Research paper

Measuring drug use sensation-seeking among Australian gay and bisexual men

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**Abstract**

**Background:** Gay and bisexual men (GBM) use illicit drugs at higher rates than most other population groups and their use has been associated with sexual risk behavior. The measure of sexual sensation-seeking has been a useful tool for understanding sexual risk behavior in this population, but there is no equivalent measure for sensation-seeking in relation to drug-using behaviors.

**Objective:** This paper explores baseline associations with illicit drug use in an online prospective observational study of licit and illicit drug use among GBM. We describe the development of a measure of drug-use sensation-seeking, and its association with illicit drug use.

**Methods:** Australian GBM were invited to enroll online through social networking and gay community sites. Between September 2014 and July 2015, a total of 2251 GBM completed the questionnaire and 1900 men provided useable baseline data on items designed to measure drug use sensation-seeking.

**Results:** Mean age was 32.8 years (SD 12.7). Half (50.7%) had used illicit drugs within the previous six months. Among these 963 recent users, 27.3% had used illicit drugs weekly or more often. Responses to items to measure drug use sensation-seeking formed a reliable scale ($\alpha = 0.944$). Within the total sample, any illicit drug use within the previous six months was associated with a higher score on the measure of drug use sensation-seeking ($\text{aOR} = 1.18; \text{95%CI} = 1.16–1.20$). When we restricted our analyses to men who reported recent illicit drug use, it was also associated with using those drugs at least weekly in the previous six months ($\text{aOR} = 1.09; \text{95%CI} = 1.07–1.11$).

**Conclusion:** We developed a reliable measure of drug use sensation-seeking for this sample of GBM. Our measure predicted any use of illicit drugs within the total sample, and when restricted to men who reported illicit drug use, it also predicted more frequent use of those drugs.

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**Introduction**

Gay and bisexual men (GBM) tend to use most illicit drugs at higher rates when compared with other men in the population (Cochran, Ackerman, Mays, & Ross, 2004; Hickson, Bonell, Weatherburn, & Reid, 2010; Roxburgh, Lea, de Wit, & Degenhardt, 2016). Apart from the health, legal, and other issues that can often accompany use of illicit drugs, their use has been strongly associated with sexual risk behavior and HIV infection among GBM (Bourne, Reid, Hickson, Torres Rueda, & Weatherburn, 2014; Drumright et al., 2006; Kirby & Thornber-Dunwell, 2013; Prestage et al., 2007; Prestage, Grierson et al., 2009; Prestage, Jin et al., 2009; Vosburgh, Mansergh, Sullivan, & Purcell, 2012).

The measure of sexual sensation-seeking has been used as an indicator of sexual risk behavior in general (Hendershot, Stoner, George, & Norris, 2007; Kalichman & Rompa, 1995; Ritchwood, Penn, DiClemente, Rose, & Sales, 2014). This measure identifies individuals predisposed toward more adventurous, and therefore risky, behaviors. The sexual sensation-seeking measure has also been used in relation to risk behaviors associated with HIV infection among GBM (Bancroft et al., 2003; Kalichman, Heckman, & Kelly, 1996; Kashubeck-West & Szymanski, 2008; Preston, D’Augelli, Kassab, & Starks, 2007). In our previous and current work, the original sexual sensation-seeking measure has been and continues to be associated with the key indicators of HIV risk (Prestage et al., 2013).

Generalized measures of sensation-seeking and impulsivity have been found to be associated with drug use, both licit and illicit (Kaestner, Rosen, & Appel, 1977; Trocki, Drabble, & Midanik, 2009).

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While useful as psychological tools to identify particular personality types associated with risky behaviors in general, more specific measures may be better able to distinguish between risky and non-risky drug-using behaviors, particularly in settings where drug use is relatively normalized. Among GBM, drug use is relatively common (Hammoud et al., 2017; Hickson et al., 2010; Lea et al., 2013; Roxburgh et al., 2016), and is often perceived as acceptable behavior (Isaiah Green & Hakitis, 2006; Isaiah Green, 2003; Slavin, 2004). In such a setting, the role of peer norms is critical. Distinguishing between a generic acceptance of drug use and more adventurous attitudes in gay community settings may be key to understanding the relationship between individuals’ attitudes and behaviors regarding drug use and the role of peer networks in this regard.

Given the strong association between drug use and sexual risk behavior among GBM, and the important role it appears to play in HIV infection, it is important to identify both the separate and interconnected contributions of both types of behavior. Additionally, it is difficult to determine the extent to which dependent drug use reflects its use in sex party contexts or is separately linked to attitudes toward drug use in general. Therefore, a measure similar to the sexual sensation-seeking scale, but with regard to drug-using behaviors, may be invaluable. Measures of this type could identify individuals with a predilection toward adventurous and risky drug use, instead of adventurous and risky sexual behavior. Importantly, such a measure may help to distinguish men inclined to adventurous and risky drug use from those inclined to adventurous and risky sex, and thereby help to identify their separate, or interconnected contributions to HIV risk. Such measures could also be used to explore the place of sensation-seeking specifically within gay community drug-using subcultures. Hakitis, Mukherjee, and Palamar (2007) devised measures of both negative and positive outcome expectancies in relation to methamphetamine use specifically. While broadly modeled on the sexual sensation-seeking scale, these measures were not directly equivalent to that scale, and were not necessarily applicable to use of other drugs.

We devised a new measure of drug-use sensation-seeking directly adapted from the existing measure of sexual sensation-seeking and referencing drug use in general. We tested this new measure in relation to the prevalence and frequency of illicit drug use among Australian GBM.

### Methods

The Following Lives Undergoing Change (Flux) study has been described in detail (Hammoud et al., 2017). Flux was funded by the Australian Research Council. This national online cohort study investigates patterns of, and factors associated with, drug use over time among Australian GBM. Ethics approval was obtained from the University of New South Wales and La Trobe University, Australia.

#### Questionnaire

Questions about socio-demographic characteristics, drug use, sexual practices and testing for HIV/STI were adapted from Australia’s primary behavioral surveillance among GBM (Holt, 2014; Zablotska, Holt, & Prestage, 2012). Questions about specific sex practices (any anal intercourse, separately for the insertive and receptive positions, with and without condoms in each position, and with or without ejaculation inside) were used to devise the composite measure of condomless anal intercourse with casual partners. HIV serostatus was by self-report. We asked men about use of specific illicit drugs over their lifetime and in the six months prior to the survey. We also asked about the frequency of use of each drug.

We included the measure of sexual sensation-seeking (Kalichman et al., 1996). We also adapted the sexual sensation-seeking scale to create a similar measure of drug use sensation-seeking (see Table 1). Participants were asked how much each statement applied to themselves, with responses scored as 0 = ‘Not at all’, 1 = ‘Slightly’, 2 = ‘Somewhat’, and 3 = ‘Very much’; response options were self-defined by respondents (Table 2). The specific questionnaire items were adapted from those comprising the sexual sensation-seeking scale, so that references to particular sexual situations were replaced by equivalent kinds of drug use situations. Our primary purpose was to identify men within the cohort who might be more inclined toward adventurous and risky drug use, as a possible tool to identify men who were more likely to either initiate drug use or to become dependent users over time. It was our intention that such a tool could be used alongside the sexual sensation-seeking measure, and be a useful comparison measure, thereby enabling us to also explore the different, or interconnected, contributions of more adventurous attitudes toward sex and to drug use. We conducted an initial search to identify any such

### Table 1

Drug use sensation-seeking items – factor analysis (N = 1900).

<table>
<thead>
<tr>
<th>Factor 1: Drug-use sensation-seeking (α = 0.944)</th>
<th>Level of endorsement of statement n (%)</th>
<th>Total Item Mean (SD)</th>
<th>Principal Components Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy the company of people who use drugs</td>
<td>Not at all (1066) 56.1 (%)</td>
<td>Slightly (476) 25.1 (%)</td>
<td>Somewhat (251) 13.3 (%)</td>
</tr>
<tr>
<td>I like the excitement and sensation of trying different drugs</td>
<td>1166 (61.4)</td>
<td>356 (18.7)</td>
<td>240 (12.6)</td>
</tr>
<tr>
<td>I feel like experimenting with drugs</td>
<td>1157 (60.9)</td>
<td>425 (22.4)</td>
<td>213 (11.2)</td>
</tr>
<tr>
<td>I enjoy the sensation of getting really fucked up on drugs</td>
<td>1173 (61.7)</td>
<td>251 (13.2)</td>
<td>251 (13.3)</td>
</tr>
<tr>
<td>I am interested in trying out different drugs</td>
<td>1132 (59.6)</td>
<td>446 (23.5)</td>
<td>210 (11.1)</td>
</tr>
<tr>
<td>I enjoy using drugs with other people</td>
<td>866 (45.6)</td>
<td>296 (15.6)</td>
<td>340 (17.9)</td>
</tr>
<tr>
<td>I use drugs for the pleasure in the moment</td>
<td>927 (48.8)</td>
<td>314 (16.5)</td>
<td>360 (18.9)</td>
</tr>
<tr>
<td>I enjoy watching other people taking drugs</td>
<td>1277 (67.2)</td>
<td>322 (16.9)</td>
<td>198 (5.4)</td>
</tr>
<tr>
<td>I like wild, uninhibited drug use</td>
<td>1386 (72.9)</td>
<td>238 (12.5)</td>
<td>151 (7.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Other items (α = 0.659)</th>
<th>Level of endorsement of statement n (%)</th>
<th>Total Item Mean (SD)</th>
<th>Principal Components Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>The act of taking the drugs is more important to me than how good they are</td>
<td>1714 (90.2)</td>
<td>125 (6.6)</td>
<td>46 (2.4)</td>
</tr>
<tr>
<td>I have said things that are not exactly true to get a person to give me drugs</td>
<td>1660 (87.4)</td>
<td>146 (7.7)</td>
<td>59 (3.1)</td>
</tr>
<tr>
<td>My friends probably think I take too many drugs</td>
<td>1649 (86.8)</td>
<td>142 (7.5)</td>
<td>77 (4.1)</td>
</tr>
</tbody>
</table>
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