Public injecting and the need for ‘safer environment interventions’ in the reduction of drug-related harm

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ABSTRACT

Background One key structural dimension in the distribution of drug-related harm associated with injecting drug use is the injecting environment. Epidemiological evidence associates elevated blood-borne viral risk with injecting in ‘public’ and ‘semipublic’ environments. Yet the quality of evidence on public injecting and related viral risk is variable, and is lacking in many countries such as the United Kingdom. Aim This commentary considers the micro-injecting environment as a critical dimension of risk, exploring the need for ‘safer injecting environment interventions’. Methods We draw upon published research evidence and qualitative case examples. Results We note the limits in epidemiological evidence on public injecting and emphasize the need for ethnographic research to determine the ‘social relations’ of how drug users and risk practices interact with injecting environments. We identify three main forms of ‘safer environment intervention’: purpose-built drug consumption rooms; interventions within existing spatial relations; and spatial programming and urban design. While drug consumption rooms find evidence-based support, they are not a panacea. We emphasize the potential of interventions embedded within existing spatial and social relations. These include low-cost pragmatic interventions enhancing facilities and safety at public and semipublic injecting sites and, primarily, peer-based interventions, including peer-supervised injecting sites. We caution against spatial programming and urban design interventions which can cause the displacement of socially marginalized populations and the redistribution of harm. Conclusions Public health interventions in the addictions field have in the past focused upon individual behavioural change at the cost of social interventions and environmental change. We wish to focus greater attention on reducing risks related to public injecting and encourage greater debate on ‘safer environment interventions’ in harm reduction.

Keywords Drug consumption room, environment, harm reduction, injecting drug use, place, risk.

INTRODUCTION

While we readily accept that a healthy seed can’t grow into a plant without the right soil, air, light and water, and that a feral dog won’t behave like a pet, we resist recognising the importance of environment in our own lives [1].

Place matters in the distribution of health and illness [2]. The inner-city in particular is a place of marked health inequity often associated with urban development as well as neighbourhood disadvantage. For example, increased vulnerability to HIV among socially disadvantaged populations, including drug users, has been associated with urban ‘gentrification’, the ‘planned shrinkage’ of urban spaces, the disintegration of housing and social networks, as well as inequities in health service availability and access [3–5].

There is a need to understand how micro ‘risk environments’—including physical place—shape risk in relation to drug use [6–10]. Yet the predominant focus of harm reduction—and health promotion more broadly—remains on individuals and knowledge-based behaviour change [11]. We focus here on the critical but neglected importance of place in the production and reduction of
risk associated with drug injecting. We place our emphasis on the ‘public’ or ‘semipublic’ injecting environment (places in which multiple injectors gather to inject drugs) to argue for a shift in emphasis in harm reduction intervention from an overwhelming focus on individual behaviour change and safer injecting technique toward the development of ‘safer environment interventions’. We believe that there is much that can—and should—be done in relation to developing low-cost and effective interventions to enable safer injecting environments.

**PLACE, INJECTING AND RISK**

The ‘shooting gallery’ conjures an image of high-risk injecting in a public or semipublic space. What constitutes a shooting gallery is open to considerable variation locally and culturally [12–14]. We therefore accept that epidemiological associations of risk in relation to the shooting gallery may blur rather than determine how different public injecting environments are experienced in relation to risk and its reduction [15,16]. This highlights the need for ethnographic description of injecting environments to inform how an ‘ethno-’ as well as ‘eco’-epidemiology might better explore contextual factors in risk production, including the effect of place [11,17,18].

A similar argument might be made of the ‘crack house’. This, too, features heavily in epidemiological constructions of place in relation to risk [19], but also deserves far better explanation through ethnography [20,21]. One interesting variant on dominant scientific constructions of the crack house and shooting gallery, for example, is such locales as ‘safe havens’; as places offering some perception of safety or protection from a hostile risk environment, for instance by enabling off-street injection where the risk of arrest or public disturbance is reduced [13,14,22]. Given the dearth of ethnographic evidence on the spatial relations of risk associated with drug injecting, it is important to exercise some caution when interpreting the inevitably narrower epidemiological measures of place associated with risk [11].

In addition to a European literature on ‘open drug scenes’ [23], a largely North American literature associates public or semipublic injecting environments with elevated injecting risk behaviour and risk of HIV and HCV transmission, especially in places where injecting equipment is rented or stored for re-use [12,24–31]. For instance, a recent longitudinal study links HIV seroconversion with injecting in shooting galleries among Puerto Rican injectors, finding that 83% of seroconversions were among shooting gallery attenders [25]. A study among 611 injectors in Denver found that those who injected in ‘unsafe injecting locations’ (defined as including shooting galleries, alleys, parks and abandoned buildings) had twice the odds of injecting with a previously used and uncleaned syringe, and three times the odds of reporting an injecting episode in which a cooker or spoon was shared by multiple people [24]. Similarly, in a cohort study of 226 injectors in Baltimore, injectors who had attended public injecting environments early in their injecting careers had five times the odds of injecting with previously used injecting equipment and three times the odds of being HIV positive [28]. It is also important to note that public injecting (as distinct from injecting in a known semipublic or public injecting environment) may be associated with elevated blood-borne viral risk, such as injecting outside and in abandoned buildings [32].

The prevalence of public injecting may be unknown in many countries. In Canada, there are public and semipublic drug injecting scenes in a number of urban centres, including Toronto, Montreal, Ottawa, Victoria and Vancouver [33–35]. Approximately 65% of IDUs surveyed in Ottawa and Montreal report public injecting [34,35]. In Vancouver, there is a large public injecting scene in Downtown Eastside [36,37], and 67% of IDUs report having recently injected in public spaces [38]. In Australia, a national survey found that 22% of injectors reported that their last injection was in a public place (street, park, public toilet or car) [39]. In a recent survey of 102 homeless injectors in London [40], we found that around two-thirds (68%) reported that their last injection was in a public place (usually a public toilet or street/park). By comparison, in a longitudinal study of injectors in London who were not homeless [41], we found that only 15% last injected in a public place (with 55% last injecting in their own home and 23% in a home of another), but that 66% of this total sample had experienced homelessness.

Evidence highlights interplay between public injecting, elevated viral risk, and social-material factors, principally unstable housing, homelessness, and socioeconomic deprivation [18,27,34,35,42]. Unstable housing and homelessness in particular are key factors mediating heightened health risk, including in relation to injecting drug use [42–44]. In our UK surveys we have found homeless injectors, injectors of crack cocaine (who are also more likely to be homeless than heroin-only injectors) and groin injectors (common among street and homeless injectors) to have higher risk of HCV infection [40,41,45]. We call for a greater focus in drug use epidemiology on the potential role of place, interacting with other social structural factors, in patterning drug-related risk behaviour.

**THE SOCIAL RELATIONS OF RISK AND PUBLIC INJECTING**

Qualitative research needs to describe how risk perception and behaviour is situated in different injecting
environments. Qualitative evidence to date links risk associated with public injecting with a risk or fear of interruption during injecting, including that associated with police intervention, resulting in hasty injection, ‘missed hits’ and reduced regulation of safety and hygiene routines [16,46–53]. This may, in turn, be associated with elevated risk of HIV and HCV transmission, as well as vascular damage and bacterial infection [54,55]. It is largely because of a fear of interruption or police interference that semipublic places known among injectors as places for injection (called ‘get-offs’ in some US cities) may come to be viewed as ‘safe houses’ [14,56], thus creating paradoxical relations between safety and danger [8].

Qualitative work, including our own [37,51,57,58], highlights a critical interplay between urgency (largely borne out of a fear of being interrupted when injecting in public), privacy (the striking of balance between a need for privacy and a lack of it in many public injecting locations) and hygiene/safety (often constrained by the physical environment through a combination of debris, contaminated surfaces, and lack of facilities such as available light or running water) (see Fig. 1).

In addition to fear of interruption, urgency when public injecting may also link with a sense of ‘shame’ associated with public disclosure [8,51]. As we have found, this highlights, first, a balance in managing ostensibly private behaviour in public space, and secondly, how the social regulation of public space can reinforce the marginalization of homeless people and injectors as ‘matter out of place’ [59]: ‘It’s not something you want to broadcast is it?’; ‘You get paranoid like, just in case someone sees you. It’s embarrassing like’; Someone might pass and see you doing it. It’s shaming isn’t it?’ [57].

Physical place interacts with personal and risk identity [2]. For some women drug users, for example, avoidance of ‘junkie spaces’, such as ‘junkie toilets’, attempts to resist the discursive force of ‘junkie identity’ and all this encompasses in terms of dirtiness, disease, deviancy and irresponsibility [60]. Among homeless injectors, too, perceptions of self are constituted within everyday social and spatial relations that may reproduce portrayals of drug users as ‘worthless’, ‘dirty’, ‘junkies’ [57]. Homeless injectors may reflect upon the daily interactions they have within the places they inhabit as degrading of self: ‘They [the police] try to belittle you and make you feel dirty’; ‘They [the police] will do anything to show the public you are a drug addict’; ‘People look down their noses at you’; ‘People walk past you as if you’re worthless, as if you’re dirty, a stinking tramp off the street, but we’re human like everybody else’ [57]. That some injectors may speak of ‘shame’ associated with public injecting and their use of public injecting environments—such as derelict buildings, public toilets or ‘shooting galleries’—at once speaks of how personal identity, and sense of self, takes shape in relation to place as well as how public injecting can feature as a form of ‘symbolic violence’ or stigma in the everyday lives of homeless injectors [7,16,27].

An ethnographic understanding appreciates place as at once physical and social, thereby helping to discover

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**Urgency**

“There are places where you can go and just be quick. Most people are very quick. Most people inject in their groin, so they just go pssst…” [London]

“It’s just anywhere to get in quick.” [Merthyr]

“Behind a tree or in a car park, you got to rush. And you could damage yourself by rushing…” [Cardiff]

**Privacy**

“Just any where that’s out the way” [Merthyr]

“You’re paranoid aren’t you? You’re afraid people are going to come around the corner” [Aberdare]

“It’s really hard when you’re homeless because there is police always on your back, and you have to be careful the police don’t catch what you’re doing. You normally end up going to a park somewhere” [Cardiff]

**Hygiene**

“There’s needles everywhere… dirty filters, dirty cookers everywhere” [Merthyr]

“They were horrible places. They were disgusting… Just a squat where people were always shitting everywhere, or you know, places like that, really disgusting. Horrible places” [London]

“I’ve seen boys going in there, like a friend of mine, he’s been so bad he’s found a needle on the floor, he’s picked it up and used it without boiling it or whatever, but that’s how desperate they’ve been” [Merthyr]
the social meanings ascribed to place and determining how place shapes the production and reproduction of risk perception and identity [60]. Place is not simply a set of coordinates [61], but is constructed through finding meaning in the social and built forms we inhabit.

Two examples

We offer two brief examples drawn from qualitative research in public injecting environments in the United Kingdom and Canada. Each illustrate instances in the ‘situatedness’ of risk and injection in the context of place. The first example draws upon an observation at a public injecting environment in London undertaken as part of a visual assessment of injecting drug use [58]. The location is a derelict site (a boarded frontage of a derelict industrial building), off-street and shielded from view, and frequently used by injectors. The site is strewn with dumped rubbish, including a mass of discarded injecting paraphernalia.

There are two participants during this particular observation [58]: A (38 years) and B (30 years), both European males and housed temporarily in a large hostel which has a high proportion of residents with drug and alcohol problems. Both have been street homeless, and A has only recently been given a hostel bed. Both are recently methadone scripted. Both came to the United Kingdom in search of treatment for heroin addiction, independently and at different times, but were introduced into injecting crack and ‘speedball’ (the injection of crack and heroin together) through contact with the London street injecting scene.

At the time of this observation, A and B were spending most of their lives on the street, raising money by begging and ‘connecting’ people (users to dealers), only returning to their hostel in the early hours to sleep for a few hours before returning to the street. A and B are practised and efficient public injectors and inject regularly at this site. Following a quickly executed preparation of the drugs (heroin and crack), using material found at the site as a surface on which to lay injecting equipment, B injects into his neck (assisted by A). He does this because he has problems hitting his leg and groin or veins elsewhere. A injects into his groin. Both have bad leg infections (most probably Streptococcus A), which they have had for over a year. Both have had recent periods where they have been unable to walk unaided.

The injecting observed here is characterized by speed and efficiency, heightened by an awareness of intense police presence associated with an ongoing ‘crackdown’ on street begging, a factor associated elsewhere with disruption to safety routines.

The second example draws on observations undertaken in Vancouver’s Downtown Eastside. Here it is common for injectors to use street alleyways, recessed doorways and alcoves as injection ‘niches’ [62]. In such alleyways, large rubbish containers sometimes function as privacy screens as well as providing working surfaces for laying out injecting equipment. There is no access to running water in the alleys, and injecting drug users (IDU) have been known to use rain and puddle water to mix their drugs into a solution. These injecting niches provide a small measure of privacy for injectors from passers-by but also serve as public latrines, given the lack of public toilets in the neighbourhood.

Our observations of public injecting in Vancouver’s Downtown Eastside suggest that jugular and assisted injections are common, and that the hasty preparation of drugs and injecting is typical. The steps of cooking and filtering drugs prior to injection are often omitted, as many local users employ the ‘shaker’ method in the quest for expediency. This unhygienic method involves mixing drugs with water directly in the syringe barrel and then shaking the syringe to create a solution that can be injected [36]. The majority of hospitalizations among local IDU relate to unsterile injection, known to increase risk for soft-tissue infections [63]. Our observations reiterate that heightened police presence in local public injecting environments prompt ‘rushing’ during injection, injecting in riskier environments, accidental syringe sharing and unsafe disposal of injection equipment [37].

SAFER INJECTING ENVIRONMENT INTERVENTIONS

A safer injecting space enables individual and community risk reduction practices to occur. Safer injecting environment interventions (SIEIs) aim to minimize the likelihood of police or public interference, the disruption of injecting safety and hygiene routines and the need for hurried or hasty injection. At the same time, safer injecting environment interventions maximize opportunities for injecting safely through the availability of sterile injecting equipment (spoons, needles, syringes, filters, swabs, citric), sterile water, good light, clean surfaces and safe sharps disposal. Such interventions are likely to have most impact when supported by local and community development initiatives, including peer-based and social network interventions among IDU and partnerships between health, policing and local community [64.65].

The drug consumption room

An intervention finding evidence-based support is the drug consumption room (DCR) or safer injecting facility (SIF) [66.67]. Legally sanctioned facilities either physically integrated into existing services for drug using and/or homeless clients, or purpose built to exclusively provide DCR services. DCRs are seen to overcome a
significant service gap of other harm reduction interventions by enabling the hygienic consumption of preobtained drugs under professional supervision [66,68].

DCRs are accessible to and utilized by high risk IDU populations [67,69–71]. DCR use is associated with decreased equipment sharing and improved injecting hygiene and technique [69,71–73]. DCR use is also associated with reductions in fatal overdose and non-fatal overdose severity [74–76], and with improvements in injecting-related health, psychosocial functioning and access to drug treatment [77–79]. DCRs have also been shown to significantly reduce the frequency of public injecting, number of publicly discarded needle-syringes and community perceptions of drug-related nuisance [69,80].

However, not all city or local environments are conducive to DCR intervention. DCRs are designed to be located close to open or semiphen drug markets and established in the context of geographically concentrated marginalized drug-using populations with high rates of public injecting, injecting-related morbidity and mortality and significant community concern about reduced public amenity and safety [81]. Additionally, DCRs are politically charged interventions, requiring feasibility research, advocacy and piloting, shaped as much by political decision-making and community support as the persuasiveness of scientific evidence [38,82,83]. Coverage is also a key consideration: the potential impact of DCRs may depend upon whether there is sufficient density of public injecting and injectors, within reach of the intervention, whether the DCR itself has sufficient capacity, or whether a network of linked facilities is locally feasible and cost-effective [33,84,85].

Additionally, regulations governing the operation of DCRs have, in some settings, limited access to subpopulations of IDUs at heightened risk for HIV infection, such as those who require assistance with injections (many DCRs are legally or otherwise unable to permit assisted injection) [83,86]. DCRs place emphasis on hygienic, often clinical surroundings, in combination with operational rules and close client monitoring, creating a marked contrast to the social relations of ‘naturally occurring’ injection [87]. Some IDU decline the opportunity to use DCRs [38,70], as their ‘design and rules may express mainly others’ concepts of “safety” and comfort and not their own’ [87]. Some suggest that DCRs may become absorbed as part of wider city strategies targeting the ‘purification’ of urban space, unwittingly contributing to the ‘ghettoization’ of drug users and other socially marginalized populations and their exclusion from public space [87,88]. Drug consumption rooms thus raise ethical questions concerning the extent to which they may contribute towards, rather than alleviate, the repressive governance of drug users, albeit in the guise of public health [89]. One consideration is the extent to which the location and architectural or spatial design of DCRs can reflect existing practices of drug injecting in public space, including the potential for malleability and mobility should the pattern or location of local drug markets shift [8]. The DCR and variants of it offer promise as a niche environmental intervention with potential positive community impacts and, arguably, especially if embedded within existing social and spatial relations, but they are not a panacea.

Interventions within existing spatial relations

We emphasize the existing injecting environment as a site of intervention and change towards harm reduction. Low-cost and pragmatic interventions include: increasing the availability of sterile water at injecting sites; the placing of injecting equipment vending machines on site; the placing of safe disposal and sharps containers on site; and improvements to available lighting in established indoor injecting environments.

Safer environment interventions might also better embrace opportunities afforded by social intervention approaches, such as: community and peer initiatives oriented to safe disposal and clean-up; partnerships with local police; and importantly, ‘peer-supervised’ places for injecting. Of note here is emerging evidence which runs counter to the prevailing epidemiological orthodoxy of the public or semipublic injecting environment as a place of risk and danger. Metsch et al. [22] note the potential for the shooting gallery as a site of HIV prevention, finding the coexistence of HIV risk awareness and reduction alongside HIV risk practices. They emphasize that while there is elevated viral risk associated with shooting galleries in Miami, there is a strong basis for fostering collective changes in injecting practices among gallery users as well as willingness among gallery operators to participate in peer-based interventions. Other studies show the potential of peer interventions targeting shooting gallery operators to enable systemic change [13,14], but there are few documented examples of pilot intervention or effect [90].

There are examples of emerging good practice in peer-based safer injecting environment interventions. In Chennai, India, for example, much public injection takes place in public toilets around the city (Rhodes et al., unpublished paper). Through partnerships with local and city officials and organizations responsible for maintaining general hygiene at public toilets, peer intervention programmes have been developed which enable the distribution of sterile injecting equipment as well as safer disposal at these locales and an element of supervision on site, with ease of contact to local outreach teams. Similar programmes involving provision and recovery of syringes have been implemented by drug user organizations, such
as the Vancouver Area Network of Drug Users (VANDU) [64]. Evaluations show that these programmes are successful in reaching individuals who inject in public spaces and help facilitate safer syringe disposal [91]. In an effort to address gaps in local service provision, VANDU also developed an ‘Alley Patrol Program’ that involves the delivery of outreach services to individuals who inject in alleyways [64]. Recently, VANDU expanded this programme by adding an ‘Injecting Support Team’ to respond to the needs of individuals who require assistance with injections [92]. Currently, these individuals are prohibited from receiving assistance with injections within the local DCR, despite evidence of heightened risk for HIV infection among this subpopulation of IDUs [86]. In Melbourne, also, ‘quasi-’ or ‘peer’-supervised injecting environments have taken shape, and some city-based injecting environments feature the installation of an emergency button to local outreach teams in the event of overdose [51].

In addition to enhancing amenity in injecting environments for the purposes of reducing harm, peer interventions offer scope for fostering changes in location-specific social relations. The importance of noting above that place, and our relations to it, is made of the meaning ascribed to it, is that this opens up the possibility for peer and social interventions to create spaces in which a sense of belonging is created and sustained. Peer interventions offer scope for new and different identities to be performed in spaces which are not subject to everyday punitive or coercive regulation.

One brief instance drawn from our field observations serves to illustrate this point. In a public toilet in a busy open drug scene in Melbourne is a ‘manifesto’ from a drug user written on the toilet wall. The message is addressed to ‘public citizens’ and other drug users, and advises the former to be careful of uncapped syringes and berates those drug users who dispose of their syringes unsafely. The signed message states:

On behalf of all the sensible junkies that use this facility to use our drugs, I would like to apologise for all of the lazy, inconsiderate and brainless arseholes who do not dispose of their needles safely and just leave them and the rest of their rubbish on the floor. Please be careful of used syringes without their orange coloured cap on . . . And as for all you slackfuckers who can’t lift your arm with the oh so heavy fit [needle/syringe] in it to put it in the bin in here, you are all a mob of hopeless fuck-witted pricks! Get your shit together AND USE THE FUCKING BIN!!

In one sense this is a perfectly targeted harm reduction strategy that addresses both the target group and the general public through a medium that makes sense in this environment. It is obvious that no one wants injecting to occur in this public toilet; however, at the time of this image being taken, injecting was occurring here once every 12 minutes during daylight hours. Importantly, the harm reduction message is from a drug user and helps to inscribe a responsible identity for drug users. Unfortunately, the message lasted for only 3 days before being washed off by council cleaners. This serves to illustrate how drug user identity can be linked to spatial practices [60] and how a space can be transformed through the performance of particular identities. In this case the responsible drug user looms large on the toilet wall. Drug injecting environments may encourage health responsible identities and ‘social responsibility’ in the management of space through peer-based intervention [91,93].

Spatial programming and urban design

There is, in addition, an established literature in crime prevention on ‘designing out’ crime through spatial planning and other forms of environmental management [94,95]. Originally referred to as ‘crime prevention through environmental design’ (CPTED), and now more commonly called ‘situational crime prevention’ (SCP), the premise is that environmental management—using techniques such as increased surveillance, ‘access control’, ‘territorial reinforcement’ and ‘target hardening’—can reduce criminal behaviour [95]. Examples of effective SCP include use of surveillance cameras, street and sensor lighting and fences, as well as more sophisticated forms of environmental management [94].

In relation to drug use prevention, SCP is question-able. While potentially effective in disrupting drug markets when these are placed-based [96], when deployed against drug use SCP can result in geographical displacement [51,97], ‘redistributing danger’ and ‘unwanted behaviour’ elsewhere [8].

The use of SCP techniques in marginalized communities to prevent drug use has been reported to cause the disintegration of local social networks, the disappearance of genuinely collective public space (as urban space is cleaned up, developed or gentrified) and the disproportionate targeting of marginalized populations through the increased surveillance, regulation and punitive control of public space [4,98]. It might be possible, however, to use the analytical techniques of spatial programming (for example, spatial syntax analysis, pedestrian flow monitoring, built form footprint analysis and social surveillance analysis) [8] to create environmental interventions that reduce harm. Harm reduction has historically been a focus for behaviour change specialists. Given our understanding of the importance of environment, we now believe that ‘harm reduction design’ needs to be considered as a new focus for social and environmental planners.
CONCLUSION

We have argued that place matters in the reduction of drug-related harm; that harm reduction needs to shift from an overwhelming focus on individual action in safer injecting technique toward the connections between risk practices and environments [6,7]. At the same time, a parallel shift in research towards developing a ‘social-epidemiology’ of drug-related harm, including the effects of place, is required. Moreover, we have highlighted the need for much closer linkage between ethnographic and epidemiological approaches and a critical role for ethnographic and qualitative research in examining the social relations of the interplay of risk practices, identities and environment. We have noted that a lack of ethnographic or nuanced appreciation of public and semipublic injecting environments blurs appreciation of their potential as sites of harm reduction.

There is an urgent need for ‘safer environment interventions’ in harm reduction. There are parallels here with the reduction of alcohol-related harm through the modification of the layout, design and organization of drinking environments [10]. We do not wish to side-track the need for broader structural interventions in harm reduction such as those potentially focusing on the interplay of homelessness, unstable housing and material inequalities in the production of harm associated with drug injecting [7,42], but we emphasize the amenability of the micro drug-injecting environment as one entry point and agent for social structural change. In relation to drug injecting, there is growing evidence supporting ‘drug consumption rooms’ and ‘supervised injecting facilities’ as exemplars of safer environmental intervention, and growing advocacy for such interventions, including in the United Kingdom [99]. However, such interventions are by no means a panacea. We therefore emphasize the need to introduce and strengthen safer environment interventions embedded within existing spatial relations. These comprise a combination of low-cost pragmatic interventions to modify existing public and semipublic injecting environments to maximize personal and community safety, and a fundamental role for peer-based interventions which shape the social relations of space fostering social responsibility in harm reduction. The drug consumption room is one evidence-based example in a spectrum of safer environment interventions, and the scope for peer-based and social interventions remains relatively unexplored.

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