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ORIGINAL ARTICLE

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Characteristics of recent violence among entrants to acute mental health and substance abuse services

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Abstract *Objective* The aim of this study was to describe the characteristics of recent interpersonal violence perpetrated and experienced by individuals recruited from acute crisis mental health and substance abuse treatment settings and to examine differences among incidents involving individuals with mental disorders only (MDO), substance use disorders only (SDO), and co-occurring mental and substance use disorders (COD). *Method* Participants ($N = 419$) were interviewed about their involvement in specific acts of violence in the past 30 days. Participants were also asked about where each incident took place, who was involved, whether individuals were injured, and whether alcohol or drugs were used before the incident. We examined distributions of violence characteristics for the full sample and used logistic regression analyses to test differences among incidents involving participants with MDO, SDO, and COD. *Results* Approximately 41% ($n = 171$) of the sample was involved in at least one incident of violence as a perpetrator or a victim, generating a total of 379 incidents. Far more incidents of violence involved victimization (62%) than perpetration (38%). Most incidents were isolated and involved only perpetration or only victimization. However, a total of 98 (26%) incidents occurred with another incident and constituted 49 episodes of violence that included incidents of perpetration and victimization. Characteristics of perpetration and victimization incidents were similar, except that victimization incidents involved more serious types of violence. The majority of incidents took place outdoors and did not result in injuries. Participants used drugs or alcohol prior to over 40% of incidents. Most incidents of perpetration (70%) targeted someone known to the participant. Diagnostic group was the strongest predictor of type of injury, location of incident, and use of alcohol and drugs before the incident. Individuals with substance use disorders, either alone or co-occurring with mental disorders, were more likely to report that violent incidents took place outdoors. Individuals with mental disorders, either alone or co-occurring with substance use disorders, were less likely to report alcohol and drug use prior to involvement in violence. *Conclusions* Violence is common among individuals entering acute crisis mental health and substance abuse treatment. We found that such persons are more likely to report being victims of violence than perpetrators of violence. In contrast to prior studies, we found that most incidents took place outdoors. Although individuals in different diagnostic groups were no more or less likely to perpetrate or experience violence, they perpetrated and experienced violence under different circumstances. Implications and directions for future research and practice are discussed.

Key words violence – mental disorder – substance use disorder – comorbidity

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Introduction

Most research indicates that individuals with mental disorders are not violent and are not the primary contributors to police-identified criminal violence [46]. However, findings from large-scale, cohort and epidemiologic studies suggest that mental disorder increases risk for the perpetration of violence [1, 47, 48] and individuals with mental disorders are victimized at much higher rates than those without mental disorders [4, 13, 15, 20, 25, 56]. Additionally, the link between

substance use (alcohol use in particular) and violence has been well established (see [3] for a review), despite continued debate regarding the exact casual mechanisms. Further, there is mounting evidence to suggest that co-occurring substance use increases risk of perpetration and victimization among individuals with mental disorders [2, 4, 15, 20, 25, 49–51, 53, 54].

Studies that examine patterns in the specific types, targets, locations, and immediate precursors of violence are important because they provide information about the *immediate context*[1] in which violence occurs. As a whole, most researchers have found that violence, defined generally as attacks against another person, perpetrated by individuals with mental disorders typically involves striking or kicking [31, 32], usually involves no injury or minimal injury [32, 55], frequently targets family members or someone known to the respondent [19, 31, 32, 50, 55], occurs within the home or a residence [19, 31, 32, 50, 55], and involves the use of substances roughly a quarter to one half of the time [19, 31, 32, 55].

A comparatively smaller literature has examined these questions with respect to victimization. Researchers have found that individuals with mental disorders are typically victimized by someone they know [27], often at the hands of a partner or family member [5]. However, less is known about other contextual factors except that women are more likely to report being victimized at home while men are more likely to report being victimized in a public place, such as on the street or in a park [27]. And although studies have examined the prevalence and predictors of perpetration and victimization using the same sample in separate publications [15, 21, 52], we could locate no other published reports that have concurrently examined and compared the context of perpetration and victimization. This sort is of study is important to understanding the context in which violence occurs and the type of violence that may occur under particular circumstances.

Further, the literature is also lacking studies that compare different diagnostic groups, such as mental versus substance use disorders and single versus co-occurring mental and substance use disorders, and whether diagnostic group influences the circumstances under which violence is perpetrated or experienced. Such studies are important because they may reveal whether contextual risk for violence, either perpetration or victimization, is the same for all individuals with psychiatric disorders or varies among key diagnostic groups, particularly those individuals with mental and co-occurring substance use disorders who may appear in predominantly mental health or substance abuse settings. This is an unfortunate gap in the literature due to the high prevalence of co-occurring disorders in the community [23, 24, 38, 41] and among those in mental health and substance abuse treatment settings [17].

This study is part of a larger investigation of the outcomes of individuals with single (either mental disorders or substance use disorders) and co-occurring mental and substance use disorders entering either mental health or substance abuse treatment (see [17] for additional information). The primary aim of the current study was to describe the context of violence and perpetration, that is the type of violent act, nature of injury involved, primary target, location and the use of alcohol and drugs prior to the incident of violence perpetrated and experienced by individuals 30 days prior to entry into acute crisis mental health and substance abuse treatment settings. The secondary aim was to examine differences among incidents of violence reported by individuals with mental disorders only (MDO), substance use disorders only (SDO), and co-occurring mental and substance use disorders (COD).

The unit of analysis in this study is the *incidents* described by study participants. In a separate paper [18], we explore specific demographic and diagnostic predictors of involvement in perpetration and victimization with the participant as the unit of analysis. And although we examine the characteristics victimization and perpetration incidents separately, we recognize that, within the same episode of violence, an individual may experience perpetration and victimization (i.e., violence may result in self-defense or victimization as a consequence of an attack and both perpetration and victimization may occur within disputes) [9, 44]. As such, we report the prevalence of isolated perpetration and victimization incidents as well as the prevalence of episodes of violence that contained perpetration and victimization incidents.

Methods

Participants and sites

Participants were recruited from four short-term residential treatment settings in the mental health system and from three short-term residential treatment settings in the substance abuse treatment system in San Francisco from 1999 to 2001. The mental health treatment settings were residential units for seriously mentally ill patients diverted from psychiatric hospitalization. The substance abuse treatment settings were public residential detoxification programs. The seven sites were selected purposefully in order to facilitate comparisons across mental health or substance abuse settings. Each was a publicly funded, non-medical facility that provided short-term care (typically 2–4 weeks) to stabilize clients and prepare them for longer-term treatments. Participants were considered eligible if they were English- or Spanish-speaking adults between 18 and 50 years of age and not HIV positive.[2]

[1] In this paper, we use the term context to refer to the immediate context in which violence occurs. We do not address the broader social context in which violence may occur and refer the reader to an article by Draine et al. [8] for discussion of this topic.

[2] A central focus of the parent study was the comparison of the relative drug and mental health service use patterns of individuals with co-occurring disorders; minors, older adults, and those with HIV were not enrolled in the study because they had access to specialized treatment networks and services.

Procedures

Senior research interviewers rotated among the seven settings on a schedule that varied weekly, ensuring that recruitment took place on all days of the week (except Sundays) at each setting. On recruitment days, attempts were made to enlist all patients who began their stay within the prior 24 h. Patients whose symptoms were too acute to allow informed consent (usually because of intoxication or withdrawal effects) were approached approximately 48–72 h later. After a complete description of the study to the participants, written informed consent was obtained. Participants received $35 for completing the interview. All procedures involving human subjects were approved by the Institutional Review Board of the University of California, San Francisco.

Instrumentation and measures

The data collection instruments administered relevant to this work were contained in a study intake assessment battery. In addition to demographic information (gender, race/ethnicity, age, and homelessness at any point during the 30 days prior to admission), we collected detailed information on recent violence and assessed a variety of psychiatric and substance use disorders.

Characteristics of recent violence

Data on recent violence were collected using a modified version of the MacArthur Community Violence Inventory (MCVI) [31]. Participants were asked whether, within the 30 days prior to treatment entry, they had experienced as a victim or perpetrated a range of acts on a continuum anchored on one end by the acts considered to be the least serious (e.g., throwing something at someone) and on the other end by the acts considered to be most serious (e.g., use of a knife or gun). Although a number of studies using the MCVI have used a recall period of 10 weeks [31, 40, 45], we shortened this time frame to capture recent violence, which may have a more immediate impact on treatment needs in acute crisis settings.

Participants who endorsed experiencing or perpetrating any of the acts listed were asked to provide details about the incident in which these acts occurred.[3] Specifically, participants were asked about the nature of any injury incurred or inflicted, the primary victim of the incident, the location of the incident, whether they were drinking just before the incident occurred, and whether they were using street drugs just before the incident occurred. Incidents were classified as "perpetration" if they involved the participant doing something to someone else and "victimization" if they involved someone doing something to the respondent. All incidents contained an identifier to track whether the incident described was isolated or occurred contemporaneously and in conjunction with another incident and constituted an episode of violence.

We determined whether incidents involved no injury, minor injury (e.g., bruises or cuts), or serious injury (e.g., unconscious, internal injuries, broken bones or teeth, stabbings or gunshots, or death). Each incident, regardless of the nature of the act, could involve any of these levels of injury (e.g., an incident involving sexual assault could involve any level of injury as described by the participant). With respect to target, we examined whether the victim of the perpetration was a family member or intimate partner (e.g., spouse, cohabitant, boyfriend or girlfriend), someone else known to the respondent, or a stranger. With respect to location, we examined whether the incident took place within a residence (e.g., the respondent's or someone else's home), outdoors, or in some other indoor location (e.g., store, bank, restaurant, bar, other commercial establishment, work, school, treatment setting). Our substance use measures focused on alcohol, opiate (e.g., heroin and methadone), and stimulant (e.g., cocaine, crack and amphetamines) use prior to the incident described.

Studies using the MCVI that have examined the characteristics of perpetration incidents have typically separated incidents into those deemed violent and those deemed aggressive [31, 40, 45]. According to the definition used in these studies, incidents are considered violent only if they involve more serious acts of perpetration or victimization (e.g., incidents involving forced sex or threatened or actual use of a weapon) or involve injury despite the nature of the act. All other incidents involving physical attacks are considered aggressive. We used these criteria to assess the prevalence of incidents that would be considered violent so that we could compare our findings to other studies using the MCVI. However, when examining the characteristics of perpetration and victimization, and differences among incidents involving individuals in different diagnostic groups, we considered all physical attacks to constitute violence regardless of the nature of the act or level of injury incurred which is consistent with standard definitions of violent crime used in reports by the Bureau of Justice Statistics [36]. Preliminary analyses (available from the authors) revealed no differences in the characteristics of incidents deemed violent or aggressive using the MCVI criteria. Further, limiting our sample to only certain incidents of a certain nature would have decreased the stability of our estimates.

Mental and substance use disorders

Current (12 month) mental and substance use disorders were identified with the Diagnostic Interview Schedule for DSM-IV (DIS-IV) [39]. We assessed major depressive, bipolar, anxiety (including PTSD), and schizophrenic disorders and assessed substance use disorders for the most commonly used substances (alcohol, amphetamines, cocaine, opiates, and marijuana). In order to assess differences among incidents involving individuals with mental, substance, and co-occurring mental and substance use disorders, we grouped participants into one of three mutually exclusive diagnostic groups: those with mental disorders only (MDO), those with substance use disorders only (SDO), and those co-occurring mental and substance use disorders (COD).

Data analyses

We used descriptive statistics to examine sample characteristics, the prevalence of violence, and incident characteristics (e.g., type of act, primary victim, location, and prior alcohol or drug use). We used Chi-square analyses to examine differences between characteristics of incidents involving perpetration and victimization. When testing for differences among individuals with varying diagnostic profiles, we used logistic regression rather than difference in proportion tests in order to adjust standard errors for the possibility that the same individual could be involved in multiple incidents (i.e., standard errors were adjusted for clustering on individual participants). We compared incidents involving individuals with single disorders to one another (MDO vs. SDO) as well as incidents involving individuals with co-occurring disorders and incidents involving individuals with single disorders (COD vs. MDO and CDO vs. SDO). In order to isolate the effects of diagnostic group, we controlled for demographic differences among the diagnostic groups.

Results

Sample characteristics

A total of 1,484 clients were approached for participation. Of these, 537 (36%) were ineligible and 377 (25%) refused to participate. There were 151 participants

[3] If an incident contained multiple acts of victimization or multiple acts of perpetration, the incident was characterized as involving the most serious type of perpetration or victimization (e.g., an incident involving hitting someone and stabbing someone would be considered an incident involving stabbing).

Table 1 Participant characteristics ($N = 419$)

	Full Sample ($N = 419$)		MDO ($N = 70$)		SDO ($N = 124$)		COD ($N = 225$)	
	n	%	*n*	%	*n*	%	*n*	%
Gender[a]								
Female	154	36.8	25	35.7	35	28.2	94	41.8
Male	256	63.3	45	64.3	89	71.8	131	58.2
Race/ethnicity[c]								
Non-hispanic white	178	42.5	32	45.7	41	33.1	105	46.7
African American	144	34.4	8	11.4	62	50.0	74	32.9
Other	97	23.2	30	42.9	21	16.9	46	20.4
Age: mean (STD)[b]	36.3 (7.6)		34.9 (8.9)		38.0 (6.4)		35.9 (7.6)	
Homelessness in the past 30 days[c]	182	43.4	13	18.6	70	56.5	99	44.0
Experienced any violence (perpetration or victimization)	171	40.8	25	35.7	48	38.7	98	43.6
Perpetration								
Any perpetration	87	20.8	9	12.9	28	22.6	50	22.2
Only perpetration	27	6.4	4	5.7	9	7.3	14	6.2
Victimization								
Any victimization	144	34.4	21	30.0	39	31.5	84	37.3
Only victimization	84	20.1	16	22.9	20	16.1	48	21.3
Experienced perpetration and victimization	60	14.3	5	7.1	19	15.3	36	16.0

Notes: In the "Other" race/ethnicity category were 45 Latinos, 15 Asian/Pacific Islanders, 15 Native Americans, 15 of mixed racial/ethnic groups, and 7 who did not fit into any of these categories. Difference in proportion tests (Pearson Chi-square) and difference in mean tests (ANOVA)
[a]$P < 0.05$, [b]$P < 0.01$, [c]$P < 0.001$

who agreed to participate in the study but were not included in these analyses because they were experiencing cognitive disturbance or acute symptoms of withdrawal, were unable to participate in a follow-up interview, or failed to provided sufficient information to obtain a valid psychiatric diagnosis or information regarding their experience of violence in the 30 days prior to treatment entry. Of the final count of 419 participants, 58% were from substance abuse settings and 42% from mental health settings. Table 1 lists key demographic characteristics for the entire sample and for sub-groups based on diagnostic profile. Across diagnostic groups, participants varied significantly by gender, race/ethnicity, age, and homelessness status.

Prevalence of violence

Table 1 also lists the prevalence of violence within the full sample and by diagnostic groups. A total of 41% ($n = 171$) of the sample experienced some sort of violence (as a perpetrator or a victim) in the 30 days prior to treatment entry. Approximately 21% perpetrated some sort of violence, and 34% experienced some sort of victimization. Only a small percent (6.4%) of the sample reported *only* perpetrating (but not being a victim of) violence in the past 30 days. More (20.1%) reported *only* experiencing victimization in the past 30 days. Thirty-five percent of individuals who reported experiencing violence ($n = 171$) experienced both perpetration and victimization ($n = 60$). There were no differences in the prevalence of perpetration or victimization across the three diagnostic groups (MDO, SDO, and COD).

Characteristics of violent incidents

The 171 subjects who experienced violence in the past 30 days described 379 incidents in which these experiences occurred (see Fig. 1). A total of 145 (38%) of these incidents involved perpetration, and 234 (62%) of these incidents involved victimization. Most incidents were isolated and involved only perpetration or only victimization. However, a total of 98 (26%) incidents occurred with another incident and constituted 49 episodes of violence that included incidents of perpetration and victimization.

Perpetration

Table 2 lists characteristics of incidents involving perpetration. Most perpetration incidents involved less serious acts (throwing an object at someone or

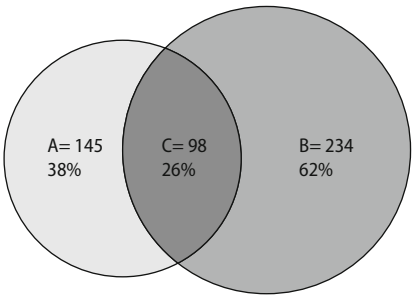

Fig. 1 Incidents of perpetration and victimization ($N = 379$). Notes: *Circle A* represents incidents involving perpetration, and *circle B* represents incidents involving victimization. Most incidents involved just perpetration or just victimization, but 98 incidents involved perpetration and victimization within the same episode of violence

Table 2 Characteristics of perpetration incidents ($N = 145$) and victimization Incidents ($N = 234$)

	Perpetration incidents		Victimization incidents	
	%	*n*	%	*n*
Type of act[a]				
Throwing something/pushing, grabbing, shoving slapping	42.8	(62)	31.6	(74)
Kicking, biting, choking, beating-up	33.8	(49)	32.1	(75)
Forced sex or threats/use of a weapon	23.5	(34)	36.3	(85)
Nature of injury				
No injury	62.3	(86)	61.0	(139)
Bruises, cuts	26.0	(36)	32.5	(74)
Unconscious, internal injuries, broken bones, death	11.6	(16)	6.6	(15)
MCVI description				
Violent	53.6	(74)	62.5	(143)
Aggressive	46.4	(64)	37.6	(86)
Primary target of perpetration				
Family member, intimate (partner, spouse, significant other)	26.9	(36)	Not applicable	
Other known to respondent	43.3	(58)		
Stranger	29.9	(40)		
Location				
Residence (respondent's or other home)	28.7	(41)	29.7	(68)
Outdoors	58.0	(83)	57.2	(131)
Other location	13.3	(19)	13.1	(30)
Alcohol used beforehand	45.5	(65)	45.4	(104)
Drug used beforehand				
No drug use	59.6	(84)	57.4	(128)
Opiates	14.9	(21)	10.8	(24)
Stimulants	25.5	(36)	31.8	(71)

Notes: The total number of incidents for particular characteristics varies due to missing data. Difference in proportion tests (Pearson Chi-square)
[a]$P < 0.05$

less serious forms of physical assault). Approximately 24% involved forced sex or involved threatened or actual use of a weapon. The majority of the incidents resulted in no injury to the victim. However, based on definitions from the MacArthur Community Violence Study [31, 45], most of the incidents would be considered violent because they involved either more serious acts or because some sort of injury occurred despite the nature of the act.

The primary target of the perpetration was most often someone known to the participant, with approximately a quarter involving an intimate (partner, spouse, boyfriend or girlfriend). The majority of incidents took place outdoors with 29% taking place within a residence (the participant's home or someone else's home). Alcohol and drugs were used prior to nearly half of all incidents of perpetration; stimulants were used prior to 40% of these incidents.

Victimization

Table 2 also lists characteristics of victimization. As with incidents of perpetration, most incidents involved less serious acts, but 36% of the incidents involved forced sex or involved someone using or threatening to use a weapon. The majority of incidents involved no injury, however approximately 63% of the incidents would be considered violent because they involved these more serious acts or involved injury. Most incidents of victimization took place outdoors. Approximately 45% of the incidents involved alcohol use, and 43% of the incidents involved opiate or stimulant use prior to victimization.

Incidents of perpetration and victimization were similar with respect to location, level of injury and prior use of alcohol and substances. The only significant difference that emerged between characteristics of perpetration and victimization incidents pertained to the type act of involved. In general, victimization incidents involved more serious acts such as forced sex or involved someone using or threatening to use a weapon.

Characteristics of perpetration and victimization incidents by diagnostic group

Perpetration

Table 3 lists characteristics of the perpetration incidents by diagnostic group. The first column in this table lists the odds of certain characteristics being present for incidents involving individuals with MDO vs. individuals with SDO when controlling for significant demographic differences among the groups (i.e., age, race, gender, and homelessness). As this table shows, there were no statistically significant differences in the types of perpetration, nature of injury inflicted, primary target of perpetration or

Table 3 Logistic regression analyses predicting characteristics of perpetration incidents by diagnostic group

	MDO vs. SDO		COD vs. MDO		COD vs. SDO	
	OR	CI	OR	CI	OR	CI
Types of perpetration						
Threw something at anyone/pushed, grabbed, shoved, slapped	0.21	[0.04–1.12]	1.92	[0.47–7.78]	0.61	[0.24–1.56]
Kicked, bit, choked, beat-up anyone	5.02	[0.77–32.67]	0.29	[0.06–1.43]	1.04	[0.39–2.80]
Forced anyone to have sex or threaten/used a weapon	1.61	[0.15–17.66]	2.36	[0.36–15.30]	1.94	[0.55–6.87]
Nature of injury inflicted						
No injury	0.44	[0.07–3.01]	20.78	[1.75–246.76][a]	2.23	[0.69–7.20]
Bruises, cuts	2.52	[0.32–20.04]	0.02	[0.00–0.64][a]	0.19	[0.05–0.67][a]
Unconscious, internal injuries, broken bones, death	0.93	[0.15–5.97]	1.18	[0.15–9.30]	3.26	[0.52–20.56]
Violent perpetration	4.09	[0.51–32.75]	0.16	[0.03–0.90][a]	0.64	[0.23–1.77]
Primary target of perpetration						
Family member, intimate (partner, spouse, significant other)	0.35	[0.06–2.06]	1.61	[0.26–9.88]	1.23	[0.23–6.63]
Other known to respondent	1.96	[0.12–31.48]	0.67	[0.09–5.07]	0.89	[0.28–2.80]
Stranger	0.87	[0.89–8.50]	1.23	[0.23–6.61]	1.02	[0.34–3.09]
Location of perpetration						
Residence (respondent's or other home)	35.70	[0.29–4322.56]	0.09	[0.01–0.71][a]	2.64	[0.75–9.25]
Outdoors	0.15	[0.01–1.72]	2.66	[0.43–16.57]	0.29	[0.90–0.89][a]
Alcohol used before perpetration	No reported alcohol or drug use before perpetration in the MDO group				0.12	[0.03–0.42][b]
Drug used before perpetration						
No drug use					2.67	[0.91–7.83]
Opiates					0.53	[0.15–1.90]
Stimulants					0.49	[0.14–1.76]

Notes: The total number of incidents for particular characteristics varies due to missing data. Odds ratios reflect the likelihood that a particular characteristic was present in the incidents for one group and not the other in the subgroup of incidents being compared. These analyses controlled for age, race, gender and homelessness and were adjusted to reflect the possibility that multiple incidents could be perpetrated by a single individual (i.e., standard errors were adjusted for clustering on individual participants)
[a]$P < 0.05$, [b]$P < 0.01$

location of perpetration between incidents perpetrated by MDOs and incidents perpetrated by SDOs. However, none of the MDOs reported using alcohol or drugs prior to perpetration. Although alcohol and drug use was common among MDOs (46% had used alcohol or drugs in the past 30 days), substance use was not reported as occurring prior to involvement in violence.

The next two columns in this table display the odds of certain characteristics being present among incidents involving individuals with COD vs individuals with single disorders (either MDO or SDO) after controlling for demographic differences. No differences emerged with respect to type of perpetration in incidents involving CODs compared to incidents involving MDOs or SDOs. With respect to injury, incidents involving CODs were more likely to involve no injury (OR = 20.78, $P = 0.016$) and less likely to involve minor injuries (bruises and cuts, OR = 0.02, $P = 0.028$) if injuries occurred compared to MDOs. A similar trend appeared for COD compared to SDOs. Incidents involving CODs were less likely to involve minor injuries (bruises and cuts, OR = 0.19, $P = 0.010$) if injuries occurred. Although no differences appeared with respect to primary target of perpetration, differences did emerge with respect to location of the perpetration. Compared to MDOs, incidents involving CODs were significantly less likely to take place in a residence (OR = 0.09, $P = 0.022$). Compared to SDOs, incidents involving CODs were significantly less likely to take place outdoors (OR = 0.29, $P = 0.031$). Because none of the MDOs reported use of alcohol or drugs prior to involvement in perpetration, no comparisons between incidents involving CODs and MDOs can be made. However, compared to SDOs, incidents involving CODs were significantly less likely to involve the use of alcohol prior to perpetration (OR = 0.12, $P = 0.001$).

Victimization

Table 4 lists characteristics of the victimization incidents by diagnostic group. The first column in this table lists the odds of certain characteristics being present for incidents involving individuals with MDO vs. individuals with SDO when controlling for demographic differences among the groups. Differences emerged pertaining to location and substance use prior to victimization. Incidents involving individuals with MDO were more likely to take place in a residence (OR = 5.63, $P = 0.044$) and less likely to take place outdoors (OR = 0.13, $P = 0.044$). As with perpetration incidents, none of the MDOs reported using alcohol or drugs prior to victimization. The only difference that emerged between incidents involving CODs and those with single disorders pertained to drug use. Incidents involving CODs were significantly more likely not to involve drug use (OR = 3.65, $P = 0.007$).

Table 4 Logistic regression analyses predicting characteristics of victimization incidents by diagnostic group

	MDO vs. SDO		COD vs. MDO		COD vs. SDO	
	OR	CI	OR	CI	OR	CI
Types of victimization						
Threw something at you/pushed, grabbed, shoved, slapped you	1.35	[0.35– 5.23]	1.42	[0.44– 4.62]	1.18	[0.54– 2.58]
Kicked, bit, choked, beat-up you	0.90	[0.24– 3.42]	0.59	[0.21– 1.69]	0.85	[0.37– 1.97]
Forced you to have sex or threaten/used a weapon	0.75	[0.18– 3.07]	1.37	[0.46– 4.08]	1.03	[0.51– 2.08]
Nature of injury incurred						
No injury	1.03	[0.26– 4.18]	1.93	[0.70– 5.34]	1.29	[0.53– 3.16]
Bruises, cuts	0.86	[0.16– 4.52]	0.60	[0.20– 1.87]	0.75	[0.29– 1.94]
Unconscious, internal injuries, broken bones, death	1.15	[0.21– 6.21]	0.60	[0.13– 2.73]	1.10	[0.30– 4.02]
Violent victimization	1.22	[0.32– 4.67]	0.62	[0.20– 1.90]	0.86	[0.40– 1.85]
Location of victimization						
Residence (respondent's or other home)	5.63	[1.05–30.20][a]	0.38	[0.11– 1.26]	1.72	[0.77– 3.85]
Outdoors	0.13	[0.02– 0.67][a]	2.09	[0.64– 6.79]	0.58	[0.27– 1.25]
Alcohol used before victimization	No reported alcohol or drug use before victimization in the MDO group				0.71	[0.28– 1.78]
Drug used before victimization						
No drug use					3.65	[1.43– 9.37][b]
Opiates					0.45	[0.13– 1.56]
Stimulants					0.43	[0.17– 1.08]

Notes: The total number of incidents for particular characteristics varies due to missing data. Odds ratios reflect the likelihood that a particular characteristic was present in the incidents for one group and not the other in the subgroup of incidents being compared. These analyses controlled for age, race, gender and homelessness and were adjusted to reflect the possibility that multiple incidents could be perpetrated by a single individual (i.e., standard errors were adjusted for clustering on individual participants)

[a] $P > 0.05$, [b] $P > 0.01$

In sum, diagnostic group was the strongest predictor of type of injury, location of incident, and use of alcohol and drugs before the incident. Individuals with substance use disorders, either alone or co-occurring with mental disorders, were more likely to report that violent incidents took place outdoors. Individuals with mental disorders, either alone or co-occurring with substance use disorders were less likely to report alcohol and drug use prior to involvement in violence.

Discussion

Recent estimates have placed the cost of crime to victims in the US at around $450 billion annually [30]. Attempts to incorporate other social costs into the equation (e.g., society's response to crime and offender-related costs) suggest that the annual cost of crime to society is even larger—perhaps as large as $1 trillion or more [7]. Clinicians providing mental health and substance abuse treatment can help curb the social and economic costs of violence by reducing the likelihood that individuals seeking treatment will perpetrate or experience violence and by helping individuals lead productive lives when violence has already occurred.

However, in order to accurately assess the potential for violence or the sequalae of it, one must also have a sense of the circumstances under which it occurs. This sort of information frames judgment about what can be anticipated or avoided and yields valuable clues about how it may be addressed. Our study is unique in that we examined characteristics of perpetration *and* victimization among individuals in different diagnostic groups. Below we highlight key findings with respect to characteristics of incidents involving perpetration and victimization among our sample and discuss why these characteristics may vary depending on diagnostic profile. We also explore potential limitations and implications for future research and practice.

Characteristics of perpetration and victimization

Violence is a prominent feature in the lives of individuals entering acute mental health and substance abuse services. Two fifths of our sample reported 379 incidents of violence involving perpetration or victimization during the month prior to admission. Participants reported being victimized by violence twice as often as they reported perpetrating violence; however, the majority of incidents involved no injury. Most incidents were isolated acts of perpetration or victimization, but 26% occurred in conjunction with another incident involving both perpetration and victimization.

For the most part, characteristics of incidents involving perpetration and victimization were quite similar. However, we found that incidents of victimization involved more serious sorts of physical attacks than incidents of perpetration. Despite a growing body of literature outlining the prevalence of victimization among individuals with mental illness, the literature examining predictors of victimization and the context of victimization among this population is

relatively sparse. Our findings highlight the need to investigate victimization among this population as rigorously as studies of perpetration have been pursued.

In contrast to prior research examining context of perpetration, we found that over half of the incidents of violence, regardless of type (victimization or perpetration), took place outdoors rather than within a home or residence. The divergence of our findings from the extant literature may be related to the fact that 43% reported being homeless at some point in the past 30 days. A number of studies have found that homelessness is related to both perpetration and victimization [33], particularly with respect to victimization among individuals with mental disorders [13, 15, 20, 25, 34].

We also found much higher rates of substance use prior to involvement in a violent incident than has been found in prior studies. Alcohol was involved in 45% of the incidents of perpetration and victimization and underscores a large body of work investigating the effects of alcohol and its propensity to increase the likelihood of violence [3, 22, 35]. A substantial portion of our participants also reported drug use—in particular stimulant use—prior to incidents of perpetration and victimization. There is growing recognition in the substance abuse literature that, like alcohol, stimulants may also increase risks for violence [3, 6, 10, 28, 29, 43].

Differences among individuals with varying diagnoses

Given the high prevalence of co-occurring disorders and findings to suggest that co-occurring substance use increases the risk of violence among individuals with mental disorders, we were particularly interested in whether characteristics of perpetration and victimization incidents varied for individuals with mental and substance use disorders and how characteristics varied for individuals with co-occurring disorders compared to those with single disorders. Although we did not find that the prevalence of either perpetration or victimization varied among diagnostic groups, we did find interesting differences with respect to the context in which such incidents occurred.

MDO vs. SDO

In general, very few differences emerged with respect to incidents involving MDOs vs. SDOs. However, our study may have lacked sufficient power to detect differences due to the relatively small number of MDOs who were involved in violence. The singular difference that emerged with respect to perpetration pertained to alcohol and substance use. While substance use is common among MDOs in our sample, we found that none of the perpetration (nor the victimization, for that matter) incidents involving MDOs entailed the use of alcohol or drugs prior to the incident. Although a number of studies have found that substance use increases the risk of perpetration and victimization among individuals with mental illness, our findings suggest that violence may be a consequence of alcohol and drug use only for those who meet criteria for substance use disorders.

The only other difference that we found pertained to location of victimization. Incidents involving MDOs were more likely to take place within a home or residence and less likely to take place outdoors, even after controlling for recent homelessness. Within the substance use and violence literature, there is growing recognition of the importance of environmental and situational context for understanding violence and the ways in which alcohol and drugs are related to violence [11, 12, 16, 26, 37]. For example, it is possible that SDOs are simply more likely to be victimized outdoors because of how and where they obtain their drugs. Alternately, research has found a link between mental disorder and victimization that is mediated by conflicted social relationships that holds even after illegal drug use is taken into account [42]. It may be that conflicted relationships with individuals known to and perhaps living with the respondent make individuals with mental disorders more vulnerable to victimization within residences rather than outdoors.

COD vs. MDO and SDO

We did find a number of differences between incidents involving individuals with co-occurring disorders (COD) and those with single disorders (either MDO or SDO). With respect to perpetration, incidents involving CODs were more likely to result in no injury. Although not statistically significant, when injury occurred, incidents involving individuals with CODs were more likely to involve serious injuries. It is possible that having co-occurring disorders increases disorganization and may serve to inhibit the seriousness of the perpetration. However, with increased disorganization, it is also possible that individuals have less self-control and are less able to regulate their responses if the incident escalates.

Also with respect to perpetration, we also found that incidents involving individuals with CODs were less likely to take place within a residence compared to incidents involving MDOs but also less likely to take place outdoors compared to SDOs. This may be related to differences found with respect to location among MDOs and SDOs. Although not statistically significant, incidents involving MDOs were more likely to take place within a home or residence and less likely to take place outdoors. Our findings suggest that having a co-occurring disorder mutes this effect, such that having a co-occurring substance disorder

makes one less likely to perpetrate within a home or residence compared to individuals with only mental disorders and that having a co-occurring mental disorder makes one less likely to perpetrate outdoors compared to individuals with substance use disorders alone.

The only other difference that emerged with respect to type of disorder pertained to substance use. Perpetration incidents involving CODs were less likely to involve alcohol use compared to SDOs. Victimization incidents involving CODs were more likely NOT to involve drug use compared to SDOs. As with findings pertaining to location, these results might speak to an attenuation of the effects of having a substance use disorder when a co-occurring mental disorder is also present. As mentioned previously, MDOs did not report any alcohol or drug use prior to the involvement in perpetration or victimization. Our findings suggest that having a co-occurring mental disorder may decrease the likelihood of violence resulting from substance use.

Limitations

Our results need to be interpreted with caution for a number of reasons. First, our findings are based solely on self-report data. Although some researchers who have studied reliability of reports of victimization among the seriously mentally ill have concluded that this data can be gathered reliably via self-report [14], larger-scale studies of the perpetration of violence among individuals with mental disorders have attempted to correct for potential self-report bias by gathering information from collateral reports and official records [31, 40, 45, 50]. Combining information from multiple sources typically results in *higher* estimates than when one source alone is used. In this respect, our estimates of the prevalence of perpetration and victimization incidents are likely conservative. Alternatively, it is also possible that part of the reason these individuals were in treatment was related to recent perpetration or victimization and its sequalae. These factors may have increased the likelihood of reporting perpetration and victimization and countered any under-reporting found in other studies.

Second, our results may not be typical of all individuals with mental, substance use, and co-occurring mental and substance use disorders. We sampled individuals who had newly entered publicly funded, acute mental health and substance abuse treatment centers from purposefully selected sites within San Francisco County. Further, we did not include individuals who were too cognitively or otherwise disorganized to complete the intake or follow-up interviews. Taken together, the characteristics of perpetration and victimization we describe may best generalize to higher functioning individuals receiving publicly funded, short-term treatment in similar urban areas.

Another limitation pertains to our sample of 379 incidents. In comparison, the MacArthur Violence Risk Assessment Study contained a sample of 3,276 incidents [31, 40]. A relatively small number of incidents may have limited our ability to find differences among individuals with different diagnostic profiles, particularly with respect to perpetration and comparisons between incidents involving MDOs and SDOs. Sample size may have also limited the stability of our estimates, particularly in comparisons of incident involving CODs and MDOs. With a larger sample we might also have been able to look at characteristics of perpetration and victimization in greater detail; instead we were forced to collapse rare characteristics into more general categories. For example, because the low frequency of amphetamine use before involvement in violence, we collapsed cocaine and amphetamines into one category, stimulants, although the literature suggests that violence related to cocaine may be different from violence related to the use of amphetamines, such as methamphetamine [3, 43]. Further, we may have been able to examine differences between isolated incidents of perpetration and victimization and those that occurred within an episode of violence involving both perpetration and victimization.

Finally, although we gathered information about where the incidents took place, who was involved, and whether alcohol and drugs were used prior to the incident, we have limited information about social and environmental context of the violence. Information regarding the state of mind of the participant prior to the violence, the events leading up to the incident, and the nature of the relationship and interactions between the participant and the other individual involved in the violence might help in focusing on factors that could be targeted to reduce violence.

Conclusions

Our findings have important implications for future research and practice. Our study highlights the need for additional studies of victimization among individuals with psychiatric disorders and of co-occurring perpetration and victimization, particularly with respect to the characteristics in which incidents occur. Our results suggest that individuals with different diagnostic profiles perpetrate and experience violence under different circumstances. Additional studies are also needed to validate these findings and explore potential explanations for this phenomenon. Large-scale studies employing multiple recall periods, collateral sources of information, clinically diverse samples, follow-up interviews, and additional variables may help to further integrate findings from the present study and prior research. These data may also help disentangle the temporal ordering of perpetration

and victimization and further enhance models for predicting future violence.

Our findings also have important implications for practitioners working with individuals with mental, substance use, and co-occurring mental and substance use disorders. While the majority of individuals with mental disorders do not perpetrate violence, there is a substantial minority who are at risk. Recent studies suggest that rates of victimization among this population are much higher than in the general population. Our findings, although subject to a number of limitations, suggest that these individuals are more likely to be victimized than to perpetrate violence. Assessment of recent interpersonal violence, particularly the context and circumstances in which it occurs, is critical to developing appropriate treatment and discharge plans. Increased clinical attention to violence among individuals with mental, substance use, and co-occurring mental and substance use disorders is an important step in helping curb the personal, social, and economic costs of violence.

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