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Characteristics and treatment interests among individuals with substance use disorders and a history of past six-month violence: Findings from an emergency department study

Stephen T. Chermack, PhD^{1,2}, Regan Murray, PhD³, Shane Kraus, PhD⁴, Maureen A. Walton, M.P.H., Ph.D.¹, Rebecca M. Cunningham, M.D.⁵, Kristen L. Barry, Ph.D.^{1,2}, Brenda M. Booth, Ph.D.⁶, and Frederic C. Blow, Ph.D.^{1,2}

¹Department of Psychiatry, University of Michigan, 4250 Plymouth Rd., Ann Arbor, MI

²Department of Veterans Affairs, Health Services Research & Development, Ann Arbor, MI

³Department of Psychology, Briar Cliff University, Sioux City, IA 51104

⁴Department of Psychology, Bowling Green State University, Bowling Green, OH 43403

⁵Department of Emergency Medicine, University of Michigan, 300 North Ingalls, Ann Arbor, MI 48109

⁶Department of Psychiatry, University of Arkansas for Medical Sciences, 4301 W Markham Slot 755, Little Rock, AR 72205

Abstract

The study examined clinical characteristics and treatment interests of individuals identified to have substance use disorders (SUDs) in an urban emergency department (ED) who reported past six-month history of violence or victimization. Specifically, participants were 1441 ED patients enrolled in a randomized controlled trial of interventions designed to link those with SUDs to treatment. To examine factors related to violence type, four groups based on participants' reports of violence toward others were created: no violence (46.8%), partner violence only (17.3%), non-partner violence only (20.2%), and both partner and non-partner violence (15.7%). Four groups based on participants' reports of victimization were also created: no violence (42.1%), victimization from partner only (18.7%), victimization from non-partner only (20.2%), and both partner and non-partner victimization (17.7%). Separate multinomial logistic regression analyses were conducted to examine which variables distinguished the violence and victimization groups from those reporting no violence or victimization. For violence toward others, demographic variables, alcohol and cocaine disorders, and rating treatment for psychological problems were higher for violence groups, with some differences depending on type of violence. For victimization, demographic variables, having an alcohol disorder, and rating treatment for family/social problems were higher for violence groups, also with some differences depending on type of violence. Findings from the present study could be useful for designing effective brief interventions and services for ED settings.

Keywords

Partner and non-partner violence; substance use disorder; emergency department

1. Introduction

Between 1997 to 2007, the total number of annual visits to the emergency department (ED) in the US increased by 23% for persons insured by Medicaid, particularly nonelderly adults, accounting for the largest proportion of this increase (Tang et al., 2010). The ED visit may serve as a “teachable moment” in which patients might be receptive to health-based interventions (Cherpitel, 1997; Longabaugh et al., 2001). In particular, a focus has been placed on the role of the ED in identifying and intervening with individuals who have problems with substance use disorders (SUDs) (Cherpitel, 2007; Nilsen et al., 2008) and/or involvement with partner violence (Kendall et al., 2009; Krasnoff & Moscatti, 2002). Research suggests that brief ED interventions can reduce alcohol use among adults (Blow et al., 2006) and adolescents with a history of alcohol misuse and violence (Walton et al., 2010). Currently, ED settings may be missing important opportunities to screen and engage persons with active SUDs who also have a history of violence and/or victimization. To our knowledge, studies have not examined the development and evaluation of ED based interventions for adult patients with active SUDs and a history of violence and/or victimization. Additional research is needed to better understand the extent and correlates of violence involvement (violence with intimate partners as well as others) among ED patients with SUDs, including the identified treatment needs/interests of those involved with violence (e.g., treatment for factors associated with violence, such as alcohol-, drug-, family/social-, psychiatric- and medical-problems). The current study investigated the clinical characteristics and treatment interests of individuals identified to have a SUD in an urban ED who also reported a history of violence or victimization in the past six months. The present study is unique in that it involves assessing factors associated with both violence and victimization, includes measures of violence/victimization in both intimate partner and non-partner relationships, and examines participants’ reported treatment needs.

Prior studies have revealed relatively high rates (~10–46%) of substance use disorders (SUDs) in ED samples (Cherpitel, 2007; Cunningham et al., 2009; D’Onofrio, Becker, & Woolard, 2006), and individuals with SUDs are up to three times more likely to use ED services than are those without a SUD (D’Onofrio et al., 2006). In terms of violence involvement, studies of ED samples have revealed relatively high rates of intimate partner violence (IPV) (~9–46%) (Alexandercilova et al., 2013; Cunningham et al., 2009; Hofner et al., 2005; Lipsky & Caetano, 2011; Walton et al., 2009a), with most studies focusing on partner violence victimization among female ED patients (Daugherty & Houry, 2008; Houry et al., 2008; Lipsky et al., 2005). Accordingly, the ED presents an opportunity to interface with those who are at high risk of involvement with violence and may serve as a critical location for violence intervention efforts (Alexandercilova et al., 2013; Choo et al., 2010; Cunningham et al., 2009; Walton et al., 2009c). A recent study found that men who report IPV involvement were 1.5 times more likely than non-perpetrators to utilize the ED within a 12-month period (Lipsky & Caetano, 2011).

Given evidence from prior studies, it is important to assess IPV and non-partner violence (NPV) as clinical correlates of SUDs and potential treatment needs may differ on the type and the context of violence involvement [i.e., partner violence only, non-partner violence only, both; or the type of violence involvement]. For example, there is evidence that individuals involved with violence across both partner and non-partner relationships present with greater levels of clinical problem severity (i.e., higher levels of psychiatric distress, such as depression, substance use, antisocial behaviors, or use of less effective coping strategies) (Alexandercilova et al., 2013; Bonar et al., in press; Chermack et al., 2009; Holtzworth-Munroe & Meehan, 2004; Huss & Langhinrichsen-Rohling, 2006; Walton et al., 2007). There is also evidence of gender differences depending on the nature and type of violence involvement, with male gender being associated with greater participation in non-partner violence (Alexandercilova et al., 2013; Chermack et al., 2001; Cunningham et al., 2003), both partner and non-partner violence (Chermack et al., 2009; Walton et al., 2007), and violence resulting in injury (Chermack et al., 2010; Felson & Cares, 2005; Walton et al., 2009b). Studies have not examined the reported treatment needs of individuals with substance use and violence involvement across relationship types in ED or other settings. Assessing participant treatment needs and interests is important, given that several studies have shown that self-identified needs predict actual healthcare utilization. Matching treatment services to participant identified needs improves treatment engagement, compliance, and/or outcomes (Hser et al., 1999; McLellan et al., 1997; Shen et al., 2000; Smith & Marsh, 2002). Therefore, identifying the treatment needs and interests of ED SUD patients involved with violence could inform screening and brief intervention protocols in ED settings that are more engaging and effective by being responsive to patients' stated treatment needs and interests.

It should be noted that most studies examining potential differences in characteristics associated with different types of violence involvement have been based on either samples of persons in treatment for SUDs (e.g., Chermack et al., 2001, 2009), or in samples of individuals identified specifically due to marital violence (Holtzworth-Munroe & Meehan, 2004; Huss & Langhinrichsen-Rohling, 2006). Studies that have taken place in healthcare settings have been limited by focusing primarily on IPV perpetration by men and victimization of women (e.g., MacMillan et al., 2009; Roche et al., 2007), by focusing solely on specific patient groups (e.g., injured, Cherpitel, 1997; cocaine chest pain patients, Cunningham et al., 2007), or by using a brief violence screening measures in the ED (e.g., Cunningham et al., 2009; Walton et al., 2009a). Thus, the present study builds upon prior research in several ways. First, the current study assessed both IPV and NPV perpetration and victimization among individuals in an ED setting with an identified SUD using a comprehensive measure of violence involvement (i.e., the modified Conflict Tactics Scale; Straus, 1979; Chermack et al., 2001). Second, this study assessed IPV and NPV perpetration and victimization in a high-risk sample, particularly, individuals with an active SUD. Third, prior ED-based studies have not asked participants involved with violence or victimization across relationships directly about their perceived treatment needs and interests.

In the present study, we examined the extent of past six-month violence (both perpetration and victimization) across partner and non-partner relationships among men and women with SUDs in an ED setting. Specifically, we investigated how potential demographic variables

(i.e., age, gender, race, marital status, education), clinical correlates (i.e., alcohol, cannabis, and cocaine use disorders), and treatment needs and interests (i.e., participants' ratings of importance of treatment for alcohol, drug, psychological, family/social, and medical problems) might differ according to the type of violence involvement (i.e., partner only, non-partner only, both) compared to those participants with SUDs who did not report violence involvement. The current findings have implications for developing ED-based screening, intervention and referral protocols.

2. Method

2.1 Procedure

Participants (ages 19–60) entering the ED for injury or medical complaints were approached by research staff to participate in the current study. Participants initially completed a 10 minute computerized survey to determine eligibility to take part in a randomized controlled trial (RCT) examining interventions designed to help link patients with SUDs to a treatment referral center. Most ED patients were eligible for screening; exclusion criteria included being pregnant, being unable to provide informed consent, having abnormal vital signs, and seeking ED-care solely for psychiatric purposes. For the RCT, patients who screened positive for at least one SUD completed a baseline assessment. A positive screen for a SUD included if they reported using alcohol in the past 30 days and had an alcohol use disorder and/or they reported cannabis, cocaine, stimulant, or opioid use in the past 30 days and had a drug use disorder. Participants were also only eligible if they had not received SUD treatment services in the three months prior to this study and were not injection drug users. Participants who agreed to take part in the RCT (75%, $N = 1441$) completed a computerized baseline survey that assessed areas such as substance use history, violence perpetration and victimization, and psychosocial factors (see Blow et al., 2010 for additional information regarding the recruitment procedures).

Data used in the present study are from the baseline survey; thus, all participants met criteria for a SUD. Recruitment was from November 2005 through January 2009. This study was approved by Institutional Review Boards (IRB) at both the University of Michigan and the Hurley Medical Center; Certificates of Confidentiality were obtained from NIAAA and NIDA. To date, there have been a number of papers published or accepted for publication from this project. The initial papers (e.g., Cunningham et al., 2009; Walton et al., 2009) relied on the larger screening sample taken from this Randomized Control Trial (RCT) and examined the prevalence rates of non-partner and partner violence among a sample of inner city emergency department patients ($n = 10,744$). However, these studies assessed rates of non-partner and partner violence by using only two items from the screening data. An additional paper (Blow et al., 2010) examined the treatment attendance among individuals who were randomly assigned to the clinical intervention (i.e., motivational interviewing versus case management to reduce excessive drinking), and did not examine any correlates of partner or non-partner aggression. Finally, Alexandercikova et al. (2013) examined correlates of violence perpetration among patients with substance use disorders and violence within a subset of the sample ($n = 1215$). Specifically, Alexandercikova et al. (2013) examined correlates between current substance use, childhood trauma, antisocial traits, and

social support and partner only and non-partner only aggression perpetration. The current paper includes a broader sample (e.g., including individuals involved with both partner and non-partner violence, a group that other studies/samples have suggested have more severe overall substance use and psychiatric problems and coping skills deficits), and an emphasis on identifying how participant treatment needs and interests may differ according to the nature of participants' involvement with both violence *and* victimization across relationship types.

2.2 Measures

Participants were screened for eligibility for this study via specially programmed tablet pc's regarding overall health status and substance use. Participants with a SUD, as determined by responses to the Substance Abuse Outcomes Module (described below; Smith et al., 1996), then completed a longer (approximately 40 minutes) baseline computerized survey using the following instruments:

2.2.1 Modified Conflict Tactics Scale—For the six months prior to the study, physical violence was assessed with the Conflict Tactics Scale (CTS; Straus, 1979); we did not assess psychological violence or negotiation. In the present study, we modified the CTS so that each participant indicated physical violence and victimization related to intimate partners, and then completed the same items regarding non-partners (Chermack et al., 2001). The CTS has been shown to have good internal consistency and has been well validated (Simpson & Christensen, 2005).

To examine factors related to participants' violence toward others, scores on the participant-to-partner and participant-to-non-partner physical violence scales were dichotomized to reflect the presence or absence of aggression towards a partner (yes/no) or non-partner (yes/no) in the past six months. Next, scores on these two scales were combined to form four groups: no violence in either partner or non-partner relationships (NV), partner violence only (PVO), non-partner violence only (N-PVO), and both partner and non-partner violence (BV). Scores on the partner-to-participant and non-partner-to-participant victimization scales were dichotomized to reflect the presence or absence of experienced physical victimization towards participants by either a partner or non-partner in the past six months. Scores were then combined to form four groups: no victimization (NV), victimization by partner only (VPO), victimization by non-partner only (VN-PO), and victimization by both partner and non-partner (VB).

2.2.2 Alcohol and Drug Use—The Substance Abuse Outcomes Module (SAOM; Smith et al., 1996) measures DSM-IV (American Psychiatric Association, 1994) substance use disorders, as well as key prognostic factors and outcome domains for evaluation of substance abuse treatment. The SAOM has demonstrated reliability (e.g., internal consistency, test-retest) and validity (e.g., concurrent, predictive) (Smith et al., 1996). The SAOM also had 90–93% agreement with the CIDI-SAM on substance use diagnoses (present/absent). For the current study, we used the SAOM to identify participants meeting DSM-IV criteria for alcohol, cannabis, and cocaine abuse/dependence. Demographic information presented in this study also came from the SAOM.

2.2.3 Addiction Severity Index—The Addiction Severity Index (ASI; McLellan et al., 1992) is a semi-structured interview that provides composite scores for the following domains: alcohol use, drug use, psychiatric symptoms, legal problems, employment problems, medical status, and family /social support problems. The ASI assesses for both lifetime and current (last 30 days) problem severity in the aforementioned areas. For the purposes of this study, the only items used were those related to the importance of specific types of treatment. For example, respondents were asked to rate on a Likert scale (range 0–5; 0 = “not at all” to 5 = “very”) the following: “How important to you now is treatment/ counseling for [alcohol, drug, family, legal, medical] problems.” The ASI is widely used throughout the United States to assess intake status for individuals entering SUD treatment and it has been validated as an assessment and research tool for substance use disorders (McLellan et al., 2006). ASI items measuring treatment importance have also been found to predict subsequent treatment initiation (Weisner et al., 2001) as well as treatment engagement and progress (Shen et al., 2000).

3. Data Analysis

We decided to examine violence (*participant-to-others*) and victimization (*others-to-participant*) in separate analyses because they were strongly related to each other (Spearman = .78, $p < .001$). First, descriptive bivariate analyses [chi-square analyses for dichotomous variables and ANOVA's with post hoc analyses (Tukey's HSD) for continuous variables] were used to examine the relationship between violence and victimization groups (e.g., no violence, partner only, non-partner only, both partner and non-partner) and participant variables (i.e., age; gender, race, marital status, education, etc.). Next, multinomial logistic regression analyses were conducted to identify the characteristics that distinguished specific violence groups from those reporting no violence or no victimization. The first model focused on factors associated with participants violence toward others (with the “no violence” group as the reference group), and the second model focused on factors associated with participants being victimized by others (with the “no victimization” group as the reference group). Specifically, the multinomial logistic regression analysis strategy accounted the potential impact of ratings of treatment importance on the violence and/or victimization groups after adjusting for demographic information and SUDs.

4. Results

4.1. Participants

Participants were 895 men (62.1%) and 546 women (37.9%) seeking ED care for illness (66.6%) or injuries (33.4%). The average age was 33.2 ($SD = 10.5$), with a range of 19 to 60 years. The ethnicity of the sample was 35.3% Caucasian, 57.6% African American, 2.4% Hispanic, and 4.7% “Other” (e.g., Native American, Biracial). Most of the participants were never married (55.6%) with 9.4% married, 6.0% separated, 12.1% divorced, 1.0% widowed, and 15.8% living with a significant other. Approximately three percent (3.4%) of participants had less than an eighth grade education, 30.1% had some high school education (but did not graduate) high school, 39.5% graduated from high school, 22.8% attended college, 4.0% graduated from college and 0.2% had taken post-graduate courses.

4.2. Analyses Related to Participant-to-Others Violence Groups

With respect to the violence groups, 46.8% were in the “no violence” group (NV), 17.3% in the “partner violence only” group (PVO), 20.2% in the “non-partner violence only” group (N-PVO), and 15.7% were in the “both partner and non-partner violence” group (BV). As shown in Table 1, the bivariate analyses revealed significant differences between group members on all variables *except* for years of education, meeting criteria for cannabis abuse/dependence, and importance of medical treatment. Overall, all the violence groups tended to be younger than the NV group, and had higher rates of alcohol disorders. In general, participants in the PVO and BV groups were similar in terms of gender and ratings of treatment importance, with higher rates of women and ratings of treatment importance in most areas. The NV and N-PVO groups had lower rates of cocaine disorders and similar ratings of treatment importance. However, the N-PVO group had relatively high rates of alcohol disorders, male and unmarried participants. Overall, importance ratings for alcohol and drug treatment appeared markedly lower than for other types of treatment, particularly compared to ratings of importance for medical and psychological services.

Multinomial logistic regression results are presented in Table 2. Results indicate that those in the PVO group were more likely to be younger, female, meet criteria for alcohol or cocaine abuse/dependence, and to have higher ratings for the importance of treatment for both alcohol and psychological problems. Individuals in the N-PVO group were more likely to be younger, male, non-African American, unmarried, and meet criteria for alcohol abuse/dependence. Finally, those in the BV group were more likely to be younger, female, African-American meet DSM-IV criteria for alcohol or cocaine abuse/dependence, and to have higher ratings of the importance of treatment for psychological and family/social problems.

4.3 Analyses Related to Others-to-Participant Violence Groups

In terms of the violence groups, 42.1% were in the “no violence” group (NV), 18.7% in the “violence by partner only” group (VPO), 21.6% in the violence by non-partner only group (VN-PO), and 17.7% were in the violence by “both partner and non-partner” group (VB). Analyses examining group differences in participant factors are shown in Table 3. Bivariate analyses indicated that factors significantly related (and not related) to victimization groups were similar to those found in the violence perpetration groups. For example, compared to the NV group, the victimization groups tended to be younger, and have higher rates of alcohol problems, higher ratings of treatment importance for medical and psychological services, and the VN-PO had higher rates of male and non-African American participants, and relatively low rates of cocaine disorders.

Multinomial logistic regression results are presented in Table 4. Results indicate that those in the VPO group were more likely to be younger, married, meet criteria for alcohol abuse/dependence, and to have higher ratings for the importance of treatment for both alcohol and family/social problems. Individuals in the VN-PO group were more likely to be younger, male, non-African American, unmarried, meet criteria for alcohol abuse/dependence, and have higher ratings for the importance of treatment for family/social problems. Finally, those in the VB group were more likely to be younger, meet criteria for alcohol or cocaine

abuse/dependence, and to have higher ratings of the importance of treatment for family/social problems.

5. Discussion

In the current sample, approximately 53% of participants indicated that they had been involved in violence toward others while 58% reported that they had been the victim of violence by a partner, non-partner, or both. The prevalence of both past six-month IPV and NPV found in this ED SUD sample is higher than prior ED studies assessing past year IPV and NPV (Cunningham et al., 2003, 2007, 2009; Walton et al., 2007, 2009a, 2009b), likely due to the present studies' focus on those with active SUDs. In addition, a more comprehensive violence measure was used compared to most previous studies. Specifically, the modified CTS includes multiple items assessing violence and victimization across both partner and non-partner relationships. Thus, the inclusion of a broader number of physical violence items likely provides more opportunities to endorse items indicating involvement with violence perpetration and/or victimization (resulting in higher rates than briefer scales assessing a more limited set of conflict behaviors).

In terms of demographics, the findings reveal that, similar to other studies of SUD samples, younger participants were more likely to be involved in all types of violence, regardless of relationship context or type (Chermack et al., 2009; Murray et al., 2008; Rolfe et al., 2006), and non-married participants were significantly more likely to report involvement with both partner and non-partner violence and victimization. Also consistent with previous work (e.g., SUD treatment settings, ED settings, untreated heavy drinkers), females were significantly less likely to be involved with NPV perpetration or victimization (Chermack et al., 2001; Murray et al., 2008; Rolfe et al., 2006; Walton et al., 2007, 2009c). Further, females were significantly more likely to have reported violence toward a partner only, and somewhat unexpectedly, toward both partners and non-partners. This unexpected finding could reflect one of the limitations of the CTS as a violence measure, in that the questionnaire does not include items assessing who initiated violent behavior, or whether reported violence was reactive (or defensive) in nature. Consequently, it is possible that women who were victimized would be also more likely to indicate high levels of violence toward others. Future research with violence measures addressing some of the dynamics of violent incidents would provide important additional information regarding potential gender differences.

Finally, with respect to substance related factors, alcohol abuse/dependence was significantly associated with involvement with all types of violence (all perpetration and victimization groups), and cocaine abuse/dependence was associated with involvement with certain violence groups (e.g., violence toward partner's only, violence toward both partner and non-partner; victimization from both partner and non-partner). Cannabis/abuse dependence was not associated with violence or victimization groups. Consistent with the literature (e.g., Chermack et al., 2008; Moore et al., 2008), alcohol and cocaine problems were the most notable in relation to violence and illustrate that the relationship between particular subsets and types of violence may differ to some degree. Additional research is needed to further examine why there may be significant differences between violence

groups in regards to cocaine use or related problems. Specifically, research examining social contextual information and substance use in more detail and/or examining such factors in specific violence incidents (across partner and non-partner incidents) may provide important information regarding potential differences in how cocaine use or use of other substances may be related to violence across relationship types (Chermack et al., 2010; Epstein-Ngo et al., 2013).

Despite the self-acknowledged substance use problems among our sample, mean ratings of the importance of alcohol and/or drug treatment were lower than some other problem areas (e.g., medical and psychiatric), and generally were not associated with violence involvement groups (with the exception that involvement with partner only violence or victimization were related to higher ratings for the importance of alcohol treatment). Further, it appeared that importance of treatment for psychological issues generally was related to involvement with violence perpetration, and that importance of treatment for family/social problems was related to victimization.

These findings have implications for developing and/or refining ED based screening, brief intervention and linkage protocols. For example, given the relatively low ratings of treatment importance for alcohol and drug problems, it appears ED-based interventions should specifically target substance abuse problem recognition and enhance motivation for treatment participation, as evidence suggests individuals who perceive a need for SUD treatment are more likely to enter treatment (Kertesz et al., 2006; Siegal, Li, & Rapp, 2002), remain in care (Shen et al., 2000), and have positive outcomes (Longshore & Teruya, 2006). For those with a history of violence perpetration and/or victimization, services related to psychological and family issues were rated as important, if not more so, than SUD treatment. Assessing for psychological and familial/social problems may help facilitate ED-based brief intervention approaches and post ED referrals. Tailoring services to match client severity needs and treatment wishes improves overall treatment compliance (Nielsen, Nielsen, & Wraae, 1998), treatment retention (Chen et al., 2006; McLellan et al., 1997), and patient outcomes (McLellan et al., 1997; Timko & Sempel, 2004). Ideally, ED interventions could work to not only boost perceived SUD treatment importance but to also provide linkage protocols to other types of treatment (i.e., for psychological and family/social issues) that may initially be more appealing to patients and could provide a gateway to SUD services specifically. Further, it has been argued that there is a need for SUD treatment approaches in general to more specifically integrate family/social network issues (Copello et al., 2005; Copello & Orford, 2002), and that addressing psychological problems among those with SUDs may reduce violence risk (Chermack et al., 2009). Thus, the present findings suggest intervention and referral protocols in ED settings targeting reductions in violence among those with SUDs settings should attend to participants' interest in services geared to address psychological and family/social concerns in addition to SUD services.

Prior studies (Choo et al., 2010) suggests that there may be missed opportunities to intervene within the ED setting for patients who present with SUDs and a recent history of violence or victimization due to significant challenges to overcome to feasibly implement screening, intervention and referral protocols. For example, ED staff have significant time constraints, and there can be challenges in terms of having staff with training and expertise in

conducting such protocols. Given such concerns, it is likely that increased use of technology for screening and either computer/tablet delivered or guided approaches are needed (Walton et al., 2010). For example, prior research (e.g., Walton et al., 2010) suggests that brief computerized interventions delivered within an ED setting can be efficacious in reducing substance use and violence involvement among adolescents. Currently, computer/tablet delivered or guided ED interventions targeting adults with substance misuse problems are being evaluated (Walton et al., 2010), although these studies do not address violence related issues.

Although findings from the current study are important for medical staff to consider when designing effective brief interventions and services for patients presenting with SUDs to the ED, a number of limitations should be noted. For example, we were not able to conduct more detailed analyses regarding the potential associations of several variables (e.g., marital or relationship status, race) with violence/victimization groups given the sample size, small number of participants in certain groups and limitations in the measures of such constructs. Further, the findings from this inner city ED may not generalize to EDs outside of this setting, especially those in rural settings.

Conclusions

The current study investigated clinical characteristics and treatment interests of individuals identified to have SUDs in an urban ED who also reported past six-month history of IPV or NPV perpetration or victimization. Similar to other studies, we found high rates of violence and victimization in our sample of ED patients with SUDs and that presence of alcohol and/or cocaine problems served as indicators to help identify individuals with SUDs who were at risk for involvement in particular types of violence or victimization. Although all individuals in this study had SUDs, those involved with certain forms of violence or victimization reported that they felt treatment for psychological or family/social problems was particularly important. This finding is critical to note, because it suggests that ED based screening, intervention and referral protocols targeting violence reduction among those with SUDs should explicitly address patients' interests in services for psychological or family/social issues in addition to SUD services. Finally, given that ED settings provide an important opportunity to address issues related to SUDs and violence involvement, as well as promising findings from adolescent samples with computer delivered or guided interventions (Cunningham et al., 2012; Walton et al., 2010), it is important for future research to focus on developing screening, brief intervention and referral protocols capitalizing on information technology (e.g., computerized/tablet screening and delivered/guided interventions) that can be feasibly implemented.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Bivariate differences between violence groups.

	No Violence (NV) (<i>n</i> = 675) % or mean (sd)	Partner Violence only (PVO) (<i>n</i> = 249) % or mean (sd)	Non-partner Violence only (N-PVO) (<i>n</i> = 291) % or mean (sd)	Partner and Non- partner Violence (BV) (<i>n</i> = 226) % or mean (sd)
Participant characteristics: Age (M, SD) *	35.79 (10.66)	32.92 (9.67) ^a	32.21 (10.43) ^a	28.33 (8.40)
Female Gender *	30.7%	59.0%	25.8%	51.8%
Education (less than high school)	31.0%	36.1%	31.3%	41.1%
Married *	27.7%	30.1%	17.5%	22.6%
Race (African-American) *	60.9%	61.0%	42.6%	63.3%
Substance Use Disorder Diagnoses[†]:				
DSM-IV Alcohol Abuse/Dependence *	61.8%	70.7%	85.2%	77.0%
DSM-IV Cannabis Abuse/Dependence	34.1%	37.3%	33.3%	38.9%
DSM-IV Cocaine Abuse/Dependence *	15.1%	25.7%	12.4%	21.7%
Perceived treatment importance for the following problems:				
Alcohol (M, SD) *	0.40 (1.09) ^a	0.69 (1.39) ^b	0.47 (1.17) ^{a, b}	0.63 (1.31) ^{a, b}
Drug (M, SD) *	0.45 (1.18) ^a	0.73 (1.43) ^b	0.33 (1.01) ^a	0.77 (1.45) ^b
Psychological/Emotional (M, SD) *	0.87 (1.43) ^a	1.60 (1.75) ^b	1.03 (1.55) ^a	1.53 (1.69) ^b
Family/Social (M, SD) *	0.38 (1.06) ^a	0.67 (1.34) ^b	0.47 (1.12) ^{a, b}	1.01(1.60)
Medical (M, SD)	2.24 (1.80) ^a	2.54 (1.75) ^a	2.35 (1.79) ^a	2.25 (1.78) ^a

*
p < .01

Note.

^{a,b,c} Same superscript indicates that group means were not significantly different at $\alpha = .05$.[†] Some participants screened positive for more than one substance use disorder

Table 2

Multinomial logistic regression results (Odds ratios and 95% Confidence Intervals) examining predictors of violence groups.^a

	Partner Violence only (PVO)	Non-partner Violence only (N-PVO)	Partner and Non-partner Violence (BV)
	OR (CI)	OR (CI)	OR (CI)
Age	0.97 (0.95 – 0.98)**	0.96 (0.94 – 0.97)**	0.91 (0.890 – 0.93)**
Female Gender	2.66 (1.93 – 3.67)**	0.65 (0.46 – 0.90)*	1.62 (1.15 – 2.28)**
Race (African-American)	1.11 (0.80 – 1.53)	0.60 (0.44 – 0.81)**	1.56 (1.10 – 2.21)*
Married	1.38 (0.98 – 1.94)	0.60 (0.42 – 0.86)**	0.92 (0.63 – 1.36)
Education	0.98 (0.83 – 1.16)	0.97 (0.83 – 1.14)	0.90 (0.75 – 1.08)
Alcohol Abuse/Dep.	1.49 (1.05 – 2.11)*	3.50 (2.39 – 5.14)**	2.32 (1.57 – 3.44)**
Cannabis Abuse/Dep.	1.11 (0.78 – 1.56)	1.09 (0.78 – 1.52)	0.90 (0.63 – 1.29)
Cocaine Abuse/Dep.	2.10 (1.37 – 3.23)**	1.14 (0.71 – 1.81)	2.35 (1.45 – 3.80)**
Import. alcohol tx	1.14 (1.00 – 1.30)*	1.00 (0.87 – 1.14)	1.10 (0.95 – 1.27)
Import. drug tx	1.00 (0.88 – 1.15)	0.93 (0.79 – 1.08)	1.06 (0.92 – 1.22)
Import. psych tx	1.19 (1.08 – 1.32)**	1.08 (0.97 – 1.20)	1.16 (1.04 – 1.29)**
Import. family/social tx	1.05 (0.93 – 1.20)	1.04 (0.90 – 1.19)	1.29 (1.14 – 1.46)**
Import. medical tx	1.04 (0.95 – 1.13)	1.08 (0.99 – 1.17)	0.98 (0.89 – 1.08)

Note.

^{a,b,c} Same superscript indicates that group means were not significantly different at $\alpha = .05$.

[†] Some participants screened positive for more than one substance use disorder

Table 3

Bivariate differences between victimization groups.

	No Violence (NV) (<i>n</i> = 606) % or mean (sd)	Partner Violence only (VPO) (<i>n</i> = 269) % or mean (sd)	Non-partner Violence only (VN-PO) (<i>n</i> = 311) % or mean (sd)	Both Partner and Non- partner Violence (VB) (<i>n</i> = 255) % or mean (sd)
Participant characteristics: Age (M, SD) **	35.9 (10.8)	32.3 (9.8) ^a	31.8 (10.5) ^a	28.4 (8.6)
Female gender **	35.3%	45.4%	32.8%	42.4%
Education (less than High School)	31.3%	35.0%	31.2%	40.0%
Married **	26.4%	31.6%	18.0%	24.7%
Race (African-American) **	62.0%	60.2%	47.3%	56.9%
Substance Use Disorder Diagnoses †				
DSM-IV Alcohol Abuse/Dependence **	60.6%	72.9%	80.7%	78.8%
DSM-IV Cannabis Abuse/Dependence	34.8%	36.8%	35.4%	34.5%
DSM-IV Cocaine Abuse/Dependence	15.3%	19.0%	16.1%	22.4%
Perceived treatment importance for the following problems:				
Alcohol (M, SD) **	0.39 (1.09) ^a	0.68 (1.36) ^{a, b}	0.44 (1.13) ^{a, b}	0.64 (1.33) ^b
Drug (M, SD) *	0.44 (1.15) ^a	0.59 (1.33) ^{a, b}	0.48 (1.23) ^{a, b}	0.72 (1.39) ^b
Psychological/Emotional (M, SD) **	0.93 (1.51) ^a	1.35 (1.68) ^b	1.13 (1.58) ^{a, b}	1.40 (1.70) ^b
Family/Social (M, SD) **	0.34 (1.00) ^a	0.64 (1.32) ^b	0.57 (1.25) ^{a, b}	0.93 (1.52)
Medical (M, SD)	2.24 (1.83)	2.39 (1.77)	2.36 (1.77)	2.37 (1.76)

*
 $p < .05$;**
 $p < .01$

Note.

^{a,b,c} Same superscript indicates that group means were not significantly different at $\alpha = .05$.

† Some participants screened positive for more than one substance use disorder

Table 4

Multinomial logistic regression results (Odds ratios and 95% Confidence Intervals) examining predictors of victimization groups.^a

	Violence by Partner Only (VPO) OR (CI)	Violence by Non partner only (VN-PO) OR (CI)	Violence both Partner and Non-partner (VB) OR (CI)
Age	0.96 (0.94 – 0.97) **	0.96 (0.94 – 0.97) **	0.92 (0.90 – 0.93) **
Female Gender	1.22 (0.89 – 1.67)	0.71 (0.52 – 0.98) *	0.88 (0.63 – 1.22)
Race (African-American)	1.07 (0.78 – 1.46)	0.66 (0.49 – 0.89) *	1.11 (0.80 – 1.54)
Married	1.47 (1.06 – 2.04) *	0.67 (0.47 – 0.95) *	1.06 (0.74 – 1.53)
Education	0.99 (0.84 – 1.16)	0.99 (0.85 – 1.16)	0.93 (0.78 – 1.10)
Alcohol Abuse/Dep	1.71 (1.22 – 2.40) **	2.77 (1.96 – 3.93) **	2.48 (1.70 – 3.62) **
Cannabis Abuse/Dep	0.96 (0.69 – 1.35)	1.04 (0.75 – 1.44)	0.75 (0.53 – 1.07)
Cocaine Abuse/Dep	1.50 (0.97 – 2.34)	1.34 (0.86 – 2.07)	2.27 (1.43 – 3.59) **
Import. alcohol tx	1.15 (1.01 – 1.31) *	0.95 (0.83 – 1.09)	1.08 (0.94 – 1.24)
Import. drug tx	1.02 (0.89 – 1.17)	1.04 (0.90 – 1.19)	1.08 (0.94 – 1.24)
Import. psych tx	1.10 (0.99 – 1.21)	1.06 (0.96 – 1.17)	1.08 (0.97 – 1.20)
Import. family/social tx	1.14 (1.00 – 1.30) *	1.16 (1.02 – 1.32) *	1.34 (1.18 – 1.52) **
Import. medical tx	1.04 (0.95 – 1.13)	1.07 (0.98 – 1.16)	1.06 (0.96 – 1.16)

Note. Model Chi-Square (39 df) = 262.27, $p < .001$

* indicates $p < .05$,

** indicates $p < .01$,

^a The reference group for the violence group outcomes was the NV (no victimization) group.