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Rapid review protocol for literature on hurricanes, mental health, and risk behaviours

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ADMINISTRATIVE INFORMATION**Support** - There is no financial support for this project.**Review Stage at time of this submission** - Formal screening of search results against eligibility criteria.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202570011**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 2 July 2025 and was last updated on 2 July 2025.**INTRODUCTION**

Review question / Objective To systematically examine the literature on mental health and risk behaviors in communities before, during, and after a hurricane. This study will answer the research question: How can the current empirical research outcomes associated with hurricanes and mental health be applied in a Canadian mental health intervention and support context? Specific attention will include focuses on risk behaviors such as prevention, protection, and coping.

Rationale Hurricanes are a growing concern in Atlantic Canada and often associated with adverse mental health including anxiety and depression, especially among vulnerable populations. While many studies illuminate post-hurricane mental health outcomes, less literature has focused considered before and during hurricanes in conversation with pre-existing concerns among vulnerable populations. Moreover, in the growing field of social work, whole community health and

supports must consider the full hurricane cycle (before, during, and after) in addition to kinds of risk behaviors may results as a part of coping with or escaping from the stressors of surviving a hurricane.

Condition being studied This rapid literature review will examine mental health and risk behavior outcomes from people during the hurricane cycle. Particular attention will be paid to vulnerable populations and individuals with pre-existing vulnerabilities and how those compound during hurricane disasters.

METHODS

Search strategy Three criteria groups of keywords are used to search rapidly for relevant literature:

1. Hurricane-type Disaster: "hurricane" OR "typhoon" OR "cyclone" OR "tropical storm" OR "extreme weather"
2. Mental Health: "mental health" OR "depress" OR "anxiety" OR "stress" OR "anxious" OR "PTSD" OR "psychological trauma" OR "emotional

disturbance” OR “wellbeing” OR “well-being” OR “panic”

3. Risk Behaviors: “cope” OR “coping” OR “resilienc” OR “protective” OR “avoid” OR “risk perception” OR “maladapt” OR “capacity” OR “risk behav” OR “shelter”.

Participant or population This review will focus on all individuals who have experienced hurricane-type disasters including typhoons, cyclones, and tropical storms. Special attention will be paid to discussion of participant vulnerability and/or pre-existing vulnerabilities, such as mental health concerns.

Intervention This review will not evaluate any interventions.

Comparator This review will not evaluate any comparative interventions.

Study designs to be included Empirical data studies using quantitative, qualitative, and mixed methods and literature reviews.

Eligibility criteria Additional inclusion criteria for all databases: English language, peer-reviewed journal articles.

Information sources The information will be based on electronic databases: EBSCOhost, Scopus, Web of Science.

Main outcome(s) Based on the review results, we will be able to identify the findings of mental health outcomes and risk behaviors in hurricane-type disasters. We expect the study to generate knowledge in the following:

Mental Health Outcomes along the Hurricane Cycle: the rapid review will synthesize existing scholarship on the current known mental health outcomes in relation to the hurricane cycle (before, during, and after). Specifically, we expect to see limited literature before and during the disaster and how those phases in the cycle impact mental health. By examining the literature on mental health outcomes at the three phases of the hurricane cycle, this review will identify avenues and gaps to generate knowledge for community mental health prevention and mitigation efforts.

Pre-existing Vulnerabilities: the rapid review will synthesize existing scholarship on the impact of pre-existing vulnerabilities on mental health throughout the hurricane cycle. This review will focus on how those pre-existing vulnerabilities compound or result in especially significant

concerns throughout the hurricane cycle. This review will identify opportunities and gaps for addressing vulnerable populations in community mental health plans for hurricanes.

Risk Behaviors: this rapid review will synthesize the scholarship on risk behaviors (including prevention, protection, and coping) for how individuals, especially vulnerable populations, react throughout the hurricane cycles. Moreover, we expect to see literature on considering risk behaviors before and during the hurricane disaster. By examining this literature, this review will identify avenues and gaps for developing prevention and mitigation plans for supporting positive community mental health for hurricane disasters.

Additional outcome(s) Additional outcomes from this literature review will include actionable recommendations for Atlantic Canada based on the reviewed literature.

Data management All formal screening processes will be done with the use of COVIDENCE, a web-based tool, to conduct the screening process.

1. Importing studies: After pulling results using the above criteria from the selected databases, article meta-data will be imported into Covidence. This will include lists from the appropriate databases in RIS file format.

2. Screening: Imported articles will be screened by one screener (appropriate for a rapid review) with regular discussion and review as a research team. Data management will include tracking screening results.

3. Data extraction: Selected articles will be exported from Covidence in a consistent format for transparency and accuracy across the research team. Data will be organized using consistent meta-data categories for analysis and synthesis.

4. Analysis and synthesis: Descriptive statistics, review visuals, and sub-group breakdowns will provide the initial analysis while deeper thematic analysis will occur outside Covidence. Data management will include documenting themes and code-weaving for reporting methods and results.

5. Reporting and exporting: Covidence reports will be exported into Word and Excel files to support writing manuscripts. Finalized data corpus, maintaining documentation, and ensuring data transparency will ensure validity and reliability for reproducing the results.

Quality assessment / Risk of bias analysis

Quality assessment: By the nature of rapid review, phases of a systematic literature review will be shortened to identify actionable recommendations from the relevant literature. Nonetheless,

screening, extraction, and analysis will include thorough documentation of selected literature and themes for analytical trustworthiness. Risk of bias: Risk selection bias is reduced through pre-selecting search criteria. Documented decisions about included/excluded data improves transparency and reliability. Due to being a social-science based rapid review, a risk of bias assessment scale will not be used.

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Strategy of data synthesis Data synthesis will occur through combined phases, as is appropriate for a rapid review:

1. Organization: Exported data from Covidence will be organized via relevant meta-data into a format for qualitative analysis.
2. Familiarization and code generation: Data codes will be emergently created from the analyzed articles throughout the familiarization process.
3. Organizing, reviewing, and refining codes: Re-reading and research team meetings will support organizing, reviewing, and refining emergent codes into analytical themes relevant to the identified research questions and outcomes.
4. Interpretation and reporting: Findings will be synthesized based on the refined codes for observed patterns. Implications for practice and policy will guide the interpretation, specifically for Atlantic Canada.

Subgroup analysis Specific attention will be given to vulnerable populations, such as individuals with pre-existing mental health concerns before the hurricane-type disaster.

Sensitivity analysis The rapid review process will decrease the potential for sensitivity in selection bias. Repeated discussion and cross-team analysis will promote rigorous analysis and trustworthiness in selection and interpretation.

Language restriction English.

Country(ies) involved Canada.

Keywords Hurricane, typhoon, cyclone, tropical storm, mental health, pre-existing vulnerabilities, risk behaviors, coping, prevention, protection, social work.

Dissemination plans This study will result in a peer-reviewed publication.

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