Drug and Alcohol Dependence 197 (2019) 299–314

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

A systematic review of stakeholder perceptions of supervised injection facilities

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ARTICLE INFO

Keywords:
Supervised injection facility
Supervised injection site
People who use drugs
Substance use
Qualitative
Systematic review

ABSTRACT

Introduction: Supervised injection facilities (SIFs) have been developed to address the public health burden associated with substance use. While these facilities have been associated with a number of positive outcomes, stakeholder opinion (the opinions of those potentially affected by these facilities) is likely to influence their future development. This systematic review aims to answer the question, "how do stakeholders perceive SIFs?"
Materials and methods: Articles were located through nine academic databases, by searching for grey literature, by contacting health departments in countries where SIFs have been implemented, by searching articles that cited included articles, and by searching the reference lists of included articles. Two reviewers screened all articles. Data was double-extracted and quality appraised. All extracted perceptions were analyzed by two coders.
Results: Forty-seven articles were synthesized. Key themes included (1) benefits of SIFs, such as the increased safety of people who use drugs (PWUD) and the education that was provided at these facilities; (2) concerns regarding SIFs, such as the location of these facilities and existing rules and regulations; and (3) suggestions for SIFs, such as changing restrictions and regulations. Perceptions often fluctuated between stakeholders with first-hand experience of SIFs (e.g. staff and PWUD) and stakeholders not involved in the operation of SIFs (e.g. the general public).
Conclusion: The findings of this review illustrate how perceptions vary and align across different types of SIFs. Going forward, it will be important to draw on these insights to facilitate a more informed discussion on the implementation and continuation of these facilities.

1. Introduction

Globally, substance use has become a significant public health issue. Specifically, the Global Burden of Disease Study 2010 found that substance use disorders accounted for 14.7% of disability adjusted life years lost from mental, neurological, and substance use disorders (Whiteford et al., 2015). This study also found that substance use was responsible for approximately 188,152 deaths globally in 2010 (Whiteford et al., 2013). In North America specially, research has shown that deaths from overdose, including overdose related to injection drug use, have been increasing (Ciccarone, 2017; Rudd et al., 2016). Further, drug use continues to be associated with a number of adverse outcomes, including premature death, hepatitis C, HIV, and other infectious diseases (Chen and Lin, 2009).

Given the rising mortality rates and issues caused by substance use, and injection drug use in particular, a number of facilities to reduce drug-related harm have been developed. Specifically, drug consumption rooms (DCRs) were established in Europe in 1986 (Hedrich et al., 2010). To achieve the overall objective of reducing health and societal problems related to people who use drugs (PWUD), DCRs are designed to fulfill the following three aims: 1) to create an environment where drug use can be safer for users; 2) to improve the health of PWUD through the reduction of morbidity, mortality, and risky behaviors, and by increasing access to care; and 3) to reduce disorder in public spaces caused by PWUD (Hedrich et al., 2010). The terminology on DCRs is often used inconsistently and different terms (e.g. supervised consumption sites, fixing galleries, etc.) are often used interchangeably. This variable use of terminology is problematic as there are important distinctions between different types of DCRs. For example, some facilities are designed for injection, others for smoking, and some for multiple types of substance use (Hedrich et al., 2010). This review will narrow its focus to supervised injection facilities (SIFs), which are the most implemented type of DCR with people who inject drugs (PWID) as the main clientele.

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https://doi.org/10.1016/j.drugalcdep.2019.02.006
Received 28 September 2018; Received in revised form 17 January 2019; Accepted 7 February 2019
Available online 14 February 2019
0376-8716/

SIFs have been evaluated in several systematic reviews. Specifically, two recent systematic reviews assessed outcomes related to the use of SIFs (Kennedy et al., 2017; Potier et al., 2014). These reviews found that the use of these facilities was associated with a decrease in overdose deaths, an increase in individuals receiving addiction and medical treatment, and a decrease in substance use in public (Kennedy et al., 2017; Potier et al., 2014). Further, SIFs were found to be largely cost-effective (Kennedy et al., 2017; Potier et al., 2014).

While research has demonstrated many benefits associated with implementing SIFs, policy decisions are not always made based on the best available and up-to-date evidence, with stakeholder (those who may be affected by the policy) perceptions often playing a large role in policy decisions (Burstein, 2003; Hyshka et al., 2013). Although reducing harm is the primary objective of DCRs, perceptions of SIFs are critical to successfully fulfilling the third aim of DCRs (i.e. reducing public disorder; Hedrich et al., 2010). Further, community resistance can serve as an important barrier to SIF implementation. SIFs will inevitably influence the community of implementation, and it is thus important to understand aspects related to the perceptions of those the facilities concern. Yet, little is known about how different types of stakeholders perceive SIFs, which is a significant knowledge gap when considering the continued operation and future implementation of SIFs.

1.1. Objectives and research question

To the best of our knowledge, no study has attempted to aggregate and synthesize the research conducted on the perceptions of SIFs, although one existing review focused on perceptions of PWUD in several drug-related programs (not just SIFs; McNeil and Small, 2014). However, for the purposes of this review, it is important not only to synthesize perceptions of PWUD, but also of other relevant stakeholders. We consider all groups which are influenced directly or indirectly by the implementation of SIFs as a stakeholder. This includes, but is not limited to PWUD, staff at these facilities, local businesses, community representatives, police officers, and health care personnel. Further, we will consider perceptions for different types of SIFs, including sanctioned (legal) and unsanctioned (illegal or underground) facilities, as well as stakeholder perceptions of SIFs if they were to be implemented (these will be referred to as 'not yet developed' SIFs).

Ultimately, this review aims to answer the question "how do stakeholders perceive SIFs?"

2. Materials and methods

2.1. Pre-Registration

A protocol for this review was pre-registered in PROSPERO (CRD42017081866).

2.2. Search strategy

The search strategy for this review was developed by reviewing existing literature in the field to determine key terms that may be appropriate for the review. Specifically, we located several manuscripts that contained stakeholder perceptions of SIFs, which met the criteria for our review, and used these to create our search terms. As part of the search strategy development, we piloted this search strategy to ensure that all articles we had pre-identified as being relevant to this review (those we used to create the search terms) were captured. In our first pilot search, one of our pre-identified articles was missing, so the search terms were further refined. The second, and final, search was conducted on December 17 and December 18, 2017, with the following databases being searched: Applied Social Sciences Index and Abstracts, Global Health, Medline, ProQuest Dissertations and Theses Global, PsycINFO, PubMed, Scopus, Social Services Abstracts, and Web of Science. The search strategy for these databases can be found in Appendix 1. To ensure maximum sensitivity, the search was deliberately kept broad, using a number of terms related to SIFs and DCRs, and not terms related to the methodology of the studies. The final search yielded 2531 articles from academic databases.

In response to the recently described challenge that qualitative research is underrepresented in academic databases, and thus in systematic reviews (Booth, 2016), and given that recent reviews in the substance use field locate both grey and academic literature solely through Google Scholar (Jozaghi et al., 2018), this review made comprehensive efforts to identify additional literature, such as reports from governmental and non-governmental organizations. Grey literature was located through several search engines, such as Google Scholar, on December 17 and December 18, 2017 using various terms related to SIFs. Specifically, we used the terminology developed for the academic databases to search for grey literature, with different combinations of key words being used for different searches. This resulted in the identification of eight additional articles for review.

Additionally, on February 13 and February 14, 2018, health departments from countries known to have implemented SIFs (Australia, Canada, Denmark, Germany, Netherlands, and Norway) were contacted, as was the International Network of Drug Consumption Rooms. These emails described the aim of our review followed by a request for information on any grey literature or information they had related to SIFs. Organizations in Norway (eight articles) and Denmark (six articles) responded.

After the full text review, described further below, attempts were made to locate additional articles based on the articles included in the review. Between January 24 and February 14, 2018, the reference lists of included articles were searched for relevant articles. Included publications were then entered into Google Scholar to determine if any articles citing the included study were relevant. Nine additional articles were identified through this method.

The number of articles resulting from each component of the search can be found in Fig. 1. The term "article" is used broadly in the manuscript to refer to academic articles and pieces of grey literature, such as reports.

2.3. Inclusion criteria

Articles were included if they met the following criteria:

1 The full text of the article was available.
2 The article was published in English, German, Danish, Norwegian, or Dutch.
3 The study was qualitative in nature (not including policy/document analysis). Qualitative research studies were selected as they are meant to assess the "experience, meaning and perspective" of participants (Hammarberg et al., 2016, p. 499).
4 Stakeholder perceptions related to SIFs were included in the article. For the purposes of this review, "stakeholder" refers to anyone who may be affected by a SIF. Stakeholders did not have to have direct experience with SIFs to be included.

2.4. Data extraction (selection and coding)

After the removal of duplicates, 1645 articles remained and were uploaded to Covidence for screening. Steps for the selection of articles follow those recommended by Meade and Richardson (1997). Titles and abstracts were double-screened by two reviewers (BL and ABM). Upon completion of the initial screening, discrepancies were resolved through discussion. Following this, the remaining articles (n = 111) were screened at the full text level by both BL and ABM. For any discrepancy that occurred at this stage, each author located and presented evidence within the article to justify why it should be included or excluded. All

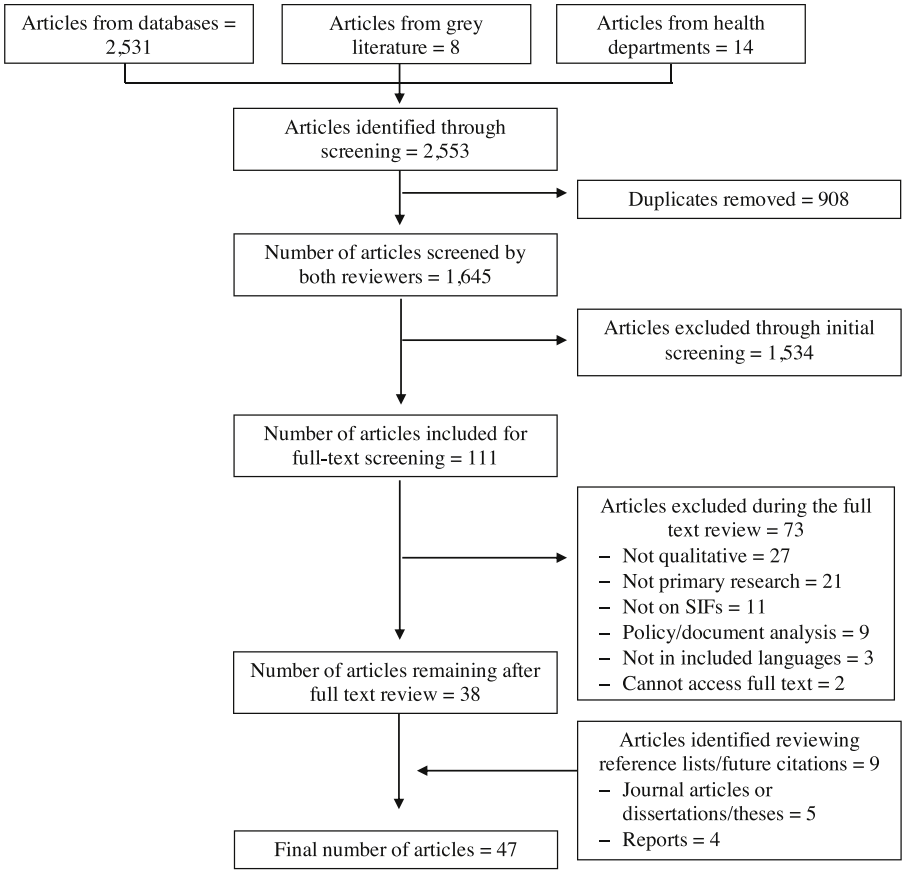

Fig. 1. Selection of Articles for Review.

discrepancies were discussed until consensus was reached.

Following this process, BL and ABM began data extraction for all included studies (except for three articles in Norwegian, which ABM solely completed data extraction for). General study information (author, title, research aim, etc.), participant information (stakeholder groups represented and characteristics of stakeholder groups), methods (recruitment strategy, inclusion and exclusion criteria, sample size, data collection methods, data analysis methods, etc.), and discussion points (suggested future interventions, suggested future research, and suggested policy) were extracted. Then, all perceptions related to SIFs were extracted and grouped into three categories described further below. BL and ABM created agreed upon documents with all discrepancies being resolved through the review of full texts and discussion.

2.5. Data analysis

Basic study information, such as country, types of stakeholders included, and characteristics of the SIF, was synthesized narratively.

Following agreement of extracted stakeholder perceptions, this information was uploaded in separate documents for each article into NVivo. Based on a preliminary review of included studies, we applied several categories deductively to the data (Joffe and Yardley, 2004). First, we classified perceptions according to whether they related to sanctioned, unsanctioned, or sites that were yet to be developed (i.e. where participants discussed their perceptions, often in terms of feasibility and acceptability, of a SIF if it were to be developed). Within the three types of sites, perceptions were separated based on whether they were positive, negative, or neutral.

Further, within each of these categories, different groups of stakeholders were created. These included stakeholder groups are shown in Table 1. Though each stakeholder group was initially coded separately, several stakeholder groups were eventually combined into broad stakeholder groups, as illustrated in Table 1. PWUD refers to any individual who uses drugs. Workers in the substance use field refer to a variety of substance use professionals outside of the SIF, including researchers. Government or city employees include any individual working for the government, such as policy makers. Health professionals include both physical and mental health professionals. The general public includes individuals whose professions have not been identified and those who fit into community groups, such as religious groups. Emergency service stakeholders include both EMS and fire services. The business sector refers to those stakeholders who owned businesses or had a vested interest in businesses within the community. Further stakeholder groups include the police, employees at SIFs, and those in social services. The mixed stakeholder group refers to instances in the data where it was unclear what group a participant belonged to or when the perceptions of multiple stakeholder groups were combined.

All extracted data from the results section of included articles were then coded inductively following the principles of thematic analysis (Braun and Clarke, 2006; Joffe and Yardley, 2004; Thomas and Harden, 2008), as suggested by Thomas and Harden (2008), who highlight how to conduct a thematic synthesis of qualitative research in a systematic review. BL and ABM coded a subset of extracted data separately. Based on this initial coding, the authors then developed a joint codebook defining all codes to ensure consistency in subsequent coding. BL and ABM then proceeded to code a further subset of interviews together to further expand the codebook and ensure that both authors were coding extracted data consistently. Following the joint coding, the remaining articles were divided among BL and ABM for independent coding. During this process, both authors continued to add codes and definitions to the codebook. All coding was reviewed by both authors on an iterative basis.

Tables 3–5 were developed to synthesize the top three perceived benefits, concerns, and suggestions among the major stakeholder

Table 1
Overview of Included Studies (N = 47)*.

	n	%	Mean (SD)
Type of Publication			
Peer-Reviewed Study	33	70.2	
Report	7	14.9	
Dissertation/Thesis	7	14.9	
Date of Publication			
1999–2000	2	4.3	
2001–2005	6	12.8	
2006–2010	14	29.8	
2011–2015	15	31.9	
2016–2018	10	21.3	
Country Study was Conducted In			
Canada	26	55.3	
Australia	8	17.0	
United States	4	8.5	
Norway	3	6.4	
Multiple countries	3	6.4	
England	1	2.1	
Ireland	1	2.1	
Mexico	1	2.1	
Type of Facility			
Sanctioned	21	44.7	
Not developed	19	40.4	
Mixed (specific combinations found in Table 2)	4	8.5	
Unsanctioned	3	6.4	
Number/Percent of Total Articles with each Stakeholder Group			
PWUD	37	78.7	
Workers in the Substance Use Field Outside of SIFs			
General workers in the substance use field	10	21.3	
Advocates	3	6.4	
Public health professionals	3	6.4	
Researchers	3	6.4	
Outreach	1	2.1	
Health Professionals			
Physical health professionals	15	31.9	
Mental health professionals	2	4.3	
Government/City Employees			
Government officials	6	12.8	
Community/city workers	6	12.8	
Policy makers	4	8.5	
Police	13	27.7	
General Public			
General public (specific group not specified)	8	17.0	
Religious groups	2	4.3	
School officials	1	2.1	
Lawyers	1	2.1	
Emergency Services			
EMS	6	12.8	
Fire services	3	6.4	
Employees at SIFs	9	19.1	
Business Sector	8	17.0	
Social Services	5	10.6	
Sample Size (n = 42)**			55.8 (64.0)

* Please note that percentages may not sum to 100% due to rounding.
** Five of the studies had unclear sample sizes, so are not included here.

groups across sanctioned and yet to be developed SIFs, while perceptions of unsanctioned sites are synthesized narratively in text. The top benefits, concerns, and suggestions were determined by the number of articles and quotes contributing to these themes. Articles that reported on the same sample were counted multiple times, as the articles presented different aspects of the collected data. In cases where multiple themes had the same number of articles contributing to the theme and the same number and length of quotes, both were included, resulting in some stakeholder groups having more than three listed top benefits, concerns, and suggestions. Upon completion of the initial coding, subgroup analyses occurred, with BL and ABM examining potential differences and similarities in perceptions between stakeholder groups. Additionally, subgroup analyses were conducted by country. For these analyses, a table was created with each major benefit, concern, and suggestion described below without regard to stakeholder group. The country of origin for each article was then added and the table was examined to determine if any themes were more prominent in certain countries.

2.6. Quality assessment

The CASP Qualitative Checklist was used to assess the quality of studies located during the review (Critical Appraisal Skills Programme, 2017).We modified the last item on the CASP checklist ("how valuable is the research?") to determine whether an article could be considered of low, medium, or high value to the review, based on the overall study quality and the amount of information in the article relevant to the review (Critical Appraisal Skills Programme, 2017). Further details on the rating system can be found in Appendix 2. The CASP checklist was completed for each article by both BL and ABM (except for three articles not in English, which were solely completed by ABM). Ratings on individual CASP checklists from both reviewers were compiled into a single document, with any discrepancies being noted. BL and ABM discussed ratings until consensus was reached. The quality assessment of the included studies helped inform the interpretations and conclusions of the review, though studies were not excluded from the review based on quality ratings.

3. Results

3.1. Overview of results

A summary of the characteristics of included articles (N = 47) can be found in Table 1. Most articles included in this review are peer-reviewed articles (n = 33, 70.2%). The number of publications on stakeholder perceptions of SIFs has been steadily increasing, with most published in 2006 or later (n = 39, 83.0%). Over half of the included studies were conducted in Canada (n = 26, 55.3%), followed by Australia (n = 8, 17.0%). The mean sample size of the studies with clear sample sizes was 55.8 (SD = 64.0), with a median of 34, and sample sizes ranging from 4-250. Key characteristics of individual included articles are summarized in Table 2.

The top benefits, concerns, and suggestions that stakeholders had on SIFs are detailed in Tables 3–5. Themes that occurred prominently and/or across multiple stakeholder groups are discussed in depth below. Given the large volume of studies contributing to certain themes, references for some themes are not presented in text, but are instead presented in Tables 3–5. Instances where this occurred are noted in the text. Finally, illustrative quotes for each of the main themes and subthemes can be found in Table 6.

3.2. Quality of included studies

Most included studies were rated to be of medium and high value with only five studies (10.6%) being rated as 'low'. The most common quality issue was the failure to address and discuss the researcher-participant relationship. Further, several studies did not employ rigorous analysis methods, such as using multiple coders to ensure inter-rater reliability.

3.3. Benefits

3.3.1. Sanctioned SIFs

The top perceived benefits by stakeholders of sanctioned SIFs can be found in Table 3. Among PWUD, the most commonly stated benefit was that SIFs provided a safe place from the risks of being on the street, which included fear of theft, assault, and police harassment (References in Table 3). This theme was especially prominent among females who

Table 2
Overview of Individual Studies.

Author(s) and Year	Stakeholders Represented		Participant Characteristics	Facility Characteristics	Data Collection and Analysis
(Bardwell et al., 2017)	- Business sector - EMS - General public - Government officials	- Health professionals - Police - Social services	- Sample size: 20 - Age: Not listed	- Location: Canada - Status of facility: Not developed	- Collection: Interviews - Analysis: Thematic
(Bayoumi et al., 2012)	- Business sector - EMS - Fire services - General public - Government officials - Health professionals	- Police - Policy makers - PWUD - Social services - Workers in the substance use field	- Sample size: 236 - Age: Not listed	- Location: Canada - Status of facility: Not developed	- Collection: Interviews and focus groups - Analysis: Iterative
(Bozinoff et al., 2017)	- PWUD		- Sample size: 13 - Age: 17-28	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Butler et al., 2018)	- PWUD		- Sample size: 90 - Age: 23-55 for males and 21-58 for females	- Location: England - Status of facility: Not develop	- Collection: Questionnaire - Analysis: Not listed
(Davidson et al., 2018)	- PWUD	- SIF staff	- Sample size: 23 - Age: Not listed	- Location: United States - Status of facility: Unsanctioned	- Collection: Interviews and ethnography - Analysis: Thematic and grounded theory
(Dwyer et al., 2016)	- Business sector - Community workers - General public	- Health professionals - Police - PWUD	- Sample size: 35 - Age: Most between 31-50 (n = 28; 80.0%)	- Location: Australia - Status of facility: Not developed	- Collection: Interviews and informal conversations - Analysis: Content
(Fairbairn et al., 2010)	- PWUD		- Sample size: 20 - Age: 24-51	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Fairbairn et al., 2008)	- PWUD		- Sample size: 25 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Fast et al., 2008)	- PWUD		- Sample size: 50 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Frost, 2017)	- PWUD		- Sample size: 33 - Age: 21-57	- Location: United States - Status of facility: Not yet developed	- Collection: Focus groups and questionnaires - Analysis: Thematic and grounded theory
(Fry, 2002)	- PWUD		- Sample size: 215 - Age: 15-48	- Location: Australia - Status of facility: Not yet developed	- Collection: Questionnaires - Analysis: Not listed
(Fry et al., 1999)	- PWUD		- Sample size: 107 - Age: Most between 15-45	- Location: Australia - Status of facility: Not yet developed	- Collection: Interviews, focus groups, and questionnaires - Analysis: Consensus driven exploration
(Gardner, 2017)	- SIF staff		- Sample size: Unclear - Age: Not listed	- Location: Australia, Canada, and Denmark - Status of facility: Sanctioned	- Collection: Questionnaires - Analysis: Not listed
(Green et al., 2002)	- Former PWUD - IDU service providers - Outreach workers	- Data Collection and Analysis	- Sample size: 11 - Age: Not listed	- Location: Canada - Status of facility: Not yet developed	- Collection: Interviews - Analysis: Not listed
(Harris et al., 2018)	- Health professionals	- PWUD	- Sample size: 81 - Age: 27-59 for those who did interview	- Location: United States - Status of facility: Not yet developed	- Collection: Free listing and interviews - Analysis: Not listed
(Hudson, 2009)	- PWUD		- Sample size: 12 interviews - Age: 17-30 for those who did interviews	- Location: Australia - Status of facility: Sanctioned	- Collection: Interviews and ethnography - Analysis: Thematic
(Jozaghi and Reid, 2014)	- Peer injection PWUD		- Sample size: 32 - Age: most between 41-70 (n = 27; 84.4%)	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Content
(Jozaghi and Andresen, 2013)	- PWUD		- Sample size: 31 - Age: 28-60	- Location: Canada - Status of facility: Sanctioned and not yet developed	- Collection: Interviews - Analysis: Thematic
(Jozaghi, 2012)	- PWUD		- Sample size: 6 - Age: 29-50	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Katz et al., 2017)	- Health professionals		- Sample size: 250 - Age: Most between 36-55 (n = 143; 61.3%)	- Location: Canada - Status of facility: Sanctioned and not yet developed	- Collection: Questionnaire - Analysis: Not listed
(Kerr et al., 2017)	- Business sector - EMS - General public - Government officials	- Health professionals - Police - Social services	- Sample size: 20 - Age: Not listed	- Location: Canada - Status of facility: Not yet developed	- Collection: Interviews - Analysis: Not listed
(Kerr et al., 2007)	- PWUD		- Sample size: 50 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Kerr et al., 2004)	- Government official	- SIF staff	- Sample size: Unclear	- Location: Canada	

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Table 2 (*continued*)

Author(s) and Year	Stakeholders Represented		Participant Characteristics	Facility Characteristics	Data Collection and Analysis
	- Police - PWUD	- Workers in the substance use field	- Age: Not listed	- Status of facility: Unsanctioned	- Collection: Historical documentation and ethnography - Analysis: Content
(Kimber and Dolan, 2007)	- PWUD	- Workers in the substance use field	- Sample size: 25 - Age: 21-46	- Location: Australia - Status of facility: Not yet developed	- Collection: Interviews - Analysis: Thematic content
(KPMG, 2010)	- Drug services - EMS - Health professionals - Mental health professionals	- Police - PWUD - SIF staff	- Sample size: 49 clients/ former clients and 10 organizations - Age: Not listed	- Location: Australia - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Krüsi et al., 2009)	- PWUD	- SIF staff	- Sample size: 29 - Age: 28-54 for PWUD	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Malowaniec, 2003)	- Health professionals - Police	- PWUD	- Sample size: 39 - Age: Not listed	- Location: Canada - Status of facility: Not yet developed	- Collection: Focus groups - Analysis: Grounded theory
(Malowaniec, 2000)	- Community worker - Director of community agency - Health professional	- Mental health professional - Public health professional - Policy researcher	- Sample size: 6 - Age: Not listed	- Location: Canada - Status of facility: Not yet developed	- Collection: Interviews - Analysis: Content and grounded theory
(McNeil et al., 2014)	- PWUD		- Sample size: 23 - Age: 27-59	- Location: Canada - Status of facility: Unsanctioned (discusses sanctioned sites)	- Collection: Interviews and ethnography - Analysis: Thematic
(MSIC Evaluation Committee, 2003)	- Business sector - Community workers - General public - Health professionals	- Police - PWUD - SIF staff	- Sample size: Unclear - Age: Not listed	- Location: Australia - Status of facility: Sanctioned	- Collection: Interviews and focus groups - Analysis: Content
(O'Shea, 2007)	- Community workers - Member of the National Drugs Strategy Team - Minister for State - Police	- PWUD - Social services - UISCE members - Workers in the substance use field	- Sample size: 26 - Age: Not listed	- Location: Ireland - Status of facility: Not yet developed	- Collection: Interviews - Analysis: Not listed
(Olsen and Skretting, 2007)	- Health professionals - PWUD	- SIF staff	- Sample size: 41 - Age: Not listed	- Location: Norway - Status of facility: Sanctioned	- Collection: Interviews and focus groups - Analysis: Not listed
(Philbin et al., 2009)	- Health professionals - Legal professionals - Pharmacy workers	- Rehabilitation workers - Religious groups	- Sample size: 40 - Age: 32-71 for systems level and 31-61 for interactor level	- Location: Mexico - Status of facility: Not yet develop	- Collection: Interviews - Analysis: Content
(Pro Sentret, 2001)	- PWUD		- Sample size: 4 for interviews - Age: Not listed	- Location: Norway - Status of facility: Sanctioned (but decommissioned by the time of publication)	- Collection: Interviews and focus groups - Analysis: Not listed
(Rance and Fraser, 2011)	- PWUD		- Sample size: Unclear - Age: Not listed	- Location: Australia - Status of facility: Sanctioned	- Collection: Comment book entries - Analysis: Not listed
(Rautenberg, 2013)	- Advocacy groups - DCR staff	- Policy makers - Researchers	- Sample size: 11 - Age: Not listed	- Location: Canada, Germany, and Switzerland - Status of facility: Sanctioned and yet to be developed	- Collection: Interviews - Analysis: Not listed
(Skretting and Olsen, 2009)	- PWUD	- SIF staff	- Sample size: 5-7 - Age: Not listed	- Location: Norway - Status of facility: Sanctioned	- Collection: Interviews and focus groups - Analysis: Not listed
(Small et al., 2012)	- PWUD		- Sample size: 50 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews and ethnography - Analysis: Not listed
(Small et al., 2011a)	- PWUD		- Sample size: 50 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Small et al., 2011b)	- PWUD		- Sample size: 50 - Age: Not listed	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews and ethnography - Analysis: Thematic and emergent
(Small et al., 2009)	- PWUD		- Sample size: 50 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Small et al., 2008)	- PWUD		- Sample size: 50 - Age: 25-60	- Location: Canada - Status of facility: Sanctioned	- Collection: Interviews - Analysis: Thematic
(Strike et al., 2015)	- Addiction services - Business sector - City workers - EMS	- Health professionals - Police - Public health professionals	- Sample size: 141 - Age: Not listed	- Location: Canada - Status of facility: Not yet developed	- Collection: Interviews and focus groups - Analysis: Thematic and grounded theory

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Table 2 (*continued*)

Author(s) and Year	Stakeholders Represented		Participant Characteristics	Facility Characteristics	Data Collection and Analysis
	- Fire services - General public	- PWUD - Social services			
(Watson et al., 2015)	- Business sector - City workers - EMS - Fire services - General public	- Health professionals - Police - PWUD - Workers in the substance use field	- Sample size: 236 - Age: 21-60 for PWUD and 22-81 for stakeholders	- Location: Canada - Status of facility: Not yet developed	- Collection: Interviews and focus groups - Analysis: Iterative
(Watson et al., 2012)	- Police		- Sample size: 18 - Age: 28-55	- Location: Canada - Status of facility: Not yet developed	- Collection: Interviews and focus groups - Analysis: Thematic
(Wenger et al., 2011)	- Advocates - Business sector - General public - Government officials - IDU providers	- Police - Politicians - Religious groups - School official	- Sample size: 20 - Age: Not listed	- Location: United States - Status of facility: Not yet developed	- Collection: Interviews - Analysis: Inductive
(Zampini, 2014)	- Advocates - Health professionals	- Politicians - Researchers	- Sample size: 16 - Age: Not listed	- Location: Australia and England - Status of facility: Sanctioned and yet to be developed	- Collection: Interviews - Analysis: Iterative

*Note: For type of data analysis in the above table, articles where no description of the coding process was provided and articles that described the coding process without listing a major analysis type, such as grounded theory, were marked as "not listed.".

Abbreviations:

- IDU: Injection drug user.
- DCR: Drug consumption room.
- EMS: Emergency medical services.
- SCR: Supervised consumption rooms.
- SIF: Supervised injection facilities.
- PWUD: People who use drugs.

inject drugs (Fairbairn et al., 2008; Hudson, 2009; Jozaghi and Andresen, 2013; Krüsi et al., 2009; Small et al., 2012).

Most stakeholders considered increased safety of PWID a benefit of these facilities, including those who are directly involved in the operation of SIFs as well as the mixed stakeholder group (References in Table 3). The safety enabled by SIFs was understood to be driven by education on drug use; a hygienic environment, necessary supplies; and the supervision of substance use, especially in the event of an overdose. The positive educational influence on injection practices was the most commonly cited benefit across stakeholder groups, with PWUD, employees at SIFs, health professionals, and mixed stakeholders all highlighting this aspect (References in Table 3). Positive staff-PWID relations were also considered integral to the safety of clients by both PWUD (Fast et al., 2008; Jozaghi, 2012; Jozaghi and Andresen, 2013; KPMG, 2010; Krüsi et al., 2009; Olsen and Skretting, 2007; Rance and Fraser, 2011; Skretting and Olsen, 2009; Small et al., 2011a, 2012; Small et al., 2008) and SIF staff (References in Table 3). PWUD (Hudson, 2009; Jozaghi, 2012; Jozaghi and Andresen, 2013; KPMG, 2010; Krüsi et al., 2009; Small et al., 2009, 2008), SIF staff (Krüsi et al., 2009; Skretting and Olsen, 2009), and mixed stakeholders (KPMG, 2010) described the improved access to care enabled by SIFs as a benefit. Finally, the business sector, community workers, and health professionals reported a reduction in discarded syringes in the community (MSIC Evaluation Committee, 2003).

3.3.2. Not yet developed SIFs

As with sanctioned SIFs, safety of PWID was considered the major potential benefit of a prospective SIF implementation. Specifically, PWUD, workers in the substance use field, health professionals, emergency services, and mixed stakeholders saw this as a benefit (References in Table 3). The increased safety was thought to be facilitated by SIFs serving as a safe place for PWID - a potential benefit that was also recognized by police officers (References in Table 3). Increased safety was also seen as resulting from increased education, which was the fourth most commonly mentioned benefit by PWUD (Frost, 2017; Malowaniec, 2003) and also cited by health professionals (Malowaniec, 2003).

Further, mixed stakeholders and police officers argued that SIFs were a cost-effective solution, in that they would reduce HIV and hepatitis C transmissions (Malowaniec, 2003). Also, PWUD believed that SIFs would lead to reduced public injection and reduce the number of syringes in the community (References in Table 3).

3.3.3. Unsanctioned SIFs

PWUD found unsanctioned sites to increase the physical safety of users, provide a safe place from crime on the streets, create a sense of solidarity and a general positive environment, and to be educational for clients (Davidson et al., 2018; Small et al., 2011a). While police were not supportive of unsanctioned SIFs, they did express support of sanctioned SIFs – "we are very disappointed that groups did this now, because we are supporters of the official- supervised safe injection site application" (Kerr et al., 2004, p. 15). However, those who developed the unsanctioned SIF thought the process of a legalizing the site was too long and the benefits to PWUD too important to wait for sanctioning (Kerr et al., 2004).

3.4. Concerns

3.4.1. Sanctioned SIFs

As shown in Table 4, the most discussed concerns regarding sanctioned SIFs by PWUD revolved around existing restrictions and regulations (References in Table 4). For example, PWUD were concerned with current restrictions on drug sharing, age, intoxication, and

Table 3
Summary of Perceived Benefits of SIFs Listed by Stakeholder Groups.

Stakeholder Group	Sanctioned	References - Sanctioned	Not Yet Developed	References – Not Yet Developed
PWUD	1. Safe place	(Fairbairn et al., 2008; Hudson, 2009; Jozaghi, 2012; Jozaghi and Andresen, 2013; Kerr et al., 2007; KPMG, 2010; Krüsi et al., 2009; MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007; Pro Sentret, 2001; Rance and Fraser, 2011; Small, Ainsworth, et al., 2011; Small et al., 2012, 2009)	1. Safety	(Bayoumi et al., 2012; Frost, 2017; Fry, 2002; Harris et al., 2018; Kimber and Dolan, 2007; Malowaniec, 2003; O'Shea, 2007)
	2. Safety	(Fairbairn et al., 2010; Fast et al., 2008; Hudson, 2009; Jozaghi, 2012; Jozaghi and Andresen, 2013; Jozaghi and Reid, 2014; Kerr et al., 2007; KPMG, 2010; Krüsi et al., 2009; Rance and Fraser, 2011; Small et al., 2012, 2009; Small et al., 2008)	2. Reduction in public injection/syringes	(Dwyer et al., 2016; Frost, 2017; Fry, 2002; Harris et al., 2018; Jozaghi and Andresen, 2013; O'Shea, 2007)
	3. Education	(Fairbairn et al., 2008; Fast et al., 2008; Jozaghi, 2012; Jozaghi and Andresen, 2013; Jozaghi and Reid, 2014; Kerr et al., 2007; KPMG, 2010; Krüsi et al., 2009; McNeil et al., 2014; Pro Sentret, 2001; Skretting and Olsen, 2009; Small et al., 2012, 2008)	3. Safe place	(Frost, 2017; Fry, 2002; Harris et al., 2018; Kimber and Dolan, 2007; Malowaniec, 2003)
Workers in the Substance Use Field Outside of SIFs	1. X	X	1. Safety	(Bayoumi et al., 2012)
	2. X	X	2. X	X
	3. X	X	3. X	X
Government or city employees	1. Reduction in public injection/syringes	(MSIC Evaluation Committee, 2003)	1. Alleviate challenges around injection drug use	(Bardwell et al., 2017)
	2. X	X	2. X	X
	3. X	X	3. X	X
Health Professionals	1. Education	(Olsen and Skretting, 2007)	1. The harm reduction approach of facilities	(Katz et al., 2017; Malowaniec, 2003)
	2. The harm reduction approach of facilities	(Olsen and Skretting, 2007)	2. Access to care	(Katz et al., 2017; Malowaniec, 2003)
	3. Reduction in public injection/syringes	(MSIC Evaluation Committee, 2003)	3. Education	(Malowaniec, 2003)
	4. Safer for health professionals	(MSIC Evaluation Committee, 2003)	4. Safety	(Katz et al., 2017)
Police	1. Change in police perceptions	(KPMG, 2010)	1. Cost-effectiveness	(Malowaniec, 2003)
	2. X	X	2. Educating the public	(Malowaniec, 2003)
	3. X	X	3. Research can be conducted	(Malowaniec, 2003)
			4. Safe place	(Malowaniec, 2003)
Emergency Services	1. Cost-effectiveness (fewer individuals in emergency departments)	(KPMG, 2010)	1. Safety	(Watson et al., 2015)
	2. X	X	2. X	X
	3. X	X	3. X	X
Employees at SIFs	1. Positive staff-PWID relations	(Krüsi et al., 2009; MSIC Evaluation Committee, 2003; Skretting and Olsen, 2009)	1. X	X
	2. Education	(Krüsi et al., 2009; MSIC Evaluation Committee, 2003; Skretting and Olsen, 2009)	2. X	X
	3. Safety	(Krüsi et al., 2009; MSIC Evaluation Committee, 2003)	3. X	X
Business Sector	1. Reduction in public injection/syringes	(MSIC Evaluation Committee, 2003)	1. X	X
	2. Reduced criminal activity	(Rautenberg, 2013)	2. X	X
	3. X	X	3. X	X

(*continued on next page*)

Table 3 (*continued*)

Stakeholder Group	Sanctioned	References - Sanctioned	Not Yet Developed	References – Not Yet Developed
Mixed Stakeholders	1. Access to care	(KPMG, 2010)	1. Access to care	(Bardwell et al., 2017; Malowaniec, 2000)
	2. Solidarity	(Rautenberg, 2013)	2. Safety	(Malowaniec, 2000)
	3. Education	(KPMG, 2010)	3. Cost-effectiveness	(Malowaniec, 2000)
	4. Safety	(KPMG, 2010)		

Stakeholder groups that did not contribute to the benefits theme for sanctioned and not developed sites are not included in the table.
X = the stakeholder group did contribute to the benefits theme for sanctioned and not developed sites, but did not have three concerns listed.

pregnancy (Hudson, 2009; Jozaghi and Reid, 2014; KPMG, 2010; Small et al., 2011a). Further, in four studies, PWUD expressed concern about SIFs not allowing assisted injection (Fairbairn et al., 2010; McNeil et al., 2014; Small et al., 2011a,b). PWUD were also concerned about waiting times and hours of operation within sanctioned SIFs (References in Table 4). SIF staff mentioned disruptive client behavior as their top concern, as well as personal safety and mental health (References in Table 4).

Stakeholders not directly involved with the operation of SIFs expressed several concerns related to the effect that sanctioned SIFs might have on the community, such as increasing drug use, more PWUD in the community, and loitering (References in Table 4).

3.4.2. Not yet developed SIFs

Perceived concerns related to prospective SIFs are shown in Table 4. Across stakeholder groups, including PWUD, government or city employees, the business sector, and mixed stakeholders, deciding on the location of SIFs was a major issue for debate and concern (References in Table 4). While PWUD were concerned that the SIF would be too far away for them to use (Harris et al., 2018; Kimber and Dolan, 2007), community representatives were concerned about the proximity of the facility to themselves and their businesses (Bardwell et al., 2017; Bayoumi et al., 2012; Kerr et al., 2017; O'Shea, 2007; Strike et al., 2015).

Another major concern listed by workers in the substance use field, health professionals, and the general public was that SIFs would be enabling to users and thus lead to increased drug use in the area (References in Table 4).

3.4.3. Unsanctioned SIFs

The unsanctioned nature of SIFs led to a number of concerns among stakeholders. Chief among these concerns was that unsanctioned SIFs were unable to connect with other care services the way a sanctioned SIF could (Davidson et al., 2018). Other concerns listed by PWUD were the exclusivity of the site, and restrictions and regulations stemming from its unsanctioned nature (Davidson et al., 2018). While most participants had concerns related to the fact that the SIF was unsanctioned, one PWUD described a concern regarding the SIF becoming sanctioned, based on the rationale that a government-run SIF would be less effective than one operated underground (Davidson et al., 2018). People working in the substance use field and SIF staff were concerned about police presence and opposition to the unsanctioned SIF, which they thought would lead to harassment and intimidation of the clients (Kerr et al., 2004).

3.5. Suggestions

3.5.1. Sanctioned SIFs

A summary of suggestions by stakeholder group for sanctioned SIFs can be found in Table 5. The most prominent suggestion was to change certain restrictions and regulations at SIFs, with PWUD, the police, and mixed stakeholders all making suggestions on what existing practices should be revised (References in Table 5). For PWUD, these suggestions involved allowing drug sharing (Small et al., 2011a) and for users to be allowed to inject other substances than heroin (Olsen and Skretting, 2007). SIF staff echoed the need to allow drug sharing (MSIC Evaluation Committee, 2003) and other substances than heroin (Skretting and Olsen, 2009), and also suggested that the current exclusion criteria of intoxicated client should be changed (KPMG, 2010). Both PWUD and mixed stakeholders suggested an increase in SIF opening hours (KPMG, 2010).

3.5.2. Not yet developed SIFs

Suggestions for the development of SIFs can be found in Table 5. Many of the stakeholder groups voiced suggestions on SIF location, including PWUD, government or city employees, health professionals,

Table 4
Summary of Perceived Concerns Related to SIFs Listed by Stakeholder Groups.

Stakeholder Group	Sanctioned	References - Sanctioned	Not Yet Developed	References – Not Yet Developed
PWUD	1. Restrictions and regulations	(Fairbairn et al., 2010; Hudson, 2009; Jozaghi and Reid, 2014; KPMG, 2010; McNeil et al., 2014; MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007; Pro Sentret, 2001; Small et al., 2011a,b)	1. Lack of privacy	(Fry, 2002; Fry et al., 1999; Malowaniec, 2003)
	2. Waiting time	(Jozaghi, 2012; Jozaghi and Andresen, 2013; Kerr et al., 2007; Small et al., 2011a,b)	2. Police presence	(Fry et al., 1999; Kimber and Dolan, 2007)
	3. Hours of operation	(Jozaghi, 2012; MSIC Evaluation Committee, 2003; Skretting and Olsen, 2009; Small, Ainsworth, et al., 2011)	3. Location of SIF	(Harris et al., 2018; Kimber and Dolan, 2007)
			4. Increased criminal activity	(Harris et al., 2018; Malowaniec, 2003)
Workers in the Substance Use Field Outside of SIFs	1. X	X	1. Comprises other services	(Wenger et al., 2011)
	2. X	X	2. Enabling	(Wenger et al., 2011)
	3. X	X	3. X	X
Health Professionals	1. X	X	1. Enabling	(Katz et al., 2017; Philbin et al., 2009)
	2. X	X	2. Too few PWUD in area	(Katz et al., 2017)
	3. X	X	3. Funding could be better used elsewhere	(Katz et al., 2017)
Government or City Employees	1. Loitering	(MSIC Evaluation Committee, 2003)	1. Increase in "undesirable" people	(Wenger et al., 2011)
	2. Increased drug use	(MSIC Evaluation Committee, 2003)	2. Location of SIF	(O'Shea, 2007)
	3. X	X	3. X	X
Police	1. X	X	1. SIFs will be used sporadically	(Bayoumi et al., 2012; Watson et al., 2012)
	2. X	X	2. More PWUD	(Watson et al., 2012)
	3. X	X	3. Increased criminal activity	(Watson et al., 2012)
General Public	1. Increased number of PWUD	(MSIC Evaluation Committee, 2003)	1. Enabling	(Philbin et al., 2009; Wenger et al., 2011)
	2. Safety	(MSIC Evaluation Committee, 2003)	2. Increased criminal activity	(Strike et al., 2015)
	3. X	X	3. Damaging to businesses	(Strike et al., 2015)
			4. Increased number of PWUD	(Strike et al., 2015)
Emergency Services	1. X	X	1. Restrictions and regulations	(Watson et al., 2015)
	2. X	X	2. X	X
	3. X	X	3. X	X
Employees at SIFs	1. Client behavior	(MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007; Skretting and Olsen, 2009)	1. X	X
	2. Safety	(MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007)	2. X	X
	3. Staff mental health	(MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007)	3. X	X
Business Sector	1. Increased criminal activity	(Rautenberg, 2013)	1. Restrictions and regulations	(Watson et al., 2015)
	2. Loitering	(MSIC Evaluation Committee, 2003)	2. Pushback from the community	(Wenger et al., 2011)
	3. Safety	(MSIC Evaluation Committee, 2003)	3. Increased criminal activity	(Wenger et al., 2011)
			4. Degradation of neighborhood	(Wenger et al., 2011)
			5. Location of SIF	(Bayoumi et al., 2012)
Mixed Stakeholders	1. Sanctioned site is only on a trial basis	(KPMG, 2010)	1. Increased number of PWUD	(Dwyer et al., 2016; Malowaniec, 2000; Strike et al., 2015)
	2. Limited services to refer clients to	(KPMG, 2010)	2. Location of SIF	(Bardwell et al., 2017; Kerr et al., 2017; Strike et al., 2015)
	3. Enables PWUD	(KPMG, 2010)	3. PWUD will not leave area	(Dwyer et al., 2016; Malowaniec, 2000)

Stakeholder groups that did not contribute to the benefits theme for sanctioned and not developed sites are not included in the table.
X = the stakeholder group did contribute to the benefits theme for sanctioned and not developed sites, but did not have three concerns listed.

Table 5
Summary of Suggestions for SIFs Listed by Stakeholder Groups.

Stakeholder Group	Sanctioned	References - Sanctioned	Not Yet Developed	References – Not Yet Developed
PWUD	1. Restrictions and regulations	(Olsen and Skretting, 2007; Small et al., 2011a)	1. Staffing resources	(Fry et al., 1999; Malowaniec, 2003)
	2. Opening hours	(KPMG, 2010)	2. Location of SIF	(Fry et al., 1999; Malowaniec, 2003)
	3. More facilities	(KPMG, 2010)	3. Hours of operation	(Fry et al., 1999; Malowaniec, 2003)
			4. Size of facility	(Fry et al., 1999; Malowaniec, 2003)
Workers in the Substance Use Field Outside of SIFs	1. X	X	1. Size of facility	(Bayoumi et al., 2012)
	2. X	X	2. X	X
	3. X	X	3. X	X
Health Professionals	1. X	X	1. Location of SIFs	(Bardwell et al., 2017; Malowaniec, 2003)
	2. X	X	2. Facility characteristics	(Bardwell et al., 2017; Malowaniec, 2003)
	3. X	X	3. Restrictions and regulations	(Malowaniec, 2003)
			4. Staffing resources	(Malowaniec, 2003)
Government or City Employees	1. X	X	1. Location of SIF	(Bayoumi et al., 2012)
	2. X	X	2. Opening hours	(Bardwell et al., 2017)
	3. X	X	3. Non-centralized facility	(Bardwell et al., 2017)
Police	1. Restrictions and regulations	(KPMG, 2010)	1. Client involvement	(Malowaniec, 2003)
	2. X	X	2. Consultation with the community	(Bayoumi et al., 2012)
	3. X	X	3. Location of SIF	(Bardwell et al., 2017)
General Public	1. X	X	1. Location of SIF	(Strike et al., 2015)
	2. X	X	2. X	X
	3. X	X	3. X	X
Emergency Services	1. X	X	1. Location of SIF	(Bardwell et al., 2017)
	2. X	X	2. X	X
	3. X	X	3. X	X
Employees at SIFs	1. Restrictions and regulations	(KPMG, 2010; MSIC Evaluation Committee, 2003; Skretting and Olsen, 2009)	1. X	X
	2. Integration with other facilities	(MSIC Evaluation Committee, 2003; Skretting and Olsen, 2009)	2. X	X
	3. Follow up with clients	(MSIC Evaluation Committee, 2003)	3. X	X
Business Sector	1. X	X	1. Location of SIF	(Bayoumi et al., 2012)
	2. X	X	2. X	X
	3. X	X	3. X	X
Social Services	1. X	X	1. Connection to other services	(Strike et al., 2015)
	2. X	X	2. Integration with other services	(Bardwell et al., 2017)
	3. X	X	3. Location of SIF	(Bardwell et al., 2017)
			4. Mental health services	(Strike et al., 2015)
			5. Needle exchange	(O'Shea, 2007)
Mixed Stakeholders	1. Collaboration	(Rautenberg, 2013)	1. Location of SIFs	(Bardwell et al., 2017; Green et al., 2002; Kerr et al., 2017; Malowaniec, 2000; Strike et al., 2015)
	2. Opening hours	(KPMG, 2010)	2. Integration with other services	(Bardwell et al., 2017; Green et al., 2002; Malowaniec, 2000)
	3. Restrictions and regulations	(KPMG, 2010)	3. Connection to other services	(Kerr et al., 2017; Malowaniec, 2000; Strike et al., 2015)
			4. Education	(Kerr et al., 2017; Philbin et al., 2009; Wenger et al., 2011)

X = the stakeholder group did contribute to the benefits theme for sanctioned and not developed sites, but did not have three concerns listed.

Table 6
Illustrative Quotes for Main Themes.

Benefits	
Theme	**Illustrative Examples**
Sanctioned SIFs	
Access to care	PWUD and SIF staff – "Participants' and staff' perspectives indicated that the HRR influenced participants' access to care by building more trusting relationships with staff and facilitating engagement in a broader array of support services, including safer injection education and care for injection-related infections" (Krüsi et al., 2009, p. 640).
Education	SIF staff – "With education and assistance, a huge impact from both a blood borne virus point and a potential death issue. … [There's] been an increase in hand washing definitely, …. also less bruising, scars and abscesses. …. people ask for help too now. … [We have the] ability to demonstrate, …. A more lasting effect" (MSIC Evaluation Committee, 2003, p. 30).
Safe place	PWUD - "When the InSite wasn't there, you were fixing outside and you're worrying about if the cops are going to come or if someone's gonna attack or rob you" (Fairbairn et al., 2008, p. 820).
Safety	PWUD - "Participants reported that the provision of sterile syringes and the necessary ancillary injecting equipment, combined with the provision of targeted, in situ safer injecting education by trusted experts, all served to reinforce educational messages and contribute to an overall atmosphere that encourages the adoption of safer injecting practice" (Fast et al., 2008, p. 5).
Staff	PWUD - "They never judge me" (KPMG, 2010, p. 97) PWUD - "Staff know me and I like that" (KPMG, 2010, p. 96) PWUD - "The staff are very professional…nonjudgmental and understanding" (Rance and Fraser, 2011, p. 137).
Not Yet Developed SIFs	
Cost-effective	PWUD - "I would say the cost of the safe injection site far outweighs the cost of not having it, health-wise. If you take a look at the economy, giving somebody drugs to prolong their life or whatever, the cost of that is about $120,000 a year. And to save money, I guess the bottom line is to save money. So the safe injection site is to save money, to prevent the cause of HIV and AIDS or Hep C or anything like that. I mean just Hep C - the treatment alone is over $60,000 for Hep C, and I would say it's a strong point in their favor to have it, especially here because in the downtown eastside the majority of people here inject, and let's be real" (Malowaniec, 2003, p. 87).
Reduction in public injection	Mixed stakeholders – "People shoot up in public because they want to be safe; it's a safe way of shooting up. So it helps to deal with that, and I think that it helps to minimize the disruptions in businesses and things" (Malowaniec, 2000, p. 31).
Safe place	PWUD - "Participants generally saw the benefits of a SIF in Philadelphia as being two-fold. First, participants felt a SIF would provide a safe and private place that would allow people the time to prepare their drugs, inject, and be high without fear of assault or arrest. Having clinical supervision would also prevent overdose deaths through the administration of naloxone. Multiple participants used the phrase 'safe haven' to describe what that type of security would mean to them" (Harris et al., 2018, p. 59).
Safety	Advisory group member - "I do think that safe injection sites are important in terms of the safety of the people who use, but also the safety of folks that live in those neighbourhoods, including myself. In a selfish way, as a taxpayer, I want to reduce the number of people who contract AIDS or other diseases that are highly susceptible to being contracted and transmitted through unsafe injection or crack use" (Bayoumi et al., 2012, p. 82)
Concerns	
Theme	**Illustrative Examples**
Sanctioned SIFs	
Hours of operation	PWUD - "It is even worse in the morning' cause you're trying to stay up so you don't get robbed. They should keep this place open 24 hours. Many times I had to go to the alley after they closed. The door is closed at around 3 [in the morning]" (Jozaghi, 2012, pp. 15-16).
More drug users	Resident - "Seems to be a lot more drunks and dodgy types at the train station. I've seen a few people out the back [of the MSIC] near the Icebox. I'm not positive, but I think it could be [due to] the MSIC" (MSIC Evaluation Committee, 2003, p. 146).
Restrictions and regulations	PWUD - "Because of this regulation, individuals who rely on assisted injection may inject within street-based public injection settings, rather than attend the SIF" (Small et al., 2011a, p. 564).
Unsanctioned SIFs	
Making the SIF sanctioned	PWUD - "Because the government is inefficient and can't run anything properly. It should be underground" (Davidson et al., 2018, p. 41).
Police	SIF staff – "Already on a nightly basis the people who both access and volunteer at the safe injection site are subject to police harassment. They park their cruisers directly in front of the 327 safe injection site door, they walk their drug dogs in front of the safe injection site, the police harass and intimidate people who come in and out of the 327 safe injection site main door…" (Kerr et al., 2004, p. 16).
Unable to connect to other services	PWUD and SIF staff – "A second set of disadvantages described by both staff and users had to do with the inability to closely integrate the SIF with other social service agencies due to perceived need to keep the agency at 'arms length' from other agencies to reduce risk of inadvertent disclosure about the service being provided" (Davidson et al., 2018, p. 42).
Not Yet Developed SIFs	
Enabling	Health professional - "I think it is going against our principals. My duty is to help relieve sickness; if my duty [as a doctor] is finding relief and promoting health, then I would be betraying my ethical principals when it comes to seeing a person hurting himself, right" (Philbin et al., 2009, p. 333).
Location of SIF	Business sector and general public – "Key informants from the business and community sector exclusively discussed their preferences regarding the proximity of SIS in relation to their businesses or neighbourhood locations. Almost all of these perspectives suggested that this sector in particular saw issues with having SIS located in close proximity to them" (Bardwell et al., 2017, p. 30).
Suggestions	
Theme	**Illustrative Examples**
Sanctioned SIFs	
Changes to restrictions and regulations	SIF staff – "Some staff considered excluding intoxicated clients (as referred to in the Internal Management Protocols) as contrary to harm reduction principles as clients who are refused entry may use drugs on the streets in an unhygienic and unsafe environment (and at higher risk of overdose in an intoxicated state)" (KPMG, 2010, p. 145).
Opening hours	PWUD - "Preference for earlier times - a number suggested an earlier start time (ranging from 6.30am-8am); Preference for later times - a number of clients commented that they thought the MSIC should be open longer at weekends for 'casual users and people who are partying who come into the area on the weekends'; 24 hour access - three clients interviewed felt that the MSIC should be open 24 hours, as one client commented 'I'd prefer earlier and later [opening]. I use [inject] 24/7'" (KPMG, 2010, pp. 134-135).

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Table 6 (*continued*)

Benefits	
Not Yet Developed SIFs	
Connect with other services	Social services – "I think we're not serving people well if we just focus on their addiction, if we don't also provide mental health services. … I think the community would be more receptive, from our drug strategy work, as long as harm reduction was connected to treatment options and housing and all of those other things" (Strike et al., 2015, p. 3).
Location of SIF	PWUD - 'It has got to be in an area where it is not really residential, no kids, young kids, that kind of thing'" (Malowaniec, 2003, p. 99). General public – "I might kick myself in the ass for saying this, but I might consider a mobile facility that, it's not stationed in one place, but maybe they don't have to be right on the main street… I'm opposed to this, but I would consider a mobile" (Strike et al., 2015, p. 3). Mixed stakeholders – "The centralization of SIS [supervised injection sites] in the downtown area was seen by many key informants as important not only for addressing public injection and associated waste, but also because of close proximity to other health and social services accessible to PWID" (Bardwell et al., 2017, p. 29).

police officers, and mixed stakeholders (References in Table 5). Specifically, those in the business sector (Bayoumi et al., 2012), PWUD (Malowaniec, 2003), the general public (Strike et al., 2015), government and city employees (Bayoumi et al., 2012), and mixed stakeholders (Bardwell et al., 2017; Kerr et al., 2017; Malowaniec, 2000) suggested that SIFs should be developed away from residential areas and children.

Most stakeholders, including those in the business sector (Bayoumi et al., 2012), PWUD (Fry et al., 1999), emergency services (Bardwell et al., 2017), police (Bardwell et al., 2017), government or city officials (Bayoumi et al., 2012), health professionals (Bardwell et al., 2017; Malowaniec, 2003), social services (Bardwell et al., 2017), and mixed stakeholders (Bardwell et al., 2017; Green et al., 2002; Kerr et al., 2017) suggested that SIFs should be implemented centrally and/or in proximity to health and emergency services. The possibility of introducing mobile SIFs was also suggested by the general public (Strike et al., 2015), health professionals (Bardwell et al., 2017), social service employees (Bardwell et al., 2017), and mixed stakeholders (Strike et al., 2015).

Other stakeholders, including social service employees and mixed stakeholders suggested that SIFs should be integrated with other services, such as mental health, as this would allow better and easier access to treatment for PWID (References in Table 5).

3.5.3. Unsanctioned SIFs

PWUD made several suggestions regarding unsanctioned SIFs, including improved access to other care service, diversity in the drug user population within the SIF, increased hours of operation, and greater privacy within the facility (Davidson et al., 2018).

3.6. Subgroup analyses

Considering that research originating from Canada represented over half of the articles included in this review, we conducted a subgroup analysis to determine if perceptions from stakeholders from Canada were skewing the results. For the main themes discussed above, the only sub-theme that was comprised of articles solely from Canada was concerns over waiting times at sanctioned SIFs. Further, out of the studies where stakeholders discussed suggestions regarding the location of yet to be developed SIFs, all but one of these articles was from Canada.

4. Discussion

4.1. Overview

This systematic review identified a range of perceived benefits, concerns, and recommendations central to key SIF stakeholders. The following sections will discuss the general implications of the results identified in the review, with a particular focus on policy and practice, limitations of our approach, and future directions.

4.2. Implications for policy and practice

To address the identified issues related to SIFs, it is important to distinguish between concerns based on misconceptions and those demanding serious thought and consideration on existing practices. For example, the perceived issue of SIFs "enabling" drug use arguably fails to consider the main objective of DCRs, i.e. to reduce drug-related harm (Hedrich et al., 2010). While drug use may be considered a criminal justice issue, it is mainly a (growing) public health issue, which has not been meaningfully reduced through the status quo and harsher criminalization of drugs (Bardwell et al., 2017). The issue of public misconception was echoed by several stakeholders (e.g. drug workers, government officials, and police officers), who emphasized the necessity of educating the public on the nature of drug use to create meaningful dialogue around SIFs (Kerr et al., 2017; Malowaniec, 2003; McColloch, 2017; Philbin et al., 2009; Wenger et al., 2011).

Further, it is important to recognize that the original objectives of SIFs do not include "solving" the issue of illegal drug use, but revolve around creating a safe environment for PWUD to consume drugs to reduce drug related harms (Hedrich et al., 2010). PWUD often reported this objective to be fulfilled, in that SIFs provided both physical safety (Fairbairn et al., 2010; Fast et al., 2008; Hudson, 2009; Jozaghi, 2012; Jozaghi and Andresen, 2013; Jozaghi and Reid, 2014; Kerr et al., 2007; KPMG, 2010; Krüsi et al., 2009; Rance and Fraser, 2011; Small et al., 2012, 2009; Small et al., 2008), and a general safe space for them (Fairbairn et al., 2008; Hudson, 2009; Jozaghi, 2012; Jozaghi and Andresen, 2013; Kerr et al., 2007; KPMG, 2010; Krüsi et al., 2009; MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007; Pro Sentret, 2001; Rance and Fraser, 2011; Small et al., 2011a, 2012, 2009), in which they did not feel judged or stigmatized, but instead experienced acceptance and solidarity. Creating a safe place for vulnerable and stigmatized populations should not be underestimated, as it allows individuals isolated from the health care system to reconnect with health services, which was recognized as one of the main perceived benefits of SIFs. Indeed, it has been argued that access to SIFs constitute a human rights issue for PWUD (Hyshka et al., 2013). Also, it was clear from the synthesis that one of the central perceived benefits according to SIF staff and PWUD was the educational component of SIFs, which enabled safer injection practices that was even reported to transfer to injection practices outside of the facilities (Fairbairn et al., 2008; Fast et al., 2008; Jozaghi, 2012; Jozaghi and Andresen, 2013; Jozaghi and Reid, 2014; Kerr et al., 2007; KPMG, 2010; Krüsi et al., 2009; McNeil et al., 2014; MSIC Evaluation Committee, 2003; Pro Sentret, 2001; Skretting and Olsen, 2009; Small et al., 2012, 2008).

Many issues were identified regarding the operation and restrictions of SIFs. For example, a range of studies reported that SIFs are underresourced at the cost of the mental health and work quality of staff members (MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007), which led to longer waiting times and shorter timeslots for drug users to attend the SIF (Jozaghi, 2012; Jozaghi and Andresen, 2013; Kerr et al., 2007; Small et al., 2011a,b). Such issues compromise the

utility of SIFs, as not allocating necessary resources to meet the demand of a SIF may facilitate rash and dangerous practices for PWUD relying on SIFs for injection.

Some of the existing rules in SIFs were criticized by PWUD, particularly restrictions on drug sharing, assisted injection, and age (Fairbairn et al., 2010; Hudson, 2009; Jozaghi and Reid, 2014; KPMG, 2010; McNeil et al., 2014; MSIC Evaluation Committee, 2003; Olsen and Skretting, 2007; Pro Sentret, 2001; Small et al., 2011a,b). These are not straightforward issues, in that they introduce legal ambiguous territory (e.g. how far can SIFs go in the drug injection process without being held legally accountable?) and difficult ethical considerations (e.g. should there be an age limit to the PWUD that SIFs accommodate?). Yet, they constitute important topics, which, by not being addressed, will not alleviate harmful practices among vulnerable individuals, such as young PWUD and those not capable of injecting themselves. However, it is critical to emphasize that studies investigating the *acceptability* of SIFs by PWUD generally demonstrated consistent support towards the facilities.

A central and reoccurring issue addressed by stakeholders was deciding on a location to implement SIFs. Although business and community stakeholders were often favorable to SIFs in general, many voiced concerns, and even opposition, to having SIFs implemented locally. This challenge was considered to be driven by an uninformed 'culture' around drug use, thus making the topic a politically sensitive area (Malowaniec, 2003; O'Shea, 2007; Philbin et al., 2009), which facilitated a lack of political will to develop SIFs due to mixed opinions of constituents and a fear of community opposition and liability (McColloch, 2017; Philbin et al., 2009; Wenger et al., 2011; Zampini, 2014). To deal with this issue, stakeholders emphasized the importance of consulting the local community before implementing a SIF, following the rationale that this would help alleviate misconceptions about SIFs and drug use in general (Bayoumi et al., 2012; Malowaniec, 2003).

4.3. Limitations and future directions

The findings of the review should be interpreted in light of the following limitations of the included literature. Firstly, studies originated from a limited number of countries, with 55.3% of the studies (n = 26) conducted in Canada, potentially limiting the generalizability of some results, though the subgroup analyses suggest that these studies were not overly influencing the results. Secondly, few studies investigated unsanctioned SIFs, with Davidson et al., 2018 providing the majority of the information on this topic. Thirdly, 8 (17.0%) of the studies were conducted more than 13 years ago and may thus represent perceptions from a context different from today. Last, studies included samples that reported perceptions of ongoing SIFs or their retrospective perceptions of SIFs prior to their development, but only one study followed a sample longitudinally before and after the development of SIF (MSIC Evaluation Committee, 2003).

The review was restricted to primary qualitative research and thus did not include news articles, opinion pieces, and editorials, which may have added valuable information and nuances to the synthesis. However, considering that the objective of the systematic review was to synthesize *perceptions* of SIF stakeholders (and not expert opinions), it was critical that the included material was based on primary qualitative research.

This review attempted to synthesize all stakeholder perceptions, but it may be that certain stakeholder voices were missing or under-represented in the included literature. Thus, perceptions from certain stakeholder groups were only represented by one country or study and may not be generalizable to those in other areas. While the sample of this review is, by definition, limited to the included literature, the review went through great lengths to identify all existing literature on the topic. Further, the synthesis was conducted with the aim of providing an overall and descriptive picture of *all* stakeholder perspectives included in the synthesized literature.

Although efforts were made to extract information specifically on SIFs, some articles used "DCR" and "SIF" interchangeably (Butler et al., 2018; McNeil et al., 2014). For example, one study asked participants: "What do you think a DCR is? (Also known as a safe injecting facility)" (Butler et al., 2018, p. 33). Studies with ambiguous terminology were only included if it was clear that the facilities in question revolved around *injection*, and it is critical to underline that a *clear* and *consistent* language on SIFs and DCRs is important. The importance of language was, for example, illustrated by a recent study which found perceptions and support of facilities to differ substantially according to whether researchers used the term "safe consumption sites" vs. "overdose prevention sites" (Barry et al., 2018).

Several stakeholders justified an ambiguous or critical stance to SIFs by the lack of conclusive evidence on SIF effectiveness (Katz et al., 2017; Kolla et al., 2017). The nature of SIFs makes the pursuit of causal estimates challenging, in that it is neither ethical nor feasible to produce a counterfactual control group by means of randomization. Moreover, it is critical to consider how "effectiveness" should be operationalized when working with a hard-to-reach and stigmatized client group. As mentioned earlier, SIFs are not constructed to reduce drug use and should, therefore, not be weighed against this objective, but rather tested according to the ability to reduce harm and public injection. This review identified many mechanisms by which SIFs might alleviate harm, including providing PWUD with a safe environment, education on safe injection practices, access to health care, and social support. Some of these mechanisms, such as social support has been associated with lower risk of non-fatal overdose for female PWID (Pabayo et al., 2013). However, going forward it will be important to supplement and test the mechanisms suggested by the stakeholder voices included in this review through further research by, for example, conducting longitudinal studies following up on PWUD attending SIFs, and by continuing to monitor the prevalence of overdose mortalities and drug related diseases in areas with SIFs.

5. Conclusions

Despite the growing emphasis and international debate on SIFs, little research has systematically investigated perceptions of those the facilities primarily concern, despite the critical role stakeholders hold in the implementation and scale-up of SIFs. This review constitutes the first comprehensive effort to systematically identify, appraise, and synthesize existing qualitative research on stakeholder perspectives and, as such, represents an important step to better understand how key stakeholders perceive SIFs. In so doing, the review followed best practices and was exhaustive of existing literature. Importantly, the findings suggest that perceptions often varied across sanctioned and unsanctioned SIFs, and for stakeholders voicing their opinion on the prospect of implementing a SIF. For example, the educational aspect of SIFs was more commonly acknowledged as a benefit by stakeholders of sanctioned SIFs, whereas feasibility and acceptability studies emphasized the safety aspects of SIFs as the main potential benefit. Perceptions also fluctuated according to whether stakeholders had first-hand experience with SIFs, in that many stakeholders not involved in the operation of SIFs (e.g. the general public and business representatives) were often concerned that SIFs enabled drug use, whereas PWID and staff often perceived SIFs as transformative for drug user behavior (Fast et al., 2008; Jozaghi, 2012; Jozaghi and Andresen, 2013; Jozaghi and Reid, 2014; Kerr et al., 2007; KPMG, 2010).

The findings of the review offer a comprehensive and up-to-date review on the existing research of stakeholder perceptions. Considering the current debate on whether to implement SIFs in new settings, such as the US, the findings discussed in this article offer a systematic synthesis of stakeholder insights. Going forward, it will be important to draw on these insights to facilitate a more informed discussion among policy makers, researchers, and advocates on the future implementation and continuation of these facilities.

Role of funding source

Nothing declared.

Contributors

ABM was primarily responsible for the search strategy for the review. Both authors conceived of the initial research question for this review, worked to develop the review protocol, completed all screening procedures, completed data extraction and quality determinations, completed the thematic analysis, and contributed to the writing of this manuscript. Both authors have approved of the final article.

Conflict of interest

No conflict declared.

Acknowledgements

We would like to acknowledge Dr. Elizabeth Nye for her invaluable feedback on the protocol for this review.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.drugalcdep.2019.02.006.

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