

Short Report

Safer injecting education for HIV prevention within a medically supervised safer injecting facility

Evan Wood^{a,b,*}, Mark W. Tyndall^{a,b}, Jo-Anne Stoltz^a, Will Small^a, Ruth Zhang^a,
Jacqueline O'Connell^a, Julio S.G. Montaner^{a,b}, Thomas Kerr^a

^a BC Centre for Excellence in HIV/AIDS, St. Paul's Hospital, 667-1081 Burrard Street, Vancouver, BC, Canada V6Z 1Y6

^b Department of Infectious Diseases, Faculty of Medicine, University of British Columbia,
667-1081 Burrard Street, Vancouver, BC, Canada V6Z 1Y6

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Abstract

Background: Requiring help injecting has recently been independently associated with syringe sharing and HIV incidence among injection drug users (IDUs) in Vancouver. We examined IDUs who were receiving safer injecting education within a supervised injecting facility (SIF) in Vancouver.

Methods: The Scientific Evaluation of Supervised Injecting (SEOSI) cohort is based on a representative sample of SIF users. We examined the prevalence and correlates of receiving safer injecting education within the SIF using univariate and logistic regression analyses.

Results: Between May 31, 2003 and Oct 22, 2004, 874 individuals of the SEOSI cohort have completed the baseline questionnaire, among whom 293 (33.5%) received safer injecting education. In multivariate analyses, requiring help with an injection in the last 6 months (OR = 2.20 [95% CI: 1.62–2.98]) and sex-trade involvement in the last 6 months (OR = 1.54 [1.09–2.16]) were independently associated with receiving safer injecting education within the SIF.

Conclusions: Since requiring help injecting has previously been associated with HIV incidence, it is encouraging that this risk factor was associated with receiving safer injecting education within the SIF. Nevertheless, prospective evaluation is necessary to examine if receiving safer injecting education is associated with reduced HIV risk behaviour and blood-borne disease incidence.

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Introduction

Illicit injection drug use continues to be a primary route of HIV transmission in many areas around the globe (Des Jarlais & Friedman, 1998; Kerr, Wodak, Elliot, Montaner, & Wood, 2004). While there is strong evidence to suggest that significant sexual transmission of HIV occurs (Kral et al., 2001; Strathdee et al., 2001), in many settings, it has been demonstrated that syringe sharing is the primary driver of HIV transmission within this population (Wood, Tyndall, Spittal, Li, Hogg, Montaner et al., 2002; Tyndall et al., 2003). Accordingly, efforts to reduce syringe sharing among injection

drug users (IDUs) have received significant attention, and substantial energy is now devoted to the provision of sterile syringes through needle exchange programs and other means (Des Jarlais et al., 1996; Wood, Tyndall, Spittal, Li, Hogg, O'Shaughnessy et al., 2002).

However, recent studies have demonstrated that, even when IDUs have accessible sources of sterile syringes, a number of characteristics may make individuals vulnerable to sharing syringes and subsequent HIV infection (Hagan, McGough, Thiede, Weiss, & Hopkins, 1999; Vlahov, Fuller, Ompad, Galea, & Des Jarlais, 2004; Wood, Tyndall, Spittal, Li, Hogg, Montaner et al., 2002). For instance, recent studies have demonstrated that requiring help injecting is independently associated with syringe sharing (Kral, Bluthenthal, Erringer, Lorvick, & Edlin, 1999; Wood et al., 2003). Help

* Corresponding author. Tel.: +1 604 806 9116; fax: +1 604 806 9044.
E-mail address: ewood@cfenet.ubc.ca (E. Wood).

injecting has also been independently associated with elevated HIV incidence, and it has recently been argued that interventions are needed to address this risk factor (O'Connell et al., 2004).

In a number of settings, medically supervised safer injection facilities (SIFs), where IDUs can inject pre-obtained illicit drugs, have been implemented in an effort to reduce the impacts of illicit drug use (Broadhead, Kerr, Grund, & Altice, 2002). While the primary function of SIFs is to reduce public disorder and respond to overdoses (Dolan et al., 2000; Wright & Tompkins, 2004), there is potential for the nursing staff to educate IDUs about safer injecting practices (Wood, Kerr, Montaner et al., 2004). The present study was therefore conducted to examine the prevalence and correlates of receiving safer injecting education within the supervised injecting facility, which opened in Vancouver, Canada on September 22, 2003.

Methods

The Vancouver SIF, known as Insite, is centrally located in Vancouver's Downtown Eastside, which is the most impoverished urban neighbourhood in Canada and home to well-documented overdose and infectious disease epidemics among the estimated 5000 IDUs that reside there (Kerr, Wood, Small, Palepu, & Tyndall, 2003). The SIF is being evaluated through the Scientific Evaluation of Supervised Injecting (SEOSI) cohort, which has been described in detail previously (Wood, Kerr, Lloyd-Smith et al., 2004). Briefly, the SEOSI cohort is based on a representative sample of Insite users. The sample was derived through random recruitment of Insite users who are offered an informed consent to enroll into the study. Random recruitment involves using random number generation to select blocks of time during the hours that Insite is open (between 10:00 a.m. and 4:00 a.m.). During these times, users of the SIF are invited to enroll in the SEOSI study, and a nominal financial incentive (\$20 CDN) is offered to those who attend the research site, which is approximately one block away from Insite. Among individuals who wish to enroll in the SIF evaluation, and provide informed consent, a venous blood sample is drawn and an interviewer-administered questionnaire is conducted. The SEOSI cohort has been ethically approved by the University of British Columbia/Providence Healthcare Research Ethics Board.

The primary endpoint in the present study was the prevalence and correlates of receiving safer injecting education within Insite. Safer injecting education was defined as any of the following: being shown how to find a vein and/or tie off properly, being shown how to insert the syringe properly, and/or receiving information about safer injecting that you did not already know. We examined factors potentially associated with receiving safer injecting education including: age, years injecting, gender, ethnic background (Aboriginal versus other), daily cocaine injection (yes versus no), daily

heroin injection (yes versus no), sex-trade involvement (yes versus no), borrowing used syringes (yes versus no), requiring help with injections (yes versus no), syringe sharing (yes versus no), HIV status, reported daily SIF use, and binge drug use (yes versus no). All behavioural variables were in regard to the last 6 months, and all variable definitions were identical to previous reports.

Variables potentially associated with receiving safer injecting education were examined in bivariate analyses using Pearson's chi-square test and the Wilcoxon rank sum test. In addition, logistic regression was used to examine factors independently associated with receiving safer injecting education. The multivariate model was fit using an a priori defined model-building approach in which we adjusted for all variables that were statistically significant at the $p < 0.05$ level in the bivariate analyses. All statistical analyses were performed using SPSS 12.0. All p -values are two-sided.

Results

Between May 31, 2003 and Oct 22, 2004, 874 individuals were recruited into the SEOSI cohort, among whom 293 (33.5%) received safer injecting education at the SIF. Overall, safer injecting education consisted of: 159 (18.4%) individuals reported being shown how to find a vein and/or tie off properly, 139 (16.2%) reported being shown how to insert the syringe properly, and 230 (26.7%) reported receiving other information about safer injecting that they did not already know. Percents do not add up to 100% since individuals could report receiving multiple forms of assistance.

In univariate analyses, factors associated with receiving safer injecting education included: lesser years injecting (15 versus 17; $p = 0.003$), male gender (OR = 0.5), requiring help with injections in the last 6 months (OR = 2.5; [95% CI: 1.9–3.3]), reporting binge drug use in the last 6 months (OR = 1.5; [95% CI: 1.1–2.1]), and being involved in the sex-trade in the last 6 months (OR = 2.0; [95% CI: 1.4–2.7]). None of the other variables that were considered were statistically associated with receiving safer injecting education in univariate analyses, although both syringe borrowing ($p = 0.061$) and self-reported daily SIF use ($p = 0.085$) were marginally associated with reporting safer injecting education. As shown in Table 1, in multivariate logistic regression analyses, requiring help with an injection in the last six months (Adjusted Odds Ratio [AOR] = 2.20 [95% CI: 1.62–2.98]) and sex-trade involvement in the last 6 months (AOR = 1.54 [1.09–2.16]) were independently associated with receiving safer injecting education within the SIF. Both binge drug use (AOR = 1.34 [95% CI: 0.99–1.83]; $p = 0.06$) and years injecting (AOR = 0.99 [95% CI: 0.97–1.00]; $p = 0.056$ per year older) were marginally associated with receiving safer injecting education. Gender was excluded from the final model due to collinearity with sex-trade involvement.

Table 1
Multivariate logistic regression analysis of factors associated with receiving safer injecting education

| Characteristic (in the past 6 months) | Adjusted Odds Ratio | 95% CI | p-value |
|--|---------------------|-----------|---------|
| Requiring help injecting ^a | | | |
| Yes vs. no | 2.20 | 1.62–2.98 | <0.001 |
| Binge drug use ^a | | | |
| Yes vs. no | 1.34 | 0.99–1.83 | 0.060 |
| Years injecting ^a | | | |
| Per year longer | 0.99 | 0.97–1.00 | 0.056 |
| Sex-trade involvement ^a | | | |
| Yes vs. no | 1.54 | 1.09–2.16 | 0.014 |

CI = confidence interval.

^a Indicates behaviours are in regards to the 6-month period preceding the interview.

Discussion

The present study demonstrates that a significant proportion of SIF users are obtaining safer injecting education within the SIF. Furthermore, behaviours that predicted receiving safer injecting education within the SIF included sex-trade involvement and having required assistance with injection during the prior 6 months.

As noted above, it has been demonstrated that requiring help injecting has been associated with syringe sharing in cross-sectional studies (Kral et al., 1999; Wood et al., 2003), and a recent prospective study has demonstrated that requiring help injecting was independently associated with elevated HIV infection rates (O'Connell et al., 2004). Examinations of why IDUs require help injecting have demonstrated that lack of knowledge regarding how to safely inject oneself is a primary explanation for requiring help (Wood et al., 2003). This reportedly results in IDUs, experiencing significant vulnerability when they require assistance injecting from other IDUs (O'Connell et al., 2004; Wood et al., 2003). The present study is therefore highly relevant to these earlier analyses, since reporting requiring help injecting was independently associated with receiving safer injecting education within the SIF.

Nevertheless, although the fact that IDUs who require help with injections are receiving safer injecting education within the SIF is encouraging, the present study is preliminary, and several years of prospective follow-up will be required to determine if the receipt of safer injecting education reduces the rate of blood-borne infections among IDUs who exhibit this risk factor. In addition, further study ideally using qualitative research methods will be required to determine why sex-trade involvement was associated with requiring help injecting. Finally, previous studies have demonstrated that HIV risk behaviours may be under reported by IDUs in cohort studies such as SEOSI (Des Jarlais et al., 1999). Nevertheless, we know of no reason why drug use characteristics or other risk factors would be differentially reported by IDUs

who did and did not receive safer injecting education within the SIF.

In summary, the present study demonstrates that a significant proportion of SIF users are obtaining safer injecting education within the SIF, and that requiring help with injections and sex-trade involvement were associated with receiving safer injecting education. Since requiring help injecting has previously been associated with syringe sharing and HIV incidence (Kral et al., 1999; O'Connell et al., 2004; Wood et al., 2003), the fact that reporting requiring help injecting was independently associated with receiving safer injecting education within the SIF has major implications for HIV prevention. Prospective evaluation will now be necessary to examine if receiving safer injecting education is associated with reduced HIV risk behaviour and the incidence of blood-borne infections.

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