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Boredom, depressive symptoms, and HIV risk behaviors among urban injection drug users

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Abstract

Boredom is closely aligned with depression, but is understood to be conceptually distinct. Little is known about boredom among active drug users and the potential association with depression and HIV risk. Current IDUs (n=845) completed a baseline behavioral survey including socio-demographic characteristics, self-reported boredom, depressive symptoms (CESD score), and HIV risk behaviors. One-third of the sample reported high boredom in the past week. In multivariate analysis, those who reported boredom were less likely to be older, African-American, have a main partner, and to be employed at least part-time. Controlling for covariates, those with high boredom were almost five times as likely to report high depressive symptoms. Co-occurrence of boredom and depressive symptoms (28%) was strongly and independently associated with a range of injection risk behaviors and sex exchange. This study demonstrates the need for more thorough understanding of mental health and HIV risk among urban drug users.

Keywords

Boredom; depressive symptoms; drug use; HIV risk; employment; mental health

INTRODUCTION

Within impoverished inner-city communities, one dimension of psychological well-being, depressive symptoms, has been found to be associated with social isolation, injection risk and sex risk behaviors, and can be a barrier to drug use cessation among injection drug users (IDUs). Yet other dimensions of the psychological well being of inner-city residents at risk for HIV, who experience high rates of stressors and numerous individual and structural barriers to goal attainment, are not well characterized. Understanding the complexities of psychological distress and the influence of social and structural circumstances is critical for designing appropriate interventions.

One psychological state that has not been well characterized in this population is boredom. Boredom is an affective state that is closely aligned with depression, but is understood to be both conceptually and operationally distinct (1; 2). A person who is prone to boredom may experience varying degrees of depression, hopelessness, loneliness, and distractibility (2). Boredom proneness has been associated with depression, anxiety, and sensation seeking (3), but the reported experience of boredom has received less research attention. While depression is characterized by sadness and loss, boredom is understood to be most associated with lack of interest (4), lack of meaning (2; 5), constrained circumstances (6),

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progress towards goals (7; 8) and perceived passage of time (9) in U.S. and international research. Little is known about the experience of boredom among IDUs and the relationship between boredom, depression, and HIV risk behavior.

Existentialist perspectives suggest that the relationship between boredom, depression, and life meaning is a question of purpose. Feelings of meaninglessness contradict fundamental human motivations to find purpose and meaning in one's life (10). Persistent meaninglessness leads to an existential vacuum, which is characterized by emptiness and manifests in a state of boredom. While both boredom and depression may result from feelings of meaninglessness, there is some suggestion that a prolonged lack of meaning will evolve into boredom characterized by apathy and indifference, while feelings of sadness will recede (11). Meaninglessness has important implications for HIV prevention and drug treatment programs as enhancing motivation is often a key component of these programs. If participants experience high levels of meaninglessness, the potential impact of these programs on behavior change may be attenuated.

The production of boredom can also be understood as linked to a sense of progress (7). Boredom in this case is the emotional result of one's inability to progress over time, particularly towards goals that are individually or societally-determined. For example, in one ethnographic study of boredom, chronically unemployed young men in Ethiopia described feeling that life lacked meaning and had no purpose other than survival (8). In this context, perceptions of time passage expanded and they found themselves with far too much unstructured time – a circumstance that fostered contemplation of their unsatisfying situation. This points to the role of structural factors, such as employment opportunities, in creating conditions that foster a sense of potential for future change. In inner-city settings, there are high rates of chronic unemployment, especially among drug users (12; 13), which may contribute to feelings of entrapment and lack of progress.

Heidegger suggested that profound boredom occurs when it becomes impossible to escape more superficial forms of boredom; the present is perceived to stand still and actions are no longer seen as contributing to future possibilities (14). Profound boredom is characterized by persistent feelings of emptiness, inaction, and a sense of time as unchanging. In contrast, superficial boredom is transient and associated only with a point in time experience of unmoving time. As one's ability to change the situation becomes more constrained, the experience of boredom becomes direr.

There is some evidence of an association between boredom and drug use, although measurement has varied and studies among active drug users are rare. Leisure boredom, a concept that assesses negative affect associated with meaningless leisure time, has been associated with drug use among adolescents (15). Substance use among young people is often attributed to sensation seeking, although the relationship between boredom and sensation seeking is inconsistent (3). Those who are mildly bored may be more inclined to seek excitement from a new environment. However, those whose boredom is more extreme – and therefore more similar to depression – may be more likely to avoid stimulation. Lacking meaningful engagement, individuals may become bored and also more detached from mainstream activities, such as school, which may lead to affiliation with similar peers and drug use. It is unclear whether existing studies of boredom and drug use are applicable to boredom among chronic IDUs in urban settings, although boredom has been cited as a barrier to cessation.

No study has examined boredom correlates among urban IDUs or measured the association between boredom and depression in similar samples. IDU research shows life challenges and frustrations sometimes associated with chronic drug use, missed opportunities, and

challenges related to personal and societal goals such as employment (16). There is reason to believe that boredom among chronic drug users is similar to profound boredom and may have elements of the sense of entrapment in boredom, lack of achievement, and meaningless passage of time described by Mains. In the context of chronic drug use, heroin and cocaine may be strategic vehicles for achieving the numbing and state of “thoughtlessness” sought by the young unemployed men in Ethiopia.

Despite evidence that the origins and experience of boredom are unique from depression, boredom remains under-recognized as an important mental health concern (2). Severe boredom may manifest similarly to depression, such that one may mask the presence of the other (3). Although depression and boredom may co-occur, attention to boredom as a distinct concern is often overlooked or subsumed by a focus on competing issues (17). Although depressive symptoms are highly associated with HIV risk among urban IDUs, it is unclear whether these associations may be partially attributed to boredom.

This preliminary study aims to explore reported feelings of boredom among active IDUs and the relationship between self-reported boredom, depressive symptoms, and HIV risk behaviors. We hypothesized that boredom would be more common when life circumstances deviate from societal norms, such as homelessness, lack of steady partnership, incarceration, and unemployment. Additionally, we evaluated the intersection between boredom and depressive symptoms to explore the relationship between the two constructs. We expected a strong association between boredom and depressive symptomatology and anticipated that HIV risk behaviors would be most prevalent among individuals who reported both boredom and depressive symptoms.

METHODS

Baseline interviews for the STEP study (n=1024), a study among IDUs and social network members, took place in 2004–2006. Primary participants were recruited through targeted outreach. Eligibility included: 18 or older; self-reported IDU in the past six-months; Baltimore City residence; no participation in other HIV or network studies in the past year; and willingness to introduce a risk network member to the study. Network members were sex or drug partners of primary participants. Of 2420 screened primary participants, 936 were eligible and 600 completed surveys. Eligible risk network members determined through social network elicitation methods were invited to participate by primary participants (n=424). The current study is limited to index or network participants who reported IDU in past six-months (n=845).

Trained staff members conducted face-to-face two-hour interviews using ACASI software for HIV risk behaviors. Participants received \$35 for baseline completion. Study protocols were approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

Boredom was assessed by asking participants how often they felt bored in the past week on a four-point scale: rarely or none of the time, some or a little bit of the time, occasionally or moderate amount of time, or most of all of the time. High boredom was classified as those who reported at least moderate boredom frequency, similar to a prior study of boredom and health outcomes (18).

Demographic characteristics included race/ethnicity, age, educational attainment, employment status, recent homelessness, recent incarceration, and specific income sources in the past month. Age was divided at the median and race/ethnicity was collapsed into African-American and other due to sample distribution. Cocaine and heroin frequency was collapsed into a measure of daily drug use.

Depressive symptoms were assessed with the Center for Epidemiological Studies Depression scale (19). A score of 16 or higher was considered to be high depressive symptoms.

A range of HIV risk behaviors were examined in this exploratory study, including sex for money or drugs in the past 90 days, number of partners, and injection risk behaviors in the past six-months.

Chi-square tests were conducted to identify socio-demographic characteristics associated with higher frequency of boredom. Association between socio-demographics and boredom frequency was examined with univariate and multivariate logistic regression, using GEE to account for clustering by index. Associations between four mutually-exclusive categories (Low boredom/Low depressive symptoms; High boredom/Low depressive symptoms; Low boredom/High depressive symptoms; and High boredom/High depressive symptoms) and demographic and HIV-risk characteristics were examined with chi-square tests, then with regression of category on each outcome, using GEE to account for clustering, with the Low boredom/Low depressive symptoms group as the referent category. Three respondents without complete CES-D information were excluded. Stata10 was used for analysis.

RESULTS

Table 1 shows study population characteristics. Respondents were median age of 44 (IQR=39–49), predominantly male (64%) and African-American (80%). Approximately half completed high school (45%) and reported daily IDU (52%). Most used injection heroin (93%), cocaine (65%) or heroin/cocaine combined (76%). Sixty-five percent reported recent crack use.

One-third reported high boredom in the past week. In bivariate analysis (Table 2), boredom was significantly less common among older respondents, African-Americans, and non-crack users, but did not differ by gender, education, or HIV status. As expected, homelessness, incarceration, unemployment, and no main partner were associated with more boredom. Boredom was significantly associated with high depressive symptoms and significantly more common among those who reported illicit or non-independent income sources, such as borrowing money from friends or family (78.4% vs. 70.7%, $p<0.05$), selling drugs (20.9% vs. 15.1%, $p<0.05$), and trading sex for money or drugs (25.2% vs. 13.9%, $p<0.001$). In multivariate analysis of demographic characteristics (Table 2), those who reported boredom were less likely to be older (AOR: 0.65, 95% C.I.: 0.47, 0.89), African-American (AOR: 0.58, 95% C.I.: 0.40, 0.85), to have a main partner (AOR: 0.63, 95% C.I.: 0.45, 0.86), and to be employed at least part-time (AOR: 0.55, 95% C.I.: 0.36, 0.83). In the presence of depressive symptoms, associations between boredom and race/ethnicity and employment were mildly attenuated. Controlling for covariates, those who reported boredom were almost five times as likely to report high depressive symptoms (AOR: 4.71, 95% C.I.: 3.17, 7.01).

Sixty-four percent scored 16 or higher on the CES-D scale (mean: 21.5 SD: 12.2). Approximately 85% of those who reported boredom reported high depressive symptoms. Almost half (44%) of those who reported high depressive symptoms reported boredom. When stratified according to boredom and depressive symptoms level, 31% reported low boredom and low depressive symptoms. Thirty-six percent reported high depressive symptoms and low boredom. More than one-quarter (28%) reported high boredom and high depressive symptoms. Only 5% reported high boredom and low depressive symptoms.

Demographic characteristics, drug use, income sources, and HIV risk behaviors differed across the groups (Table 3). Compared to the Low Boredom/Low CESD group, the High Boredom only group were younger, less likely to have a main partner and more likely to

have been recently incarcerated. The High CESD Only group was more likely to be female, less likely to have completed high school or be employed, and more likely to report crack use, homelessness, and incarceration. Those who reported High Boredom and High CESD were younger, less likely to be African-American, and more likely to be female, inject daily, and use crack. This group was 2.6 times more likely to report homelessness, twice as likely to report incarceration, almost half as likely to have a main partner, and substantially less likely to report employment compared to the Low Boredom/Low CESD group.

HIV-related risk behaviors did not differ between the High Boredom only group and the Low Boredom/Low CESD group. Controlling for demographic characteristics, the High CESD only group was more likely to use a needle of unknown cleanliness (AOR: 1.45, 95% C.I.: 1.00, 2.06) compared to the Low Boredom/Low CESD group and to report exchanging sex for money or drugs (AOR: 1.83, 95% C.I.: 1.02, 3.26). The High Boredom/High CESD group was more likely to report using a needle after someone (AOR: 1.76, 95% C.I.: 1.20, 2.59), and a needle without being sure if it was clean (AOR: 2.15, 95% C.I.: 1.43, 3.23). This group was also more likely to report shared cotton (AOR: 1.75, 95% C.I.: 1.19, 2.59), cookers (AOR: 1.77, 95% C.I.: 1.18, 2.65), and any equipment (AOR: 1.55, 95% C.I.: 1.02, 2.35). The High Boredom/High CESD group was more three times more likely to report exchanging sex for money or drugs (AOR: 3.22, 95% C.I.: 1.83, 5.64) compared to the Low Boredom/Low CESD group.

DISCUSSION

Boredom is an underappreciated aspect of life among urban IDUs. This study showed that one-third of IDUs reported at least moderate boredom during the past week. In contrast, approximately 10% of British civil servants reported the same level of boredom (18). More than one-quarter of current respondents reported both boredom and depression and close to half of respondents who reported high depressive symptoms also reported boredom. However, associations between boredom and demographic characteristics were not substantively different in the presence of depressive symptoms. Associations with HIV risk were highest among those with both high boredom and depressive symptoms. In contrast, the boredom only group did not report elevated HIV risk in any domain and those with only depressive symptoms reported lower levels of HIV risk.

It may be that the assessment of both boredom and depressive symptoms better captures the range of psychological well-being that affects an individual's ability to sustain preventive behaviors and the psychosocial impact of structural factors such as unemployment on risk behaviors. It is also possible that those reporting boredom, but not depression, are experiencing a less severe form of boredom, one that is more akin to leisure boredom. Interestingly, the characteristics of those with both boredom and depressive symptoms differed somewhat from those reporting only boredom or only depressive symptoms. Recent research suggests that boredom may be uniquely distinguished by the configuration of lack of challenge and meaning, which may help to further explain how those with boredom and depression differed from those with depression only (20). Further exploration may help to explain the relative relationship between different dimensions of mental health and HIV risk and the reasons why the combination of boredom and depressive symptoms may be more concentrated among certain groups. Future research should also continue to explore the experience of boredom among drug using populations and examine the relationship between structural determinants, boredom, depressive symptoms, and HIV risk.

Consistent with expectation, boredom was higher among those whose life circumstances were less stable. Although instability often involves greater chaos and less daily routine, these findings suggest that instability may also involve the feelings of entrapment and lack

of progress associated with extreme boredom. Employment and income generation may be critical sources for personal assessment of meaningful passage of time and progress towards societally-approved goals (6; 7).

Only 17% of respondents in this study were employed at least part-time, which is consistent with other IDU studies (12; 13). There are many individual, social, and structural barriers to employment among drug users. It is possible that opportunities for meaningful work involvement for active drug users may alleviate boredom and contribute to reduced HIV risk. In the absence of viable employment opportunities, creating opportunities for drug users to pass time meaningfully and connect to personal future goals may also have public health value. These types of interventions are likely to contribute to mental health status, but this study suggests they may alleviate HIV risk as well. Some have suggested unique clinical approaches for individuals who are both bored and depressed (21), while others have suggested the feasibility of employment training programs for drug users (12), and development of low-threshold skill development and employment opportunities (13; 22).

The boredom literature lacks a coherent, universally accepted definition and measure (23). Most research into the association between boredom and drug use has examined the tendency to experience boredom, or boredom proneness, rather than reported feelings of boredom. More research is needed to understand the dynamics of the association between drug use and boredom experiences among active drug users, including any potential role that boredom may play in drug use relapse, and the relationship between boredom and other mental distress. The current boredom measure was only a common single item measure indicating recent feelings of boredom. Although elements of this analysis support construct validity for this item, measurement with a multiple item scale would allow more nuanced assessment and should be an important next step for this area of research. Understanding the stability of boredom over time will also be important to further understand pathways to HIV risk behaviors. Measuring boredom along a severity scale may allow respondents to distinguish between existential and leisure types of boredom experience. Despite measurement limitations, these findings suggest the importance of both assessing the construct of boredom and of obtaining a better understanding of the multidimensional aspects of mental health and how they may promote or impede HIV risk behaviors among urban populations. Qualitative research would help to understand how boredom is experienced and conceptualized among urban drug users and the extent to which it relates to depression and overall well-being.

This study has some additional limitations. Data were cross-sectional and therefore causal effects cannot be assumed. Measures were based on self-reported information and it is possible that social desirability influenced responses. Data collection times may have biased the sample against those with full-time employment. Non-random sampling may limit generalizability, although network recruitment may have helped. These findings may not be generalizable to drug users in non-urban settings or those with higher rates of employment or other social stability.

These findings suggest that the relationship between boredom and mental well-being may be worth HIV prevention attention. Among London civil servants, those who were bored were more likely to die younger than those who were not bored (18). The authors suggested that boredom was a proxy for other risk factors and may be indicative of harmful behaviors, concluding that alleviating boredom could be a mechanism for improving health. The current study suggests that HIV-related risk behaviors are a component of these health risk behaviors. Future research should examine whether alleviating boredom through meaningful role engagement is a feasible mechanism for reducing HIV risk and improving health among urban IDUs.

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REFERENCES

1. Farmer R, Sundberg ND. Boredom proneness--the development and correlates of a new scale. *J Pers Assess.* 1986; 50:4–17. [PubMed: 3723312]
2. Fahlman SA, Mercer KB, Gaskovski P, Eastwood AE, Eastwood JD. Does a lack of life meaning cause boredom? results from psychometric, longitudinal, and experimental analyses. *J Soc Clin Psychol.* 2009; 28:307–340.
3. Vodanovich SJ, Verner KM, Gilbride TV. Boredom proneness: its relationship to positive and negative affect. *Psychol Rep.* 1991; 69:1139–1146. [PubMed: 1792282]
4. Sommers J, Vodanovich SJ. Boredom proneness: its relationship to psychological- and physical-health symptoms. *J Clin Psychol.* 2000; 56:149–155. [PubMed: 10661377]
5. Melton AM, Schulenberg SE. On the relationship between meaning in life and boredom proneness: examining a logotherapy postulate. *Psychol Rep.* 2007; 101:1016–1022. [PubMed: 18361113]
6. Fenichel, O. On the psychology of boredom. In: Rappaport, D., editor. *Organization and Pathology of Thought.* New York: Columbia University Press; 1951.
7. Goodstein, E. *Experience without Qualities: Boredom and Modernity.* Stanford: Stanford University Press; 2005.
8. Mains D. Neoliberal times: Progress, boredom, and shame among young men in urban Ethiopia. *Am Ethnol.* 2007; 34:659–673.
9. Moran A, Scott PA, Darbyshire P. Existential boredom: The experience of living on haemodialysis therapy. *Med Humanit.* 2009; 35:70–75.
10. Frankl, VE. *The Unheard Cry for Meaning.* New York: Simon & Schuster; 1978.
11. Maddi, S. The search for meaning. In: Arnold, WJ., editor. *The Nebraska Symposium on Motivation.* Lincoln: University of Nebraska Press; 1970.
12. McCoy CB, Comerford M, Metsch LR. Employment among chronic drug users at baseline and 6-month follow-up. *Subst Use Misuse.* 2007; 42
13. Richardson L, Wood E, Zhang R, Montaner J, Tyndall M, Kerr T. Employment among users of a medically supervised safer injection facility. *Am J Drug Alcohol Abuse.* 2008; 34:519–525. [PubMed: 18821450]
14. Heidegger, M. *The fundamental concepts of metaphysics: world, finitude, solitude.* Bloomington: Indiana University Press; 1995.
15. Wegner L, Flisher AJ, Chikobvu P, Lombard C, King G. Leisure boredom and high school dropout in Cape Town, South Africa. *J Adolesc.* 2008; 31:421–431. [PubMed: 18001827]
16. Ware NC, Wyatt MA, Tugenberg T. Adherence, stereotyping and unequal HIV treatment for active users of illegal drugs. *Soc Sci Med.* 2005; 61:565–576. [PubMed: 15899316]
17. Inman A, Kirsh KL, Passik SD. A pilot study to examine the relationship between boredom and spirituality in cancer patients. *Palliat Support Care.* 2003; 1:143–151. [PubMed: 16594276]
18. Britton A, Shipley MJ. Bored to death? *Int J Epidemiol.* 2010; 39:370–371. [PubMed: 20361429]
19. Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Appl Psychol Meas.* 1977; 1:385–401.
20. van Tilburg WAP, Igou ER. On boredom: Lack of challenge and meaning as distinct boredom experiences. *Motiv Emot.* Published online 01 July 2011. DOI: 10.1007/s11031-011-9234-9.
21. Ellis, A. Treating the bored client with rational emotive therapy (RET). In: Stern, EM., editor. *Psychotherapy and the Bored Patient.* Binghamton: Haworth Press; 1988.
22. DeBeck K, Shannon K, Wood E, Li K, Montaner J, Kerr T. Income generating activities of people who inject drugs. *Drug Alcohol Depend.* 2007; 91:50–56. [PubMed: 17561355]

23. Vodanovich SJ. Psychometric Measures of Boredom: A Review of the Literature. *J Psychol.* 2003; 137:569–595. [PubMed: 14992349]

Table 1
Sample characteristics by boredom among injection drug users in the STEP study (n=845)

	Total		Low Boredom (n=563)		High Boredom (n=282)		χ ² test statistic	p-value
N	n (%)	n (%)	n (%)	n (%)	n (%)			
Age > 43 years	842	459 (54.5)	331 (59.0)	128 (45.6)	13.66	0.000		
Female gender	845	307 (36.3)	201 (35.7)	106 (37.6)	0.29	0.591		
African-American race/ethnicity	842	677 (80.4)	474 (84.6)	203 (72.0)	19.07	0.000		
Education > 12 years	845	380 (45.1)	251 (44.6)	129 (45.7)	0.10	0.749		
Daily injection	845	442 (52.3)	282 (50.1)	160 (56.7)	3.33	0.068		
Depressive symptoms > 16	842	446 (53.0)	302 (53.8)	239 (85.1)	79.5	0.000		
Type of drug use in past 6m								
Injected heroin	845	782 (92.5)	267 (94.7)	515 (91.5)	2.80	0.094		
Inject cocaine	845	553 (65.4)	363 (64.5)	190 (67.4)	0.70	0.403		
Injected speedball	845	641 (75.9)	420 (74.6)	221 (78.4)	1.46	0.227		
Snort heroin	844	382 (45.3)	244 (43.4)	138 (48.9)	2.31	0.129		
Snort cocaine	842	199 (23.6)	133 (23.7)	66 (23.5)	0.01	0.943		
Smoke crack	845	545 (64.5)	348 (61.8)	197 (69.9)	5.31	0.021		
Reported HIV-positive	842	119 (14.1)	78 (13.9)	41 (14.6)	0.07	0.787		
Current main partner	845	494 (58.5)	353 (62.7)	141 (50.0)	12.48	0.000		
Homeless in the past 6m	845	311 (36.8)	181 (32.2)	130 (46.1)	15.72	0.000		
Jail or prison in past 6m	845	243 (28.8)	144 (25.6)	99 (35.1)	8.33	0.004		
Employed at least part-time in past 6m	845	140 (16.6)	109 (19.4)	31 (11.0)	9.52	0.002		

Table 2

Bivariate and multivariate associations between boredom and socio-demographic characteristics among injection drug users in the STEP study

	High Boredom: Bivariate models	High Boredom: Model 1	High Boredom: Model 2
	Crude odds ratio (95% C.I.)	Adjusted odds ratio (95% C.I.)	Adjusted odds ratio (95% C.I.)
Age > 43 years	0.58 (0.43, 0.79)	0.65 (0.47, 0.89)	0.60 (0.43, 0.84)
Female gender	1.09 (0.80, 1.48)	1.08 (0.76, 1.54)	0.88 (0.61, 1.26)
African-American race/ethnicity	0.46 (0.33, 0.66)	0.58 (0.40, 0.85)	0.64 (0.43, 0.95)
Education > 12 years	1.05 (0.78, 1.41)	1.19 (0.88, 1.61)	1.38 (0.99, 1.91)
Daily injection	1.31 (0.99, 1.73)	1.20 (0.89, 1.63)	1.22 (0.89, 1.68)
Crack use in past 6m	1.44 (1.05, 1.96)	1.32 (0.95, 1.85)	1.25 (0.89, 1.78)
Current main partner	0.60 (0.45, 0.79)	0.63 (0.45, 0.86)	0.62 (0.45, 0.86)
Homeless in the past 6m	1.80 (1.32, 2.44)	1.35 (0.97, 1.88)	1.16 (0.82, 1.63)
Jail or prison in past 6m	1.56 (1.14, 2.14)	1.34 (0.96, 1.88)	1.23 (0.86, 1.75)
Employed at least part-time in past 6m	0.51 (0.34, 0.76)	0.55 (0.36, 0.83)	0.63 (0.40, 1.00)
Depressive symptoms > 20	5.76 (4.09, 8.11)	-	4.71 (3.17, 7.01)

Bold indicates $p < 0.05$

Table 3

Associations between sample characteristics and mutually exclusive categories of boredom and depression among injection drug users in the STEP study (n=842)

	High Boredom only (n=42)		High Depressive Symptoms only (n=302)		High Boredom/ High Depressive Symptoms (n=239)	
	Odds Ratio (95% C.I.)	Adj. Odds Ratio ^a (95% C.I.)	Odds Ratio (95% C.I.)	Adj. Odds Ratio ^a (95% C.I.)	Odds ratio (95% C.I.)	Adj. Odds Ratio ^a (95% C.I.)
<u>Socio-demographics</u>						
Age > 43 years	0.47 (0.24, 0.89)		1.01 (0.73, 1.40)		0.64 (0.45, 0.91)	
Female gender	0.59 (0.26, 1.32)		1.78 (1.24, 2.56)		1.74 (1.18, 2.55)	
African-American	0.67 (0.43, 1.04)		1.00 (0.70, 1.44)		0.68 (0.50, 0.93)	
Education > 12 years	0.91 (0.45, 1.82)		0.55 (0.39, 0.77)		0.74 (0.52, 1.05)	
Daily injection	1.29 (0.71, 2.38)		1.18 (0.85, 1.63)		1.46 (1.04, 2.06)	
Crack use	1.28 (0.62, 2.63)		1.49 (1.06, 2.09)		1.90 (1.31, 2.76)	
Main partner	0.41 (0.22, 0.76)		0.91 (0.64, 1.28)		0.61 (0.43, 0.86)	
Homelessness	1.28 (0.65, 2.52)		1.70 (1.20, 2.41)		2.62 (1.75, 3.89)	
Incarceration	2.24 (1.11, 4.52)		1.71 (1.16, 2.53)		2.14 (1.42, 3.21)	
Employed at least part-time	1.10 (0.54, 2.23)		0.58 (0.38, 0.87)		0.29 (0.17, 0.48)	
<u>HIV-related risk behaviors</u>						
Used needle after someone	0.63 (0.31, 1.30)	0.49 (0.22, 1.08)	1.57 (1.12, 2.19)	1.35 (0.94, 1.93)	2.38 (1.66, 3.41)	1.76 (1.20, 2.59)
Used needle, unknown clean	0.88 (0.39, 1.81)	0.65 (0.30, 1.38)	1.65 (1.18, 2.31)	1.45 (1.00, 2.06)	2.79 (1.92, 4.05)	2.15 (1.43, 3.23)
Used rinse water	0.98 (0.51, 1.89)	0.73 (0.36, 1.47)	1.55 (1.12, 2.15)	1.34 (0.94, 1.90)	1.87 (1.32, 2.67)	1.37 (0.93, 2.01)
Used cotton	0.74 (0.38, 1.45)	0.60 (0.29, 1.21)	1.50 (1.08, 2.08)	1.32 (0.93, 1.88)	2.25 (1.57, 3.26)	1.75 (1.19, 2.59)
Used cooker	0.98 (0.50, 1.91)	0.74 (0.35, 1.55)	1.51 (1.08, 2.13)	1.34 (0.93, 1.93)	2.30 (1.57, 3.37)	1.77 (1.18, 2.65)
Used cooker, cotton, water	1.54 (0.75, 3.14)	1.17 (0.53, 2.57)	1.54 (1.07, 2.20)	1.28 (0.87, 1.88)	2.17 (1.47, 3.20)	1.55 (1.02, 2.35)
Multiple partners	1.82 (0.96, 3.45)	1.72 (0.87, 3.39)	1.82 (0.90, 1.81)	1.19 (0.82, 1.74)	1.67 (1.16, 2.32)	1.37 (0.92, 2.04)
Exchange sex	1.08 (0.34, 3.37)	1.16 (0.35, 3.79)	2.26 (1.33, 3.84)	1.83 (1.02, 3.26)	4.02 (2.39, 6.76)	3.22 (1.83, 5.64)

Note: Reference group for all models is Low Boredom/Low Depressive Symptoms

Bold indicates $p < 0.05$

^aTable shows results of separate models for each behavior. All models adjusted for all listed socio-demographic variables.