Criminal Behavior and Victimization Among Homeless Individuals With Severe Mental Illness: A Systematic Review

Laurence Roy, Ph.D.
Anne G. Crocker, Ph.D.
Tonia L. Nicholls, Ph.D.
Eric A. Latimer, Ph.D.
Andrea Reyes Ayllon, M.Sc.

Objectives: **The objectives of the systematic review were to estimate the prevalence and correlates of criminal behavior, contacts with the criminal justice system, and victimization among homeless adults with severe mental illness.** ***Methods:*** **MEDLINE, Embase, PsycINFO, Cumulative Index to Nursing and Allied Health Literature, and Web of Science were searched for published empirical investigations of prevalence and correlates of criminal behavior, contacts with the justice system, and episodes of victimization in the target population.** ***Results:*** **The search yielded 21 studies. Fifteen examined prevalence of contacts with the criminal justice system; lifetime arrest rates ranged between 62.9% and 90.0%, lifetime conviction rates ranged between 28.1% and 80.0%, and lifetime incarceration rates ranged between 48.0% and 67.0%. Four studies examined self-reported criminal behavior, with 12-month rates ranging from 17.0% to 32.0%. Six studies examined the prevalence of victimization, with lifetime rates ranging between 73.7% and 87.0%. Significant correlates of criminal behavior and contacts with the justice system included criminal history, high perceived need for medical services, high intensity of mental health service use, young age, male gender, substance use, protracted homelessness, type of homelessness (street or shelter), and history of conduct disorder. Significant correlates of victimization included female gender, history of child abuse, and depression.** ***Conclusions:*** **Rates of criminal behavior, contacts with the criminal justice system, and victimization among homeless adults with severe mental illness are higher than among housed adults with severe mental illness. (*Psychiatric Services* 65: 739–750, 2014; doi: 10.1176/appi.ps.201200515)**

Homelessness is a significant social, economic, and health issue in North America (1–3). Several estimates indicate that between 20% and 50% of homeless adults also have a severe mental illness (4–6), which in turn is associated with adverse outcomes in terms of housing, involvement in the criminal justice system, substance use, and morbidity (7,8). In North America, media coverage of violent incidents frequently depicts homeless individuals with severe mental illness as either victims or perpetrators of crime. These events continuously bring public attention to the complex interplay between homelessness, severe mental illness, violence, criminal justice involvement, and victimization.

To our knowledge, the literature on homelessness, crime, violence, and victimization has not yet been examined in a systematic review or meta-analysis. This seriously limits the extent to which clinicians and decision makers can develop and implement evidence-informed services and achieve meaningful reductions in the prevalence and severity of related adverse outcomes (financial burden to taxpayers, physical harm and psychological trauma, stigmatizing attitudes, and burgeoning jail populations). Practitioners, decision makers, and researchers alike often find it difficult to stay abreast of rapidly expanding literatures, and it can be particularly challenging when the topic crosses diverse intersecting areas. In addition to the large volume of literature, there are often inconsistencies and contradictory findings, which make it challenging for direct care providers and advocates to determine priorities. A systematic literature review can identify gaps requiring further research and areas where the empirical literature has converged and little further study is required. Systematic reviews provide a less biased and comprehensive

Dr. Roy, Dr. Crocker, and Dr. Latimer are with the Douglas Mental Health University Research Centre and with the Department of Psychiatry, McGill University, Montreal, Quebec, Canada (e-mail: laurence.roy@douglas.mcgill.ca). Dr. Nicholls is with the Forensic Psychiatric Services Commission, British Columbia Mental Health and Substance Use Services, Coquitlam, British Columbia, Canada, and with the Department of Psychiatry, University of British Columbia, Vancouver. Ms. Ayllon is with the Department of Counselling Psychology, McGill University.

consideration of the field to support clinicians by summarizing the current, best evidence available.

The objectives of this systematic review were to synthesize the available evidence on the rates and correlates of criminal behavior, contacts with the justice system (arrests, charges, convictions, summons, and incarcerations), and victimization among homeless individuals with a severe mental illness living in the community.

Methods

The systematic review used the PRISMA (preferred reporting items for systematic reviews and meta-analyses) consensus statement approach, which aims to ensure that systematic reviews and meta-analyses are conducted in the most transparent and thorough fashion possible (9). Before conducting the review, the first three authors wrote the systematic review protocol, including all extraction and selection methods.

Inclusion criteria

Studies were eligible for inclusion if they reported prevalence rates of one of the outcome variables (victimization; contacts with the criminal justice system, including arrests, charges, convictions, and incarcerations; and self-reported criminal behavior), they were based on primary data collection, their sample consisted of adults (18 years and older), participants were homeless at the time of data collection, and participants had at least one severe mental illness (schizophrenia, other psychotic disorder, bipolar disorder, or major depression) with or without a co-occurring substance use disorder, in accordance with *DSM* or *ICD* diagnostic criteria (10,11). No publication date or publication status restrictions were imposed. However, studies had to be published in either English or French.

Because this review focused on base rates of criminal behavior, criminal justice involvement, and victimization of homeless individuals living in the community, studies reporting data for samples recruited exclusively through jails, prisons, jail diversion programs, or mental health courts were excluded for two reasons. First, including homeless detainees would lead to overestimating rates of criminal behavior, arrests, convictions, and incarceration. Second, previous studies have suggested that profiles of victimization of detainees with severe mental illness may differ from those of community-based individuals with severe mental illness—for example, in the prevalence of sexual victimization among men. Studies that included participants with personality disorders or substance use problems without concomitant severe mental illness were also excluded, as were studies in which participants had a history of homelessness but were not necessarily homeless at the time of data collection.

Information sources

Studies were first identified by searching MEDLINE, Embase, PsycINFO, Cumulative Index to Nursing and Allied Health Literature, and Web of Science. The search was limited to peer-reviewed studies in French or English with an abstract. Manual scanning of reference lists, correspondence with authors, and consultation with experts in the field of homelessness and justice supplemented the electronic search. The final search was run on July 20, 2012.

Search strategy

Two of the authors (LR and ARA) used the following keywords in all databases: (homeless* OR shelter*) AND (mental illness OR mental health OR mental disorder OR schizophrenia OR bipolar OR depression OR "affective disorders" OR "mood disorders" OR "psychotic disorders* OR psychos*) AND (justice OR crime OR criminality OR jail OR prison* OR police OR victim* OR arrest OR incarceration OR violence OR detention OR "forensic psych*" OR offens* OR offend* OR convict*). The complete search strategy in MEDLINE is available from the first author upon request.

Study selection process

Two authors (LR and ARA) independently assessed eligibility of studies in a standardized manner, using the abstract provided in the database. In some cases, the full-text publication was consulted to clarify eligibility criteria. For multiple publications of the same study, the article with the most complete primary outcomes was selected. Disagreement between reviewers was resolved by consensus, and the advice of a third author was sought if a consensus was not reached.

Data collection process

The first author developed a data extraction sheet that was pilot-tested in a preliminary database search and refined accordingly with all other authors. The two reviewers (LR and ARA) then independently extracted the following data: study objectives, geographic location, and design; sample size, mean age, and gender composition; diagnostic tool used to assess severe mental illness; rates of comorbid alcohol and substance use disorders; time frame; source of outcome data; rates of criminal justice contact, victimization, and criminal behavior; and significant correlates of criminal activity or victimization, with associated odds ratios. Authors were contacted for missing information, and odds ratios were calculated manually if sufficient information was provided (either in the published report or via data provided by the authors). Disagreements were resolved by discussion between the two reviewers, and the advice of a third author was sought if disagreements persisted.

Assessment of methodological quality

Quality assessment of observational data in systematic reviews is different from that of randomized controlled trials and not as well established. Risk of bias in the case of observational studies is intrinsically linked to underreporting or overreporting of outcome variables, in this case criminal activity, contacts with the justice system, and victimization. For each of these variables, assessment methods are crucial in determining risk of underreporting or overreporting. Another potential source of bias is the representativeness of the sample because homeless individuals, particularly those with severe mental illnesses, are known to be difficult to contact. In an attempt to establish methodological quality of the observational studies reviewed, relevant items from the Newcastle-Ottawa Scale were used (12): representativeness of the sample,

ascertainment of severe mental illness, assessment of outcome, and, for prospective studies, adequacy of follow-up. According to these criteria, methodological quality was assessed as good, fair, or poor. The full definition of each item is available from the first author upon request.

Results

Outcome of the search

The search of all electronic databases provided a total of 1,438 citations. After the abstracts were read, 1,377 studies were discarded because they did not meet inclusion criteria. The full text of the remaining 61 articles was obtained and read, resulting in the exclusion of a further 42 studies. Three additional studies were obtained through manual searches of the reference lists, of which two were selected, for a final total of 21 studies included in the review. [The phases of the systematic review are shown in a figure in an online supplement to this article.]

Characteristics of included studies

Although 21 studies were selected, some of our selected outcome variables were cited more often than others. Criminal behavior was reported as a criterion variable in four studies. Arrest rates were reported in seven studies, conviction rates in eight studies, and incarceration rates in eight studies. One study cited rates of summons in the target population. Victimization rates were cited in six studies. Only one study cited rates of criminal behavior and victimization for the same sample. No study reported rates of persons charged with a crime. Selected studies were published between 1986 and 2011. Twenty were conducted in the United States and one in England.

The studies included had a total of 10,704 participants, of whom 3,705 (34.6%) were female and 6,999 (65.4%) were male, with a mean age of 38.32± 9.11 at the time of the interview (baseline interview for longitudinal studies). Three studies reported outcomes for 7,222 participants (67.5% of total sample) from the Access to Community Care and Effect Services and Supports (ACCESS) study, a multisite housing program for homeless individuals with severe mental illness (13–15). This is noteworthy because participants in the ACCESS study had to receive shelter services, which may have altered the representativeness of this sample. According to the Newcastle-Ottawa Scale, four (19%) studies were classified as good (16–19), 12 (57%) as fair (13,15,20–28), and five (24%) as poor (29–33).

Prevalence and correlates of justice system involvement

Table 1 summarizes characteristics and findings from the 15 studies that measured contacts with the criminal justice system. The studies were heterogeneous in terms of sources of data, type of design, and studied time frame.

Lifetime arrest rates (four studies) ranged between 62.9% and 90.0% (20,21,29,30). Two studies reported 12-month arrest rates: 12.8% in a sample of 39 individuals recruited from a specialist psychiatric service for people with severe mental illness who were homeless in Birmingham, United Kingdom (20), and 52.0% in a sample of 144 individuals with severe mental illness recruited from a variety of locations (16). One study reported a 27-month arrest rate of 35.4% (22). It should be noted that the study reporting a 12.8% arrest rate over a one-year period (20) was the only study conducted outside the United States. A large study of 7,222 homeless individuals participating in the ACCESS program yielded two-month charge rates of 2.7% for major crimes, 10.9% for minor crimes, and 2.1% for substance-related crimes (15). One study reported a 12-month summons rate of 41% (16). Significant correlates of arrest included all types of previous contacts with the criminal justice system, high perceived need for medical services, high intensity of mental health service use, young age, a diagnosis of conduct disorder before the age of 15, and African-American race-ethnicity (15,16,22,29).

Lifetime conviction rates (seven studies) ranged between 28.1% and 80.0% (20,21,23,24,29–31). One study reported a 12-month conviction rate of 33.3% among homeless persons with schizophrenia and substance abuse (17). Significant correlates of conviction included high intensity of mental health service use, high severity of substance use, and protracted homelessness (24,29,31).

Lifetime incarceration rates (four studies) ranged between 48.0% and 67.0% (14,20,30,32). Three studies reported 12-month incarceration rates ranging from 26.0% to 33.0% (16–18). Significant correlates of incarceration included male gender, young age, African-American race-ethnicity, previous contact with the criminal justice system, greater severity of psychiatric symptoms, higher level of substance use, and co-occurring mental and substance use disorders (14,16,17).

Prevalence and correlates of self-reported criminal behavior

Table 2 presents characteristics and findings from the four studies that measured self-reported criminal behavior. Available time frames were considerably shorter than for contacts with the criminal justice system and ranged between two weeks and 12 months. In one study, 17.0% of participants reported committing a violent crime during a six-month period, whereas 32.0% reported committing a nonviolent crime during the same time frame (25). Over a 12-month period, participants enrolled in a supported housing trial reported a mean number of 1.8 crimes (33). In a study by Calsyn and colleagues (16), 12-month prevalence rates of 40.0% for substance-related offenses, 22.0% for minor offenses, and 9.0% for major offenses were reported. Finally, in one study, 7.8% of participants reported committing a violent crime in the previous two weeks (26). Of the two studies that reported correlates of self-reported criminal behavior, significant correlates included young age, severity of psychiatric symptoms, type of homelessness (street versus shelter), protracted homelessness, and previous contact with the criminal justice system (16,25).

Prevalence and correlates of victimization

Table 3 summarizes characteristics and findings from the six studies that measured victimization outcomes. Lifetime victimization rates ranged between 73.7% and 87.0% (17,19,27,34). Two studies reported short-term victimization rates, with a one-month prevalence

Table 1

Characteristics of studies reporting outcomes for arrest, conviction, charge, summons, and incarceration rates

Study and location	Sample	Mean age	Male (%)	Design and time frame	Outcome and prevalence	Correlates	OR (95% CI)
Barrett et al., 2009 (22), Florida	96 homeless individuals admitted to a mental health facility	41.5	67.0	Prospective, 27 months	Arrest rate, 35.4%	Previous contact with criminal justice system; perceived need for medical services	Previous contact with criminal justice system, 4.5 (1.4–14.8); perceived need for medical services, 1.5 (1.1–2.3)
Brunette et al., 1998 (17), Washington, D.C.	108 homeless individuals with schizophrenia or schizoaffective disorder	36.0	39.0	Retrospective, 12 months	Conviction rate, 33.3%; incarceration rate, 30.6%	Male gender (incarceration only)	3.7 (1.6–8.7)
Calsyn et al., 2005 (16), Missouri	144 homeless individuals with severe mental illness	40.4	79.0	Prospective, 12 months	Arrest rate, 52.0%; summons rate, 41.0%; incarceration rate, 26.0%	Previous contact with criminal justice system; young age; African-American ethnicity	Not measured
Caton et al., 1993 (32), New York	42 homeless men with severe mental illness admitted for placement in community housing	34.0	100.0	Retrospective, lifetime	Incarceration rate, 48.0%	Not measured	Not measured
Commander and Odell, 2001 (20), United Kingdom	39 homeless individuals with severe mental illness	38.0	92.0	Retrospective, lifetime and 12 months	Lifetime arrest rate, 90.0%; 12-month arrest rate, 12.8%; conviction rate, 66.0%; incarceration rate, 56.0%	Not measured	Not measured
Desai et al., 2000 (15), U.S. (multisite)	7,222 homeless individuals with severe mental illness participating in the ACCESS program[a]	38.0	62.0	Retrospective, 2 months	Charge rate for major offenses, 2.7%; charge rate for minor offenses, 10.9%; charge rate for substance-related offenses, 2.1%	For all types of offenses, conduct disorder before the age of 15; for major crimes, protracted homelessness and young age; for minor crimes, male gender and frequency of alcohol use; for substance-related crime, frequency of substance use	For conduct disorder among males who committed major offenses, 2.6; who committed minor offenses, 1.6; for males who committed substance-related offenses, 3.2; for females who committed major offenses, 2.0; who committed minor offenses, 2.2; for females who committed substance-related offenses, 2.1
Gelberg et al., 1998 (29), California	313 homeless individuals with severe mental illness	34.0	79.0	Retrospective, lifetime	Arrest rate, 63.0%; felony conviction rate, 28.1%	Type of mental health services used (inpatient versus outpatient)	For arrest rate among inpatients, 2.8 (1.7–4.8); for conviction rate among inpatients, 2.5 (1.3–4.8)
Gilmer et al., 2010 (18), California	209 homeless individuals with severe mental illness referred for participation in mental health services	44.0	63.0	Retrospective, 12 months	Incarceration rate, 33.0%	Not measured	Not measured
Haugland et al., 1997 (30), New York	43 homeless individuals with severe mental illness	37.0	90.7	Retrospective, lifetime	Arrest rate, 77.0%; conviction rate, 80.0%; incarceration rate, 53.0%	Not measured	Not measured

Continues on next page

Table 1

Continued from previous page

Study and location	Sample	Mean age	Male (%)	Design and time frame	Outcome and prevalence	Correlates	OR (95% CI)
Leal et al., 1999 (31), New York	55 homeless individuals with severe mental illness	35.0	80.5	Retrospective, lifetime	Conviction rate, 63.6%	Protracted homelessness (>1 year of continuous homelessness)	2.4 (1.2–4.9)
Malone, 2010 (23), Washington	332 homeless individuals with severe mental illness referred for participation in housing program	44.5	74.0	Retrospective, lifetime	Conviction rate, 52.0%	Not measured	Not measured
McGuire and Rosenheck, 2004 (14), U.S. (multisite)	5,774 homeless individuals with severe mental illness participating in the ACCESS program[a]	39.0	61.0	Retrospective, lifetime	Incarceration rate (total), 67.0%; incarceration rate (≤6 months), 35.0%; incarceration rate (>6 months), 32.0%	Level of psychiatric symptoms; level of substance use; presence of a co-occurring mental and substance use disorder	Not measured
Sacks et al., 2003 (33), New York	115 homeless individuals with a dual diagnosis (severe mental illness and a substance-related disorder) referred for supported housing	35.8	69.0	Retrospective, 12 months	Mean number of incarcerations, .1 per person	Not measured	Not measured
Taylor et al., 1997 (21), New York	183 homeless men with severe mental illness	35.0	100.0	Retrospective, lifetime	Arrest rate, 77.0%; arrest rate for violent crime, 45.0%; conviction rate, 58.0%	Not measured	Not measured
Wenzel et al., 1996 (24), California	161 homeless men with severe mental illness	43.2	100.0	Retrospective, lifetime	Conviction rate, 39.9%	Co-occurring mental and substance use disorders	1.3 (.7–2.4)

[a] ACCESS, Access to Community Care and Effect Services and Supports

of 45.0% (28) and a two-month prevalence of 76.7% (13). Significant correlates of victimization included female gender, diagnosis of depression, and a history of child abuse.

Discussion

The objectives of this systematic review were to estimate the rates and correlates of criminal behavior, contacts with the criminal justice system, and victimization among homeless adults with severe mental illness. Although the heterogeneous nature of the selected studies precluded calculations of prevalence metadata for each of the variables of interest, common features emerged. The discussion focuses on common features relevant to criminal behavior and contacts with the criminal justice system combined, and victimization is considered separately. Also included are an analysis of methodological quality of the studies and suggestions for future research, planning, and interventions.

Criminal behavior and justice system contacts

Lifetime prevalence data considered in this review indicate that 62.9%–90.0% of homeless individuals with severe mental illness have been arrested at least once, 28.1%–80.0% have been convicted of a crime, and 48.0%–67.0% have been incarcerated. Of note, for conviction rates, the lowest figure (28.1%) represents felony convictions only (which include more severe categories of crime than misdemeanors) (29); if this figure is excluded, lifetime rates for any conviction fall into a much tighter range, between 52.0% and 80.0%. These rates, as well as shorter-term prevalence rates, are much higher than for the general U.S. population, in which lifetime arrest rates are estimated to be about 15.0% (35). Ten-year arrest rates of community-dwelling adults with mental illness ranged between 25.0% and 33.0% (36–38).

Lack of uniformity in time frames and sources of data render any comparison tentative, but homeless individuals with severe mental illness seem to be arrested more often than their stably housed counterparts. As discussed below in the context of rates of criminal behavior, this could reflect both a greater frequency of criminal behavior as well as the visible nature of the homeless life, which may make

Table 2

Characteristics of studies reporting outcomes for self-reported crimes

Study and location	Sample	Mean age	Male (%)	Design and time frame	Outcome and prevalence	Correlates
Calsyn et al., 2005 (16), Missouri	144 homeless individuals with severe mental illness	40.4	79.0	Prospective, 12 months	Major offenses, 9.0%; minor offenses, 22.0%; substance-related offenses, 40.0%	Previous contact with criminal justice system; young age
Fischer et al., 2008 (25), New York	218 homeless individuals with severe mental illness	41.6	78.0	Prospective, 6 months	Violent crime, 17.0%; nonviolent crime, 32.0%	Type of homelessness (street or shelter); duration of homelessness; level of psychiatric symptoms; young age
McNiel and Binder, 2005 (26), California	829 homeless individuals with severe mental illness	37.3	74.3	Retrospective, 2 weeks	Violent behavior, 7.8%	Not measured
Sacks et al., 2003 (33), New York	115 homeless individuals with a dual diagnosis (severe mental illness and a substance-related disorder) referred for supported housing	35.8	69.0	Retrospective, 12 months	Mean of 1.8 crimes per person	Not measured

these individuals more likely to come into contact with the criminal justice system.

Comparing rates of criminal justice contacts from the studies reviewed with rates from studies of homeless individuals without a severe mental illness is more challenging because there is considerable overlap in their characteristics at contact with services and because most studies on homeless populations do not typically exclude individuals with mental illnesses. Two of the studies selected for this review did, however, report comparative data for homeless participants with and without severe mental illnesses (20,30). Results suggested that both groups had similar rates of involvement with the criminal justice system (arrests, convictions, and incarcerations). This indicates that in terms of criminal justice involvement, homeless individuals with severe mental illness tend to be more similar to the general homeless population than to the general population of individuals with severe mental illness. However, any conclusions must be viewed as tentative given the few studies available and the challenge of drawing comparisons across studies that used different definitions of mental illness and different measures of criminal justice involvement and that had various other methodological differences (such as use of self-report data versus data from administrative records).

Common correlates of criminal behavior (either through self-reports or administrative records reflecting contacts with the justice system) included demographic variables (young age, male gender, and African-American race-ethnicity), clinical variables (level of psychiatric symptoms, substance use, and diagnosis of conduct disorder), and contextual variables (type and duration of homelessness, perceived need for medical services, and previous contact with the justice system). One of the most important correlates of all types of contact with the criminal justice system in both this review and previous studies of housed individuals with severe mental illness or homeless individuals without severe mental illness is the extent of criminal history or previous contacts with the criminal justice system (39,40). Number of prior convictions and age at onset of criminal activity have also been found to be the most common predictor of recidivism among offenders both with and without severe mental illness (41).

For two reasons, the extent of criminal history may be even more significant for individuals who live both with severe mental illness and in a homeless situation compared with housed persons with severe mental illness. The first one speaks to the interaction between demographic or clinical factors and environmental variables (particularly living context). When individuals with severe mental illness are homeless and thus visible in the public space, they are more likely to draw attention from the public and from law enforcement personnel and thus to be rearrested more frequently (26).

The second reason reflects common behavioral patterns that are more likely to be found in the homeless population, particularly antisocial personality disorder and substance abuse. Some evidence suggests that antisocial personality disorder and homelessness are related. For example, homelessness is one of the most significant correlates of antisocial personality disorder in community samples with (42) or without (43) severe mental illness. Connolly and colleagues (44) reported that 57% of a sample of homeless adults met Structured Clinical Interview for DSM-IV criteria (45) for a diagnosis of antisocial personality disorder. In a recent study of homeless young women, 66.2% met criteria for a lifetime diagnosis of antisocial personality disorder (46). One retrospective study of the course of antisocial symptoms among homeless adults indicated that these symptoms preceded the onset of homelessness for more than 90% of individuals in the sample (47). The co-

Table 3

Characteristics of studies reporting outcomes on victimization

Study and location	Sample	Age	Male (%)	Design and time frame	Outcome and prevalence	Correlates	OR (95% CI)
Brunette and Drake, 1998 (17), Washington, D.C.	108 homeless individuals with schizophrenia or schizoaffective disorder	36.0	39.0	Retrospective, 12 months	Robbery, 58.5% (female, 55.0%; male, 64.0%); assault, 61.3% (female, 66.0%; male, 54.0%); rape, 39.3% (female, 63.0%; male, 2.0%); physical abuse, 38.9% (female, 56.0%; male, 12.0%); sexual abuse, 25.2% (female, 40.0%; male, 2.0%)	Female (for rape and physical abuse and sexual abuse)	Not measured
Cheng and Kelly, 2008 (13), U.S. (multisite)	7,222 homeless individuals with severe mental illness participating in the ACCESS program	38.0	62.0	Retrospective, 2 months	Physical victimization	Female	Not measured
Christensen et al., 2005 (19), Florida	78 homeless individuals with severe mental illness admitted for participation in integrated program	42.0	65.0	Retrospective, lifetime[a]	Physical or sexual abuse	Female gender	Not measured
Goodman et al., 1995 (27), Maryland	99 homeless women with severe mental illness	42.0	.0	Retrospective, lifetime[a]	Physical and sexual abuse	History of childhood abuse	Not measured
Holt et al., 2007 (34), Florida	99 homeless women with severe mental illness seeking psychiatric treatment	36.9	.0	Retrospective, lifetime[a]	Physical or sexual victimization	Diagnosis (major depressive disorder, PTSD, and anxiety disorders)	Depression, 3.0 (1.1–8.0); PTSD, 9.6 (1.2–78.8); anxiety disorders, 4.2 (1.2–14.5)
Sullivan et al., 2000 (28), California	319 homeless individuals with severe mental illness	39.0	80.0	Retrospective, 1 month	Violent victimization (physical assault, sexual assault, or armed robbery)	Female gender	Not measured

[a] Lifetime victimization rates included childhood and adult victimization in the studies by Christensen et al. (19) and Holt et al. (34), but only adult victimization in the study by Goodman et al. (27).

occurrence of antisocial personality disorder with a substance use disorder among persons with a mental illness is also well documented (48,49), as well as the cumulative effect that these conditions have on rates of criminal behavior and violence (42,50,51). Future research in this area should include follow-up studies of the course of antisocial personality disorder symptoms after provision of housing or support services, as well as the specific nature of relationships between homelessness, personality disorders, severe mental illness, and substance use.

Another behavioral pattern likely to be found in homeless populations is substance misuse. A large body of literature indicates that substance abuse accounts for a large proportion of violent behavior (52–54), incarceration (55), and arrest (56–59) among adults with severe mental illness. In fact, many studies have found that in the larger population of adults with severe mental illness, substance abuse, along with antisocial tendencies, is the main cause of offending, rather than mental illness itself (41,57,60,61). This is particularly relevant given that 20%−40% of homeless individuals have a severe mental illness as well as a diagnosis of a substance use disorder (62,63). As noted above, there is also substantial evidence for a close link between substance abuse and personality disorders (48,49), with more than half of treated substance abusers having at least one personality disorder (64). In our review, three studies reported an association between substance abuse and charges, convictions, and incarcerations. No study specifically examined the relationship between substance use and arrests or self-reported criminal behavior. This reflects the more limited number of studies focusing specifically on homeless adults with severe mental illness, but it hinders our understanding of the role played by substance

use in specific criminal behaviors and criminal justice system trajectories, which may vary for some subgroups of individuals. Indeed, Constantine and colleagues (59) found that the risk of felony arrest among persons with severe mental illness was independently associated with a substance use disorder but not with homelessness, whereas the risk of misdemeanor arrest was independently associated with homelessness but not with a substance use disorder.

It is also noteworthy that two of the studies included in the review sampled only homeless individuals with co-occurring disorders and failed to find a relationship between indicators of severity of substance abuse and arrests, incarcerations, or summons (16,22). This absence of a significant association could, of course, reflect the more limited range of severity of substance abuse in a sample that included only persons with co-occurring disorders. It is possible that for various subgroups of homeless individuals with severe mental illness, various causal pathways underlie the relationship between substance abuse and contacts with the criminal justice system. For example, the disinhibiting effect of drug and alcohol abuse might make some homeless individuals more disorderly and likely to come to the attention of law enforcement personnel in the public space, thus increasing the risk for nuisance offenses. For other individuals, such as those with comorbid personality disorders, substance abuse might trigger violent behavior and be related to more serious offenses. Research designed to disentangle the longitudinal course of substance use and personality disorders in relationship to onset and duration of homelessness and criminal behavior among persons with severe mental illness is needed.

Contextual factors, such as type and duration of homelessness, also appear as significant risk factors for self-reported criminal behavior and convictions. Contextual factors tend to receive less attention than clinical risk factors in studies of the relationship between mental illness and criminal justice involvement (65). Our results suggest that this is also the case for homeless populations of adults with severe mental illness, even though the very nature of homelessness should bring researchers to better understand how and when disturbing or violent behaviors and contacts with law enforcement personnel occur and lead to criminal justice involvement. An alternative perspective on our findings is that even though homelessness itself can be considered a crime (loitering and vagrancy are considered nuisance offenses), 10%–37% of homeless people with severe mental illness have never been arrested, according to data in the reviewed studies. Qualitative studies of the daily lives of homeless individuals can provide preliminary explanations about why some individuals never formally come in contact with the criminal justice system: the creation of small, protective groups of homeless individuals (66), the use of discretionary power by law enforcement personnel (67), the existence of retribution without recourse to formal police or justice mechanisms (68), and frequent refusals from fellow homeless individuals, spouses, or relatives to press charges (68). Research with the subgroup of people who have no contact with the criminal justice system might shed light on how to reduce contacts in this population.

Victimization

Studies examining rates of victimization among homeless individuals tended to have more design features in common, and their findings were slightly more homogeneous than the other two categories of studies in terms of operational definitions, time frame, and correlates. All six victimization studies found that homeless individuals with mental illnesses, especially women, experienced extreme levels of victimization—higher than those of housed individuals with severe mental illness. Indeed, a systematic review of criminal victimization among adults with major mental disorders reported one-year prevalence rates between 4.3% and 35.0% for violent victimization and between 7.7% and 28.0% for nonviolent victimization (69). Studies (not included in our review) that examined the impact of past homelessness on victimization among larger samples of individuals with severe mental illness also found that homelessness was one of the most significant risk factors (70–73). Like homeless individuals with severe mental illness, stably housed individuals with severe mental illness are more likely than the general population to be victims of crime (69,74). There is also evidence that housed individuals with severe mental illness are more likely to be victims than to be perpetrators of violence (39,75). Finally, these findings can be contrasted with those of previous studies of victimization in the general homeless population, which have found one-year prevalence rates ranging from 50% to 60% (76,77). Compared with homeless individuals with severe mental illness, homeless individuals without severe mental illness are at higher risk of being victims of crime (26.0% versus 45.0%) (28). Thus it can be concluded that homeless individuals with severe mental illness are at higher risk of victimization than other comparable subgroups.

Only two studies identified correlates of victimization other than gender (27,34), namely child abuse and depression or anxiety. These two studies focused only on homeless women with severe mental illness, and both had small samples. In a study with a larger sample of adults with severe mental illness, child abuse was also found to be a risk factor for victimization, but other correlates included illness severity and substance misuse (72). The gender difference in rates of victimization among homeless adults with severe mental illness is similar to that found in previous studies of victimization among housed adults with severe mental illness (70,73). Future research should focus on the identification of correlates and predictors of victimization among larger samples of homeless men and women with severe mental illness. Investigations should also examine how revictimization occurs (the physical and social contexts, relationship to perpetrator, and so forth) and whether this process is also moderated by gender.

Methodological quality of studies

One important aspect of quality assessment for this systematic review is the representativeness of the sample. Homeless individuals are known to be

hard to reach and difficult to recruit and retain for participation in research; moreover, studies tend to oversample homeless individuals who use services, particularly shelters (78). In this systematic review, one-third of the studies (seven studies) were considered representative or somewhat representative of the population of homeless persons in a given area, whereas the remaining studies recruited participants from designated areas (for example, skid row districts) or services (for example, a psychiatric clinic in an emergency shelter). This lack of representativeness may have biased results in terms of rates of criminal behavior, contacts with the justice system, or victimization, but the direction of bias is unpredictable. For example, homeless persons living in situations where they tend to be underrepresented (such as squatters) could be more subject to victimization, but they could also have developed street survival skills that lessen their exposure to violence.

Another caveat is related to the quality of the assessments of the outcomes of interest—criminal behavior, contacts with the justice system, and victimization. All of the included studies assessing criminal behavior and victimization examined these variables through self-reports. For victimization, use of self-report seems appropriate, and previous studies have indicated that official records (such as police logs) greatly underestimate the prevalence of victimization (79). Two studies used Lehman's Quality of Life Interview (80) to assess victimization, three used home interviews, and one used the Conflict Tactics Scales (81). Both the Quality of Life Interview and home interviews use abuse-related labels (for example, rape) rather than behaviorally specific questions (for example, forced to have sex), which is known to lead to underreporting. The use of measures with established psychometric properties may not only alleviate the risk of underreporting; it could also help clarify the nature of victimization experiences, expand the focus of research to include severity levels, and facilitate comparison of findings across studies. Also, in the studies reviewed, contacts with the criminal justice system were examined either through administrative databases (six studies) or via self-report (nine studies) but not through multiple sources. Future research should consider strengthening the assessment of violence, victimization, and contacts with the criminal justice system through the use of multiple sources of information (administrative databases, self-report, and proxy report) to triangulate results and provide more valid prevalence estimates. In addition, the field should move beyond dichotomized outcomes to consider additional features of the outcome criterion, including severity, frequency, and the relationship of the perpetrator to the victim.

Overall, the ability to infer causal pathways between personal, clinical, and contextual factors and criminal activity in the studies reviewed was limited because of their use of cross-sectional, between-person, and mostly retrospective designs. One notable exception is the study by Fischer and colleagues (25), which used a within-person, prospective, longitudinal design to examine the relation between criminal activity, level of psychiatric symptoms, and housing status. Results indicated that levels of psychiatric symptoms and type of homelessness (shelter or street) had additive rather than multiplicative effects, particularly among individuals with protracted homelessness. Additional research examining the convergent effects of contextual, clinical, and personal factors affecting criminal behavior and victimization are urgently needed.

Limitations

This systematic review had limitations. First, because of the heterogeneity of the studies, meta-analytic techniques were precluded. Second, most studies used cross-sectional designs to identify variables associated with criminal behavior, victimization, and contacts with the justice system. It was thus difficult to determine for most studies the nature and mechanisms of the relationships between independent and dependent variables. These findings need to be replicated in studies with large samples that use longitudinal designs to identify predictors of victimization and criminal activity. Third, as highlighted above, 67.5% of all participants were from a single study (ACCESS program). Fourth, all but one of the studies were conducted in the United States. Results may not generalize beyond the United States because of differences between countries in the nature of the homeless population (for example, homeless individuals in the United States are much more likely to be veterans); rates of contacts with the criminal justice system in the general population, which is higher in the U.S. than in other Western countries; and availability, accessibility, and costs of mental health and social services, which can vary significantly from one jurisdiction to the other. Fifth, in all studies reviewed, a significant portion of homeless individuals with severe mental illness may not have been identified as such, introducing potential bias. Finally, this systematic review used narrowly defined inclusion criteria so that conclusions could be drawn about a fairly precisely defined population (adults with both current severe mental illness and current homelessness).

Conclusions

Despite these limitations, implications for policy, services, and research can be identified. First, these findings add to the literature emphasizing that all care providers who work with homeless individuals with severe mental illness should be aware of the high levels of victimization they experience. Our findings suggest that homeless women with a history of child abuse and depression appear to be at particularly high risk of violent physical and sexual victimization and revictimization. This is consistent with the extensive literature on the consequences of childhood trauma in regard to revictimization and adult severe mental illness (82). These findings support the need for trauma-sensitive services among providers that offer services to women, including drop-in and shelter services (83). Trauma as a probable consequence of victimization is likely to influence important variables, including trust, quality of the therapeutic alliance, independent living skills, parenting skills, and coping skills (84). Criminal history has been examined as

a potential predictor of outcomes among participants of residential programs (23), but associations with victimization and trauma variables have not been studied.

Overall, results of this review highlight the contrast between the magnitude of victimization and the extent of research investigating crime perpetration rather than victimization in this population. For example, less than half the studies reviewed focused on victimization rates, which indicates the need for thorough and extensive research programs focusing on victimization as an important predictor, outcome, and process variable. In particular, studies that examine both victimization and crime perpetration in the same sample are needed. It is essential that researchers, policy makers, and practitioners recognize that perpetration and victimization are closely interlinked. For example, violent victimization has been shown to lead to a high prevalence of injuries and physical health problems among homeless persons (85), and physical health needs were identified as a correlate of criminal justice involvement in this review.

The ability of clinical teams to develop effective prevention and intervention strategies also depends on understanding specific pathways to victimization among homeless individuals with severe mental illness. Homelessness can create victimization situations that are different from the situations in which housed individuals are victimized, but no empirical data exist to contextualize victimization in this population. For example, although "homeless bashing" (the perpetration of hate crimes against homeless individuals) has received some media coverage in the past few years, the extent of this phenomenon has not been empirically investigated. Qualitative studies exploring the significance and meaning of victimization among homeless individuals with severe mental illness could also help inform preventive and intervention strategies. Studies of the extent to which victimization experiences differ by gender would also be a valuable addition to the literature. For example, findings of gender differences in sexual victimization versus general physical assaults and robbery would help inform the development of evidence-informed services for this population.

The correlates of criminal behavior identified in this review also have important clinical and policy implications. First, given the effect of contextual factors, particularly protracted homelessness, on criminal activity, interventions that aim to move individuals as rapidly as possible into permanent housing should help reduce contacts with the criminal justice system. Given the impact of clinical variables (such as level of psychiatric symptoms) on criminal activity, provision of permanent housing along with accessible mental health and substance abuse services would be an effective approach to reducing criminal behaviors. Alternative services could include integrated services (both psychiatric and general medical) in contexts in which homeless individuals with severe mental illness are most likely to receive them.

This systematic review has recommended areas for future research on the interplay between homelessness, severe mental illness, criminality, and victimization. Future investigations among homeless individuals with severe mental illness should focus on longitudinal, prospective, individual-level trajectories and cycles of crime perpetration, victimization, and contacts with the justice system (both as perpetrator and victim); study the effects of both criminal and victimization history on outcomes of housing interventions; provide more information on the specific nature and context of victimization (for example, relationship with the perpetrator and location, nature, and severity); and study how participation in housing programs and community services may decrease victimization and criminal behavior. Future studies should also make more consistent use of standardized measures (of severe mental illness and of outcomes), triangulate data collection methods (such as self-reports, official records, and proxy reports), and focus on homeless samples outside the United States.

Acknowledgments and disclosures

Dr. Roy is supported by postdoctoral fellowship grant 25446 from the Fonds de Recherche du Québec–Santé. Dr. Crocker acknowledges the support of the Canadian Institutes of Health Research (CIHR) and the Fonds de Recherche du Québec–Santé for consecutive salary awards while working on this article. Dr. Nicholls acknowledges the support of the CIHR and the Michael Smith Foundation for Health Research Career for salary awards while working on this article. Dr. Latimer acknowledges fellowship support from the J. A. Bombardier Foundation. All authors also acknowledge the support of Health Canada via the Mental Health Commission of Canada.

The authors report no competing interests.

References

1. Hwang SW: Homelessness and health. Canadian Medical Association Journal 164: 229–233, 2001
2. Improving the Health of Canadians: Mental Health and Homelessness. Ottawa, Canadian Institute for Health Information, 2007
3. 2008 Annual Homeless Assessment Report to Congress. Washington, DC, US Department of Housing and Urban Development, Office of Community Planning and Development, 2009
4. Scott J: Homelessness and mental illness. British Journal of Psychiatry 162:314–324, 1993
5. Bonin J, Fournier L: Survey of clients using resources for homeless persons in the Montreal and Quebec City areas [in French]. Montreal, Institut de la Statistique du Québec, 2001
6. Toro PA: International Perspectives on Homelessness in Developed Nations. Hoboken, NJ, Wiley-Blackwell, 2007
7. Levitt AJ, Culhane DP, DeGenova J, et al: Health and social characteristics of homeless adults in Manhattan who were chronically or not chronically unsheltered. Psychiatric Services 60:978–981, 2009
8. Lamb HR, Weinberger LE: Persons with severe mental illness in jails and prisons: a review. Psychiatric Services 49:483–492, 1998
9. Moher D, Liberati A, Tetzlaff J, et al: Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. Annals of Internal Medicine 151:264–269, W64, 2009
10. Diagnostic and Statistical Manual of Mental Disorders, 4th ed. Washington, DC, American Psychiatric Association, 1994
11. International Statistical Classification of Diseases and Health Related Problems. Geneva, World Health Organization, 2004
12. Wells GA, Shea B, O'Connell D, et al: The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analysis. Ottawa, University of Ottawa, 2006. Available at http://www.ohri.ca/programs/clinical_epidemiology/oxford.htm
13. Cheng A-L, Kelly PJ: Impact of an integrated service system on client outcomes by gender in a national sample of a mentally ill homeless population. Gender Medicine 5:395–404, 2008

14. McGuire JF, Rosenheck RA: Criminal history as a prognostic indicator in the treatment of homeless people with severe mental illness. Psychiatric Services 55:42–48, 2004

15. Desai RA, Lam J, Rosenheck RA: Childhood risk factors for criminal justice involvement in a sample of homeless people with serious mental illness. Journal of Nervous and Mental Disease 188:324–332, 2000

16. Calsyn RJ, Yonker RD, Lemming MR, et al: Impact of assertive community treatment and client characteristics on criminal justice outcomes in dual disorder homeless individuals. Criminal Behaviour and Mental Health 15:236–248, 2005

17. Brunette M, Drake RE: Gender differences in homeless persons with schizophrenia and substance abuse. Community Mental Health Journal 34:627–642, 1998

18. Gilmer TP, Stefancic A, Ettner SL, et al: Effect of full-service partnerships on homelessness, use and costs of mental health services, and quality of life among adults with serious mental illness. Archives of General Psychiatry 67:645–652, 2010

19. Christensen RC, Hodgkins CC, Garces LK, et al: Homeless, mentally ill and addicted: the need for abuse and trauma services. Journal of Health Care for the Poor and Underserved 16:615–622, 2005

20. Commander J, Odell SM: A comparison of the needs of homeless and never homeless patients with psychotic disorders. Journal of Mental Health 10:449–456, 2001

21. Taylor SM, Galanter M, Dermatis H, et al: Dual diagnosis patients in the modified therapeutic community: does a criminal history hinder adjustment to treatment? Journal of Addictive Diseases 16:31–38, 1997

22. Barrett B, Young MS, Moore K, et al: Factors predicting arrest for homeless persons receiving integrated residential treatment for co-occurring disorders. Criminal Behaviour and Mental Health 19:291–297, 2009

23. Malone DK: Assessing criminal history as a predictor of future housing success for homeless adults with behavioral health disorders. Psychiatric Services 60:224–230, 2009

24. Wenzel SL, Bakhtiar L, Caskey NH, et al: Dually diagnosed homeless veterans in residential treatment: service needs and service use. Journal of Nervous and Mental Disease 184:441–444, 1996

25. Fischer SN, Shinn M, Shrout P, et al: Homelessness, mental illness, and criminal activity: examining patterns over time. American Journal of Community Psychology 42:251–265, 2008

26. McNiel DE, Binder RL: Psychiatric emergency service use and homelessness, mental disorder, and violence. Psychiatric Services 56:699–704, 2005

27. Goodman LA, Dutton MA, Harris M: Episodically homeless women with serious mental illness: prevalence of physical and sexual assault. American Journal of Orthopsychiatry 65:468–478, 1995

28. Sullivan G, Burnam A, Koegel P, et al: Quality of life of homeless persons with mental illness: results from the course-of-homelessness study. Psychiatric Services 51:1135–1141, 2000

29. Gelberg L, Linn LS, Leake BD: Mental health, alcohol and drug use, and criminal history among homeless adults. American Journal of Psychiatry 145:191–196, 1988

30. Haugland G, Siegel C, Hopper K, et al: Mental illness among homeless individuals in a suburban county. Psychiatric Services 48:504–509, 1997

31. Leal D, Galanter M, Dermatis H, et al: Correlates of protracted homelessness in a sample of dually diagnosed psychiatric inpatients. Journal of Substance Abuse Treatment 16:143–147, 1999

32. Caton CLM, Wyatt RJ, Felix A, et al: Follow-up of chronically homeless mentally ill men. American Journal of Psychiatry 150:1639–1642, 1993

33. Sacks S, De Leon G, Sacks JY, et al: TC-oriented supported housing for homeless MICAs. Journal of Psychoactive Drugs 35: 355–366, 2003

34. Holt RL, Montesinos S, Christensen RC: Physical and sexual abuse history in women seeking treatment at a psychiatric clinic for the homeless. Journal of Psychiatric Practice 13:58–60, 2007

35. Bach A: Ordinary Injustice: How America Holds Court. New York, Metropolitan, 2009

36. Fisher WH, Roy-Bujnowski KM, Grudzinskas AJ, Jr, et al: Patterns and prevalence of arrest in a statewide cohort of mental health care consumers. Psychiatric Services 57:1623–1628, 2006

37. Fisher WH, Simon L, Roy-Bujnowski K, et al: Risk of arrest among public mental health services recipients and the general public. Psychiatric Services 62:67–72, 2011

38. Morrissey J, Meyer P, Cuddeback G: Extending Assertive Community Treatment to criminal justice settings: origins, current evidence, and future directions. Community Mental Health Journal 43: 527–544, 2007

39. Brekke JS, Prindle C, Bae SW, et al: Risks for individuals with schizophrenia who are living in the community. Psychiatric Services 52:1358–1366, 2001

40. Ferguson KMP, Bender K, Thompson SJP, et al: Social control correlates of arrest behavior among homeless youth in five US cities. Violence and Victims 26:648–668, 2011

41. Bonta J, Law M, Hanson K: The prediction of criminal and violent recidivism among mentally disordered offenders: a meta-analysis. Psychological Bulletin 123:123–142, 1998

42. Mueser KT, Crocker AG, Frisman LB, et al: Conduct disorder and antisocial personality disorder in persons with severe psychiatric and substance use disorders. Schizophrenia Bulletin 32:626–636, 2006

43. Coid J, Yang M, Ullrich S, et al: Prevalence and correlates of psychopathic traits in the household population of Great Britain. International Journal of Law and Psychiatry 32:65–73, 2009

44. Connolly AJMA, Cobb-Richardson P, Ball SAP: Personality disorders in homeless drop-in center clients. Journal of Personality Disorders 22:573–588, 2008

45. First M, Gibbon M, Spitzer R, et al: Computer-assisted Structured Clinical Interview for DMS-IV Axis II Personality Disorders: Patient Questionnaire and Expert System. Washington, DC, American Psychiatric Press, 2000

46. Crawford DM, Trotter EC, Hartshorn KJS, et al: Pregnancy and mental health of young homeless women. American Journal of Orthopsychiatry 81:173–183, 2011

47. North CS, Smith EM, Spitznagel EL: Is antisocial personality a valid diagnosis among the homeless? American Journal of Psychiatry 150:578–583, 1993

48. Robins LN, Regier D: Psychiatric Disorders in America: The Epidemiological Catchment Area Study. New York, Free Press, 1991

49. Kessler RC, Nelson CB, McGonagle KA, et al: The epidemiology of co-occurring addictive and mental disorders: implications for prevention and service utilization. American Journal of Orthopsychiatry 66: 17–31, 1996

50. Crocker AG, Mueser KT, Drake RE, et al: Antisocial personality, psychopathy, and violence in persons with dual disorders. Criminal Justice and Behavior 32:452–476, 2005

51. Brennan P, Grekin ER, Vanman EJ: Major mental disorders and crime in the community: a focus on patient populations and cohort investigations; in Violence Among the Mentally Ill: Effective Treatments and Management Strategies. Edited by Hodgins S. Dordrecht, The Netherlands, Kluwer, 2000

52. Hodgins S: Mental disorder, intellectual deficiency, and crime: evidence from a birth cohort. Archives of General Psychiatry 49:476–483, 1992

53. Eronen M, Angermeyer MC, Schulze B: The psychiatric epidemiology of violent behaviour. Social Psychiatry and Psychiatric Epidemiology 33(suppl 1):S13–S23, 1998

54. Elbogen EB, Johnson SC: The intricate link between violence and mental disorder: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Archives of General Psychiatry 66:152–161, 2009

55. Tiihonen J, Isohanni M, Räsänen P, et al: Specific major mental disorders and criminality: a 26-year prospective study of the 1966 northern Finland birth cohort. American Journal of Psychiatry 154:840–845, 1997

56. White MD, Godkamp JS, Campbell SP: Co-occurring mental illness and substance abuse in the criminal justice system. Prison Journal 86:301–325, 2006

57. Swartz JA, Lurigio AJ: Serious mental illness and arrest. Crime and Delinquency 53:581–604, 2007

58. Quanbeck CD, Stone DC, McDermott BE, et al: Relationship between criminal arrest and community treatment history among patients with bipolar disorder. Psychiatric Services 56:847–852, 2005

59. Constantine R, Andel R, Petrila J, et al: Characteristics and experiences of adults with a serious mental illness who were involved in the criminal justice system. Psychiatric Services 61:451–457, 2010

60. Fisher WH, Silver E, Wolff N: Beyond criminalization: toward a criminologically informed framework for mental health policy and services research. Administration and Policy in Mental Health and Mental Health Services Research 33: 544–557, 2006

61. Theriot MT, Segal SP: Involvement with the criminal justice system among new clients at outpatient mental health agencies. Psychiatric Services 56:179–185, 2005

62. Drake RE, Osher FC, Wallach MA: Homelessness and dual diagnosis. American Psychologist 46:1149–1158, 1991

63. Bonin J-P, Fournier L, Blais R, et al: Use of services by persons who frequent services for homeless people in Montreal and Quebec City, who suffer from concurrent mental health and drug related disorders [in French]. Drogues, Santé et Société 4: 211–248, 2005

64. Verheul R, Ball S, van den Brink W: Substance abuse and personality disorders; in Dual Diagnosis and Treatment: Substance Abuse and Comorbid Medical and Psychiatric Disorders. Edited by Kranzler HR, Rounsaville BJ. New York, Marcel Dekker, 1998

65. Prince JD, Akincigil A, Bromet E: Incarceration rates of persons with first-admission psychosis. Psychiatric Services 58:1173–1180, 2007

66. Bukowski K, Buetow S: Making the invisible visible: a Photovoice exploration of homeless women's health and lives in central Auckland. Social Science and Medicine 72:739–746, 2011

67. Green TM: Police as frontline mental health workers: the decision to arrest or refer to mental health agencies. International Journal of Law and Psychiatry 20: 469–486, 1997

68. Kohm SA: "Welfare is the second last resort. The last resort is death." An exploratory analysis of social assistance, victimization and crime. Canadian Journal of Urban Research 15:86–108, 2006

69. Maniglio R: Severe mental illness and criminal victimization: a systematic review. Acta Psychiatrica Scandinavica 119:180–191, 2009

70. Chapple B, Chant D, Nolan P, et al: Correlates of victimisation amongst people with psychosis. Social Psychiatry and Psychiatric Epidemiology 39:836–840, 2004

71. Hiday VA, Swartz MS, Swanson JW, et al: Criminal victimization of persons with severe mental illness. Psychiatric Services 50: 62–68, 1999

72. Goodman LA, Salyers MP, Mueser KT, et al: Recent victimization in women and men with severe mental illness: prevalence and correlates. Journal of Traumatic Stress 14:615–632, 2001

73. White MC, Chafetz L, Collins-Bride G, et al: History of arrest, incarceration and victimization in community-based severely mentally ill. Journal of Community Health 31:123–135, 2006

74. Teplin LA, McClelland GM, Abram KM, et al: Crime victimization in adults with severe mental illness: comparison with the National Crime Victimization Survey. Archives of General Psychiatry 62:911–921, 2005

75. Choe JY, Teplin LA, Abram KM: Perpetration of violence, violent victimization, and severe mental illness: balancing public health concerns. Psychiatric Services 59: 153–164, 2008

76. Padgett DK, Struening EL: Victimization and traumatic injuries among the homeless: associations with alcohol, drug, and mental problems. American Journal of Orthopsychiatry 62:525–534, 1992

77. Lee B, Schreck C: Danger on the streets: marginality and victimization among homeless people. American Behavioral Scientist 48:1055–1081, 2005

78. Greenberg GA, Rosenheck RA: Mental health correlates of past homelessness in the National Comorbidity Study Replication. Journal of Health Care for the Poor and Underserved 21:1234–1249, 2010

79. McCart MR, Smith DW, Sawyer GK: Help seeking among victims of crime: a review of the empirical literature. Journal of Traumatic Stress 23:198–206, 2010

80. Lehman AF: A quality of life interview for the chronically mentally ill. Evaluation and Program Planning 11:51–62, 1988

81. Straus M: Measuring intra-family conflict and violence: the Conflict Tactics (CT) Scales. Journal of Marriage and the Family 4:75–88, 1979

82. van der Kolk BA: The developmental impact of childhood trauma; in Understanding Trauma: Integrating Biological, Clinical and Cultural Perspectives. New York City. Edited by Kirmayer LJ, Lemelson R, Barad M. Cambridge, United Kingdom, Cambridge University Press, 2007

83. Padgett DK, Hawkins RL, Abrams C, et al: In their own words: trauma and substance abuse in the lives of formerly homeless women with serious mental illness. American Journal of Orthopsychiatry 76:461–467, 2006

84. Schuster J, Park CL, Frisman LK: Trauma exposure and PTSD symptoms among homeless mothers: predicting coping and mental health outcomes. Journal of Social and Clinical Psychology 30:887–904, 2011

85. Padgett DK, Struening EL, Andrews H, et al: Predictors of emergency room use by homeless adults in New York City: the influence of predisposing, enabling and need factors. Social Science and Medicine 41: 547–556, 1995