

Exploring the Predictors of Citizen Participation in Substance Abuse Prevention Activities

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Received date: Feb 23, 2017; Accepted date: Mar 22, 2017; Published date: Mar 27, 2017

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Abstract

Few studies have examined the influences of the participatory process in which individuals engage in as they work to improve the quality of lives in their communities. More specifically, our present investigation explored the relationship between various contextual factors that predict citizen participation in substance abuse prevention activities among a random sample of urban residents (n=283) who participated in a community-wide policing initiative in the Southwestern United States. A hypothesized path model was tested that included person (concerns with violence victimization and attributions of drug abuse), situation (perceived responsiveness to drug crime), and environment-related predictors (perceived neighbourhood incivilities and awareness of neighbourhood substance abuse problems) of citizen participation. Findings suggest that individuals who perceived higher levels of neighbourhood incivilities tended to have higher levels of participation in substance abuse prevention activities. Interestingly, however, individuals with greater perceived neighbourhood substance abuse problems also tended to perceive that police were less responsive to drug crime in their neighbourhoods. Program developers and public health practitioners should consider the individuals' perception of the neighbourhood environment on citizen participation and include activities designed to address public perception of police responsiveness to crime.

Keywords: Citizen participation; Substance abuse; Prevention; Urban community

Introduction

During the mid-1980s, health promotion efforts in the United States began to recognize the importance of the interplay between individuals and their communities as factors influencing health [1,2]. Health interventions that traditionally focused on altering individual characteristics to promote behavioral change were being reformulated with empowerment as an ideological center [2]. Empowerment became a useful framework for public health practitioners who were encouraged to promote health through community engagement efforts. These efforts helped to define needs, implement strategies, and evaluate engagement effectiveness [2]. By embracing a community-partnership model, public health interventions can work to foster opportunities for citizens to participate in voluntary community organizations and other natural help seeking systems by involving all sectors of the community [3,4].

Citizen participation is integral to democracy. It can increase one's overall engagement with her or his community, allow one to experience diversity of opinion, and allow one to experience a deeper sense of responsibility for the focal community [5]. Citizen participation serves as a construct that emphasizes empowerment and health promotion [6]. A rich body of literature has shown that citizen participation has promoted social change in a variety of local contexts—e.g., transparent and collaborative municipal budgeting [7], promoting green infrastructures [8], and water resource management [9]. Although decision-making and planning in these settings may differ,

both processes (decision making and planning) remain a critical area for prevention planners—i.e., the participatory process individuals engage in as they work to improve the quality of lives in their communities [10,11]. Although notable exceptions are present [12-14], fewer empirical investigations have examined the relationship between contextual factors that promote citizen participation in substance abuse prevention. Additional research should further explore the relationship between the social and environmental influences impacting citizen participation within a substance abuse prevention context.

Literature Review

Factors contributing to citizen participation

Kauffman and Poulin [3] examined a stratified random countywide sample of 1,019 adult citizens in the eastern part of the U.S. to ascertain which of the following factors influenced individual participation in substance abuse prevention activities: Participation accessibility, desire to participate, and knowledge about participation. Perceived efficacy (“knowledge”) of prevention programs was found to be the strongest predictor of citizen participation, suggesting that programs might develop strategies (media campaigns) to demonstrate the utility of their programmatic activities to the community. Kauffman and Poulin [3] were also interested in investigating the socio-demographic factors that affected participation in economically and socially disorganized communities. Consistent with previous findings, knowledge had the strongest direct effect on participation, with desire and accessibility adding important indirect effects.

Interestingly, despite popular misconceptions, low-income community residents had either greater or comparable levels of citizen participation in prevention activities than countywide survey respondents.

In another community-based study, Peterson and Reid [13] found among a sample of randomly selected urban residents, who participated in an evaluation of a Center for Substance Abuse Prevention (CSAP) Community Partnership, that awareness of community substance abuse problems promoted both participation and individual (psychological) empowerment. An implication of this finding concerns the need for developing substance abuse prevention initiatives that encourage individual empowerment, which can be achieved by increasing participation in substance abuse prevention activities that emphasize strategies focused on improving sense of community. Research has also demonstrated that there are contextual factors within community environments [10,15,16] that impact citizen participation.

Environmental contexts

To better account for the uneven nature of community participation, Perkins et al. [15] developed an ecological framework to explain the social, physical, as well as the permanent and transient nature of citizen participation in block associations. Interestingly, block demographics, crime-related problems, perceptions, and fears were not associated with citizen participation, but a combination of “catalysts” (poorly maintained properties) in the physical environment and “enablers” (block satisfaction) in the social environment encouraged collective participation. This interplay is an interesting dichotomy in which awareness of negative signs in the environment (illegal drug sales) may instill fear of crime and social withdrawal among some residents [17], but can also serve to motivate other residents to action [18].

Perkins and Florin [15] further explained the degree to which neighbourhood quality of life problems dictated resident abilities to organize around a common purpose. For instance, the perceived threat of drug-related crime affecting one’s neighbourhood may result in sufficient group cohesion, encouraging residents to organize and participate to rectify these problems; however, community organizing and participation is less likely to occur when discord exists among community members. In other words, when agreement about a focal problem is high, so too is neighbourhood cohesion. This point is illustrated by Rocco et al. [17], who determined that the perception of living in a stressed community moderates the relationship between being victimized and having a fear of crime, where individuals who reported higher levels of community disorder also reported higher levels of fear in spite of the victimization that occurred.

Community action

There may be a practical benefit to focus interventions on collective action or [19] neighbourhood informal social control. Community members play a vital role in addressing local violence [20]. Focusing on collective action may be more beneficial than individual action to ameliorate community problems. These findings are supported by the crime prevention literature, which indicates that fear of a crime problem does not necessarily dictate whether citizens become involved in anti-crime activities. Rather, anti-crime involvement primarily stems from commitment to the civic sphere [21]. Research has also suggested that the anti-drug initiatives of the late 1980s and early

1990s have been much more successful than earlier crime prevention efforts in promoting citizen participation. Citizens were proactive in their response to drug sales affecting their communities, which occurred in stable, visible settings and made it easier for community surveillance. However, during this time, neighbourhood crime prevention efforts were hampered by burglaries and robberies that were occurring randomly and proved to be elusive targets [22]. In these earlier crime prevention activities, citizen morale was adversely affected because they were not seeing a return on their investment. Yet these efforts were able to suggest that the benefits of participating sufficiently outweighed the costs, showing that residents were empowered by the participatory process [21]. Today, community policing initiatives exist in rural, suburban, and urban communities, each of which faces unique challenges [23].

Prevention campaigns, regardless of their focus, should provide a structure of opportunity for participation. Individuals with affective ties to their neighbourhoods (e.g. social cohesion) and a deep sense of commitment to their communities are more likely to become active participants in programs designed to ameliorate undesirable social conditions [21,24]. However, people will not lend their support if uncertainty exists regarding the effectiveness of the effort. Research suggests that residents want to be assured some probability of success, particularly when there are risks associated with participation (retaliation by drug dealers), yet such participation has been historically difficult to measure [25].

Conceptual framework

To better inform community-based prevention programs and implement robust interventions, the authors identify a present need to understand the relationship between individual, situational, and environmental factors that influence the participatory process within a substance abuse prevention context. To prevent substance abuse, previous recommendations have focused on events and policy changes rather than factors encouraging citizen participation. Yet citizen participation is needed for effective program delivery. Community leaders are typically encouraged to organize in response to adverse social conditions (e.g. drug-related crime) at the neighbourhood level [15,24]. Therefore, it is important to involve more community residents in the participatory process. Wandersman and Florin [4] described a community development perspective that emphasizes the voluntary cooperation and self-help of residents to improve the physical, social, and economic conditions of their communities. Citizens are then empowered to engage in and take control over the issues and conditions that affect their lives.

Our study was guided by a conceptual framework that includes the individuals’ perception of person (P), situation (S), and environment (E) [26]-factors related and hypothesized to influence citizen participation in substance abuse prevention activities. This model acknowledges the unique interplay between individual characteristics and the environment that produces and sustains behaviours [4]. The P × S × E framework was originally developed to guide a multi-community trial of a primary substance abuse prevention intervention. Evidence from this investigation found that individually focused preventive interventions should also consider the counteracting social and physical environmental influences that may contribute to substance abuse [27]. Addressing these concerns, Pentz [26] developed a comprehensive community-based prevention protocol, which included school programs, parent education programs, media/publicity campaigns, community organizing, and advocacy of

substance abuse policy changes. CSAP's National Registry of Effective Prevention Programs (NREPP) project has endorsed these principles. CSAP recommends that individually focused prevention interventions should also adopt a multi-level approach (i.e., person, situation, and environment) as part of a comprehensive community-based prevention strategy [28,29]. Person, situation, and environment principles are also reflected in SAMSHA's Communities that Care program [30].

Pentz [26] P × S × E framework was chosen as a conceptual lens to guide this study because it provides a useful way to categorize variables important for generating citizen participation, as well as its explicit applicability to substance abuse prevention. This framework is consistent with prior investigations that have examined the interplay of these factors from an individual's perspective in a variety of community contexts-e.g., racially and ethnically diverse urban middle and high school settings [13,31-33].

Research Questions and Hypotheses

Prior community-based prevention research has focused mostly on environmental risk factors of substance abuse. Some studies have examined person-or situation-related factors that predict a community's interpretation and response to substance abuse problems. Fewer studies have bridged this framework with citizen participation [26,34]. Incorporating the individuals' perception of person, situation, and environment-related factors in a path model predicting citizen participation in substance abuse prevention activities extends prior community based prevention research.

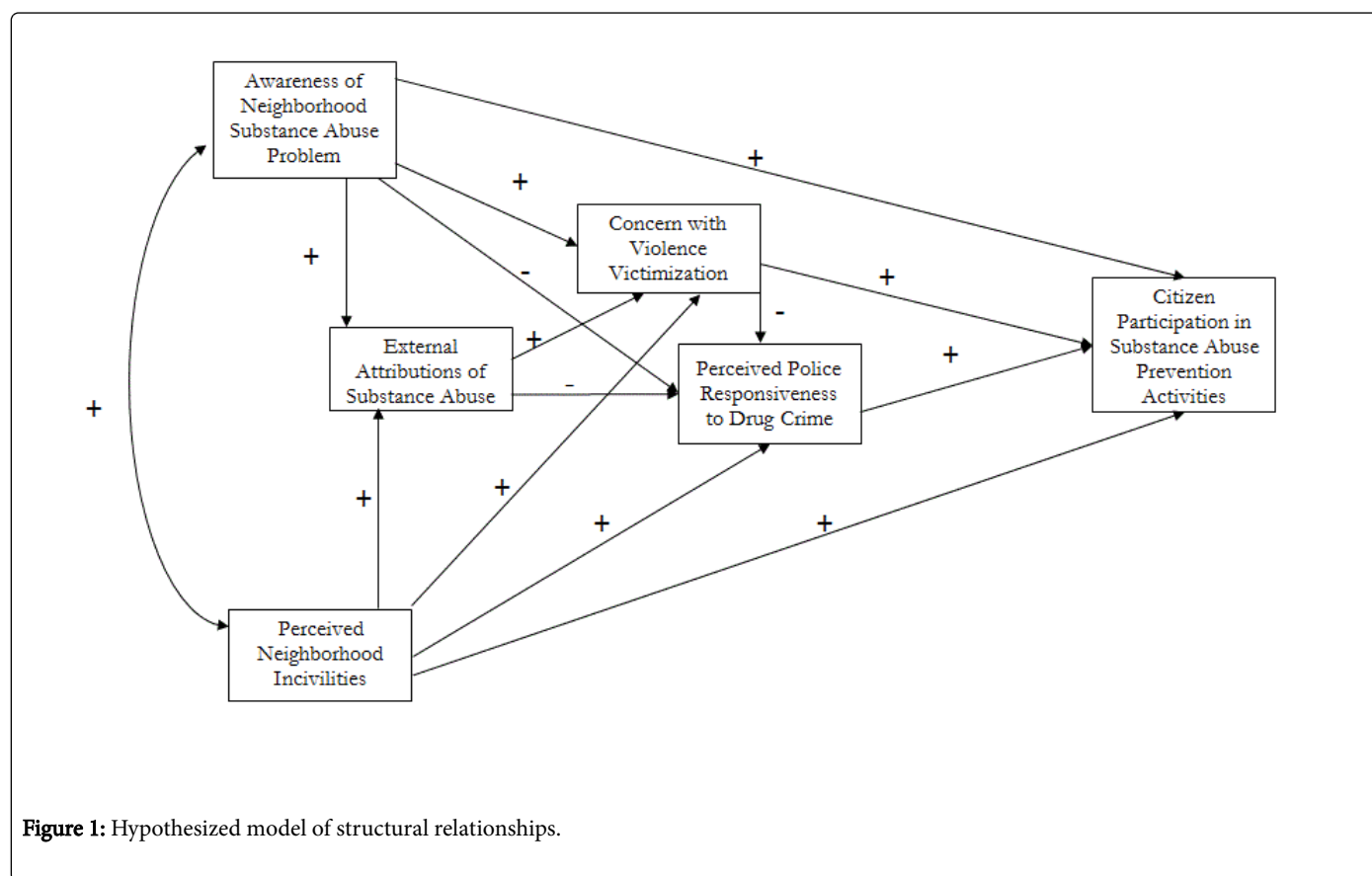


Figure 1 presents a hypothesized model of the conceptual relationships being examined for the study and elucidates the complex interaction among the perceived person-, situation-, and environment-related predictors of citizen participation in substance abuse prevention activities. Specifically, we hypothesized a negative relationship between the situation-related variables (concerned with violence victimization) and person-related variables (concerned with perceived police responsiveness to crime). For example, residents who felt that they were at increased risk for being the victim of a violent crime might perceive their local law enforcement as being less responsive to addressing these types of crimes (e.g., property damaged by vandals, a car stolen or damaged, or someone breaking into their home) in their community. We further surmised that residents who are

more concerned about being victimized would be more likely to participate in substance abuse prevention activities.

We also wanted to assess whether there was a positive relationship between environment-related variables (awareness of a neighbourhood substance abuse problem) and person-related variables (external attributions of substance abuse). For instance, citizens who have a heightened awareness of how substance abuse impacts their respective neighbourhoods may perceive that these problems are not only caused by the individual, but can be attributed to external (community-level) factors, such as a lack of resources and community disorganization. We also wanted to test if residents who believed external (community-level) conditions that caused substance abuse would be encouraged to participate in prevention programming efforts. We were further

interested in determining whether residents feared being the victim of a violent crime—i.e., concern with violence victimization (person-related). This became another line of inquiry because our sample was derived from a community with few resources and many intractable social problems. This was assessed in our study by the variable “perceived neighbourhood incivilities” (environment-related). We therefore hypothesized that exposure to these neighbourhood incivilities (e.g., vandalism, litter, trash, and graffiti) might positively influence how residents perceive the cause of substance abuse problems impacting their community (external attributions of substance abuse), which might also encourage those residents to become actively engaged in substance abuse prevention activities impacting their community.

Method

Sample

This investigation examined previously collected data that were obtained through a comprehensive community-wide needs assessment survey during the year 2000 as part of a larger community policing initiative, which examined community-oriented problem solving [35]. The sample was comprised of 283 randomly selected residents from an urban community located in the South western United States. Using an electronic telephone directory in the target community, which was comprised of approximately 30,000 residents, the researchers drew a simple random sample of residences with phone numbers to determine the study population (response rate=64%) [35,36]. This sampling procedure appeared to be a viable data collection method as only 1.5% of the households in the state where these data were derived did not have a phone [37]. Individual consent was verbally obtained by trained surveyors prior to participation in the study. Telephone interviews ranged between 20 and 35 minutes in length [35]. Demographics for the sample are shown in Table 1. The focal community was purposefully selected because of its elevated rates of drug-related crimes and high incidence of violence. In 2000, crime rates for felony and misdemeanor drug offenses peaked at 1,045 per 100,000. During this time, the drug arrest rate for the area being targeted was the highest in the entire state [38].

Measures

We examined six variables in the present study. Citizen participation in substance abuse prevention activities served as the criterion. The five predictors of citizen participation included two person-related variables (concern with violence victimization and attributions of drug abuse), one situation-related variable (perceived police responsiveness to drug crime), and two environment-related variables (perceived neighbourhood incivilities and perceived extent of neighbourhood substance abuse problems). Scores represented the mean of items comprising each scale.

Criterion: The measure of citizen participation in substance abuse prevention activities was adapted from a measure of civic engagement used in previous research [11,39]. Eleven items assessed respondents frequency of involvement over the past year (i.e., not all involved to 5 or more times of involvement) in activities related to community-based substance abuse prevention (e.g., attended a meeting where police participated in discussing local drug crime problems, attended a public meeting to pressure for a policy change). Peterson et al. [39] reported a Cronbach’s alpha of 0.80 for the citizen participation scale; alpha was 0.88 in the present study.

Predictors: The five predictor measures were based on scales used in previous studies—i.e., attributions of drug abuse [40]; perceived neighbourhood incivilities [41]; awareness of the extent of neighbourhood substance abuse problem [13]; and concern with violence victimization and perceived police responsiveness to drug crime [35].

N=283		
	n	%
Gender		
Female	144	50.9
Male	139	49.1
Race		
African American	51	18.3
Asian	20	7.2
Hispanic	126	45.2
White	67	24
Other	15	5.4
Age		
18 to 24	26	9.3
25 to 34	33	11.7
35-44	68	24.2
45 to 64	81	28.8
65 and over	73	26
Income		
Under \$10,000	42	18.3
\$10,000 to \$19,999	60	26.2
\$20,000 to \$29,999	53	23.1
\$30,000 to \$39,999	42	18.3
More than \$40,000	32	14
Education		
Less than high school	75	26.6
High school graduate	82	29.1
Some college	75	26.6
College graduate	40	14.2
Graduate degree	10	3.5

Table 1: Demographic characteristics of participants.

Person-related: As previously stated, there were two person-related predictors of citizen participation used in this study. The measure used to assess concern with violence victimization (Cronbach $\alpha=0.71$) included six items, using a four-point Likert type scale, which asked respondents to indicate their level of concern about being a victim of

crime -i.e. having property damaged by vandals, a car stolen or damaged, or someone breaking into their home [35].

The attributions of drug abuse measure were based on a nine-item, five-point Likert-type scale [40], which examined the extent respondents agreed or disagreed with statements focusing on internal, individual-level causes of drug abuse (e.g., Drug abuse is caused by individuals with problems, not communities with problems) or external, community-level causes of drug abuse (e.g., The only way to really prevent people from abusing drugs is to improve things like housing and the local economy). Internal attribution items were recoded so that higher scores on the scale indicated higher external attributions of substance abuse (Cronbach $\alpha=0.68$).

Situation-related: The situation-related predictor, citizens' perception to police responsiveness to drug crime, was measured using three items, on a five-point Likert-type scale. This scale asked respondents to indicate the extent they agreed or disagreed with statements concerning police reaction to drug crime in their neighbourhood (e.g., the police really work with neighbourhood residents to reduce drug crime in my neighbourhood). Cronbach's alpha for the measure of perceived police responsiveness to drug crime was 0.72.

Environment-related: Consistent with prior studies [13,35], and in the absence of objective criteria to measure this variable, this study relied on individual perceptions of environment-related constructs. The measure of the first environment-related predictor, perceived neighbourhood incivilities, was based on research conducted by Perkins and Long [41]. Six four-point Likert-type items examined the extent to which respondents observed incivilities in their neighbourhood (e.g., litter, trash or graffiti) (Cronbach $\alpha=0.85$). The second environment-related predictor measured awareness of neighbourhood substance abuse problems, which was based on the work of Peterson and Reid [13]. This measure included five items that asked respondents to indicate, using a four-point scale, how often they saw people engage in drug-related activities, such as selling illegal drugs, trying to buy drugs, and using drugs in public places.

Procedures

There are numerous methods of handling missing data that account for estimation error and model uncertainty [42]. Less than 15% of these data were missing for any given variable, therefore missing data for this study were managed using maximum likelihood (ML) methods of data imputation through AMOS Structural Equation modelling software (SEM) v.22.0 [43]. Using AMOS SEM software to impute missing data through ML more adequately estimates the standard error and parameter estimates in a single step than standard Multiple Imputation (MI) procedures [44].

AMOS SEM v. 22.0 was first used to examine the factor structure of each of the one-dimensional scales in the present study. Next, the fully saturated model, which included observed variables, was tested using AMOS SEM software. Maximum likelihood estimation was used to analyze the variance-covariance matrix. We performed this analysis instead of a traditional path analysis because SEM allows for simultaneous estimation of equations rather than a series of regression equations. Overall model fit was assessed using several indices.

These indices included Chi Square (χ^2) test, Comparative Fit Index (CFI), Goodness of fit indices (GFI) Adjusted Goodness of fit indices (AGFI), Root Mean Square Error of Approximation (RMSEA), and the Akaike Information Criterion (AIC) [45]. Non-significant χ^2 values indicate acceptable model fit. Higher values that are greater than 0.95 on the Comparative Fit Index and Goodness of Fit Index, and smaller RMSEA values that are less than 0.09, are desirable (i.e., RMSEA that are ≤ 0.05 =good fit, 0.05-0.08=acceptable fit and 0.08-0.10=unacceptable fit). In addition, the smaller AIC between models indicates a better fitting model [45].

Results

Results of the aforementioned analyses are presented below. Table 2 displays the correlation matrix between main study variables.

		Mean	SD	1	2	3	4	5	6	7
1	Citizen Participation in Substance Abuse Prevention Activities	1.71	0.72	-	0.06	0	0.11	0.20**	0.27**	0.21**
2	Concern with Violence Victimization	2.31	0.99	-	-	0.16**	0.14*	0.50**	0.32**	0.016
3	External Attributions of Substance Abuse	3.64	0.88	-	-	-	0.15*	0.06	0.08	-0.12
4	Perceived Police Responsiveness to Drug Crime	3.62	1.01	-	-	-	-	0.08	0.19**	-0.01
5	Perceived Neighborhood Incivilities	2.74	0.88	-	-	-	-	-	0.35**	0.11
6	Awareness of Neighborhood Substance Abuse Problem	1.90	0.87	-	-	-	-	-	-	0.06
		2.83	1.31	-	-	-	-	-	-	-

*p<0.05 ** p<0.01

Table 2: Descriptive statistics and correlations among the study variables.

Potential covariates were examined and displayed that income was significantly related to the criterion variable. Because income was positively correlated ($r=0.211$, $p<0.01$), two models were examined.

Income was examined as a potential covariate in the hypothesized model. Next, as displayed in Table 3, confirmatory factor analysis (CFA) was performed to examine the factor structure of each

unidimensional scale. As shown in Table 3, Chi Square (χ^2) results displayed initially good model-fit for all unidimensional scales, with the exception of awareness of neighborhood substance abuse problems and citizen participation in substance abuse prevention, which showed significant χ^2 results. However, χ^2 tends to be sensitive to sample size, characterizing χ^2 as a reasonable measure of fit, and requiring the examination of additional model fit indices. Further examination of additional measures of fit illustrate that awareness of neighbourhood substance abuse problems and citizen participation in substance abuse

prevention fit the sample data well. As can be seen in Table 2, the GFI, AGFI, and CFI, are all well-above .90 and the RMSEA is below .08 (with 90% CI following within acceptable ranges), which are markers for good-fit [45]. Lastly, the CMIN/df further substantiates the fit for each of the scales [45]. Overall, each of the factor structures in these one-dimensional scales had good-model fit, providing support to further examine the performance of each of these variables through path analysis techniques.

Measures of fit	Scales					
	Awareness of Neighborhood Substance Abuse Problems	Perceived Neighborhood Incivilities	External Attributions of Substance Abuse	Concern with Violence Victimization	Perceived Police Responsiveness	Citizen Participation in Substance Abuse Prevention
χ^2	10.59	8.98	32.05	4.87	1.62	53.27
df	4	7	25	4	1	35
p-Value	<0.05	0.25	0.15	0.3	0.20	<0.05
GFI	0.97	0.99	0.98	0.99	0.99	0.97
AGFI	0.95	0.97	0.96	0.97	0.98	0.94
CFI	0.99	0.99	0.96	0.97	0.98	0.99
RMSEA(90% CI)	0.04 (0.01, 0.05)	0.03 (0.02, 0.08)	0.03 (0.02, 0.06)	0.02 (0.01, 0.08)	0.04 (0.02, 0.09)	0.04 (0.01, 0.06)
CMIN/df	1.52	1.28	1.28	1.22	1.62	1.52

Note: χ^2 : Chi square; df: Degrees of freedom; GFI: Goodness-of-fit; AGFI: Adjusted Goodness of Fit; CFI: Comparative Fit Index; RMSEA: Root mean square error of approximation; CMIN/df: Chi square/degrees of freedom ratio.

Table 3: Overall fit statistics for unidimensional study scales using confirmatory factor analysis (N=283).

Next path analyses were performed; results are displayed in Figure 2. The hypothesized model in Figure 2 was found to fit the data well for the sample, (χ^2 (6)=5.38, $p=0.49$, ns; RMSEA=0.025, GFI=0.995, AGFI=0.981, CFI=0.99, AIC=35.37). When income was added as a potential covariate (χ^2 (11)=12.97, $p=0.295$; RMSEA=0.07, GFI=0.98, AGFI=0.96, CFI=0.98, AIC=46.97), model fit did not necessarily change significantly, which was confirmed through Chi Square difference testing (χ^2 diff (5)=7.24, $p=0.203$) [46]. In addition, examining the AIC (where the best fitting model has a lower AIC), corroborates that the hypothesized model is a more appropriate model for the given data [45]. Therefore, the more parsimonious model with the smaller χ^2 fits the data better and was accepted (i.e., the original hypothesized model where income was not retained) [47]. Results for Figure 2 are discussed in detail.

Figure 2 displays the resulting final path model. This model accounted for 28% of the variance in concern with violence victimization, 5% of the variance in citizens' perception of police responsiveness to drug crime, and 12% of the variance in citizen participation in substance abuse prevention activities. As can be seen in Figure 2, individuals' perception of neighbourhood incivilities predicted citizen participation directly, as well as indirectly through its effect on perceived police responsiveness to drug crime. These data indicate that individuals who perceived higher levels of neighbourhood incivilities tended to perceive that police were more responsive to drug crime and tended to have higher levels of participation in substance abuse prevention activities. In addition, perceived

neighbourhood substance abuse problems were found to predict citizen participation both directly and indirectly through its effect on perceived police responsiveness to drug crime. Individuals with greater perceived neighbourhood substance abuse problems also tended to perceive greater police responsiveness to drug crime.

Interestingly, however, perceived neighbourhood substance abuse problems were also negatively associated with perceived police responsiveness to drug crime. Individuals with greater perceived neighbourhood substance abuse problems also tended to perceive that police were less responsive to drug crime in their neighbourhoods. Analysis of direct, indirect, and total effects indicate that the positive, total effect of increased perception on citizen participation was reduced through its negative influence on perceived police responsiveness. Furthermore, external attributions of drug abuse also influenced citizen participation indirectly through its negative effect on perceived police responsiveness. This indicates that individuals who tended to attribute the causes of drug abuse to external, community-level factors, rather than intra- individual deficits, also tended to perceive that police were less responsive to drug crime, which then reduced the level of citizen participation in substance abuse prevention activities.

Table 4 presents an analysis of the effects shown in Figure 2. Decomposition of effects is useful for understanding the relative strength of direct, indirect, and total effects in path model [48]. To understand the mediating effects of perceived police responsiveness to drug crime a relative indirect effect proportion was taken [49]. Table 4 presents the standardized values representing each total effect, indirect

effect, and ratio of each indirect effect to the total effect, which was computed from the results of the path analysis.

The de-compensation of effects results indicate that the perceived police responsiveness to drug crime accounted for approximately 12.9% of the effect that awareness of neighbourhood substance abuse problems had on citizen participation in substance abuse prevention activities. However, perceived police responsiveness to drug crime had

a much larger mediating effect (38.5%) between perceived neighbourhood incivilities and citizen participation in substance abuse prevention activities. This may indicate that when community members perceive greater community responsiveness, they themselves are equally likely to engage in community participation activities, specifically substance abuse prevention. However, the overall majority of the effect in the discussed mediating paths was direct.

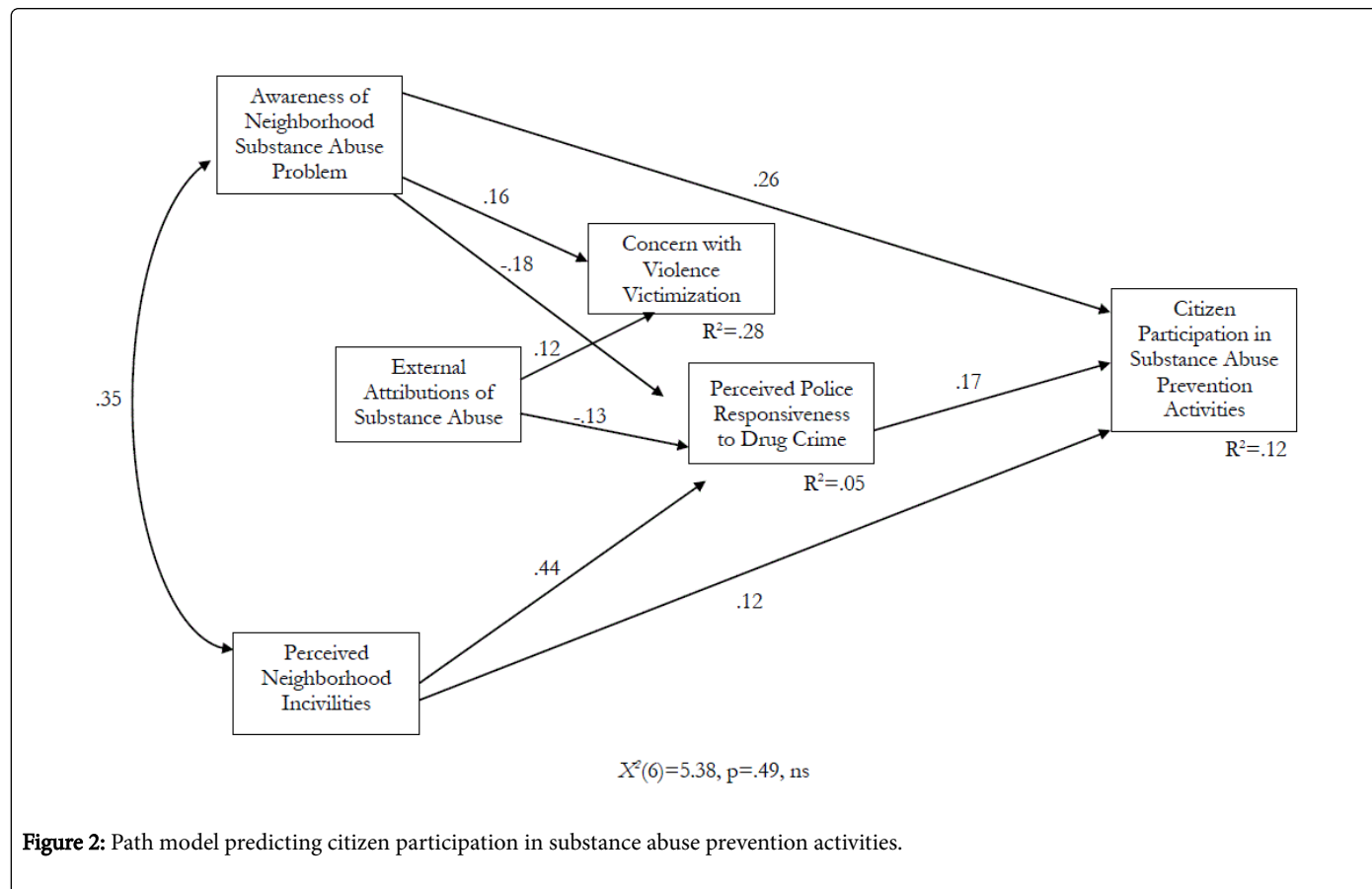


Figure 2: Path model predicting citizen participation in substance abuse prevention activities.

Indirect Effect via					
Criterion Variable	Predictor Variable	Total Effect	Direct Effect	Police Responsiveness	Ratio of Indirect to Total Effect
CP in Substance Abuse Prevention Activities	Perceived Neighborhood Incivilities	0.23	0.26	-0.03	0.12
		0.19	0.12	0.07	0.38

Note: Standardized effects; direct effects are displayed in Figure 2; CP: Citizen Participation

Table 4: Decomposition of effects in the path model.

Discussion

The present study tested a path model that included perceived person, situation, and environment-related predictors of citizen participation in an urban, substance abuse prevention context. As mentioned, the success of community-based substance abuse prevention initiatives is often contingent upon citizen participation. Our study contributes to the prevention science literature by examining a path model that included person (concerns with violence

victimization and attributions of drug abuse), situation (perceived police responsiveness to drug crime) and environment-related (perceived neighbourhood incivilities and awareness of neighbourhood substance abuse problems) predictors of participation in substance abuse prevention activities. Through our analyses, we found that increased perceptions of neighbourhood substance abuse problems appeared to be a catalyst for citizen participation. However, positive effects reduced through the negative effect that increased

perceptions also had on perceived police responsiveness to drug crime in their community.

A meaningful implication of these data involve the critical role of residents' perceptions of the neighbourhood environment in efforts to promote citizen participation and, particularly, their perceptions of police departments' responsiveness to drug crime in their communities. Our findings imply that prevention practitioners should recognize the citizens' perceptions of neighbourhood environments and foster activities that promote community action. For example, at the local level, residents can be provided a platform for participation by establishing coalitions that address police responsiveness, or lack thereof, to drug-related crime. The stage for participation may be set by perceptions of substance abuse problems and environmental incivilities, but the principal work of prevention scientists and practitioners will be to enact and evaluate explicit, sustainable, and replicable programs of citizen-police collaboration that simultaneously address substantive problems and collaborative arrangements [50-52]. Our data indicate that substance abuse preventive participation may best be achieved by acknowledging that substance abuse is part and parcel of community disorganization. Such disorganization includes the neighbourhood physical environment, violence and crime, as well as the actions of public institutions like law enforcement. It is certainly understandable when, despite awareness of substance abuse and related issues, citizen participation remains thin because mediating structures like police departments are viewed as unresponsive. These data are tandem to previous research studies that emphasize prevention strategies simultaneously aimed to address multiple issues [13,26,27,34,53], including research involved in the relationship between citizens and community organizations [21,54].

There are substantial challenges to acting on multiple issues, while simultaneously developing initiatives such as police-community partnerships. Nevertheless, there is likely to be genuine preventive value in leveraging the apparently natural relationship between place-based issues in the physical environment (like substance abuse and violence) and development of effective community collaboration that will cultivate citizen participation. Our findings indicate that perceptions of community-level problems and concerns may provide a valuable opportunity to encourage citizen participation by underscoring the need to address issues that are of chief concern for the community. Another important issue may be geographic scale. While it may be prudent to initially address community concerns on one face block, the partnerships would do well to expand to adjacent areas that exhibit multiple problems. A broader geographic focus accomplishes two things. First, it intentionally incorporates environmental context in a way that has the potential to alter "setting" (neighbourhood-based) programs consistent with theory [55]. Second, broadening focus expands the constituency for change to include a larger number of potential participants, and it makes it more likely that additional institutional constituents might be compelled to participate.

Limitations

This study is limited in several ways that should be considered when evaluating findings. First, the study's measures are limited because they included self-reports of individuals' perceptions of person, situation, and environment-related factors that were based on Pentz's framework [26,34]. Several of these perceived factors (e.g., police responsiveness, perceived incivilities) may or may not correspond to actual levels in a community. Future studies should move beyond perceptions and include objective criteria to test theoretical models. For example, this

may include an environmental scan/checklist to catalog neighbourhood incivilities, such as graffiti and litter.

A second limitation involves the study's external validity. The telephone survey methodology used in this research has been criticized as biased against people without telephones and unreliable when asking complicated or sensitive questions [56]. It is also conceivable that our probability sample was drawn from a more limited sampling frame (i.e., households with working phones), and when there is discrepancy between the population and sampling frame, there is stronger likelihood of coverage error. However, at the time of the study, census data indicated that only 1.5% of the state's residents were without phones [37]. Research has also shown that when controlling for income, households with and without phones do not differ much on behavioral and attitudinal measures [56]. Similarly, it only enables us to treat individuals as units of analysis. Third, the community-wide policing initiative may have influenced variables such as reported levels of participation in substance abuse prevention activities. This factor may limit the generalizability of the study's findings to communities without similar substance abuse prevention initiatives. Furthermore, the cross-sectional design of the study limits our causal interpretation of the data. Future research should use designs that provide longitudinal analysis of these variables to better infer causal associations.

Despite the limitations, our findings are consistent with previous research that explored the predictors of citizen participation within the context of community-wide substance abuse prevention initiatives [14,35,39]. Our study conveyed the importance of developing strategies that can empower and engage community residents in the participatory process. These residents may elect to participate despite a sense of apathy that may be triggered by a heightened awareness of the negative social and environmental conditions plaguing their communities. In essence, residents may question whether they have the ability to affect change if they perceive the problems impacting their community as being insurmountable. Alternatively, these disordered community conditions may serve as a catalyst to help the community galvanize and take action around a pressing issue (drug-related crime) impacting a community's overall quality of life. Through citizen participation endeavors, the unique skills and talents of residents can be harnessed to meet the collective goals of the community.

Compliance with Ethical Standards

Conflict of Interest

The authors declare that they have no conflict of interest.

Research Involving Human Participants

Ethical approval

"All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards."

Informed consent

Informed consent was obtained from all individual participants included in the study.

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