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WILLINGNESS TO ENGAGE IN PEER-DELIVERED HIV VOLUNTARY COUNSELLING AND TESTING AMONG PEOPLE WHO INJECT DRUGS IN A CANADIAN SETTING

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Abstract

Background—People who inject drugs (IDU) face unique systemic, social and individual barriers to conventional HIV voluntary counselling and testing (VCT) programs. Peer-delivered approaches represent a possible alternative to improve rates of testing among this population.

Methods—Cross-sectional data from a prospective cohort of IDU in Vancouver, Canada were collected between December 2011 and May 2012. Bivariate statistics and multivariate logistic regression were used to identify the prevalence of and factors associated with willingness to receive peer-delivered VCT.

Results—Of 600 individuals, 51.5% indicated willingness to receive peer-delivered pretest counselling, 40.7% to receive peer-delivered rapid HIV testing, and 42.8% to receive peer-delivered post-test counselling. Multivariate analyses found significant positive associations between willingness for pre-test counselling and having used Vancouver's supervised injection facility, Insite, or being a member of VANDU (a local drug user organization) (all $p < 0.05$). Daily crack smoking and having used Insite were positively associated with willingness to receive peer-delivered HIV testing ($p < 0.05$). Willingness to receive peer-delivered post-test counselling was positively associated with male gender, daily crack smoking, having used Insite, and being a member of VANDU ($p < 0.05$).

Conclusion—While not universally acceptable, peer-delivered VCT approaches may improve access to HIV testing among IDU.

Keywords

Peer-delivered; Voluntary HIV counselling and testing; People who inject drugs; Vancouver

INTRODUCTION

Globally, people who inject drugs (IDU) constitute 5-10% of individuals living with HIV.[1] IDU face an heightened risk of HIV infection, largely due to shared drug paraphernalia including syringes and crack pipes.[2, 3] In Canada, an estimated 13.4% of those living with HIV are IDU.[2] Although earlier diagnosis of HIV through testing has been shown to improve health outcomes and survival of patients,[4] IDU often present to healthcare only after AIDS-related opportunistic infections have developed.[3] Further benefits of routine HIV voluntary counselling and testing (VCT) include reduced risk behaviours conducive to HIV transmission and increased uptake of antiretroviral therapy following diagnosis.[5, 6]

Many barriers to VCT among IDU have been identified; distrust of the healthcare system and primary care providers are leading concerns.[7, 8] Peer-delivered VCT represents a unique opportunity to circumvent these barriers. In various studies, health services delivered by non-medical providers were shown to lower financial costs and result in equal or improved quality of care and service uptake, particularly among hard-to-reach populations. [8-13]

Certain organizations in Vancouver's Downtown Eastside neighbourhood, such as the supervised injection facility Insite (at which IDU can inject pre-obtained illicit drugs under nurse supervision), and the community organization Vancouver Area Network of Drug Users (VANDU), incorporate peer-delivery into their programming.[14] However, little is known about the acceptability of peer-delivered VCT among the IDU population, as no such programs currently exist. Therefore, this research sought to characterize IDU's willingness to receive peer-delivered VCT in Vancouver, Canada.

METHODS

Data for this research were drawn from the Vancouver Injection Drug Users Study (VIDUS), a prospective cohort of HIV-negative IDU recruited through street outreach and self-referral since 1996. The study has been described in detail previously.[15] Participants complete baseline and semi-annual follow-up questionnaires that elicit a range of information, including demographic data, information on drug use and HIV risk behaviours, and experiences with healthcare. Blood samples are also collected for serologic testing. The VIDUS study has been approved by the University of British Columbia/Providence Healthcare Research Ethics Board.

This study employs cross-sectional data from participants who completed a survey between December 2011 and May 2012 (n=600). Seven (1.2%) observations with missing data were excluded from analysis. During this follow-up period only, new survey questions asked respondents who they would want to administer HIV pre-test counselling, rapid HIV test, and HIV post-test results and counselling. For each question, possible responses included:

doctor, nurse, outreach/community worker, peer from Insite, someone from VANDU, close friend, acquaintance, someone with street experience, social worker, HIV support worker, HIV specialist (doctor), anyone (it doesn't matter who), or other. Participants selected all that applied, thus categories were not mutually exclusive. Participants were considered willing to receive peer-delivered services if they selected at least one of: an Insite or VANDU peer, a close friend, acquaintance, someone with street experience, or anyone, as these categories are generally comprised of current or former members of the IDU community. The three distinct outcomes explored by this study are willingness to receive peer-delivered pretest counselling, peer-delivered rapid HIV testing and peer-delivered post-test counselling.

Pearson's Chi-squared tests were conducted for bivariate analysis, except where 5 or fewer individuals existed in one or more cells. In this instance, Fischer's exact test was used. Odds ratios were calculated using simple logistic regression analyses. Three multivariate regression models were then constructed using the Akaike information criterion (AIC) and *p*-values. Each of the three models were initially constructed to include all variables where *p*<0.05 in bivariate analyses, then reduced by progressively removing the variable with the greatest *p*-value until no variables remained for inclusion. The model with the lowest AIC score was selected for reporting. All *p*-values were two-sided.

RESULTS

In total, 600 participants were included in this study. Seven (1.2%) observations were excluded from analysis due to missing data. 195 respondents (32.5%) were female, 301 (50.2%) were aged 48 years, 375 (62.5%) self-identified as Caucasian, and 153 (25.5%) self-identified as Aboriginal. 143 (23.8%) respondents were current members of VANDU, 450 (75.0%) had used Insite in the past, and 136 (22.7%) reported smoking crack cocaine daily. Overall, 309 individuals (51.5%) indicated willingness to receive peer-delivered pre-test counselling, 244 (40.7%) to receive peer-delivered rapid HIV testing, and 257 (42.8%) indicated willingness to receive peer-delivered post-test counselling.

In bivariate analyses, reported in Table 1, the following characteristics were significantly associated with willingness to receive peer-delivered pre-test counselling: drug dealing (Odds Ratio (OR) = 1.71, 95% confidence interval (CI): 1.10-2.65), daily crack smoking (OR = 1.59, 95%CI: 1.08-2.34), daily heroin injection (OR = 1.65, 95%CI: 1.05-2.61), injecting with others always or usually (OR = 1.66, 95%CI: 1.07-2.56), having used Insite (OR = 2.08, 95%CI: 1.42-3.03), and being a current member of VANDU (OR = 1.78, 95%CI: 0.54-2.07). Factors significantly associated with willingness to receive peer-delivered rapid HIV testing included drug dealing (OR = 1.70, 95%CI: 1.10-2.61), daily crack smoking (OR = 1.77, 95%CI: 1.20-2.60), daily heroin injection (OR = 1.65, 95%CI: 1.06-2.58), having used Insite (OR = 1.93, 95%CI: 1.30-2.87), and being a current member of VANDU (OR = 1.68, 95%CI: 1.15-2.45). Factors significantly associated with willingness to receive peer-delivered HIV test results and post-test counselling were daily crack smoking (OR = 1.63, 95%CI: 1.11-2.40), daily heroin injection (OR = 1.64, 95%CI: 1.05-2.57), injecting with others always or usually (OR = 1.64, 95%CI: 1.07-2.51), having

used Insite (OR = 2.00, 95%CI: 1.35-2.96), and being a current member of VANDU (OR = 1.67, 95%CI: 1.14-2.43).

As shown in Table 2, multivariate analyses identified the following factors to be significantly associated with willingness to receive peer-based pre-test counselling: having used Insite (Adjusted odds ratio (AOR) = 1.85, 95%CI: 1.25-2.72), and being a current member of VANDU (AOR = 1.55, 95%CI: 1.04-2.30). Daily crack smoking (AOR = 1.70, 95%CI: 1.15-2.51) and having used Insite (AOR = 1.73, 95%CI: 1.15-2.59) were significantly associated with willingness to receive peer-delivered rapid HIV testing. Willingness to receive peer-delivered post-test counselling was significantly associated with male gender (AOR = 1.46, 95%CI: 1.02-2.10), frequent crack smoking (AOR = 1.55, 95%CI: 1.04-2.31), having used Insite (AOR = 1.73, 95%CI: 1.15-2.60), and being a current member of VANDU (AOR = 1.47, 95%CI: 1.00-2.18).

DISCUSSION

Our study found moderately high levels of willingness to receive peer-delivered HIV VCT among IDU in Vancouver, Canada. Willingness was predicted by previous exposure to peer-delivered programming and markers of higher intensity drug use, specifically frequent crack smoking. These findings may reflect the potential for peer-based services to overcome various barriers to VCT associated with traditional VCT delivery. Specifically, peer-delivered VCT may help address issues such as lack of trust in the healthcare system, physicians' unfamiliarity with the social conditions surrounding IDU, and discomfort awaiting test results.[7, 8] We found that more IDU were willing to receive peer-delivered pre-test counselling than testing and post-test counselling. A previous study from Thailand found similar results, which were later explained by concerns about confidentiality and peers' ability to correctly administer tests.[16]

IDU in our sample who had used Insite, Vancouver's supervised injection facility which involves peer workers, or were members of the peer-run organization VANDU were more willing to engage in peer-delivered VCT. These results complement findings from a study in Thailand, which found that IDU who had engaged with a peer-run drop-in centre also expressed high willingness to receive peer-delivered VCT.[17] Given the potential importance of peer-delivery in the provision of HIV-related services, there may be value in implementing peer-delivered VCT within already established peer-run organizations to increase access to VCT within the community.

High willingness for peer-delivered VCT among frequent crack cocaine users may be explained by previous research, which found that perceived risk exposure constituted a main reason to seek HIV testing.[7] Due to ongoing educational efforts in Vancouver's Downtown Eastside, it is likely that IDU acknowledge crack cocaine use as a risk factor for HIV infection. Vancouver Coastal Health Authority's crack pipe distribution program, which occurred between 2011 and 2012, represents one example of such efforts.[18]

In Vancouver in 2011, a VCT pilot project delivered HIV counselling and testing to IDU through peers, in conjunction with nurses. An evaluation of the program found positive

results, but no large-scale peer-delivered VCT was implemented.[19] Research in Melbourne, Australia, also investigated a program of peer-delivered hepatitis C counselling and testing among IDU and found improvement in risk behaviours and knowledge of hepatitis C.[20] The findings from the present study are consistent with these studies and provide evidence that IDU are willing to engage in peer-delivered VCT; these types of programs and services should therefore be brought to scale.

Our study has limitations. First, our sample was built using snowball sampling methods and was not randomly selected; therefore, residual confounding may exist and results may not be generalizable. Second, we relied on self-reporting, which may subject our results to response bias. Lastly, our analysis is cross-sectional in nature and could be extended by future longitudinal and intervention research assessing how reported willingness compares to actual willingness to receive peer-delivered VCT.

Overall, this study highlights the potential of supplementing traditional VCT strategies with peer-delivered approaches tailored to IDU.

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What is already known on this subject

Peer-based approaches have been successful in delivering HIV-related interventions. This type of task-shifting from primary healthcare providers has been shown to increase quality of care and reduce costs of service delivery.

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What this study adds

This study provides evidence that people who inject drugs (IDU) support the use of peer-delivered HIV voluntary counselling and testing (VCT). Associations between involvement with community services or peer-based networks indicate that these organizations may be key roll-out points for peer-based VCT services. Results also suggest that IDU who know they are participating in high-risk activities may be more likely to take advantage of low-barrier VCT opportunities.

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Table 1

Bivariate analyses of factors associated with willingness to receive peer-delivered pre-test counselling, rapid HIV testing, and post-test counselling among IDU in Vancouver, Canada (n=600)

	Willingness to receive peer-delivered pre-test counselling	Willingness to receive peer-delivered rapid HIV-testing	Willingness to receive peer-delivered post-test counselling
Characteristic	Odds Ratio (95% CI)	Odds Ratio (95% CI)	Odds Ratio (95% CI)
Age			
(≥ 48 years vs. < 48 years)	0.79 (0.57 - 1.08)	0.84 (0.61 - 1.16)	0.95 (0.69 - 1.31)
Gender			
(male vs. female)	1.22 (0.86 - 1.71)	1.22 (0.86 - 1.73)	1.35 (0.95 - 1.91)
Ethnicity			
(Asian vs. Caucasian)	0.39 (0.10 - 1.52)	0.16 (0.02 - 1.29)	0.32 (0.07 - 1.54)
(Aboriginal vs. Caucasian)	1.13 (0.77 - 1.65)	1.19 (0.82 - 1.74)	1.06 (0.72 - 1.54)
(Latin vs. Caucasian)	0.60 (0.17 - 2.17)	0.97 (0.27 - 3.49)	0.86 (0.24 - 3.10)
(other vs. Caucasian)	0.57 (0.31 - 1.02)	0.71 (0.38 - 1.30)	0.68 (0.37 - 1.25)
Drug dealing *			
(yes vs. no)	1.71 (1.10 - 2.65)	1.70 (1.10 - 2.61)	1.45 (0.95 - 2.23)
Sex work *			
(yes vs. no)	1.91 (1.00 - 3.63)	1.66 (0.90 - 3.07)	1.66 (0.90 - 3.08)
Crack smoking *			
(≥ daily vs. < daily)	1.59 (1.08 - 2.34)	1.77 (1.20 - 2.60)	1.63 (1.11 - 2.40)
Heroin injection *			
(≥ daily vs. < daily)	1.65 (1.05 - 2.61)	1.65 (1.06 - 2.58)	1.64 (1.05 - 2.57)
Cocaine injection *			
(≥ daily vs. < daily)	1.71 (0.74 - 3.94)	1.61 (0.72 - 3.60)	1.74 (0.78 - 3.90)
Crystal methamphetamine injection *			
(≥ daily vs. < daily)	2.42 (0.93 - 6.33)	1.99 (0.83 - 4.81)	1.49 (0.62 - 3.56)
Assisted injection *			
(yes vs. no)	1.48 (0.76 - 2.90)	1.68 (0.87 - 3.24)	1.52 (0.79 - 2.94)
Inject with others *			
(always, usually vs. sometimes, occasionally, never)	1.66 (1.07 - 2.56)	1.51 (0.98 - 2.31)	1.64 (1.07 - 2.51)
Having used Insite **			
(yes vs. no)	2.08 (1.42 - 3.03)	1.93 (1.30 - 2.87)	2.00 (1.35 - 2.96)
Incarceration *			
(yes vs. no)	1.22 (0.64 - 2.31)	1.15 (0.61 - 2.19)	1.29 (0.69 - 2.44)
Current member of VANDU			
(yes vs. no)	1.78 (1.21 - 2.61)	1.68 (1.15 - 2.45)	1.67 (1.14 - 2.43)
Barriers to accessing healthcare services			
(yes vs. no)	1.06 (0.54 - 2.07)	1.90 (0.96 - 3.74)	1.53 (0.78 - 3.01)

IDU: people who inject drugs, CI: confidence interval, VANDU: Vancouver Area Network of Drug Users

*
Refers to behaviour/activities in the previous six months

**
Indicates that the participant has accessed services provided by Vancouver's supervised injection facility, Insite, at least once in the past

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Table 2

Multivariate logistic regression analyses of factors associated with willingness to receive peer-delivered pre-test counselling, rapid HIV testing, and post-test counselling among IDU in Vancouver, Canada (n=600)

	Willingness to receive peer-delivered pre-test counselling	Willingness to receive peer-delivered rapid HIV-testing	Willingness to receive peer-delivered post-test counselling
Characteristic	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Gender			
(male vs. female)	-	-	1.46 (1.02 – 2.10)
Sex work *			
(yes vs. no)	1.61 (0.83 – 3.15)	-	-
Crack smoking *			
(daily vs. < daily)	1.41 (0.94 – 2.11)	1.70 (1.15 – 2.51)	1.55 (1.04 – 2.31)
Crystal methamphetamine injection *			
(daily vs. < daily)	2.43 (0.92 – 6.44)	-	-
Inject with others *			
(always, usually vs. sometimes, occasionally, never)	-	-	1.45 (0.93 – 2.26)
Having used Insite **			
(yes vs. no)	1.85 (1.25 – 2.72)	1.73 (1.15 – 2.59)	1.73 (1.15 – 2.60)
Current member of VANDU			
(yes vs. no)	1.55 (1.04 – 2.30)	1.44 (0.98 – 2.13)	1.47 (1.00 – 2.18)
Barriers to accessing healthcare services			
(yes vs. no)	-	1.80 (0.90 – 3.60)	-

IDU: people who inject drugs, CI: confidence interval, AOR: adjusted odds ratio, VANDU: Vancouver Area Network of Drug Users

* Refers to behaviour/activities in the previous six months

** Indicates that the participant has accessed services provided by Vancouver's supervised injection facility, Insite, at least once in the past