviews and opinion papers will be considered for inclusion in the scoping review. The literature search will be limited to articles published in English; however, no date restrictions will be implemented in the search.

Methods

The proposed scoping review will be conducted in accordance with JBI methodology.¹⁴

Search strategy

The search strategy will aim to locate both published and unpublished primary studies, reviews and opinion papers. An initial search of PsycINFO was undertaken to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles, were used to develop a full search strategy detailed in Appendix I.

The final step of the search strategy will be to review the reference lists of articles included in the review to identify additional papers.

Information sources

The sources to be searched include Cochrane Database of Systematic Reviews, CINAHL, Embase, GreenFILE, PubMed, PsycINFO, Web of Science, and Scopus.

The search for unpublished/gray literature will include ProQuest Dissertations and Theses, GreyLit.org, and OpenGrey.

Study selection

Following the search, all identified records will be collated and uploaded into Zotero version 5.0.66 (Corporation for Digital Scholarship and Roy Rosenzweig Center for History and New Media, VA, USA) and duplicates removed. Titles and abstracts will then be screened by two independent reviewers for assessment against the inclusion criteria for the review. Potentially relevant papers will be retrieved in full and their citation details imported into the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia). Two independent reviewers will assess the full text of selected citations in detail against the inclusion criteria. Reasons for exclusion of full-text papers that do not meet the inclusion criteria (e.g. studies that explicitly examine the mental health impact after extreme weather events) will be recorded and reported in the scoping review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion, or by a third reviewer. The results of the search will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses Extension for Scoping Reviews (PRISMA-ScR) flow diagram.¹⁶

Data extraction

Data will be extracted from papers included in the scoping review by two independent reviewers, using a modification of the standardized JBI data extraction tool that was developed for this scoping review by the reviewers. The data extracted will include specific details about the population (e.g. age – to explore impacts by developmental phase), concept of mental health and climate change, geographic location, methods, and key findings relevant to the review objectives and questions. A draft extraction tool is provided (see Appendix II). The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each included paper. Modifications will be detailed in the full scoping review. Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer. Authors of

papers will be contacted to request missing or additional data, where required.

Data presentation

The extracted data will be presented in tabular form in a manner that aligns with the objective of this scoping review. A narrative summary will accompany the tabulated results and will describe how the results relate to the review objectives and questions.

A summary of each article will include the following information: author(s), year of publication, country of origin, purpose, population, sample size, methodology, concepts of interest, outcomes, and key findings relating to the scoping review objectives.

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Appendix I: Search strategy

Search conducted in PsycINFO (ProQuest) on 28 September 2019.

Search	Query	Records retrieved
#1	noft("climate change") OR noft("global warming")	3,505
#2	noft("mental health") OR noft("mental illness") OR noft("mental disorder") OR noft("wellness") OR noft("well-being") OR noft("wellbeing") OR noft("cognitive function") OR noft("eco-anxiety") OR noft("ecoanxiety") OR noft("pretraumatic") OR noft("environmental grief") OR noft("solastalgia") OR noft("ecoparalysis") OR noft("ecostalgia") OR noft("psychoter*") OR noft("cope") OR noft("coping") OR noft("worry") OR noft("distress") OR noft("anxiety") OR noft("psychoterratic")	1,010,183
#3	("child*") OR ("kid*") OR ("adolescen*") OR ("teen*") OR ("youth") OR ("young people") OR ("school children*") OR ("schoolchildren*") OR ("school age*") OR ("school-age*")	1,295,277
	#1 AND #2 AND #3	131

Appendix II: Data extraction instrument**Research report instrument**

Authors (year):
Research purpose/question(s):
Type of research: quantitative, qualitative, mixed methods, community-based research/participatory action research, literature review (type), discourse analysis
Population: describe the particular population focus (e.g. age group, sex/gender, socioeconomic status)
Context:
<ul style="list-style-type: none"> • Country
<ul style="list-style-type: none"> • Cultural context: does this paper focus on a particular cultural subgroup (e.g. immigrants)
<ul style="list-style-type: none"> • Geographic setting (e.g. urban/suburban, inner city, rural, remote, northern)
Concept:
1. How does this research report describe the mental health impacts of climate change awareness among children? (Describe)
2. What mental health concepts are described in the author's own language? (Record the author's definition of the concept)
3. Are outcomes reported (e.g. behavior change)? If so, describe.
4. Gaps in knowledge/recommendations for further research
Reviewer comments:

Gray literature instrument

Authors (year)
Type of paper: expert opinion, health policy document, professional guidelines, program report, other (describe)
Aim or purpose of the paper:
Population (describe the particular population focus, e.g. age group, sex/gender, socioeconomic status):
Context:
<ul style="list-style-type: none"> • Country
<ul style="list-style-type: none"> • Cultural context: does this paper focus on a particular cultural subgroup? (e.g. immigrants)
<ul style="list-style-type: none"> • Geographic setting: (e.g. urban/suburban, inner city, rural, remote, northern)

Concept:
1. How does this paper describe the mental health impacts of climate change awareness among children? (describe)
2. What mental health concepts are described in the author's own language? (Record the author's definition of the concept)
3. Recommendations/lessons learned: (related to how to understand the overarching impact of climate change on mental health of children)
Reviewer comments: