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The Association of Multiple Neighborhood Perceptions with Depression among a Highly Impoverished Urban Sample

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INTRODUCTION

There have been multiple studies in the last decade linking mental health to neighborhood factors (Mair, Diez Roux, & Galea, 2008; Truong & Ma, 2006). Much of this research focuses on the association between neighborhood factors and depression symptoms (Galea, Ahern, Rudenstine, Wallace, & Vlahov, 2005; Latkin & Curry, 2003; Mair, et al., 2008).

While numerous aspects of the neighborhood have been linked to individual depression, general neighborhood disadvantage is the most commonly studied (Mair, et al., 2008). However there is a wealth of research demonstrating the relation between neighborhood social processes and depression as well. For instance, lack of safety and high levels and fear of crime (Cutrona, et al., 2005; Kruger, Reischl, & Gee, 2007; Zule, et al., 2008), social and physical disorder (Galea, et al., 2005; Latkin, German, Hua, & Curry, 2009; Aneshensel & Sucoff, 1996; Ross & Mirowsky, 2001), and feelings of lack of control and powerlessness (Fitzpatrick, Piko, Wright, & LaGory, 2005; Ross & Mirowsky, 2009) in one's neighborhood have all been examined in relation to depression.

Neighborhood social factors are measured in multiple ways. Many studies measure neighborhood social factors objectively either through census data or utilizing objective ratings of neighborhoods by outside observers. Another common approach is to measure individuals own perceptions of their surrounding social environment. Both perceptions of one's social environment and objective ratings of neighborhood social factors have been shown to be at least moderately correlated (Perkins & Taylor, 1996). Research has shown that objective neighborhood factors to be mediated by individual perceptions of neighborhood (Ross & Jang, 2000). This suggests perceptions are critical to increasing our understanding of the neighborhood depression link. Thus, in this study we focus on perceptions of social factors, in that, it is the perception of these neighborhood conditions that are likely a proximal cause to an individual's psychological distress (Kim & Ross, 2009; Ross & Jang, 2000).

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Of all the neighborhood social factors studied, perceptions of neighborhood social disorder have been most consistently linked to depression. Assessment of neighborhood social disorder refers to observable signs in a neighborhood that social controls are weak (Geis & Ross, 1998; Skogan, 1990). These neighborhood dynamics are generally characterized by conditions such as high amounts of vandalism, trash, drug sales, and other crime and incivilities.

Studies examining perceptions of social control and fear of crime/lack of safety have been found to be significantly associated with depressive symptoms as well, though not as consistently as social disorder. Fear of crime has been shown to be related to later depression in general populations (Ross & Mirowsky, 2001; Stafford, Chandola, & Marmot, 2007). A similar construct of perceptions of safety has also been examined specifically among substance users and found to be associated with depression. Similarly, perceptions of institutional control have been shown to be important in predicting depression. However, other researchers have found no association between social control and depression (Steptoe & Feldman, 2001).

As perception of these neighborhood conditions have been consistently linked to psychological distress (Kim & Ross, 2009; Ross & Jang, 2000), perceptions of one's neighborhood are critical to further our understanding of neighborhood influence on depression. Further, some studies have found that objective neighborhood indicators lose their significance when perceptions of the neighborhood are included in the model suggesting that they are mediated by individual perceptions (Ross & Jang, 2000). One salient pathway in which many of these social factors may be linked to depression is through stress. Highly impoverished and disadvantaged areas are likely to be a source of many stressors. Neighborhood stressors, when present, tend to be chronic, and chronic stressors present in the environment may be particularly deleterious for individual mental health (Cohen, et al., 1982; Turner & Lloyd, 2003; Turner, Wheaton, & Lloyd, 1995). The presence of physical or social disorder such as vacant housing, teenagers on the street corners, and selling drugs may help to create a general sense the neighborhood is unsafe and not well controlled, thus creating chronic stress and in turn increasing the propensity for depression (Hill, Ross, & Angel, 2005). In addition to the cumulative impact of neighborhood stressors, prior exposure to certain stressors such as gangs and drug users may lead to perception that one is vulnerable to future stressors such as being a victim of crime. An additional mechanism that increases stress is lack of perceived control over the neighborhood stressors (Mirowsky & Ross, 1990). Feeling that neither they nor authorities are able to prevent or respond adequately to crime in the neighborhood may reduce perceived control and create a continual strain and worry.

While these neighborhood social factors have been studied in the general population, they have been studied to a much lesser extent among highly impoverished populations, who experience high rates of crime and have a history of drug use. Both drug users (Kessler et al., 2003) and individuals living in poverty (Ross & Mirowsky, 1989) tend to have higher of depressive symptoms than the general population, suggesting the need to understand influences of depression specifically among this population. Furthermore, research suggests that substance users may have different perceptions of their neighborhood (Latkin, German,

Hua, & Curry, 2009) and may also differ in how these perceptions influence their psychological wellbeing. Previous research has also shown that the influence of neighborhood factors on mental health may differ depending on the level of poverty in the neighborhood (Ross & Jang, 2000).

In order to better understand the relationship of neighborhood perceptions and depression, multiple neighborhood measures should be assessed and compared against one another in the same model. Despite this growing body of research examining the neighborhood and depression link, the specific type of neighborhood characteristics that have the greatest influential on depressive symptoms remains poorly understood. One reason for this lack of understanding is that many studies examining neighborhoods and mental health measure neighborhood environment as a global measure such as neighborhood disadvantage or neighborhood socioeconomic status. While other studies have examined specific factors such as social disorder or fear of crime, they are not as commonly assessed in conjunction with other neighborhood social factors.

This study sought to add to this growing body of literature by examining multiple neighborhood factors simultaneously and how each one may affect the presence of depression, in a sample of highly impoverished individuals residing in urban neighborhoods with high rates of crime. We hypothesized that, when assessed individually, negative perceptions of neighborhood would be associated with higher odds of depression. We further hypothesized that when multiple neighborhood constructs are combined in the same model, certain neighborhood perceptions would be independently associated and hence retain a significant association with depression. Specifically, we examined the level of social disorder, perceived efficacy of institutions or oneself to control social disorder, and the perception of future neighborhood threats, specifically crime, and how these 4 factors relate to depressive symptoms.

METHOD

Data collection

Data was collected as part of a longitudinal study from the Self-help in Eliminating Life-threatening Disease project. In 1997, individuals were recruited, using flyers, through outreach targeting high drug use areas in Baltimore. Some participants were social network members recruited by a primary index participant. The following eligibility criteria was used for primary members: (1) 18 years of age or older; (2) at least weekly contact with drug users; (3) willing to participate in AIDS outreach education; (4) willing to bring into the clinic 2 of their social network members; and (5) not enrolled in other behavioral HIV prevention studies. Network members were required to be 18 years of age and either have had sex with the primary member in the past six months or used drugs with the primary participant in the past 6 months. All study participants provided informed consent (approved by the Johns Hopkins School of Public Health's Institutional Review Board, and were paid $20 following the interview.

Participants

A total of 838 individuals were followed up in wave four, 2002-2004. As the neighborhood questions were added after the start of the follow up interviews, only those 742 who were asked all neighborhood questions were included in the analyses. Further, 25 individuals were removed due to incomplete data on key variables used in this study, leaving 717 individuals in our current analysis. Of these 717, 441 were primary members and 276 were network members.

Measures

Dependent variable—Depression was assessed using the Centers for Epidemiological Studies Depression Scale (CES-D) (L. S. Radloff, 1977) a 20-item, 4 point scale developed for use in the general population. The scale has high validity and reliability (Radloff, 1986). A cutoff score of 16 or greater was used to indicate probable clinical depression. This has been used as a valid indicator of probable clinical depression (Boyd, Weissman, Thompson, & Myers, 1982). The Cronbach's alpha for this measure in our sample was 0.90. Individuals were dichotomized into depressed (score 16+) or non-depressed (score<16).

Independent Variables—Neighborhood perceptions were obtained via self-report. The social disorder scale was assessed with a 7-item, 3 point scale, including questions regarding the degree to which activities such as vandalism, littering, selling drugs are problems in one's neighborhood, based on the Perkins and Taylor's Block Environmental Inventory (Perkins, Meeks, & Taylor, 1992). Perkins and Taylor (1996) found high level of agreement between the residential surveys of social disorder and independent observations. The Cronbach's alpha for this scale in our sample was 0.88, demonstrating high internal validity. Perceived institutional control, individual control, and fear of future crime were all assessed using separate 3 item, 10 point scales. The *perceived institutional control* scale included questions asking participants to rate on a scale from one to 10 how comfortable they felt calling the police if they felt drug dealing, robbery, or loud teens on the street was a problem in their neighborhood. The scale of *perceived individual control* included 3 questions of how comfortable the participant themselves felt in confronting drug dealers, robbers, or loud teens on the street, if they felt they were a problem in their neighborhood. These questions were adapted from a scale developed by Sampson and colleagues asking participants comfort level intervening in various neighborhood situations (Sampson, Earls, Raudenbush, 1997). This scale has been shown to valid and reliable. We modified the scale to measure specifically this in terms of individual control and institutional control rather than overall perceived control in order to assess the discriminant validity of the two types. Both perceived individual and institutional control were reverse coded such that a higher score reflected a lower perception of control so that all 4 neighborhood scales would be in the same direction and thus more comparable to each other. Lastly, the 3 items on the scale of *perceived fear of future crime* asked participants to rate on a scale of one to 10 how likely it was that they would be shot, mugged, and robbed in the next year. Similar measures of perceived fear of crime are used in multiple studies (i.e. LaGrange, Ferraro, & Supancic, 1992). Cronbach's alphas for these scales were 0.82, 0.84, and 0.88, respectively. Finally, to confirm the items in our 4 scales, represented 4 separate dimension a factor analysis was performed. Results of the factor loading showed 4 distinct factors and high loadings (all

loadings >0.5; most between 0.90-0.70) for all items within each factor (results not presented).

Covariates—: Age, gender, race/ethnicity, educational status, health status, homelessness, and past 6 month injection drug use, crack cocaine use, and non-injection heroin use were obtained by self-report during the interview. Age and years of education were assessed continuously. Race/ethnicity was categorized as follows: black non-Hispanic, black Hispanic, white non-Hispanic, white Hispanic, Asian/Asian-American, other. Health status was based on individuals self report of their general health status (Idler & Benyamini, 1997).

Statistical Analysis

A Pearson correlation matrix was used to assess the relationships between neighborhood scales and determine the degree of correlation of the four scales (Table 2). 4 separate logistic regressions were employed to assess bivariate associations between each neighborhood perception scale and depression. Then, using multivariable logistic regression, all neighborhood perception scales were included in the same model to assess which, if any, neighborhood scales were independently associated with depression. Based on prior findings of correlates of depression, age, gender, race, education, injection drug use status, homelessness, and general health were also included in the multivariable logistic model to control for potential confounding. For all models, neighborhood scales were converted into standardized scores to make odds ratios more interpretable.

RESULTS

The sample size was restricted to 717 individuals followed in the fourth wave of follow up in the SHIELD study that had answered questions about neighborhood perceptions, and had complete data on all other study variables. The demographic characteristics are presented in Table 1, showing a mean age of 44 (SD=7) years (median age was 44 as well), 42% female, and the vast majority (96%) identifying as African-American. Our sample reported a high rate of depression, with 45.9% classified as depressed using the CES-D scale with a cutoff of 16. The mean CESD score for the sample was 16.3 (SD=11.2).

This sample was highly impoverished with only 28% of the sample reporting full or part time employment in the past 6 months, about one third (32%) reporting injection drug use in the past 6 months, and almost half (47%) not having a high school diploma or GED. High levels of neighborhood social disorder, violence, and crime were reported. With regard to disorder in the neighborhood, a significant number of individuals reported vacant housing (50%), robberies and muggings (44%), and drug sales (69%) as either “somewhat of a problem” or a “big problem” in their neighborhood. Many individuals also reported that they perceived a high likelihood of being a victim of crime or violence in the near future, with 40% reporting their likelihood of getting either shot, robbed, or mugged in the next year as moderate to high. Furthermore, the majority reported feeling powerless to do much about these conditions, with only approximately one-half (52%) of the participants reported having high comfort level with notifying the police about problems such as a robbery in their neighborhood and one-third (36%) having a high comfort level with calling the police for a drug problem in their neighborhood.

As expected, some of the four neighborhood scales were moderately correlated with each other. Social disorder was correlated with perceived institutional control (r=0.18), perceived individual control (r=0.08), and perceived fear of future crime (r=0.28). Perceived institutional control and individual control were also significantly correlated with each other (r=0.38). Multicollinearity of all independent variables was assessed by calculating the variance inflation factor (VIF). VIF is a measure of the multicollinearity of an independent variable with all other independent variables. All independent variables used in the regression had a VIF close to one suggesting that there was not collinearity among these variables.

Next we assessed the relationship between the four neighborhood factors: social disorder, institutional control, individual control, and fear of future crime and the odds of being depressed. Table 3 shows the bivariate and multivariable logistic regression for these analyses. Bivariate analyses indicated 3 of the 4 neighborhood factors to be significantly associated with higher odds of depression. Higher levels of perceived social disorder (OR: 1.6) and perceived fear of future crime (OR: 1.7) and lower levels of perceived institutional control (OR: 1.2) were statistically significantly associated with increased odds of depression. While lower levels of perceived individual control was associated with higher levels of depression, this relationship was not statistically significant (1.1, p=0.08). Age, sex, education, injection drug use, homelessness, and self rated health were all associated with depression in bivariate analyses as well and were thus included in the multivariable regression as potential confounders.

In the multivariable regression, all four neighborhood factors were entered into the same regression, while controlling for age, sex, race, education, injection drug use status, homelessness, and self-rated health. By entering all neighborhood factors into the same model, this allowed for the assessment of each neighborhood factor's independent effect on depression. Perceived social disorder and perceived fear of future crime remained significantly associated with depression, while perceived institutional control and perceived individual control were not significantly associated with depression. Interactions between neighborhood factors were examined however none were statistically significant and thus are not included in the results. Other control variables of baseline depression at entry into the study and current residential stability (living in a neighborhood for less than 3 years vs. greater than 3 years) were examined. While baseline depression was significantly associated with current depression, its addition to the model did not change the effect of any of the neighborhood factors in either magnitude or significance and thus was not included in the model. Similarly, the inclusion of residential stability did not change the relationship between neighborhood factors and depression and hence was not included in the final model.

As a test of sensitivity, results were also examined using a cutoff score of 20 on the CESD for depression. While 16 is the standard cutoff used, it has been suggested that a higher cutoff might result in a more specific identification of depressive individuals (Pandya, Metz, & Patten, 2005). However, results did not change significantly when a cutoff of 20 was used except that gender became a small but significant predictor of depression, suggesting our results to be robust. A generalized estimating equations logistic model was also fit using a

clustering on network affiliation to account for the potential correlation between individuals in the same network (Liang & Zeger, 1986), however this did not change regression results significantly.

DISCUSSION

Disentangling and examining the different ways in which neighborhood perceptions may impact depression is important for furthering our understanding of the way in which neighborhoods influence mental health. The results of the present analysis indicate that perceived social disorder and fear of experiencing future crime in one's neighborhood are both strongly related to the presence of depression. Individuals reporting higher levels of social disorder in their neighborhood had higher odds of experiencing depression. Similarly, those reporting greater fear of being a victim of crime in the next year were more likely to experience depression. Of importance, these relationships held even while taking into account other neighborhood factors of perceived institutional control and individual control as well as the individual's substance use and other known stressors related to depression such as homelessness and poor health.

It is important to note that both perceptions of social disorder and fear of future crime in one's environment were both independently related to depression. Previous research has suggested that fear of crime and social disorder are in the same pathway to depression. Given this, one would expect social disorder to have a lesser impact or lose significance when fear of crime was added to the model. In the present analysis, we found these 2 social factors to be independently associated with depression. While the impact of social disorder did decrease somewhat with both social disorder and fear of future crime in the model, social disorder retained significance. This suggests that fear of crime may partially mediate the association between social disorder and depression, but does not fully account for the relationship between social disorder and depression. Hence, each of these factors, social disorder and fear of future crime, independently have an affect on depression. This may in part be due to the unique sample with a high amount of substance use and general disadvantage. It may be that perceived fear of future crime is a particularly high stressor in this already stressful environment.

These findings add to previous research by showing fear of future crime to be an important predictor of depression by demonstrating this relationship holds even when taking social disorder and perceptions of social controls into account. The anticipation that one may experience crime in the future may heighten stress through a reduction of perceived control and hence impact depressive symptoms (Feldman & Steptoe, 2004; Schulkin, McEwen, & Gold, 1994).

Further, the finding that social disorder has an impact on depression independent of both fear of future crime and perceptions of social control, suggests the stress of living daily in an environment of high social disorder in which the there is a lack of cohesion and trust in ones community, may lead to depression (Aneshensel & Sucoff, 1996; Ross & Mirowsky, 2001). Low social disorder may also lead to a lack of perceived control over one's environment.

Interestingly, perceived institutional control, while significantly associated with depression in the bivariate analyses did not retain significance in the multivariable regression. The addition of neighborhood social disorder as well as substance use and homelessness seemed to be responsible for institutional control not retaining statistical significance. The addition of social disorder to the model led to the largest decrease in the point estimate of institutional control. The relationship between institutional control and depression may be mediated in part by social disorder. Other research has suggested a relationship between perceived control and social disorder (Sampson, Morenoff, & Gannon-Rowley, 2002), however this relationship future longitudinal research should explore the relationship between social disorder and perceived control.

Additionally, these findings contribute to this body of research by examining these questions among a highly impoverished sample experiencing high levels of crime. Social disorder and fear of crime in one's neighborhood are important predictors of depressive symptoms even in an already highly disadvantaged environment. This suggests that even in highly disadvantaged communities there are modifiable environmental factors which may be important to consider as part of an intervention strategy.

Moreover, these issues are particularly salient considering the majority of our sample is former or current substance users. These perceptions of their neighborhood may not only affect their depression but in turn their substance use as well. For former users, this depression may lead to a greater likelihood of relapse and return to substance use. Previous research has shown that experiencing violence (Yang, German, Webster, & Latkin, 2011) as well as stressful events (Kruger, Reischl, & Gee, 2007) predicts relapse among former users. For current users who want to cease drug use, depressive symptoms may make quitting considerably more difficult and may even increase their use of substances and craving to use (Preston & Epstein, 2011; Sinha, 2008)

These findings suggest the importance of addressing these high perceptions of social disorder and fear of future crime, as they are strongly linked to depression. Further research is needed to understand how future potential stressors compared to current stressors may be particularly important in the relationship of neighborhood stressors and depression. It may be that interventions to improve the feelings of control over one's future and reduce perceptions of entrapment are important in preventing and alleviating depression. Research has pointed to social support as a potential buffer against some of the effects of neighborhood disorder and fear of crime (Kim & Ross, 2009; Ross & Jang, 2000). Future research is needed to understand if social support may be an important tool for interventionists to combat perceptions of neighborhood disorder and fear. Furthermore, this finding adds to the body of research that highlights the imperative of focusing attention on interventions that improve neighborhood conditions in order to improve mental health. Interventions that focus on improving housing, removing abandoned buildings and increasing cohesiveness of neighborhoods are important for prevention and alleviation of depression. Additionally, it is not only important to improve these neighborhood conditions but also, ensure that residents are aware of these improvements to alter resident's perceptions of their risk of future crime in this environment where the risk has been reduced.

Among this study's strengths is the inclusion of many neighborhood factors in a single analysis. By assessing these neighborhood factors simultaneously, we are able to add to a greater understanding of how neighborhoods impact mental health. Further, by examining this question among a highly impoverished sample with many other individual challenges such as high rates of substance use, homelessness, and low education, demonstrates that this relationship between neighborhood and depression exists despite other potential influences on depression. This may help in applying mental health interventions to similar populations.

Despite these strengths, there are limitations to this study. This study is cross-sectional, the sampling was not random, and individuals who dropped out of the study may have been different from those who remained. As with many studies, the fact that the study sample was not random may limit generalizability of the findings. However, the broad inclusion criteria for entry in the study, specifically including both substance users and non-substance users and only requiring that some participants have interactions with drug users (index members), allowed for a wide range of participants. However, further studies with other samples are needed to validate these findings.

The possibility exists that individuals already depressed, subsequently perceived more disorder and greater risk of future stressful events in their neighborhood (Mair, et al., 2008). However, previous studies have shown prospectively social disorder to be associated with future depressive symptoms while accounting for depression at baseline (Latkin & Curry, 2003). This study also examined the impact of including previous depression as a covariate in the model and found it did not alter the findings. A further limitation includes the reliance on self-report data which is subject to social desirability bias.

Taking into account these limitations, these findings demonstrate neighborhood perceptions, specifically social disorder and future risk of crime, have a significant influence on depression in an impoverished urban sample. This highlights the need to address these social stressors through neighborhood level interventions. Interventions that target vacant and abandoned buildings provide alternatives activities for young people may help in reducing social disorder thereby impacting individual depression. Addressing individuals' perceptions and feelings of control over their future risk of crime is also vital. Taking into account these contextual influences is important for understanding the etiology and prevention of depression among high risk individuals.

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Table 1

Descriptive Statistics for SHIELD Participants in Baltimore, MD 2002-2004.

Variable	Total Sample (n=717)	depressed (n=328) n (%)	Non depressed (n=389) n (%)	chi x2/t-test	p-value
Gender					
Male	419 (58.44)	176 (42.00)	243 (58.00)	5.66	**0.02**
Female	298 (41.56)	152 (51.01)	145 (48.99)		
Race					
Black	689 (96.09)	317 (46.01)	372 (53.99)	0.49	0.48
other	28 (3.91)	11 (39.29)	17 (46.01)		
Age - mean (SD)	44.01 (7.19)	43.49(7.12)	44.63(7.24)	4.52	**0.03**
Self-rated health *	328 (45.75)	151 (35.28)	277 (64.72)	46.86	**<0.0001**
Education					
Less than high school	334 (46.58)	179 (53.59)	159 (46.41)	15.95	**<0.0001**
High school/GED	270 (37.66)	108 (40.00)	162 (60.00)		
At least some college	113 (15.76)	41 (36.28)	72 (63.72)		
Substance Use					
Past 6 month IDU	228 (31.8)	134 (41.85)	94 (24.16)	22.85	**<0.0001**
Past 6 month crack use	252 (35.2)	149 (45.4)	103 (26.5)	28.03	**<0.0001**
Past 6 month non-injection heroin use	212 (29.6)	112 (34.1)	100 (25.7)	6.09	**0.014**
Recent homelessness	98 (13.7)	70 (21.3)	28 (7.2)	30.17	**<0.0001**
Neighborhood Perception Scales - mean (SD)					
Social disorder	5.16 (4.08)	6.15(4.03)	4.33 (3.93)		
Institutional control	11.10 (7.72)	11.87 (7.60)	10.45 (7.60)		
Perceived individual control	18.95 (8.64)	19.57 (8.37)	18.43 (8.84)		
Future risk of crime	9.44 (6.96)	11.39 (7.67)	7.79 (5.81)		
CESD - mean (SD)	16.28 (11.23)				

* Good to excellent health was compared to poor/fair health

Table 2

Pearson Correlation Coefficients of neighborhood factors among SHIELD Participants (N=717)

	Social disorder	Institutional control	Individual control	Future Risk of crime
Social disorder	1.000			
Institutional control	**0.183****	1.000		
Individual control	**0.079****	**0.376****	1.000	
Future risk of crime	**0.279****	0.061	0.032	1.000

Table 3

Unadjusted and Adjusted Associations of Perceived Neighborhood Factors and Depression among SHIELD Participants 2002-2004 (N=717)

	OR	95% CI	p value	aOR	95% CI	p value
Age	**1.02**	**(1.00, 1.04)***	0.034	1.02	(1,00, 1.05)	0.072
Sex	**1.44**	**(1.07, 1.94)***	0.017	1.4	(0.99, 1.99)	0.059
Education	**0.86**	**(0.79, 0.93)***	<0.0001	**0.89**	**(0.81, 0.97)***	0.007
homelessness	**3.5**	**(2.19, 5.58)***	<0.0001	**2.57**	**(1.53, 4.32)***	<0.0001
Self rated health	**0.59**	**(0.51, 0.68)***	<0.0001	**0.72**	**(0.61, 0.85)***	<0.0001
Past 6 month IDU	**2.17**	**(1.57, 2.98)***	<0.0001	**1.7**	**(1.18, 2.44)***	0.004
Past 6 month crack use	**2.31**	**(1.69, 3.16)***	<0.0001	**1.74**	**(1.20, 2.52)***	0.003
Past 6 month non-injection heroin use	**1.5**	**(1.09, 2.07)***	0.014	**1.3**	**(0.88, 1.92)***	0.181
Social disorder	**1.59**	**(1.36, 1.85)***	<0.0001	**1.36**	**(1.15, 1.62)***	<0.0001
Perceived institutional control	**1.2**	**(1.04, 1.40)***	0.015	1.07	(0.89, 1.29)	0.474
Perceived individual control	1.14	(0.99, 1.33)	0.078	1.02	(0.85, 1.22)	0.847
Perceived future risk of crime	**1.73**	**(1.47, 2.03)***	<0.0001	**1.41**	**(1.18, 1.68)***	<0.0001

* indicates statistical significance at p-value<0.05