Strategies for Addressing Needle Debris: Scoping Review Protocol

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Abstract

Objective: The objective of this scoping review is to explore the literature about needle debris associated with drug use in a community setting.

Introduction: Needle debris in the community poses a public health concern. Needle debris and discarded drug paraphernalia could contribute to perceived social disorder associated with harm reduction services, like supervised consumption sites. Discarded needles represent a public safety risk for both people who use drugs and other community members. Currently, the existing research on this topic is scattered and has yet to be consolidated and reviewed. Addressing needle debris may decrease perceived community impact from harm reduction services, and increase support for these services among area residents, business owners, and others. This scoping review will be undertaken to inform a program of research around needle debris, to review available literature on the topic.

Inclusion criteria: Studies that focus on strategies to address needle debris will be included, when referring to discarded needles and drug paraphernalia in the community. Exclusion criteria include strategies for people who use needles, who may generate needle waste inside homes and private property. Needle exchange programs and supervised consumption sites will be excluded when their primary purpose is to provide sterile supplies to prevent HIV/Hepatitis C transmission, and prevent and manage drug poisonings and overdoses, rather than prevent needles being discarded in the community.

Methods: This scoping review protocol was established following the Joanna Briggs Institute (JBI) guidelines for developing a protocol (Peters et al., 2022). The databases that will be searched are MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily (Ovid), CINAHL Plus with Full Text (EBSCO), APA PsycInfo (Ovid), EMBASE (Ovid), and Social Services Abstracts (ProQuest). The search will be conducted using subject headings and relevant keywords identified from analyzing seed articles. Studies will be limited to the English language. Data extraction will be completed using articles identified from the search that have substantial discussion on needle debris and the concept of disposal, retrieval, collection, prevention, and/or education. For a more comprehensive search, hand searching of reference lists and citation tracing will also be included.

The proposed scoping review will be conducted in accordance with the JBI methodology for scoping reviews (Peters et al., 2020).

Introduction

Needle debris and discarded drug paraphernalia can result from drug use outside private residences and supervised consumption sites. Needle debris may pose a health and safety hazard within the community and be perceived negatively by some community members as there are risks for the transmission of Human Immunodeficiency Virus (HIV)/Hepatitis C or injury. Stigma and fears around public safety may serve as a barrier to actualizing interventions to support people who use drugs. By addressing needle debris, it may be possible to allay some public concerns and increase support for services that help people who use drugs.

For the purposes of this study, the term needle debris will be used to refer to injection needles and drug paraphernalia that are discarded in community settings (e.g., parks, playgrounds, alleys, parking lots). These needles are often (but not exclusively) associated with injection drug use. Lastly, the term interventions will refer to any approach taken towards understanding or altering the current volume of needle debris.

Due to the stigma associated with drug use, the perception of needle debris and other drug paraphernalia within the community have paradoxically led to unfavourable public attitudes towards harm reduction interventions, such as Needle Exchange Programs (NEP) (Broadhead et al., 1999). Harm reduction refers to any strategy that is focused on minimizing the risk for harm related to drug use but does not necessarily aim to eliminate the use of drugs entirely (Lenton & Single, 1998). Although these interventions are trying to mitigate negative health outcomes, the presence of harm reduction services have been misinterpreted as the source of increasing rates of drug use (Broadhead et al., 1999).

Both Supervised Consumption Sites (SCS) and NEP are harm reduction services. SCS (or Supervised Consumption Facilities) are "legally sanctioned facilities where people who use drugs can safely inject previously obtained drugs in the presence of medical staff" (Larson et al., 2017, p. 5). NEP consist of any type of program that "provide injection drug users with sterile replacements for their used needles and syringes" (Doherty et al., 2000, p. 936). We would like to acknowledge that, although both types of services aim to limit drug-related harm (e.g., drug-related poisoning, disease transmission), these programs involve the use, collection, distribution, or disposal of needles and therefore have a connection to needle debris. While there is evidence to suggest that SCS and NEP do not increase needle debris (Doherty et al., 2000; Larson et al., 2017), their focus is in facilitating safer injection practices, and not on limiting the number of discarded needles within communities. Therefore, SCS and NEP will not be included in this review, and they have been discussed widely elsewhere (Fernandes et al., 2017; Larson et al., 2017; Strike & Miskovic, 2018).

Some researchers have studied needle debris in community settings (Devaney & Berends, 2008; Riley et al., 1998). To date, the research conducted on needle debris has been limited in range and has yet to be reviewed. A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews, and Joanna Briggs Institute (JBI) Evidence Synthesis was conducted and no current or underway systematic reviews or scoping reviews about needle debris were identified. This scoping review is intended to serve as a guide to inform stakeholders of available evidence as a cohesive understanding of needle debris can support future interventions and enhance public support for harm reduction services.

The objective of this scoping review is to explore the literature about needle debris associated with drug use in a community setting.

Review question

What are the discussions of and interventions for needle debris associated with drug use in a community setting?

Keywords

disposal program; needle debris; scoping review; harm reduction

Eligibility criteria

Subject

The subject of this study is 'needle debris' which pertains to objects that are found on the ground that may include items like syringes, needles, water vials, bongs, bubbles, and other drug paraphernalia.

Intervention

The intervention of eliminating needle debris will require a complex and multi-system approach.

For this review, we are interested in any civic or local initiatives wherein needle disposal mechanisms function outside of healthcare facilities or established programs like supervised consumption sites, and the focus is on collection of used needles (e.g., through needle boxes or syringe disposal boxes, or manually collecting needles). Initiatives may be led by community partners or by civic workers as part of their job description to address needle debris in the community.

The intervention may also relate specifically to needle boxes. Facilitating the disposal of needle debris specifically by where the box is located in relation to where the needle debris is found. Both the civic workers picking up the needle box and individuals contributing to the presence of debris need to be considered. Also included in the review will be any information regarding the shape, size, and design of the box. Interventions that discuss needle boxes placed by civic employees versus private businesses on their property will be included.

Articles that reference disposal or a reduction of needle debris but lack a substantial discussion on the topic will not be included in this scoping review. For example, we will exclude interventions that focus on preventing needle stick injuries and mention a decrease in the number of improperly disposed needles but do not elaborate on how the intervention directly impacts needle debris.

Articles about education programs will be included in the review if it discusses various methods of how to dispose of sharps. Programs that simply educate people of what a sharp is and that it needs to be disposed of in a sharps container will not be included in the review.

Exclusion criteria will include NEP and SCS. The main goal of these services is to offer clean supplies and prevent HIV/Hepatitis C transmission/ offer other services, and less to keep the needles off the ground. These topics have also been discussed in other reviews.

Context

The desired outcome for this scoping review is to summarize available evidence. The knowledge that is presented from this review can then be used to guide future researchers and stakeholders in addressing needle debris.

This project will consider literature within the context of community settings. Our goal is to direct the search towards addressing needle debris outside of healthcare facilities.

Types of Sources

This scoping review will consider both experimental and quasi-experimental study designs including randomized controlled trials, non-randomized controlled trials, pre and post study designs and interrupted time-series studies. In addition, analytical observational studies, including prospective and retrospective cohort studies, case-control studies and analytical cross-sectional studies will be considered for inclusion. This review will also consider descriptive observational study designs including case series, individual case reports and descriptive cross-sectional studies for inclusion.

Qualitative studies will also be considered that focus on qualitative data including, but not limited to designs such as phenomenology, grounded theory, ethnography, qualitative description, action research and feminist research.

Conference abstracts, editorials, discussion or opinion papers, and protocols will be included. If there is insufficient detail provided in the publication to allow for data extraction, the authors of the publication will be contacted to request additional information, or the publication will be excluded from the scoping review.

In addition, if systematic reviews or other evidence synthesis reviews are found, the studies included in the review will have their reference lists scanned for additional studies.

Grey literature will not be included in this scoping review.

Methods

This scoping review protocol was established following the Joanna Briggs Institute (JBI) guidelines for developing a protocol (Peters et al., 2022).

We will conduct a scoping review using the JBI methodology for scoping reviews framework in (Peters et al., 2020).

Search strategy

A discovery search in Google Scholar was completed to identify articles regarding needle debris. 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 in MEDLINE (Ovid) (see Appendix I). The search strategy, including all identified keywords and index terms, will be adapted for each included database and/or information source. The reference list and the cited bys of all included sources of evidence will be screened for additional studies. Studies published in English will be included. The limits of 2002-present will be utilized as needle debris is often associated with supervised consumption sites, which were reported in the literature for the first time in 2003.

Databases to be searched included: MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily (Ovid), CINAHL Plus with Full Text (EBSCO), APA PsycInfo (Ovid), EMBASE (Ovid), and Social Services Abstracts (ProQuest).

Study/Source of Evidence selection

Following the search, all identified citations will be collated and uploaded into Covidence (Veritas Health Innovation, Melbourne, Australia) and duplicates automatically removed. A pilot test using 50 randomly selected records will be conducted. The purpose of this test is to ensure consistency between reviewers and to clarify any conflict or variability with the inclusion criteria. The assessment of these records must reach a level of agreement of 75 percent or greater between reviewers before official screening will commence. Following the pilot test, titles and abstracts will then be screened by two or more independent reviewers for assessment against the inclusion criteria for the review. The full text of selected records will be assessed in detail against the inclusion criteria by two or more independent reviewers using Covidence. Reasons for exclusion at full text phase 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 group consensus. The scoping review will be reported in accordance with Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) and search results will be reported using PRISMA Flow Diagram (Page et al., 2021).

Data Extraction

Data will be extracted from studies included in the scoping review by one or more independent reviewers using a data extraction tool developed by the reviewers. The data

extracted will include specific details about the author, year of publication, title, setting, study design, participants, methods, aim or questions, and themes or outcomes.

The data extraction instrument is provided (see Appendix II). The draft data extraction tool will be tested on five studies and may be modified or revised as necessary during the process of extracting data from each included evidence source. Modifications to the data extraction form will be detailed in the scoping review in the forthcoming publication. Any issues that arise during data extraction will be resolved through discussion with additional reviewers. If appropriate, authors of papers will be contacted to request missing or additional data, where required.

Data Analysis and Presentation

The extracted data will be presented in a table format. No quality assessment of the articles will be completed, in keeping with scoping review methodology (Tricco et al., 2016). There will be a summary of the literature presented and submitted for publication.

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Conflicts of interest

The authors declare no conflicts of interest for this project.

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Appendices

Appendix I: Search strategy

Database(s): **Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily** 1946 to August 03, 2022

Search Strategy:

#	Searches	Results
1	Syringes/	6604
2	Needles/	16948
3	(needle or needles or syringe* or sharps).tw,kf.	142864
4	(drug adj3 paraphernalia).tw,kf.	180
5	(water vial* or bong or bongs or bubble* or hookah* or pipe or pipes).tw,kf.	34378
6	or/1-5	182786
7	Medical Waste Disposal/	2306
8	Refuse Disposal/	16279
9	Needle-Exchange Programs/	1963
10	(collection adj3 (bin or bins or site* or box or boxes or container*)).tw,kf.	2717
11	(dispose* or disposal or disposing or discard* or debris).tw,kf.	74853
12	(bin or bins or drop box* or dropbox* or container* or trash or garbage or bottle or bottles or jar or jars).tw,kf.	51449
13	or/7-12	142207
14	Community Participation/	18237
15	Urban Population/	62354
16	(communit* or public or neighbor* or neighbour* or residential).tw,kf.	1334507
17	(household* or house* or home*).tw,kf.	783192
18	(mall or malls or store or stores or market* or supermarket* or airport* or librar* or restroom* or washroom* or bathroom* or gym or gyms or restaurant* or park or parks or playground* or pharmacy or pharmacies or church* or mosque* or synagogue* or stadium* or arena* or shelter* or school* or business* or alley* or laneway* or parking lot* or garage* or parkade*).tw,kf.	899257
19	((Fire or police) adj3 (station* or department*)).tw,kf.	2233
20	(firetruck* or fire truck* or police car*).tw,kf.	82
21	(road* or sidewalk* or ground).tw,kf.	190650
22	((consumption or safe injection*) adj3 (site* or space* or place* or room*)).tw,kf.	1368
23	((Urban or civic or community or city or cities) adj3 (space* or place* or area* or building* or facility or facilities or environment)).tw,kf.	67423

24	or/14-23	2943822
25	6 and 13 and 24	1387
26	limit 25 to yr="2002 -Current"	1056

Appendix II: Data extraction instrument

Author/ Year	Setting	Title	Study Design	Participants	Question/Aim	Method	Themes/ Outcomes