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The Social Determinants of Alcohol-Related Traumatic Injury in Young Adults:A Scoping Review Protocol

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The Social Determinants of Alcohol-Related Traumatic Injury in Young Adults:
A Scoping Review Protocol

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Abstract

Introduction: Limited research examines alcohol-related traumatic injury in the context of social determinants of health (SDoH) to guide effective intervention and prevention programs. SDoH are non-medical factors that impact health such as income, housing and childhood environment. This scoping review aims to explore the role that SDoH in childhood have in alcohol-related traumatic injury in young adults. *Methods and analysis:* The scoping review process will be guided by the methodology framework of Arksey and O’Malley and the Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols Extension for Scoping Reviews Guidelines (PRISMA-ScR). The PubMed and SCOPUS databases will be systematically searched. Studies of various designs and methodologies (published since January 1, 2000) that examine certain SDoH of interest in relation to alcohol-related injury in adults aged 18-25 years old will be considered for inclusion in this review. Two reviewers will screen all articles identified from the databases independently. Titles and abstracts will be reviewed based on the initial search and included if eligibility criteria are met. Duplicate articles will be removed and full texts will be examined to create a final list of included studies. Any disagreements on the inclusion of any articles will be resolved through discussion and consultation with a third reviewer if necessary. *Ethics and dissemination:* As this study does not involve human subjects, ethics approval is not required. The results of this study will be summarized quantitatively through numerical counts and qualitatively through a narrative synthesis. The findings from this review will address an important literature gap and inform the development of targeted prevention programs for alcohol-related traumatic injury. *Registration:* This protocol is registered with Open Science Framework (<https://doi.org/10.17605/OSF.IO/MYEXA>).

Article Summary

Strengths and limitations of this study:

- To our knowledge, no scoping review examining the role of (SDoH) in alcohol-related traumatic injury currently exists.

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- This study is guided by the methodology framework of Arksey and O'Malley and will follow a systematic approach to data synthesis.
- The review will be limited to studies published from 2000 onwards to capture the current health context of this topic.
- Due to the design of the scoping review, included articles will not be assessed for risk bias nor critically appraised.
- There may be little published work in this area, limiting the amount of data available for this review.

1.0 INTRODUCTION

Alcohol-related deaths have been referred to as a silent epidemic in Canada, with nearly 250 alcohol-related hospitalizations daily.(1) While the majority of Canadians drink alcohol regularly, nearly 25% exceed the level of consumption that puts their health at risk.(1,2) Those diagnosed with an alcohol use disorder are more likely to be younger, from neighborhoods of lower socioeconomic status and living in non-urban environments.(3) Risky or harmful drinking has a significant impact on both individuals and society including unemployment, motor-vehicle collisions (MVC), driving while intoxicated and violence.(1,2) Alcohol is a risk factor for both intentional and unintentional injuries and increased blood alcohol level has been associated with almost all mechanisms and types of injuries (i.e., cycling, falls, MVC, violence).(4–8) Injuries are one of the primary causes of mortality and one of the leading causes of hospitalization in young adults. Most injuries are preventable and prevention programs informed by evidence are needed to address this burden. The success and cost-effectiveness of prevention programs can be improved by tailoring programs to specific targeted needs.

Reducing health inequities has been prioritized by health agencies including the World Health Organization which states that little attention has been placed on understanding related issues in the context of social determinants of health (SDoH).(9) SDoH are a broad category of social and economic factors across the lifespan that influence an individual's health(10) such as

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The review process will be guided by the five main steps set forth by Arksey and O'Malley(17):

1. Identify the research question;
2. Identify relevant studies;
3. Study selection;
4. Charting the data;
5. Collating, summarizing and reporting the results.

Step 1: Identify the research question

Our research question is as follows: What SDoH are associated with alcohol-related traumatic injury in young adults? This research question is meant to be broad in keeping with the exploratory nature of scoping reviews.

Step 2: Identifying relevant studies

The PubMed and SCOPUS databases will be systematically searched. Our research team has identified 13 SDoH of interest that will be examined in this study. The SDoH that we will examine all pertain to child health; social and economic factors that affect an individual early in their life course. These childhood SDoH include: lived in a low income household; lived in a rural or remote environment; family received income assistance; parent involved in the criminal justice system; parent did not graduate high school; lived in social housing; parent immigrated from another country; family with high residential mobility (i.e., moved frequently); child of a teen mother; mental disorder as a child; mother with a mental disorder; mother with a physical disorder; and being placed in the care of another adult. The 13 SDoH to be examined in this study are based on previous work by our team, examinations of SDoH by the Manitoba Center for Health Policy, and a review of the literature.(13-15) (See Appendix A for full search strategies).

Table 1: Social determinants of health and MeSH terms/keywords to be used for the search in the PubMed* database.

Social Determinant of Health	MeSH Terms and Keywords
Low-income household	"Income" [MeSH] OR "Poverty" [MeSH] OR "income assistance"
Lived in rural or remote environment	"Rural Population" [MeSH] OR "Rural Health" [MeSH] OR "rural occupations" OR "remote populations"
Family received income assistance	"income assistance"
Parent(s) involved in criminal justice system (as a victim, parent, or accused)	"Criminal Law" [MeSH] OR "Criminals" [MeSH] OR "Criminal Behaviour" [MeSH]
Parent(s) did not graduate high school	"Education" [MeSH] OR "Educational Status" [MeSH]
Lived in social housing	"Public Housing" [MeSH] OR "Homeless Persons" [MeSH]
Child of parent who immigrated	"Emigrants and Immigrants" [MeSH] OR "Minority Health" [MeSH]
Child from family with high residential mobility	"Population Dynamics" [MeSH] OR "transient populations"
Child with mental disorder	"Mental Health" [MeSH] OR "Mental Disorders" [MeSH] OR "mentally ill"
Child of teen mother	"Pregnancy in Adolescence" [MeSH] OR "teenage pregnancy" OR "pregnant teen"
Child of parent with mental disorder	"Mental Health" [MeSH] OR "Mental Disorders" [MeSH] OR "mentally ill"
Child of mother with physical disorder	"Disabled Persons" [MeSH] OR "physical disability" OR "physical disorder"
Child in care	"Child Welfare" [MeSH] OR "Child Protective Services" [MeSH]

* A similar search will be carried out using the SCOPUS database (see Appendix A).

For the PubMed database, MeSH terms and keyword terms for each of the 13 SDoH have been created (Table 1) will be combined with MeSH and keyword terms for traumatic injury and alcohol (Table 2) using the AND operator. To narrow the search further, the MeSH term "Adult" will be added into the search using the AND operator to only include studies looking at adult populations. The MeSH term "Aged" will also be added with the NOT operator to exclude studies looking at elderly populations. A similar search strategy using the same search terms will be carried out using the SCOPUS database. An example of the search strategy used in

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PubMed has been included (see Appendix A). Additional social determinants and search strategies may be incorporated as the review progresses and any additions or changes will be documented.

Table 2: MeSH terms and keywords used for alcohol and traumatic injury search in PubMed database.

Search Term	MeSH Terms and Keywords
Alcohol	"Ethanol" [MeSH] OR "Alcohol-Related Disorders" [MeSH] OR "Alcohol Drinking" [MeSH] OR "alcohol"
Traumatic injury	"Wounds and Injuries" [MeSH]
Adults	"Adult" [MeSH]
Elderly	"Aged" [MeSH]

Step 3: Study selection

Two reviewers will screen all articles identified from the databases independently. Titles and abstracts will be reviewed based on the initial search and will be included based on the eligibility criteria described below. Duplicate articles will be removed and full texts will be examined to create a final list of included studies. Disagreements on the inclusion of any articles will be resolved through discussion and consultation with a third reviewer if necessary.

Eligibility criteria

This scoping review will consider the following types of studies: retrospective and prospective case-control and cohort; cross-sectional; qualitative; mixed methods; case reports; meta-analyses; and systematic reviews. Studies to be included in this review must meet the following criteria (Table 3): 1) published in English (but may be from any geographic location); 2) published between January 1, 2000 and July 13, 2022; 3) examine a population of young adults (those aged 18-25) suffering physical injury related to alcohol use; and 4) examine at least one of the SDoH of interest in relation to alcohol-related traumatic injury. Additional SDoH of interest other than those already defined may be included in the review as the project progresses. Articles outside of those defined in the inclusion criteria will be excluded (Table 3).

Table 3: Inclusion and exclusion criteria for the review

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none">Quantitative studies: cross-sectional; retrospective and prospective case control and cohort studiesQualitative and mixed methods studies, case reports, meta-analyses, and systematic reviewsStudies in English language onlyStudies covering any geographical locationStudies that were published between January 1, 2000 and July 13, 2022Studies examining a population of young adults (those aged 18-25) suffering physical injury related to alcohol useStudies must examine at least one of the SDoH of interest in relation to alcohol-related traumatic injuryStudies must look specifically at traumatic injury related to alcohol use and not all-cause alcohol-related harm/mortality	<ul style="list-style-type: none">Opinion literature including commentaries, editorials, brief reports, perspectives and analysesStudies in non-English languageStudies that were published outside of the specified datesStudies examining a population of individuals not aged between 18-25 years oldStudies that only address all-cause harm/mortality related to alcohol use and not traumatic injury specifically

Step 4: Charting the data

Data from identified studies will be collected and charted according to key themes. For each eligible article charted data will include: authorship; title of publication; journal of publication; year of publication; general characteristics of the population studied; SDoH studied; study methods; and study results/key findings. A combination of Microsoft Excel and Covidence reference management software will be used to chart the data and manage the screening process.

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Step 5: Collating, summarizing and reporting the results

Risk of bias will not be assessed as scoping reviews only provide an overview of existing literature and do not critically appraise the included articles. However, we will include a discussion of any limitations found in the body of evidence. The results of this study will be summarized both quantitatively and qualitatively: quantitatively by highlighting the key numerical findings from each study included; and qualitatively through a narrative synthesis. Tables will be used to summarize the study findings and a flow chart will be created to give an overview of the screening process. SDoH other than those already identified by our team will be considered for inclusion in this study as the project progresses. The discussion section of the study will be based on themes that emerge from the review.

3.0 DISCUSSION

The results of this study will establish what is currently known about the role of SDoH in alcohol-related traumatic injury in young adults. To our knowledge, this scoping review is the first on this topic and will, therefore, address an important gap in the literature. Through this review, we hope to provide an understanding of which SDoH are associated with alcohol-related traumatic injuries in young adults. This information will generate evidence to inform the development of targeted alcohol-related injury prevention programs for this population.

4.0 ETHICS AND DISSEMINATION

Ethical approval is not required as data to be included in this review have been published or obtained from publicly available sources. The results of this scoping review will be disseminated through publication in a peer-reviewed journal.

Patient/Public Involvement

There will be no patient or public involvement in this study.

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Contributors

RS is the guarantor. HG, CC, BC, JG, RS and SL drafted the manuscript and contributed to the development of the selection criteria. HG and CC developed the search strategy. All authors read, provided feedback and approved the final manuscript.

Competing interests

None declared.

Patient consent for publication

Not applicable.

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APPENDIX A: Full Search Strategies

The full search used in PubMed is as follows:

("Adult"[MeSH Terms] AND ("Wounds and injuries"[MeSH Terms] AND (("Income"[MeSH Terms] OR "Poverty"[MeSH Terms] OR "income assistance"[Title/Abstract] OR ("Rural population"[MeSH Terms] OR "Rural health"[MeSH Terms] OR "rural occupations"[Title/Abstract]) OR ("Criminal law"[MeSH Terms] OR "Criminals"[MeSH Terms] OR "criminal behaviour"[Title/Abstract]) OR ("Education"[MeSH Terms] OR "Educational Status"[MeSH Terms]) OR ("Public housing"[MeSH Terms] OR "Homeless persons"[MeSH Terms]) OR ("Emigrants and Immigrants"[MeSH Terms] OR "Minority Health"[MeSH Terms]) OR ("Population Dynamics"[MeSH Terms] OR "transient populations"[Title/Abstract]) OR ("Mental health"[MeSH Terms] OR "Mental disorders"[MeSH Terms] OR "mentally ill"[Title/Abstract]) OR ("Pregnancy in adolescence"[MeSH Terms] OR "teenage pregnancy"[Title/Abstract] OR "pregnant teen"[Title/Abstract]) OR ("Child Welfare"[MeSH Terms] OR "Child Protective Services"[MeSH Terms]) OR ("Disabled persons"[MeSH Terms] OR "physical disability"[Title/Abstract] OR "physical disorder"[Title/Abstract])) AND ("Ethanol"[MeSH Terms] OR "Alcohol related disorders"[MeSH Terms] OR "Alcohol drinking"[MeSH Terms] OR "alcohol"[Title/Abstract]))) NOT "Aged"[MeSH Terms]

The full search used in SCOPUS is as follows:

((((TITLE-ABS-KEY (income) OR TITLE-ABS-KEY (poverty) OR TITLE-ABS-KEY (income AND assistance))) OR ((TITLE-ABS-KEY (rural) OR TITLE-ABS-KEY (rural AND health) OR TITLE-ABS-KEY (rural AND population))) OR ((TITLE-ABS-KEY (criminal) OR TITLE-ABS-KEY (criminal AND law) OR TITLE-ABS-KEY (criminal AND behaviour))) OR ((TITLE-ABS-KEY (education) OR TITLE-ABS-KEY (educational AND status))) OR ((TITLE-ABS-KEY (homeless) OR TITLE-ABS-KEY (homeless AND persons) OR TITLE-ABS-KEY (public AND housing))) OR ((TITLE-ABS-KEY (immigrant) OR TITLE-ABS-KEY (immigrants AND emigrants) OR TITLE-ABS-KEY (minority AND health))) OR ((TITLE-ABS-KEY (residential AND mobility) OR TITLE-ABS-KEY (transient AND population))) OR ((TITLE-ABS-KEY (mental AND health) OR TITLE-ABS-KEY (mental AND disorders) OR TITLE-ABS-KEY (mentally AND ill))) OR ((TITLE-ABS-KEY (teenage AND pregnancy) OR TITLE-ABS-KEY (adolescent AND pregnancy) OR TITLE-ABS-KEY (pregnant AND teen))) OR ((TITLE-ABS-KEY (child AND welfare) OR TITLE-ABS-KEY (child AND protective AND services))) OR ((TITLE-ABS-KEY (physical AND disability) OR TITLE-ABS-KEY (physical AND disorder) OR TITLE-ABS-KEY (disabled AND persons)))) AND ((TITLE-ABS-KEY (alcohol) OR TITLE-ABS-KEY (ethanol) OR TITLE-ABS-KEY (alcohol AND drinking) OR TITLE-ABS-KEY (alcohol AND related AND disorders))) AND ((TITLE-ABS-KEY (physical AND injury) OR TITLE-ABS-KEY (traumatic AND injury))) AND (TITLE-ABS-KEY (adult))) AND NOT ((TITLE-ABS-KEY (elderly) OR TITLE-ABS-KEY (seniors)))

Filters for dates and English language were then applied after the initial search.

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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.	
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.	
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.	
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.	
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.	
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.	
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.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
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.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
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).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
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.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
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.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
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.	
Limitations	20	Discuss the limitations of the scoping review process.	
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.	
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.	

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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Word count: 1898

Abstract

Introduction: Limited research examines alcohol-related injury in the context of social determinants of health (SDoH) to guide effective intervention and prevention programs. SDoH are non-medical factors that impact health such as income, housing and childhood environment. This scoping review aims to explore the role SDoH in childhood have in alcohol-related injury in young adults. *Methods and analysis:* The scoping review process will be guided by the methodology framework of Arksey and O'Malley and the Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols Extension for Scoping Reviews Guidelines (PRISMA-ScR). The PubMed and SCOPUS databases will be systematically searched. Studies of various designs and methodologies (published in English since January 1, 2000) that examine certain SDoH of interest in relation to alcohol-related injury in adults aged 18-25 years old will be considered for inclusion in this review. Two reviewers will screen all articles identified from the databases independently. Titles and abstracts will be reviewed based on the initial search and included if eligibility criteria are met. Duplicate articles will be removed and full texts will be examined to create a final list of included studies. Any disagreements on the inclusion of any articles will be resolved through discussion and consultation with a third reviewer if necessary. *Ethics and dissemination:* As this research does not involve human subjects, ethics approval is not required. The results of this study will be summarized quantitatively through numerical counts and qualitatively through a narrative synthesis. The results from this review will address an important literature gap and inform the development of targeted prevention programs for alcohol-related injury. *Registration:* This protocol is registered with Open Science Framework (<https://doi.org/10.17605/OSF.IO/MYEXA>).

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3 **Article Summary**

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5 Strengths and limitations of this study:

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- 8 • This study is guided by the methodology framework of Arksey and O'Malley and will
 - 9 follow a systematic approach to data synthesis.
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 - 11 • The review will be limited to studies published in English from 2000 onwards to
 - 12 capture the current health context of this topic.
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 - 14 • Due to the design of the scoping review, included articles will not be assessed for risk
 - 15 bias nor critically appraised.
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 - 17 • There may be little published work in this area, limiting the amount of data available
 - 18 for this review.
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25 **1.0 INTRODUCTION**

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27 Alcohol-related deaths have been referred to as a silent epidemic in Canada.(1) In 2021, 3875

28 deaths related to alcohol use were recorded in Canada, an almost 18% increase since 2019.(2)

29 While the majority of Canadians drink alcohol regularly, nearly 25% exceed the level of

30 consumption that puts their health at risk.(1,3) Those diagnosed with an alcohol use disorder

31 are more likely to be younger, from neighborhoods of lower socioeconomic status and living in

32 non-urban environments.(4) Risky or harmful drinking has a significant impact on both

33 individuals and society including unemployment, motor-vehicle collisions (MVC), driving while

34 intoxicated and violence.(1,3) Extensive literature exists on the relationship between alcohol

35 use and increased injury risk.(5–8) Alcohol is a risk factor for both intentional and unintentional

36 injuries and increased blood alcohol level has been associated with almost all mechanisms and

37 types of injuries (i.e., cycling, falls, MVC, violence).(9–13) Injuries are one of the primary causes

38 of mortality and one of the leading causes of hospitalization in young adults. As the majority of

39 injuries are preventable, prevention programs informed by evidence are needed to address this

40 burden. The success and cost-effectiveness of prevention programs can be improved by

41 tailoring programs to specific targeted needs.

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Reducing health inequities has been prioritized by health agencies including the World Health Organization who state that little attention has been placed on understanding related issues in the context of social determinants of health.(14) Social determinants of health (SDoH) are a broad category of social and economic factors across the lifespan that influence an individual's health(15) such as childhood housing, parental health status and community resources. SDoH in childhood are found to impact health status across the lifecourse.(16) Further, SDoH have a powerful role in alcohol-related injuries and deaths. Herttua et al. found that socioeconomic status was more predictive of alcohol-related death and hospitalization than the extent of alcohol consumption.(17) Nickel et al. found that individuals with alcohol use disorder had greater rates of premature mortality, hospitalization, physician visits, contact with the justice system and having a child taken into care compared to those without alcohol use disorder.(4) Roche et al. noted alcohol use and related harm are strongly influenced by SDoH and that harmful drinking itself acts as a determinant of future health.(18) Therefore, alcohol use and alcohol-related injuries must be examined in the context of other social determinants of health. By examining alcohol-related injury in young adults and SDoH from childhood we can generate evidence that informs interventions targeted early in the life course, possibly modifying an individual's future health and social outcomes.

Objectives

This scoping review intends to explore the following research question: What SDoH are associated with alcohol-related injury in young adults?

2.0 METHODS AND ANALYSIS

This scoping review will be prepared in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols Extension for Scoping Reviews guidelines (PRISMA-ScR).(19) A scoping review is a systematic way of exploring a topic area where main concepts and knowledge gaps are identified within a developing field of research. A scoping review is appropriate for this topic due to the limited research and lack of synthesized knowledge in this area.

The review process will be guided by the five main steps set forth by Arksey and O'Malley(20)

1. Identify the research question;
2. Identify relevant studies;
3. Study selection;
4. Charting the data;
5. Collating, summarizing and reporting the results.

Step 1: Identify the research question

Our research question is as follows: What SDoH are associated with alcohol-related injury in young adults? This research question is meant to be broad in keeping with the exploratory nature of scoping reviews.

Step 2: Identifying relevant studies

The PubMed and SCOPUS databases will be systematically searched. Our research team has identified 13 SDoH of interest that will be examined in this study (Table 1). These SDoH of interest are based on previous work by our team, examinations of SDoH by the Manitoba Center for Health Policy and a review of the literature.(21–24) The SDoH that we will be examining in this study all pertain to child health; that is, social and economic factors that affect an individual early in their life course. These childhood SDoH include: lived in a low income household; lived in a rural or remote environment; family received income assistance; parent involved in the criminal justice system; parent did not graduate high school; lived in social housing; parent immigrated from another country; family with high residential mobility (i.e., moved frequently); child of a teen mother; mental disorder as a child; mother with a mental disorder; mother with a physical disorder; and being placed in the care of another adult.(21,22) (See Appendix 1.0 for full search strategies).

Table 1: Social determinants of health and MeSH terms/keywords to be used for the search in the PubMed* database.

Social Determinant of Health	MeSH Terms and Keywords
Low-income household	"Income" [MeSH] OR "Poverty" [MeSH] OR "income assistance"
Lived in rural or remote environment	"Rural Population" [MeSH] OR "Rural Health" [MeSH] OR "rural occupations" OR "remote populations"
Family received income assistance	"income assistance"
Parent(s) involved in criminal justice system (as a victim, parent, or accused)	"Criminal Law" [MeSH] OR "Criminals" [MeSH] OR "Criminal Behaviour" [MeSH]
Parent(s) did not graduate high school	"Education" [MeSH] OR "Educational Status" [MeSH]
Lived in social housing	"Public Housing" [MeSH] OR "Homeless Persons" [MeSH]
Child of parent who immigrated	"Emigrants and Immigrants" [MeSH] OR "Minority Health" [MeSH]
Child from family with high residential mobility	"Population Dynamics" [MeSH] OR "transient populations"
Child with mental disorder	"Mental Health" [MeSH] OR "Mental Disorders" [MeSH] OR "mentally ill"
Child of teen mother	"Pregnancy in Adolescence" [MeSH] OR "teenage pregnancy" OR "pregnant teen"
Child of parent with mental disorder	"Mental Health" [MeSH] OR "Mental Disorders" [MeSH] OR "mentally ill"
Child of mother with physical disorder	"Disabled Persons" [MeSH] OR "physical disability" OR "physical disorder"
Child in care	"Child Welfare" [MeSH] OR "Child Protective Services" [MeSH]

*A similar search will be carried out using the SCOPUS database (see Appendix 1.0).

For the PubMed database, MeSH terms and keyword terms for each of the 13 SDoH have been created (Table 1) and will be combined with MeSH and keyword terms for injury and alcohol (Table 2) using the AND operator. To narrow the search further, the MeSH term "Adult" will be added into the search using the AND operator to only include studies looking at adult populations. The MeSH term "Aged" will also be added with the NOT operator to exclude studies looking at elderly populations. A similar search strategy using the same search terms will be carried out using the SCOPUS database. An example of the search strategy used in

PubMed has been included (see Appendix 1.0). Additional social determinants and search strategies may be incorporated as the review progresses and any additions or changes will be documented.

Table 2: MeSH terms and keywords used for alcohol and injury search in PubMed database.

Search Term	MeSH Terms and Keywords
Alcohol	“Ethanol” [MeSH] OR “Alcohol-Related Disorders” [MeSH] OR “Alcohol Drinking” [MeSH] OR “alcohol”
Injury	“Wounds and Injuries” [MeSH]
Adults	“Adult” [MeSH]
Elderly	“Aged” [MeSH]

Step 3: Study selection

Two reviewers, HG and CC, will screen all articles identified from the databases independently. Titles and abstracts will be reviewed based on the initial search and will be included based on the eligibility criteria described below. Duplicate articles will be removed and full texts will be examined to create a final list of included studies. Any disagreements on the inclusion of any articles will be resolved through discussion and consultation with a third reviewer if necessary.

Eligibility criteria

This scoping review will consider the following types of studies: quantitative; retrospective and prospective case-control and cohort; cross-sectional; qualitative; mixed methods; case reports; meta-analyses; and systematic reviews. Studies to be included in this review must meet the following criteria (Table 3): 1) published in English (may be from any geographic location); 2) published between January 1, 2000 and July 13, 2022; 3) examine a population of young adults (those aged 18-25) suffering physical injury related to alcohol use; and 4) examine at least one of the SDoH of interest in relation to alcohol-related injury. Additional SDoH of interest other than those already defined may be included in the review as the project progresses. Articles outside of those defined in the inclusion criteria will be excluded.

Table 3: Inclusion and exclusion criteria for the review

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> Quantitative studies (cross-sectional, retrospective and prospective case control and cohort studies) Qualitative and mixed methods studies, case reports, meta-analyses and systematic reviews Studies in English language only Studies covering any geographic location Studies published between January 1, 2000 and July 13, 2022 Studies examining a population of young adults (those aged 18-25) suffering physical injury related to alcohol use Studies must examine at least one of the SDoH of interest in relation to alcohol-related injury Studies must look specifically at injury related to alcohol use and not all-cause alcohol-related harm/mortality 	<ul style="list-style-type: none"> Opinion literature including commentaries, editorials, brief reports, perspectives and analyses Studies in non-English language Studies that were published outside of the specified dates Studies examining a population of individuals not aged between 18-25 years old Studies that only address all-cause harm/mortality related to alcohol use and not injury specifically

Step 4: Charting the data

Data from identified studies will be collected and charted according to key themes. For each eligible article charted data will include: authorship; title of publication; journal of publication; year of publication; general characteristics of the population studied; SDoH studied; study methods; and study results/key findings/strengths/limitations. A combination of Microsoft Excel and Covidence reference management software will be used to chart the data and manage the screening process.

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Step 5: Collating, summarizing and reporting the results

Risk of bias will not be assessed as this is a scoping review only intended to provide an overview of existing literature and not to critically appraise the included articles. However, we will include a discussion of any strengths and limitations found in the body of evidence. The results of this study will be summarized both quantitatively and qualitatively: quantitatively by highlighting the key numerical findings from each study included; and qualitatively through a narrative synthesis. Tables will be used to summarize the study findings and a flow chart will be created to give an overview of the screening process. SDoH other than those already identified by our team will be considered for inclusion in this study as the project progresses. The discussion section of the study will be based on themes that emerge from the review.

Patient/Public Involvement

There will be no patient or public involvement in this study.

3.0 DISCUSSION

The results of this study will establish what is currently known about the role of SDoH in alcohol-related injury in young adults. To our knowledge, this scoping review is the first published review on this topic and will, therefore, address an important gap in the literature. Through this review, we hope to provide an understanding of which SDoH are associated with alcohol-related injuries in young adults. This information will generate evidence to inform the development of targeted alcohol-related injury prevention programs for this population.

4.0 ETHICS AND DISSEMINATION

As the data to be included in this review have been published or obtained from publicly available sources, ethical approval is not required. The results of this scoping review will be disseminated through publication in a peer-reviewed journal.

Contributors

RS is the guarantor. HG, CC, BC, JG, RS and SL drafted the manuscript and contributed to the development of the selection criteria. HG, CC and a university librarian developed the search strategy. All authors read, provided feedback and approved the final manuscript.

Competing interests

None declared.

Patient consent for publication

Not applicable.

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APPENDIX 1.0

Full Search Strategies

The full search used in PubMed is as follows:

("Adult"[MeSH Terms] AND ("Wounds and injuries"[MeSH Terms] AND (("Income"[MeSH Terms] OR "Poverty"[MeSH Terms] OR "income assistance"[Title/Abstract] OR ("Rural population"[MeSH Terms] OR "Rural health"[MeSH Terms] OR "rural occupations"[Title/Abstract]) OR ("Criminal law"[MeSH Terms] OR "Criminals"[MeSH Terms] OR "criminal behaviour"[Title/Abstract]) OR ("Education"[MeSH Terms] OR "Educational Status"[MeSH Terms]) OR ("Public housing"[MeSH Terms] OR "Homeless persons"[MeSH Terms]) OR ("Emigrants and Immigrants"[MeSH Terms] OR "Minority Health"[MeSH Terms]) OR ("Population Dynamics"[MeSH Terms] OR "transient populations"[Title/Abstract]) OR ("Mental health"[MeSH Terms] OR "Mental disorders"[MeSH Terms] OR "mentally ill"[Title/Abstract]) OR ("Pregnancy in adolescence"[MeSH Terms] OR "teenage pregnancy"[Title/Abstract] OR "pregnant teen"[Title/Abstract]) OR ("Child Welfare"[MeSH Terms] OR "Child Protective Services"[MeSH Terms]) OR ("Disabled persons"[MeSH Terms] OR "physical disability"[Title/Abstract] OR "physical disorder"[Title/Abstract])) AND ("Ethanol"[MeSH Terms] OR "Alcohol related disorders"[MeSH Terms] OR "Alcohol drinking"[MeSH Terms] OR "alcohol"[Title/Abstract]))) NOT "Aged"[MeSH Terms]

The full search used in SCOPUS is as follows:

((((TITLE-ABS-KEY (income) OR TITLE-ABS-KEY (poverty) OR TITLE-ABS-KEY (income AND assistance))) OR ((TITLE-ABS-KEY (rural) OR TITLE-ABS-KEY (rural AND health) OR TITLE-ABS-KEY (rural AND population))) OR ((TITLE-ABS-KEY (criminal) OR TITLE-ABS-KEY (criminal AND law) OR TITLE-ABS-KEY (criminal AND behaviour))) OR ((TITLE-ABS-KEY (education) OR TITLE-ABS-KEY (educational AND status))) OR ((TITLE-ABS-KEY (homeless) OR TITLE-ABS-KEY (homeless AND persons) OR TITLE-ABS-KEY (public AND housing))) OR ((TITLE-ABS-KEY (immigrant) OR TITLE-ABS-KEY (immigrants AND emigrants) OR TITLE-ABS-KEY (minority AND health))) OR ((TITLE-ABS-KEY (residential AND mobility) OR TITLE-ABS-KEY (transient AND population))) OR ((TITLE-ABS-KEY (mental AND health) OR TITLE-ABS-KEY (mental AND disorders) OR TITLE-ABS-KEY (mentally AND ill))) OR ((TITLE-ABS-KEY (teenage AND pregnancy) OR TITLE-ABS-KEY (adolescent AND pregnancy) OR TITLE-ABS-KEY (pregnant AND teen))) OR ((TITLE-ABS-KEY (child AND welfare) OR TITLE-ABS-KEY (child AND protective AND services))) OR ((TITLE-ABS-KEY (physical AND disability) OR TITLE-ABS-KEY (physical AND disorder) OR TITLE-ABS-KEY (disabled AND persons)))) AND ((TITLE-ABS-KEY (alcohol) OR TITLE-ABS-KEY (ethanol) OR TITLE-ABS-KEY (alcohol AND drinking) OR TITLE-ABS-KEY (alcohol AND related AND disorders))) AND ((TITLE-ABS-KEY (physical AND injury) OR TITLE-ABS-KEY (traumatic AND injury))) AND (TITLE-ABS-KEY (adult))) AND NOT ((TITLE-ABS-KEY (elderly) OR TITLE-ABS-KEY (seniors)))

Filters for dates and English language were then applied after the initial search.

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.	
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.	
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.	
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.	
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.	
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.	
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.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
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.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
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).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
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.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
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.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
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.	
Limitations	20	Discuss the limitations of the scoping review process.	
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.	
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.	

JB1 = 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 JB1 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

