Assessing Inpatient Victimization Risk Among Insanity Acquittees Using the HCR-20^{V3}

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Victimization of individuals with mental illness may involve serious emotional or physical injury to already vulnerable persons. Further, victimization may contribute to subsequent victimization experiences, exacerbate psychiatric symptoms, and prolong hospitalization, among other undesirable secondary outcomes. Nonetheless, limited prior research has focused on predicting victimization in forensic psychiatric settings, and no research has attempted to do so with the Historical, Clinical, Risk Management-20 Version 3 (HCR-20^{V3}) tool. This study involved retrospective ratings of the HCR-20^{V3} for 169 hospitalized insanity acquittees and examined the utility of HCR-20^{V3} ratings in predicting victimization. Although the HCR-20^{V3} was not explicitly developed to aid in evaluations of victimization risk, other structured professional judgment tools intended to predict violence risk have demonstrated potential for predicting victimization, due to the existence of common risk factors and overlap between patients who engage in violence and those who are victimized. Results from this study suggest that evaluators may consider the Clinical scale score of the HCR-20^{V3} and elevations on its items assessing violent ideation or intent, instability, and treatment or supervision response in identifying those at increased risk for future victimization. The Historical and Risk Management scales were less relevant in predicting victimization.

J Am Acad Psychiatry Law 47(3) online, 2019. DOI:10.29158/JAAPL.003843-19

Victimization refers to the experience of insult or injury caused by the aggressive words or behaviors of another individual. This may include criminal victimization,[1] bullying, intimidation (e.g., through yelling or property damage), verbal threats, physical assault, and sexual assault,[2] as well as social exploitation, blackmail, and financial abuse, among other adverse experiences. The nature of victimization has also been conceptualized along covert–overt and relational–physical dimensions.[3] In inpatient psychiatric settings, including forensic psychiatric hospitals, victimization experienced by patients may be perpetrated by hospital staff or other patients. Several theories attempt to explain why victimization occurs[4-6]; however, no single theory completely accounts for victimization experiences in such settings.

Characteristics of Patient Victimization

Prevalence and Consequences of Victimization

Estimated prevalence rates of victimization vary widely,[7] given differences in context (e.g., inpatient psychiatric hospital versus community), recall periods (e.g., in the past four months versus in the past one month), and data collection method (e.g., victim self-report versus institutional documentation). Because of this variability, comprehensive reviews of the literature in this area typically report ranges of victimization rates. In a systematic review of the literature, Maniglio[1] found that estimates of nonviolent victimization among individuals with severe and persistent mental illness (SMI) ranged from 7.7 percent to 28.0 percent, while estimates of violent victimiza-

Published online May 16, 2019.

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Disclosures of financial or other potential conflicts of interest: None.

tion ranged from 4.3 percent to 35.0 percent. These numbers may underestimate the actual prevalence of victimization among individuals with SMI because such individuals are less likely to report mild victimization to police than are other community members.[8] Latalova and colleagues[8] found that nine other epidemiological studies indicated that individuals with SMI were more likely to experience violent victimization than other community members.[9] In other words, people with SMI are less likely to have official records of victimization, despite a higher rate of actual victimization experiences, compared with individuals without mental illness.[8] A limitation of the literature to date is that little is known about the prevalence of victimization in inpatient forensic settings, with a disproportionate focus on community victimization in existing studies.

Mental health researchers have characterized victimization of persons with mental illness as a major public health problem.[1,7,10] Victimization of individuals with SMI can exacerbate existing symptoms of psychiatric disorders, increase the likelihood of mental health service use (including hospitalization), and substantially diminish victims' quality of life. Walsh and colleagues[11] found that community-dwelling patients who were victims of violence were more likely to subsequently experience homelessness, substance use problems, and severe psychopathological symptoms than their nonvictimized peers. The data also consistently suggest that individuals who are initially victimized are likely to be subsequently victimized.[7,9,12,13] In addition to negatively impacting the life of the victim, violent victimization may also adversely affect victims' family members[8] and make other community members feel unsafe.

Vulnerability and Perception of Threat

Victimization and revictimization of individuals with SMI is problematic because such individuals are especially vulnerable. Several factors put such individuals at a disadvantage in perceiving risks and attempting to protect themselves, including impaired reality testing; impaired insight or judgment; disorganized thinking; problems with executive functioning, including poor planning and problem solving; and impulsivity.[7,14-16] Several of these symptoms are not typically associated with violence risk; however, their presence may lead to victimization experiences. For example, Fortugno and colleagues[17] found that higher levels of manic symptoms, such as those characterized by higher activity level, impaired judgment, and poorer self-control, were associated with higher risk of violent victimization among involuntarily hospitalized patients. It may be that certain psychiatric symptoms elicit the attention and aggression of other individuals, including peers with SMI.[16] Paranoid delusional thinking, hallucinations, and other positive symptoms of psychosis are also associated with increased risk of revictimization.[18] Such symptoms are common among individuals with psychotic disorders but may also be present in the context of other psychopathology.

Victimization risk factors relevant to individuals with SMI include young age, unemployment, homelessness, substance use problems, psychopathy, and prior arrest.[8,11,19-22] Consistent with findings of earlier researchers, El Missiry and colleagues[3] found the rate of medication noncompliance to be higher among victimized inpatients and outpatients compared with those who were not victimized. Walsh and colleagues[11] similarly found that unmet needs for care (e.g., accommodation, food, self-care, activities, finance, relationships, childcare, physical health, and psychological distress), as assessed by the Camberwell Assessment of Need – Research Version,[23] were associated with increased risk of victimization in a sample of community-dwelling individuals diagnosed with psychotic disorders. Additional risk factors associated with victimization in the general population may also affect individuals with mental illness; these include low socioeconomic status, previous mental health problems, and prior victimization.[14,19,24]

Walsh and colleagues[11] found that 16 percent of former inpatients and outpatients with psychotic disorders had experienced violent victimization within the prior year. In their sample, those who were victimized more frequently reported feeling unsafe compared with nonvictimized patients; it is unclear if feelings regarding lack of safety preceded the victimization experiences. In inpatient settings, patients may also experience anticipation of victimization from aspects of the supposedly therapeutic environment, such as fear of aggressive peers, inappropriate behaviors by staff, the presence of other-sex peers on the same unit, forced medication, seclusion, and restraint.[25] Junewicz and colleagues suggested that forensic psychiatric patients "may feel more vulnerable due to their restricted autonomy and direct oversight by the relevant local, state, or federal correctional authority" (Ref. 26, p 2) but may feel com-

paratively less vulnerable than they would in jail, prison, or even in the community. Despite the potential for heightened threat perception in forensic psychiatric settings, the forensic psychiatric population has greater access to resources (e.g., hospital staff) in inpatient settings, and this may mitigate the actual likelihood of victimization.[4,7]

Wolff and Shi[27] noted that individuals in correctional settings experience high rates of trauma, both with respect to preincarceration victimization and experiences while incarcerated; this may result in individuals being hypervigilant to perceptions of threat. Among male inmates in correctional institutions, more than a third are estimated to experience physical or sexual assault over a six-month period.[26,28,29] Blitz and colleagues[28] identified that males with a diagnosed mental illness were 1.3 times as likely to report physical victimization while incarcerated, compared with individuals without a diagnosed mental illness. Similarly, in a large study of state prisoners, Wood and Buttaro[30] found that dual diagnoses of SMI and substance use disorders put inmates at higher risk of physical victimization compared with inmates without mental illness. Although forensic psychiatric hospitals are designed to admit individuals with SMI and criminal justice involvement, little research has explored victimization risk among individuals in such settings. Instead, the emphasis of the literature has been on managing victimization risk in correctional and community settings.

Victimization and Perpetration Overlap

Over the past several decades, the literature has consistently demonstrated an overlap between those individuals who perpetrate violence and those who are victimized; this appears to hold true despite variations in measurement, the method of data analysis, culture (e.g., related to the nation in which the research is conducted), and the way in which victimization is conceptualized.[5] Violence and violent victimization are both more common among persons with SMI than among the general population.[10,19] For instance, in a sample of 826 discharged civil psychiatric patients, 19 percent ($n = 160$) were violently victimized, 13 percent ($n = 107$) had committed a violent offense, and 5.6 percent ($n = 47$) experienced both outcomes during the first 10 weeks following their hospital discharge.[31]

Although the current literature has established a relationship between victimization and violence, the mechanism underlying that relationship is not yet established. Researchers have theorized that victimization and violence perpetration share a common pathway among individuals with SMI because the two sets of experience often co-occur.[3,9,10,19,31–33] For example, victimization in early childhood is associated with violent behavior in adulthood,[20] and violent victimization predicted violent behaviors within the next 12–18 months among forensically involved individuals with mental illness.[34] Factor analysis has provided some support for the supposition of a shared pathway,[12] with items assessing violence and victimization mapping onto a unidimensional construct. For example, Hiday and colleagues found that being victimized in the past corresponded with significantly greater risk of perpetrating violence in the future (odds ratio = 1.76).[9] Victimized individuals may be more likely to perceive threat, to feel unsafe, and as result, to be more likely to engage in the perpetration of violence (either as a means of self-defense or as reactive aggression without the intention of self-defense).[9,11,32,35] Thus, identifying victimization experiences and providing victimization-targeted treatment to individuals with SMI may contribute to a reduction in violence.

Individuals with SMI are more likely to perpetrate violence than the general population, although "the overwhelming majority" of individuals with SMI are not violent (Ref. 9, p 559). In fact, persons with SMI are far more likely to be victimized than to be violent.[14,18] Choe and colleagues[10] found that two percent to 13 percent of patients receiving outpatient treatment in their study acted violently in the prior six months to three years, whereas 20 percent to 34 percent experienced violent victimization. For studies that combined psychiatric inpatient and outpatient samples, 12 percent to 22 percent of patients had perpetrated violence in the past 6–18 months, compared with 35 percent who had experienced victimization in the past year.[9] Teplin and colleagues[7] found that individuals receiving outpatient, day, or residential treatment for SMI experienced attempted or completed violent victimization in the previous year at a rate more than 11 times greater than the general population, even after controlling for demographic differences. In contrast, they found that the annual incidence of violent crime among the patients was four times greater than among the general population.[7] In other words, the base rate of victimization is greater than that of violence among individu-

als with SMI, although both experiences occur at an elevated rate compared with the general population.

Because base rate estimates affect the accuracy of predictions of future behaviors, one would expect that predictions of victimization might be more accurate than predictions of violent behavior. Research and policy have focused on predicting and reducing violence risk, however, to the neglect of victimization risk.[13] In their review of the literature, Choe and colleagues[10] found 31 empirical research studies examining patients as perpetrators, compared with 10 studies examining victimization of patients. Disproportionate focus may reflect the priorities of the public because public perception generally identifies the risk that individuals with SMI pose to others as more salient than the risk of those same individuals being victimized.[8,17]

Assessing Victimization Risk

It is necessary to examine victimization risk among individuals with SMI because such experiences can lead to adverse consequences, including exacerbated symptoms and increased revictimization risk. Wooldredge[36] further argued that it was important to identify correctional inmates at risk of victimization so that such individuals can be separated from those at high risk for aggression.[37] For this reason, individuals with intellectual deficits are separated from the general population in prison in some correctional settings (e.g., in New York). The same logic can be applied in forensic hospitals, yet researchers have noted the significant overlap in the violent offending and victim populations among psychiatric patients[20,31,38] as a barrier to implementing separation practices. This covariation suggests that factors which predict violence may also predict victimization.

Although mental illness serves as a significant risk factor of victimization, in settings in which virtually everyone has a mental illness the construct fails to serve as a discriminating factor between those who are and those who are not likely to be victimized. Within forensic psychiatric contexts, history of criminal involvement no longer serves as a salient risk factor in differentiating patients. The challenge to researchers and clinicians in such settings is to understand factors other than mental illness and criminality that increase risk of victimization.

Dolan and colleagues noted that many psychosocial risk factors for violence among individuals with mental illness are also risk factors for violent victimization, including "younger age, homelessness, socioeconomic disadvantage, active symptoms of mental illness, and substance abuse" (Ref. 20, p 28). Victimization risk factors for individuals with psychotic disorders also include recent prior arrest and poorer social and occupational functioning.[14] Labrecque and colleagues[37] identified history of mental illness, institutional misconduct, and disregard for others as risk factors, and offense history as a moderator, for violent victimization in prisons. Prior victimization experiences have been described as one of the most robust correlates of long-term violence, although this is not emphasized in the violence risk assessment literature[12] (i.e., prior victimization is often merely noted as one of many risk factors).

Because victimization risk may decrease over the course of time at a single facility,[39] evaluating short-term victimization risk is imperative. To date, one risk assessment tool has been developed specifically to predict nonsexual victimization risk in correctional settings: the Inmate Risk Assessment for Violent, Nonsexual Victimization.[37] This actuarial measure addresses a very narrow range of victimization in a specific context.

Another risk assessment tool, the Short-Term Assessment of Risk and Treatability (START),[40] was developed to assist evaluators in estimating the short-term risk of multiple adverse outcomes, including victimization. The START is a structured professional judgment tool that requires the clinician to indicate whether an examinee is of low, moderate, or high risk for each outcome. The START tool is composed entirely of dynamic variables (e.g., medication adherence, mental state, and conduct), and items are rated as both strengths (i.e., qualities that mitigate risk) and vulnerabilities (i.e., qualities that exacerbate risk). According to one recent meta-analysis, the START instrument has most often been evaluated as a tool to predict violence[41,42] and only a handful of studies have investigated the utility of the START tool as a measure of victimization risk.[6,43-45] Mixed findings derive from those victimization studies. The summary risk estimate, which is the critical measure for a structured professional judgment tool, demonstrated inconsistent classification accuracy across studies. The summed strength and vulnerability scale scores did not differentiate those who were victimized from those who were not.[43-45] There was some evidence suggesting utility of item-level analysis in

predicting victimization.[6,43] No research to date has explored whether other forensic assessment instruments primarily used for violence risk prediction have utility in predicting victimization risk; however, the START literature provides support for such endeavors.

A New Use for the HCR-20^{V3}

This study examines the utility of the Historical, Clinical, Risk Management-20 Version 3 (HCR-20^{V3})[46] in predicting victimization in a forensic psychiatric hospital. The HCR-20^{V3} is the most recent iteration of the most widely used violence risk assessment tool in forensic settings in the United States[47] and internationally.[48] It was not developed with the intention of aiding evaluations of victimization risk, but it may have utility in predicting victimization in addition to violence, given the START literature. In fact, the Female Additional Manual (FAM),[49] developed for use in conjunction with the HCR-20^{V3} for evaluating female examinees, allows evaluators to make final risk judgments regarding likelihood of victimization. To date, no supplemental tool or iteration of the HCR-20^{V3} has been developed to facilitate victimization risk prediction for male examinees. Both male and female examinees were included in this study, despite expected gender differences in the quality of victimization,[50] because the core HCR-20^{V3} items are applicable regardless of gender. FAM scores were not examined in this study.

We specifically aimed to answer the call by Teplin and colleagues[7] to conduct victimization research using a standardized method of measuring victimization (i.e., the START Outcomes Scale [SOS][2]) to identify key risk factors related to victimization in a special population of individuals with SMI. We aimed to examine the utility of the HCR-20^{V3}'s Historical (H), Clinical (C), and Risk Management (R) scale scores and specific items in predicting risk for inpatient victimization with a sample of individuals adjudicated not guilty by reason of insanity. As final victimization risk judgments are not formed using the HCR-20^{V3}, only the individual H, C, and R scale and item scores were evaluated in terms of their ability to predict victimization. All HCR-20^{V3} items were examined because this is the first study to explore victimization risk prediction with the HCR-20^{V3}.

Methods

Procedure

In New York, insanity acquittees are initially admitted to a state forensic psychiatric hospital to determine whether they meet criteria for a dangerous mental disorder (DMD; i.e., mental illness that constitutes a physical danger to self or others).[51] This assessment is overseen by the New York State Office of Mental Health Division of Forensic Services and is conducted by the facility's clinical staff. The forensic evaluation typically involves a review of records, clinical interview, examination of collateral sources, and the development of a report offering a professional opinion on the legal question and making a recommendation to the court. The court makes the ultimate ruling as to whether the patient has a DMD, is mentally ill as defined by New York's Mental Hygiene Law but not dangerous, or is neither dangerous nor mentally ill. Subsequently, the level of security required to ensure safety is identified, and acquittees are managed accordingly in maximum security, civil, or community settings. Individuals who are neither dangerous nor mentally ill are discharged to the community, while individuals who are not dangerous but mentally ill are transferred to a civil facility for continued care in a less restrictive environment. Acquittees found to have a DMD are retained or transferred to another secure facility following adjudication. They are then reevaluated by independent evaluators at least once every two years to assess the ongoing presence of a DMD, which would warrant retention in such a restrictive setting.

In this study, a minimum of two recent DMD evaluation reports (henceforth referred to as Evaluation 1 and Evaluation 2) were reviewed and coded retrospectively by the researchers using the HCR-20^{V3} as part of a larger research project. Because evaluators in New York are required to score the measure as part of the DMD assessment, the evaluators' reports were sufficiently detailed that the researchers coded HCR-20^{V3} archivally based on the information included in the reports. This approach was consistent with prior research utilizing an archival design involving review of records,[52-55] including DMD evaluation reports. Acquittees were also archivally coded on the SOS,[2] an outcome measure assessing for inpatient victimization among other adverse outcomes, according to formal hospital incident reports and the second DMD evaluation report (i.e., Evalu-

Table 1 Differences Between Victimized and Nonvictimized Acquittees

	Victimized			Nonvictimized			Comparison		
Demographic Characteristic	*n*	M	SD	*n*	M	SD	*t*	*p*	*d*
Age at Evaluation 1	58	42.36	11.18	110	45.20	4.04	1.33	.19	0.22
Time between evaluations	56	16.55	5.90	96	15.06	5.83	−1.51	.13	0.26
Total arrests	58	20.74	34.25	110	25.89	39.68	0.84	.40	0.14
Longest prior sentence	31	22.12	30.61	55	17.06	32.58	−0.71	.48	0.16
Demographic Characteristic	*n*	Yes	No	*n*	Yes	No	χ^2	*p*	
Male	58	49 (84.4%)	9 (15.5%)	111	91 (82.0%)	20 (18.0%)	0.17	.68	
Violent charge	58	53 (91.3%)	3 (8.7%)	110	106 (96.4%)	4 (3.6%)	1.86	.17	
Primary Diagnosis	*n*	Yes	No	*n*	Yes	No	χ^2	*p*	
Psychotic disorder	58	37 (64.9%)	21 (36.2%)	109	69 (63.3%)	40 (36.7%)	< 0.01	.95	
Mood disorder	58	10 (17.2%)	48 (82.8%)	109	15 (13.8%)	94 (86.2%)	0.36	.55	
Substance use disorder	58	1 (1.72%)	57 (98.2%)	109	7 (6.4%)	102 (93.6%)	1.83	.18	

Time between evaluations = time in months elapsed between Evaluation 1 and Evaluation 2.

ation 2). The follow-up period averaged 15.61 months (SD = 5.88, range = 5–28). The researchers involved in coding were masters- and doctoral-level graduate students who received training on coding the HCR-20^{V3} and SOS, with scoring overseen by a licensed psychologist.

Participants

Due to the archival nature of the study, a waiver of consent was approved for all participants by the relevant institutional review boards. Analyses are based on a sample of 169 insanity acquittees (82.8% male) admitted to a state forensic psychiatric hospital between 1985 and 2014 for inpatient treatment after being identified as having a DMD. Acquittees had been hospitalized in the facility for an average of 75.27 months (SD = 92.75, range = 0–366) prior to Evaluation 1 of this study.

The mean age of acquittees at Evaluation 1 was 44.22 years (SD = 13.15), and they had completed an average of 12.39 years (SD = 2.58, range = 5–18) of education. Most acquittees (n = 71 [44.7%]) were Black/African American, while 29 (18.2%) were Hispanic, 38 (23.9%) were White/European American, and 4 (10.7%) were Asian; the remainder (n = 17 [10.7%]) were classified as Other (e.g., biracial).

Most (n = 106 [63.5%]) acquittees were diagnosed with a psychotic disorder at the time of admission to the hospital; 25 (15.0%) were diagnosed with a mood disorder, 8 (4.8%) were diagnosed with a substance use disorder, and none were diagnosed primarily with an intellectual or developmental disability. All acquittees had been adjudicated not guilty by reason of insanity for one or more felony offenses, and in 159 (94.6%) cases, the offense was a violent felony. Further, 118 (69.6%) had at least one prior arrest, and 140 (81.9%) had experienced at least one prior psychiatric hospitalization. Acquittees victimized during the follow-up period did not significantly differ from nonvictimized acquittees with respect to any evaluated demographic variable (Table 1).

HCR-20^{V3}

The HCR-20^{V3} [46] is a risk assessment tool intended to aid evaluators in predicting risk of interpersonal violence using structured professional judgment. The measure has been validated for use in both correctional and civil psychiatric contexts as well as in forensic psychiatric contexts.[56,57] Consistent with earlier iterations of the measure, the HCR-20^{V3} is composed of 20 items, each of which contribute to one of three scales. The Historical (H) scale is composed of 10 risk factors associated with violence, the presence of which are not expected to be reduced over time or with treatment, although the relevance of those factors may change over time. The Clinical (C) scale is composed of five risk factors that are dynamic in nature and thus may change over time or with treatment. The Risk Management (R) scale is similarly composed of five dynamic risk factors and captures future-oriented concerns. The specific items of the HCR-20^{V3} are similar to those of the second version of the measure, although some items were either revised or subsumed under other items. Douglas and Belfrage[58] found strong evidence of

concurrent validity ($r = .69–.90$) between the two versions. All HCR-20^{V3} items are scored for their presence (i.e., Not Present [N], Partially/Possibly Present [P], or Definitely Present [Y]), as well as their relevance to violence risk. Because violence was not the outcome of interest in this study, only presence scores were examined. HCR-20^{V3} final risk judgments are reached about violence, but evaluators are not prompted to provide opinions regarding risk for victimization. For this reason, final risk judgments were not examined in the present study. Instead, we analyzed scores at the item- and scale-level.

Researchers received training on the HCR-20^{V3} with an author of the measure or other trained clinicians. Researchers also received ongoing training throughout the duration of the study to ensure consistency of coding. Interrater reliability was calculated for 86 (50.88%) cases that were randomly selected to be coded by two raters. Overall, intraclass correlation coefficients (ICCs) reflecting absolute agreement were generally high (mean = .76, median = .79, range = .56–1.00) across scales and items (see Table 2). Interrater reliability, however, was questionable for the H item assessing Relationships (ICC = .56), and for the R items assessing Living Situation (ICC = .59) and Stress and Coping (ICC = .59). Interrater reliability was likely lower for Relationships due to limits on relevant information included in the DMD reports, particularly with respect to non-intimate relationships. Lack of specific information regarding possible discharge placements and strategies for successful transition (i.e., coding without the ability to review individualized conditional release plans) were proposed as possible factors that contributed to inconsistency in scoring the Living Situation and Stress and Coping items; researchers coded these items based on hypothesized problems or observed trends in behaviors.

Table 2 Interrater Reliability for Items and Scales of the HCR-20^{V3}

Scale and Item	Intraclass Correlation Coefficient
Historical Scale (n = 86 paired ratings)	
H1. Violence	1.00
H2. Other antisocial behavior	0.86**
H3. Relationships	0.56**
H4. Employment	0.60**
H5. Substance abuse	0.95**
H6. Major mental disorder	0.84**
H7. Personality disorder	0.93**
H8. Traumatic experiences	0.78**
H9. Violent attitudes	0.51*
H10. Treatment or supervision response	0.79**
Historical Scale Total	0.86**
Clinical Scale (n = 86 paired ratings)	
C1. Insight	0.92**
C2. Violent ideation or intent	0.60**
C3. Symptoms of major mental disorder	0.87**
C4. Instability	0.80**
C5. Treatment or supervision response	0.85**
Clinical Scale Total	0.89**
Risk Management (n = 86 paired ratings)	
R1. Professional services and plans	0.73**
R2. Living situation	0.59**
R3. Personal support	0.71**
R4. Treatment or supervision response	0.79**
R5. Stress and coping	0.59**
Risk Management Scale Total	0.85**

HCR-20^{V3}, Historical, Clinical, Risk Management-20 Version 3.
* $p < .01$.
** $p < .001$.

START Outcomes Scale (SOS)

The SOS is an outcome measure used to assess instances of victimization among several other problematic outcomes (e.g., physical aggression against others).[2] In this study, victimization was operationally defined as being the recipient of interpersonal violence, including verbal or physical threats resulting in fear or intimidation, financial harm, or physical harm, consistent with the HCR-20^{V3} manual. Documented incidents of victimization were coded using the SOS on a scale of one to four. To be consistent with the operational definition of victimization and the HCR-20^{V3} manual, victimization codings were grouped such that evidence of victimization at SOS levels two, three, or four were coded as victimization present, and the absence of victimization or presence of level one victimization only was coded as victimization absent. Level one captured occasional bullying or intimidation by others resulting in mild emotional, psychological, or financial injury, property damage, fear, or intimidation. Level two captured abuse or verbal threats resulting in at least moderate emotional injury, fear or intimidation, or financial harm, without physical injury. Level three captured physical assault resulting in mild to moderate injury, as well as nonconsensual sexual touching. Level four captured physical assaults resulting in serious physical injury and coercive sexual assault. When more than one level of victimiza-

Table 3 Frequency and Severity of Victimization

Incident Severity	Victimized, *n* (%)	Victimization Mean	Range of Incidents
Any victimization	58 (34.3)	0.75	1–10
START Outcome Scale Level 2	21 (13.0)	0.16	1–3
START Outcome Scale Level 3	46 (28.6)	0.57	1–9
START Outcome Scale Level 4	2 (1.2)	0.01	1–1

$N = 169$ subjects. Victimization Mean = the number of incidents at each level of incident severity; Range of Incidents = minimum and maximum number of incidents, only including cases where there was at least one incident of victimization; Any victimization = victimization at SOS Level 2, 3, or 4.

tion was present during the same incident, the most serious level was coded. If an acquittee was involved in a physical fight in any capacity and sustained an injury, victimization was coded.

Results

More than one third ($n = 58$ [34.3%]) of acquittees in our sample were victimized at least once during the follow-up period. The frequency of victimization incidents overall, and with respect to specific SOS levels, are presented in Table 3. There were no gender differences observed for overall victimization ($p = .68$) or for individual victimization levels (SOS Level 2: $p = .81$; SOS Level 3: $p = .68$; SOS Level 4: $p = .52$).

Logistic regression analysis was conducted to establish whether the H, C, and R scales in combination were predictive of victimization status (i.e., victimized or nonvictimized) among acquittees. Controlling for length of follow-up period, logistic regression analyses indicated that the H, C, and R scales in combination were predictive of victimization experiences ($\chi^2 = 16.85$, $p = .002$; Nagelkerke $R^2 = .15$), with the C scale ($p = .001$; Exp(B) = 1.46) contributing significantly to the model. A linear regression was also conducted to determine whether the scales in combination predicted the number of victimization experiences, controlling for the length of follow-up period. The overall model was significant ($F = 5.00$, $p = .001$, adjusted $R^2 = .10$), with the C scale uniquely contributing to the model ($p = .008$). Results of both analyses are presented in Table 4.

Independent sample *t* tests were conducted to identify specific differences in mean HCR-20^{V3} item scores and scale scores between the subset of acquittees that experienced victimization during the follow-up period and the subset that did not ($\alpha < .01$). Results indicate that clinical items assessing violent ideation or intent (C2), instability (C4), and treatment or supervision response (C5) in the recent past differentiated the two groups with medium effect sizes ($d = .48, .58, .51$, respectively) (Table 5). Of the three scales, only the C scale differed between the two groups, with a medium effect size ($d = .62$). For all items and scales in which significant differences were found, the subset of acquittees that were victimized during the follow-up period produced higher mean scores than acquittees who were not victimized.

An additional logistic regression was performed to determine whether the items that significantly differed between victimized and nonvictimized acquittees were useful in combination for predicting victimization status, controlling for the length of the follow-up period. Results indicated that the items were predictive of victimization status in combination ($\chi^2 = 18.69$, $p = .001$; Nagelkerke $R^2 = .16$), with the item assessing for instability (C4) uniquely contributing to the model ($p = .03$). A linear regression was also performed to determine the ability of these items to predict the number of victimization

Table 4 HCR-20^{V3} Scales as Predictors of Victimization

	Predicting Presence of Victimization					Predicting Number of Victimization Incidents		
Variable	β	Standard Error	Wald	*p*	Exp(β)	Standardized β	*t*	*p*
H Scale	< 0.01	0.07	< 0.01	.99	1.00	0.10	1.07	.29
C Scale	0.38	0.12	10.54	< .01*	1.46	0.28	2.68	< .01*
R Scale	−0.13	0.13	1.03	.31	0.88	−0.05	−0.53	.60
Time	0.04	0.03	1.18	.28	1.04	0.16	1.97	.05

HCR-20^{V3}, Historical, Clinical, Risk Management-20 Version 3; H Scale, Historical scale; C Scale, Clinical scale; R Scale, Risk Management scale; Time, time in months elapsed between Evaluation 1 and Evaluation 2.
* $p < .01$.

Table 5 Differences in Mean HCR-20^{V3} Scores by Victimization Status

HCR-20^{V3} Component	Victimized			Nonvictimized			Comparison		
	n	M	SD	*n*	M	SD	*t*	*p*	*d*
H1. Violence	58	1.98	0.13	111	2.00	0.00	1.39	.17	0.23
H2. Other antisocial behavior	58	1.10	0.83	110	1.02	0.94	0.58	.56	0.10
H3. Relationships	58	1.81	0.44	109	1.74	0.53	0.82	.41	0.13
H4. Employment	57	1.30	0.65	106	1.20	0.71	0.88	.38	0.15
H5. Substance abuse	58	1.67	0.69	108	1.56	0.80	0.99	.33	0.16
H6. Major mental disorder	58	1.95	0.29	111	1.96	0.19	0.42	.67	0.07
H7. Personality disorder	58	1.19	0.85	111	1.09	0.84	0.73	.47	0.12
H8. Traumatic experiences	58	1.53	0.63	110	1.45	0.69	0.74	.46	0.12
H9. Violent attitudes	58	0.76	0.73	111	0.60	0.73	1.31	.19	0.21
H10. Treatment or supervision response	58	1.76	0.47	111	1.69	0.61	0.70	.48	0.11
H Scale	57	15.07	2.93	102	14.37	2.87	1.46	.15	0.24
C1. Insight	58	1.86	0.40	111	1.82	0.43	0.62	.53	0.10
C2. Violent ideation or intent	58	0.45	0.65	111	0.19	0.48	2.94	< .01*	**0.48**
C3. Symptoms of major mental disorder	58	1.50	0.71	111	1.26	0.81	1.90	.06	0.31
C4. Instability	58	1.21	0.85	111	0.74	0.79	3.55	< .01*	**0.58**
C5. Treatment or supervision response	58	1.59	0.62	111	1.24	0.78	3.12	< .01*	**0.51**
C Scale	58	6.60	2.05	111	5.25	2.25	3.82	< .01*	**0.62**
R1. Professional services and plans	58	1.71	0.53	111	1.64	0.63	0.69	.49	0.11
R2. Living situation	58	1.86	0.35	111	1.74	0.52	1.84	.07	0.30
R3. Personal support	58	1.55	0.65	111	1.55	0.66	0.02	.98	0.00
R4. Treatment or supervision response	58	1.81	0.44	111	1.70	0.50	1.45	.15	0.24
R5. Stress and coping	58	1.74	0.44	111	1.67	0.56	0.95	.34	0.15
R Scale	58	8.67	1.68	111	8.3	2.07	1.19	.24	0.19

Medium effect sizes are set in bold. HCR-20^{V3}, Historical, Clinical, Risk Management-20 Version 3.
* $p < .01$.

incidents, controlling for the length of the follow-up period. Results similarly indicated that the items in combination were predictive of the number of times acquittees were victimized ($F = 7.73$, $p < .001$), with instability uniquely contributing ($p < .001$). Results of both sets of analyses are presented in Table 6.

Exploratory Analyses

As indicated above and in Table 4, no significant differences in mean scores between the subset of victimized acquittees and nonvictimized acquittees were found for any of the R items or the R scale. We hypothesized that one potential reason for this was the context-specific nature of the R items and the irrelevance of the context for which they were coded. The R items were coded based on anticipated risk assuming that the acquittees would be transferred to a less secure facility following the DMD evaluation being coded, answering the question of whether each risk factor would likely be relevant to acquittees' risk following transfer. All acquittees included in this study were retained at the maximum-security facility after Evaluation 1, and any subsequent instances of

Table 6 HCR-20^{V3} Items as Predictors of Victimization

Variable	Predicting Presence of Victimization					Predicting Number of Victimization Incidents		
	β	Standard Error	Wald	*p*	Exp(β)	Standardized β	*t*	*p*
C2. Violent ideation or intent	0.50	0.33	2.27	.13	1.65	0.10	1.22	.22
C4. Instability	0.52	0.24	4.79	.03	1.68	0.31	3.68	< .01*
C5. Treatment or supervision response	0.35	0.28	1.48	.22	1.41	<0.01	0.09	.93
Time	0.03	0.03	1.16	.28	1.03	0.18	2.30	.02

HCR-20^{V3}, Historical, Clinical, Risk Management-20 Version 3.
Time = Time in months elapsed between evaluation one and evaluation two.
* $p < .01$.

victimization occurred at that facility. To explore this hypothesis, the R items of a random subsample of 46 cases (victimized $n = 15$, nonvictimized $n = 31$) were re-coded. For these cases, anticipated risk for each R item assumed retention within the secure facility; this procedure yielded R(in) scores. Exploratory t test analyses revealed no significant mean R(in) score differences between the victimized and nonvictimized groups of acquittees (R1(in) $p = .68$; R2(in) $p = .62$; R3(in) $p = .92$; R4(in) $p = .93$; R5(in) $p = .80$; R(in) Scale $p = .96$). Due to null findings, regression analyses examining R(in) scores were not performed.

Discussion

Victimization of individuals with SMI, particularly those in institutional settings, is concerning for several reasons, including the vulnerability of those individuals. Accurate prediction of victimization is an integral step in ensuring safety and reducing the prevalence of both violence and victimization in the long term. Due to the well-established covariation between victimization and violence, we hypothesized that forensic assessment instruments designed to predict violence may also have utility in predicting victimization. Thus, we sought to explore the ability of the HCR-20^{V3} to predict instances of victimization in a sample of hospitalized acquittees.

HCR-20^{V3} scores in this study were comparable (i.e., within reported standard deviations) to those of related samples.[59] For forensic psychiatric samples (including articles previously published using the current dataset), average H scale scores range from 12.52 (SD = 2.55) to 15.11 (SD = 3.05), average C scale scores range from 3.33 (SD = 1.99) to 6.35 (SD = 1.23), and average R scale scores have range from 3.92 (SD = 1.40) to 6.99 (SD = 1.93).[59] Readers are encouraged to refer to the HCR-20 Annotated Bibliography for specific mean scores.[59] Further, results were consistent with prior research that has identified dynamic violence risk factors as predictive of victimization,[6,37,41] with static historical variables less relevant to prediction. No historical risk factors were predictive of victimization, suggesting that acute presentation, and not past behavior, is more critical for identifying those at risk of victimization in this setting. In addition, risk management variables appeared to have limited influence on victimization risk over time, regardless of whether they were coded as though the acquittee would remain hospitalized or be transferred to a less secure facility. This is an intriguing finding because some of the C items are similar in content to the R items of the HCR-20^{V3} (e.g., Treatment or Supervision Response), the difference being that the C items reflect recent problems related to each risk factor, whereas the R items reflect the potential for future problems in each area. In other words, R codings consider information related to both the historical and current clinical picture; incorporation of historical information may have diluted the usefulness of these items. It is also possible that the short predictive time frame in this setting may have contributed to the limited utility of risk management items, given that the victimization risk changes over time. Findings suggest that evaluators may consider violence risk factors, as assessed by HCR-20^{V3} scale scores (i.e., those assessing acute Clinical risk factors) and item scores (i.e., those assessing for violent ideation or intent, psychiatric or behavioral instability, and poor treatment or supervision response) in identifying those at increased risk for inpatient victimization. These constructs may be useful in the development of context-specific victimization risk assessment tools. Alternatively, these results provide further support[6] for future research that explores the utility of established violence risk assessment tools[48,60] in predicting victimization risk in various contexts.

Victimization risk may decrease as attempts are made to mitigate violence risk by addressing overlapping risk factors. These risk factors suggest that acquittees who are less acutely able to cope with the stressors of hospitalization may benefit from alternative treatment that encourages treatment compliance and addresses how to keep oneself safe. Individuals who experience victimization may benefit from trauma-focused treatment, in which they are introduced to skills for appropriately coping with their adverse experiences. Trauma-focused interventions may be useful in decreasing instability, which was identified as a relevant victimization risk factor in this study. Poor treatment or supervision response was also identified as a victimization risk factor, so obtaining good treatment outcomes, regardless of the specific intervention, may be especially challenging. Increased monitoring of at-risk patients and development of institutional policies that contribute to a reduction in the likelihood of victimization experiences may also be appropriate.

Teplin and colleagues[7] recommended that psychiatric inpatients should be screened at intake regard-

ing their victimization history and monitored throughout their treatment. For individuals with victimization experiences, they recommended interventions aimed at reducing revictimization, addressing symptoms of trauma, replacing maladaptive coping strategies (e.g., substance use) with adaptive strategies, and improving the quality of life for victims. Interventions may also be introduced to reduce the likelihood of patients found not guilty by reason of insanity, or other patients with SMI, being victimized upon discharge to the community. Maniglio[1] indicated that individuals identified as at increased risk for victimization might benefit from such programs. For example, de Mooij and colleagues[19] recommended the Streetwise, Self-wise, Other-wise training program,[61] which aims to reduce vulnerability for victimization through group-based intervention and was designed specifically for individuals with serious mental illness and a comorbid substance use disorder. Such trainings may be implemented on an inpatient basis, as a means of preparation for discharge to the community, or in the community as a part of the community reentry process.

Limitations

One limitation of this study is that victimization was captured using only hospital records as a source of information. Dolan and colleagues[20] found that a review of criminal records alone yielded a 25 percent base rate of violent victimization, compared with rate of 75 percent when other sources of information (e.g., patient self-report) were considered. Although participants in our sample were housed in a maximum-security facility, and therefore closely monitored, it is possible that not all incidents of victimization were documented, resulting in an underestimation of the prevalence of victimization in the sample. In turn, this may have affected the accuracy of our analyses. Further, incidents of victimization may not have been documented in hospital records with sufficient detail to accurately code the incident. Future research should therefore attempt to measure victimization by examining some combination of hospital records, legal records, and patient self-report, among other possible sources of data.

In addition, this study examined only insanity acquittees determined to have a DMD warranting retention in an inpatient facility after evaluation. Therefore, the generalizability of findings to other inpatient psychiatric populations, such as pretrial defendants hospitalized for restoration of competency to stand trial or civil psychiatric inpatients, is unknown. Future research should examine the extent to which the HCR-20^{V3} has predictive validity with respect to victimization in such other forensic and inpatient contexts where risk assessments are also performed. Victimization research may also be fruitful for community-based follow-up of acquittees who are determined to no longer have a DMD and are released.

While this study provided an account of individual factors related to victimization within this setting, it failed to consider external variables, including contextual variables, that may influence risk of victimization. For example, prior research suggests that environmental factors such as availability of staff play a role in aggression within inpatient settings.[62] Future research should investigate additional factors that impact victimization incidents in inpatient settings. Factors of interest may include systems-level variables, including patient-to-staff ratios, overcrowding, proportion of unstructured time in patient schedules, and use of as-needed medications. Such information might help inform state and federal policies, as well as the policies of specific institutions, which in turn may help strengthen the safety of forensic psychiatric facilities.

Conclusions

Victimization of individuals with SMI continues to pose a major public health problem. In this study, more than one third of acquittees experienced at least one incident of victimization during the follow-up period, which was less than two years on average. Results indicated that the HCR-20^{V3} Clinical scale and items assessing violent ideation or intent (C2), psychiatric or behavioral instability (C4), and treatment or supervision response (C5) may be useful in identifying inpatients at particular risk for victimization experiences in the short term. This study provides support for the theory that violence risk assessment tools, the HCR-20^{V3} in particular, may be useful to evaluators who aim to predict victimization experiences. Individuals identified as at-risk for victimization may benefit from interventions aimed at risk management and the development of appropriate coping skills.

Acknowledgments

The authors thank several individuals who collected data for this study: Ashley DeBlasi, MA, Jackie Smith, MA, Michelle Herrera,

BA, Melanie Schneider, MA, Jenna Otten, MA, and Rebecca Steinert, MA. The authors also thank Dr. Michal Kunz for contributing to the design of the larger study from which this research derives.

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