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PTSD, Cyberbullying, and Peer Violence: Prevalence and Correlates among Adolescent Emergency Department Patients

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Abstract

Objective—Posttraumatic Stress Disorder (PTSD) is often underdiagnosed and undertreated among adolescents. The objective of this analysis was to describe the prevalence and correlates of symptoms consistent with PTSD among adolescents presenting to an urban emergency department (ED).

Method—A cross-sectional survey of adolescents aged 13–17 presenting to the ED for any reason was conducted between August 2013 and March 2014. Validated self-report measures were used to measure mental health symptoms, violence exposure, and risky behaviors. Multivariate logistic regression analysis was performed to determine adjusted differences in associations between symptoms consistent with PTSD, and predicted correlates.

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Results—Of 353 adolescents, 23.2% reported current symptoms consistent with PTSD, 13.9% had moderate or higher depressive symptoms, and 11.3% reported past-year suicidal ideation. Adolescents commonly reported physical peer violence (46.5%), cyberbullying (46.7%), and exposure to community violence (58.9%). On multivariate logistic regression, physical peer violence, cyberbullying victimization, exposure to community violence, female gender, and alcohol or other drug use positively correlated with symptoms consistent with PTSD.

Conclusions—Among adolescents presenting to the ED for any reason, symptoms consistent with PTSD PTSD, depressive symptoms, physical peer violence, cyberbullying, and community violence exposure are common and inter-related. Greater attention to PTSD, both the disorder and symptom level, and its co-occurring risk factors is needed.

Keywords

PTSD; Adolescent; Emergency department; Violence; Cyberbullying

1. Introduction

Approximately 4% of children and adolescents experience Posttraumatic Stress Disorder (PTSD)[1–3], with higher rates among trauma-exposed adolescents[4]. PTSD in adolescents has been associated with long-term functional impairment[5], including poor physical health[6], academic failure[7], and increased medical service utilization[8]. PTSD is frequently comorbid with multiple psychological and behavioral concerns, including depression[9–11], suicidal ideation[10,12,13], and substance use disorders[14]. Prior PTSD symptoms also increase the conditional risk of PTSD after future trauma[15–19], emphasizing the importance of early PTSD assessment even for those whose symptoms will spontaneously remit[20]. PTSD, despite effective treatment, is currently underdiagnosed, underreported, and undertreated[21]. Large scale adult studies suggest that only half of adults with PTSD seek psychiatric treatment, with rates falling as low as one-third in minority adults[22]. This lack of treatment is further compounded among children and adolescents, since parents may fail to recognize PTSD symptoms[23,24].

The need for early diagnosis and treatment may be highest in adolescents with a history of physical peer violence, a population at high risk for future trauma[25,26]. A history of physical peer violence is a strong predictor of PTSD symptoms in adults and adolescents[2,3,27,28]. Cyberbullying is a relatively new form of peer violence, defined as “using electronic means to intentionally harm someone else”[29]. Cyberbullying overlaps with, and may predict exposure to, physical peer violence[30]. Cyberbullying may be more strongly associated with suicidal behavior and depression than other forms of peer violence[31–34]. Its correlation with PTSD symptoms has not, to our knowledge, been reported.

Early recognition and treatment of PTSD may alter adolescents’ trajectory of future physical and cyber violence, behavioral disorders, and social consequences[35,36]. Regulatory agencies are, correspondingly, increasingly urging standardized evaluation and treatment of PTSD, particularly for high-risk adolescents presenting for clinical care[37,38]. The American College of Surgeons guidelines encourage systematic screening for PTSD in trauma centers[39]. Such screening would facilitate both alterations in the immediate care provision – for instance, by

using a trauma-informed care protocol[40]; and in the long-term plans for affected individuals, by facilitating referral to a collaborative or psychiatric care program[41].

Some studies suggest that the emergency department (ED) may be an appropriate location to screen adolescents for PTSD and other psychiatric disorders[42,43], given the large number of high-risk adolescents seen in the ED and the important role of the ED as a liaison to community mental health services[44]. Emergency physicians, however, are currently limited in their understanding of the prevalence and impact of PTSD in adolescent ED patients[45], particularly among patients who are not necessarily presenting in the aftermath of an obviously traumatic event. We are aware of only one small study (N=64, 8–21 years of age) involving assessment of pre-existing PTSD symptoms in youth presenting to the ED for non-injury complaints[46]. Existing literature on PTSD in adolescent ED patients describes its development after an acute assault[47–52] or motor vehicle crash[53,54]. Further elucidation of the correlates of PTSD, including prior physical violence and cyberbullying, in adolescent ED patients could help improve future efforts at targeted or indicated screening.

1.1 Statement of Purpose

The main aim of this analysis was to describe prevalence and correlates of symptoms compatible with PTSD among adolescents presenting to an urban ED for care for *any* reason, focusing on its correlation with known risk factors for PTSD as well as its correlation with the novel risk factor of cyberbullying.

2. Materials and Methods

2.1 Study design, setting, and population

This study represents a cross-sectional analysis of adolescents aged 13–17 presenting for care at a Level I trauma center's pediatric ED. The study site is the primary children's hospital for a Northeastern state, serving approximately 50,000 pediatric patients per year with a diverse population (30% Hispanic, 20% African American, 40% publicly insured). The administered survey represented a screening assessment for a larger study of adolescents presenting to the ED[55]. Study procedures were approved by the participating hospital's Institutional Review Board.

2.2 Study protocol

We approached a consecutive sample of adolescents aged 13–17 presenting to the ED for any reason to take the survey. Trained research assistants recruited eligible participants on a convenience sample of shifts, weighted by patient volume, between August 2013 and March 2014. Inclusion criteria for screening included being medically stable; mentally and physically able to consent; English-speaking; and having a parent/guardian present to consent. Exclusion criteria included presenting complaints of suicidality, psychosis, sexual assault, or child abuse; or being in police or state agency custody. We obtained verbal parental/guardian consent and verbal adolescent assent. Participants completed the survey on a touch-screen tablet and received a small gift valued at US$2 on completion of the survey.

2.3 Measures

Primary outcome—Past two-week PTSD symptoms were measured using the Child PTSD Symptom Scale (CPSS)[56], a validated 17-item measure corresponding to clinical criteria defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision (DSM-IV-TR)[57]. A cutoff score of 11 or higher was used to define presence of PTSD symptoms that are consistent with a diagnosis of PTSD (hereafter referred to as "PTSD"), in accordance with previous studies in which this cutoff has a sensitivity of 95% and specificity of 96% for this disorder[56].

Other mental health symptoms—Past two-week depressive symptoms were measured using the Patient Health Questionnaire-9 (PHQ-9)[58], a 9-item measure which corresponds to clinical criteria defined by the DSM-IV-TR. A cutoff score of 10 or higher was used to define presence of moderate-or-higher depressive symptoms, in concordance with clinical recommendations[58]. For adolescents, a score of 10 or higher has a sensitivity of 89.5% and specificity of 77.5% for major depressive disorder[59,60]. Suicidal ideation was measured using two items from the 2013 Youth Risk Behavior Survey (YRBS)[61], and one item from the PHQ-9[58]. Suicide attempts were measured using one item from the 2013 YRBS (kappa 0.61–1.00)[62].

Past-year violence—Past-year physical peer violence (victimization and perpetration) was measured using a 14-item modified version of the Conflict Tactics Scale-2nd edition (CTS-2)[63], as used by other studies on youth peer violence[64–66]. Previous studies report Cronbach's α ranging from 0.79–0.95[63]; this study's Cronbach's α was 0.87. High overlap between physical violence perpetration and physical violence victimization in this sample (83% of youth reporting physical perpetration also reported victimization; Pearson's r=0.65) was observed; and prior literature indicates strong correlation between victimization and perpetration in adolescent samples.[67] However, given that there is limited theoretical justification for physical violence perpetration being correlated with PTSD, the physical peer violence variables were maintained as separate "perpetration" and "victimization" variables for analytic purposes. Past-year experience with cyberbullying was measured using a modified 2-item version of the Student School Survey[68]. As prior evidence[69], as well as our own data (see results section below), indicates that cyberbullying perpetrators and victims had separate characteristics, we maintained a separation between cyberbullying perpetrators and cyberbullying victims in the analysis. Past-year exposure to community violence was measured using the NIMH Community Violence Questionnaire[70], a 7-item construct to measure exposure to acts of crime and violence in one's community. Exposure to community violence was defined as a positive answer to any question.

Substance Use—Past-year risky behaviors were measured using a 3-item version of the National Institute on Drug Abuse-Modified Alcohol, Smoking, and Substance Screening Test (ASSIST) Quick Screen to measure alcohol, prescription drug, and other illegal drug use[71]. Given observed correlations between alcohol and drug use in our sample, as well as extant empirical and theoretical support for the overlap of alcohol and drug use[72], these variables were collapsed for the purpose of analysis.

Past-year healthcare utilization—We measured primary care provider utilization and the number of past-year ED visits using a modified 3-item version of the Substance Abuse Outcomes Module[73]. The chief complaint for the current visit (abstracted from the medical record by the research assistant) was categorized into three groups by a medical professional: injury (e.g. fall, sprain, concussion), medical (e.g., asthma, nausea, headache), and psychiatric (e.g. depression, panic attack). We measured usage of inpatient and outpatient mental health resources using two items from the Child and Adolescent Services Assessment[74].

Demographics—We assessed age, gender, race, ethnicity, living with biological parents, and having children using measures from the National Longitudinal Study of Adolescent Health (AdHealth)[75]. We measured sexual orientation using the Gender-Related Measures Overview[76]. Socioeconomic status was measured using previously validated questions from Shope et al.[77] as used in prior studies[78]. We calculated, for analysis purposes, mean age and standard deviation; we collapsed race into White versus non-White; ethnicity into Hispanic versus non-Hispanic; sexual orientation into straight versus not straight; whether they lived with biological parent(s) or not; whether they had children of their own or not; and receiving public assistance as a positive answer to either “does [your parent/guardian] receive public assistance (welfare, food stamps, disability benefits, Medicaid, Medicare)” or “do you qualify for free or reduced lunches from school”.

2.4 Data Analysis

We performed statistical analyses with STATA 13[79]. We developed descriptive statistics to describe the distribution of the variables. We calculated odds ratios (OR) to obtain estimates of association between PTSD and independent variables. We conducted tests of bivariate association to identify appropriate covariates. We then performed multivariate logistic regression analysis to determine adjusted differences in associations between PTSD and independent variables. We retained independent variables in the final model based on theory, significance in bivariate analysis, and lack of collinearity (determined by goodness-of-fit and Pearson’s correlation coefficients, as appropriate)[80]. We assessed the goodness-of-fit of the final model using the Hosmer-Lemeshow test[80].

3. Results

Of 501 patients eligible for the study during recruitment hours, 70.3% (n=353) consented and completed the survey. The mean age of participants was 15.1 (SD 1.38), with slightly more than half female. Approximately half reported that they were White (53.8%), and one-third self-reported Hispanic ethnicity (33.7%). Approximately half (53.5%) reported that their family received public assistance. Participants’ chief complaints were 28% (n=98) injury, 68% (n=240) medical, and 4% (n=14) psychiatric [by definition, excluding acute suicidal ideation, psychosis, and intoxication]. Most study participants (80.5%) had a primary care provider. This demographic distribution mirrors that of all adolescents seen in this ED.

One-quarter of participants (n=82, 23.2%) had a CPSS score of 11 or higher, corresponding to the accepted cutoff for suggesting a PTSD diagnosis [mean CPSS 7.2, range 0–48, SD

8.7]. Other related mental health symptoms were also common among this sample. Almost 14% had a PHQ-9 score of 10 or above (corresponding to moderate or higher depression) [mean PHQ-9 4.5, range 0–27, SD 4.9], and 11.3% reported past-year suicidal ideation. Depressive symptoms were strongly correlated with PTSD, with a Pearson's r of 0.82. Approximately one-quarter reported any past-year alcohol or drug use. Only 23.2% had seen a mental health provider in an outpatient setting, and 7.4% reported a mental health-related hospitalization in the past year.

Almost half of the participants reported past-year physical peer violence, as either a perpetrator or victim (46.5%). Almost half reported engagement in cyberbullying as either a perpetrator or victim (46.7%), with 39% reporting cyberbullying victimization and 25% reporting cyberbullying perpetration. The correlations between cyberbullying experiences and physical violence were modest (Pearson's r=0.24). Almost two-thirds of the sample reported witnessing violence in their community (58.9%). See Table 1 for details.

On bivariate analysis, the only demographic variable that was significantly associated with self-reported PTSD symptomatology was receiving public assistance. Neither the reason for the index ED visit (e.g. injury, medical, or psychiatric) nor the number of past-year ED visits correlated with current PTSD. Depressive symptoms, suicidality, all forms of violence exposure, and all forms of alcohol and other drug use correlated strongly with PTSD. (See Table 2) PTSD was most common in adolescents who reported both cyberbullying victimization and peer violence (n=41, 50% of PTSD-positive sample); lower rates were observed in those reporting just cyberbullying victimization (n=9, 10% of PTSD-positive sample) or just peer violence (n=18, 22% of PTSD-positive sample). Participants reporting PTSD were significantly more likely to have received inpatient or outpatient mental health treatment in the past year, although rates of treatment were still low.

Given the theoretical overlap between depressive symptoms, suicidal ideation, and suicide attempts, as well as the observed collinearity of these symptom complexes with the dependent variable, we excluded depressive symptoms, suicidal ideation, and suicide attempt variables from the multivariate model. We excluded physical violence perpetration and cyberbullying perpetration from the model due to theoretical concerns as well as negative impact of these two variables on the model's goodness of fit; no major directional changes in the results were observed with or without these perpetration-related variables.

The final multivariate logistic regression model (Table 3) (Hosmer-Lemeshow goodness-of-fit = 0.96) found that physical peer victimization, cyberbullying victimization, exposure to violence in the community, and past-year alcohol and other drug use were all significantly correlated with higher likelihood of PTSD. Male gender correlated with slightly lower rates of PTSD.

4. Discussion

Nearly one-quarter of adolescents presenting to the ED for care for any reason report symptoms compatible with pre-existing PTSD, based on a validated screen cutoff score. The prevalence of PTSD among this ED sample is higher than among national community-based

samples (1–5%)[1,81]; among samples of only trauma-exposed youth (14–16%)[4,82]; or among samples of youth with a history of unintentional injury (4%–7%)[83,84]; and is nearly as high as has been reported in samples of adolescents recruited from psychiatric settings (25%)[85].

We found striking rates—nearly 1 in 2 adolescents—of past-year physical peer violence and past-year cyberbullying. Both physical violence and cyber-victimization were strongly associated with current PTSD in our sample. Recent school-based studies have reported U.S. cyberbullying rates of 15–16%[33,86,87] (ranging from 6–35% internationally)[88], and physical peer violence rates of approximately 25%[87], using similar measures. The high prevalence of both physical and cyber-violence in our ED population is concerning, particularly since they were so strongly associated with PTSD in this sample. Efforts to characterize the prevalence and effects of cyber-victimization have not kept pace with the rapid adoption and pace of technology use among adolescents. The present research supports the widespread and deleterious nature of cyberbullying in adolescents presenting to the ED and could be considered as part of future health care based violence prevention programs.

We found a high rate of PTSD among youth presenting to the ED for any chief complaint. The odds of current PTSD did not differ for adolescents with different categories of chief complaints. Evidence from prior research suggests that healthcare providers can and should assess risk of PTSD development in the acute post-injury period[44,84,89,90]. This study suggests, however, that provider sensitivity to pre-existing PTSD symptoms may be indicated for *all* adolescent ED patients. Recurrent trauma is likely to exacerbate prior symptoms[2]. The prevalence of new trauma increases during late adolescence (approximately ages 17–21) relative to other stages of the life course, such that the studied population is at future risk[91–93]. Moreover, adolescents' definition of a "traumatic" event may not relate to medical severity of an incident[94,95], particularly for adolescents with a history of physical peer violence[96]. High-risk adolescents may interpret the mere need for emergency medical treatment as "traumatic". Trauma-informed care may be helpful in reducing future traumatization of already-symptomatic youth in the ED[40,97].

We found that PTSD correlated strongly with both current depressive symptoms (50% of the PTSD-positive sample) and past-year suicidality (38% of the PTSD-positive sample). This co-morbidity is supported by other literature[98,99]. Yet, a critical finding of our investigation is that only 50% of the sample with PTSD reported receiving any form of past-year outpatient mental health care. Screening for symptoms of PTSD, depression, and suicidality in this high risk adolescent ED population may enhance linkages to treatment resources for children and families who are otherwise unconnected to the mental health system. It may, thereby, reduce the incidence of both chronic PTSD and other concurrent behavioral disorders[44,100]. Future work could address the best way to implement screening and indicated referrals in the ED setting[101,102].

Prior studies suggest that PTSD may act as a mediator between physical violence and depressive symptoms[10]. In this cross-sectional study, we are unable to assess the directional relationship between these three symptom complexes. However, given the high rates of physical violence, PTSD, and depressive symptoms in our population, the high correlation between PTSD and past-year physical peer violence on our regression analysis, and the

known bi-directional nature between physical peer violence and depression[26], our study suggests that assessments of mental health should be part of standard care for adolescent victims of peer physical assault; and vice versa. Further investigation is warranted as to the underlying psychological and physiological connections between violence, depressive symptoms, and PTSD.

Provocatively, our study also shows that the combination of cyberbullying victimization and physical peer violence is associated with increased odds of PTSD over either form of violence in isolation. Prior work establishes that both in-person bullying and physical violence are associated with adolescent PTSD symptoms[103–106]. Cyberbullying has been shown to have stronger associations with depressive symptoms and suicidal ideation than in-person bullying[107]. This study shows that cyberbullying – particularly cyberbullying victimization – correlates strongly with PTSD as well, particularly when *combined* with physical violence. Although the direction of the relationship is unclear, further research on this association is warranted. Future work should use more granular measures of cyberbullying victimization and perpetration, including frequency and type.

The high correlation between PTSD and past-year substance use corresponds with our other work[52]. Although most adolescents are resilient to childhood trauma, some develop difficult behavioral symptoms complexes[108]. Indeed, treatment research suggests that reduction of PTSD symptoms may precipitate improvements in substance use behaviors[109,110]. Moving forward, efforts to better identify PTSD in ED settings should include populations presenting with substance related concerns.

Prior work suggests an association between low socioeconomic status and PTSD symptoms.[96] In our study, this association disappeared when adjusting for violence exposure. Community and physical violence are more common in low socio-economic neighborhoods.[111] Disentanglement of this complex relationship is needed.

Limitations of this study include use of a self-report screening measure for posttraumatic stress symptomatology, not a diagnostic interview for PTSD. The incidence of PTSD may therefore be over- or under- reported. Additionally, it is possible that youth may be over-reporting PTSD symptoms and exposure to trauma in the context of the distress associated with an ED visit. However, prior studies have shown that meeting partial criteria for PTSD also correlates with long-term impairment, suicidality, and other comorbid disorders[112,113]. A second limitation is our cross-sectional study design. We are unable to conclude whether PTSD pre-date peer violence (both physical and cyber) or vice versa. Third, this study was conducted at a single, large, urban pediatric ED during a convenience sample of shifts. Despite our relatively high response rate for a clinical survey, our results may not be generalizable to other settings, and levels of physical violence and community violence may be higher than elsewhere. Despite the similarities between our population's demographics and that of the ED as a whole, it is possible that non-respondents differ in important ways from respondents. Finally, due to IRB concerns, we excluded adolescents presenting without a parent or guardian, or with suicidality or psychosis as a presenting complaint. This limitation would likely result in a bias toward the null in our study, as adolescents who do

not live with their biological parent and who have other mental health disorders are *more* likely to have PTSD[2].

5. Conclusion

In conclusion, among youth presenting to the ED for care for any reason, one quarter of adolescents report current symptoms compatible with a diagnosis of PTSD, half report past-year physical peer violence, and half report past-year cyberbullying. PTSD was strongly associated with depressive symptoms and suicidality, and correlated significantly with a variety of other risk exposures including cyberbullying victimization, physical peer violence, community violence exposure, and substance use. The minority of patients with PTSD reported receiving any mental health care in the past year. As PTSD is well known to impact adolescents' long-term quality of life, and is unlikely to improve without treatment, greater attention to this disorder and its co-occurring risk factors among ED patients is warranted.

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Table 1

Description of the Sample (n=353)

	n	%
DEMOGRAPHICS:		
Age	15.1 (mean)	1.38 (SD)
Female	193	54.7
Hispanic	119	33.7
White	190	53.8
Straight	313	88.7
Lives with biological parent(s)	321	90.9
Does not have children	330	93.4
Receives public assistance	189	53.5
MENTAL HEALTH SYMPTOMS:		
PTSD [CPSS ≥ 11] (past 2 wks)	82	23.2
Depressive symptoms [PHQ ≥ 10] (past 2 wks)	49	13.9
Suicidal ideation (past-year)	40	11.3
Suicide attempt (past-year)	11	3.1
PAST-YEAR VIOLENCE:		
Any experience with physical peer violence	164	46.5
Victim of physical peer violence	143	40.1
Perpetrator of physical peer violence	125	35.4
Any experience with cyberbullying	165	46.7
Victim of cyberbullying	137	38.9
Perpetrator of cyberbullying	89	25.3
Any exposure to community violence	208	58.9
Community violence score	2.2 (mean)	2.96 (SD)
PAST-YEAR ALCOHOL AND DRUG USE:		
Any alcohol use	76	21.5
Non-medical use of prescription drugs	15	4.3
Other illegal drug use	66	18.7
Any alcohol or other drugs use	100	28.4
PAST-YEAR MEDICAL CARE:		
Reason for index ED visit		
Injury	98	27.8
Medical	240	68.2
Psychiatric	14	4.0
Number of ED visits (range: 02013;30)	2.07 (mean)	2.13 (SD)
Has a regular source of care	284	80.5
PAST-YEAR USAGE OF MENTAL HEALTH SERVICES:		
Outpatient mental health care	82	23.2

	n	%
Inpatient mental health care	26	7.4

Table 2

Unadjusted Bivariate Analysis (n=353)

	PTSD Positive (CPSS ≥ 11) 82 (23.2%)	PTSD Negative (CPSS ≤ 10) 271 (76.8%)	OR (95% CI)
DEMOGRAPHICS:			
Age (mean, SD)	15 (SD 1.36)	15.3 (SD 1.43)	1.16 (0.97–1.40)
Female	50 (61.0%)	143 (52.8%)	0.71 (0.43–1.19)
Hispanic	35 (42.7%)	84 (31.0%)	1.0 (0.98–1.0)
White	35 (42.7%)	155 (57.2%)	1.0 (0.99–1.0)
Straight	64 (78.0%)	249 (91.9%)	0.99 (0.97–1.0)
Lives with biological parent(s)	72 (87.8%)	248 (91.5%)	0.62 (0.26–1.49)
Does not have children	74 (90.2%)	256 (94.5%)	1.84 (0.75–4.5)
Receives public assistance	53 (64.6%)	136 (50.2%)	**2.0 (1.2–3.5)**
MENTAL HEALTH ISSUES:			
Depressive symptoms [PHQ ≥ 10] (past 2 wks)	43 (52.4%)	6 (2.2%)	**48.7 (19.4–121.9)**
Suicidal ideation (past-year)	31 (37.8%)	9 (3.3%)	**17.7 (7.9–39.4)**
Suicide attempt (past-year)	10 (12.4%)	2 (0.8%)	**18.8 (4.0–87.8)**
PAST-YEAR VIOLENCE HISTORY:			
Any experience with physical violence	59 (71.9%)	105 (38.7%)	**4.1 (2.4–6.9)**
Victim of peer physical violence	51 (62.2%)	92 (34.0%)	**3.2 (1.9–5.3)**
Perpetrator of peer physical violence	47 (57.3%)	78 (28.8%)	**3.3 (2.0–5.5)**
Any experience with cyberbullying	55 (67.1%)	110 (40.6%)	**3.0 (1.8–5.0)**
Victim of cyberbullying	50 (60.9%)	87 (32.1%)	**3.3 (2.0–5.5)**
Perpetrator of cyberbullying	31 (37.8%)	58 (21.4%)	**2.2 (1.3–3.8)**
Any exposure to community violence	66 (80.5%)	142 (52.4%)	**3.7 (2.1–6.8)**
PAST YEAR RISKY BEHAVIORS:			
Alcohol use	35 (42.7%)	41 (15.1%)	**4.2 (2.4–7.2)**
Non-medical use of prescription drugs	7 (8.5%)	8 (2.9%)	**3.0 (1.1–8.6)**
Other illegal drug use	29 (35.4%)	37 (13.7%)	**3.4 (1.9–6.1)**
Any AOD	43 (52.4%)	57 (21.0%)	**4.1 (2.4–6.9)**
PAST YEAR MEDICAL CARE:			
Reason for index ED visit			
Injury	19 (23.5%)	79 (29.2%)	1.58 (0.96–2.6)
Medical	56 (68.2%)	185 (68.3%)	0.96 (0.57–1.63)
Psychiatric	7 (8.6%)	7 (2.6%)	0.89 (0.47–1.7)
Number of ED visits	2.6 (SD 3.5)	1.9 (SD 1.42)	2.78 (0.63–12.3)
Has a regular source of care	220 (82.7%)	64 (81.0%)	0.89 (0.47–1.7)
PAST-YEAR USE OF MENTAL HEALTH SERVICES:			
Outpatient mental health care	41 (51.3%)	57 (21.7%)	**4.0 (2.3–6.8)**

	PTSD Positive (CPSS ≥ 11) 82 (23.2%)	**PTSD Negative (CPSS ≤ 10) 271 (76.8%)**	**OR (95% CI)**
Inpatient mental health care	13 (15.9%)	13 (4.8%)	**3.8 (1.7–8.5)**

BOLD=significant

Table 3

Correlates of PTSD: Multivariate logistic regression (n=327)

	Adjusted OR (95% CI)
Age	1.1 (0.88–1.4)
Receives public assistance	1.3 (0.72–2.5)
Male gender	**0.57 (0.33–0.96)**
Peer physical victimization	**2.4 (1.3–4.5)**
Cyberbullying victimization	**2.0 (1.1–3.6)**
Exposure to community violence	**2.7 (1.3–5.3)**
Alcohol or other drug use	**2.6 (1.4–4.9)**

BOLD=significant
Hosmer-Lemeshow goodness of fit: p=0.96