What Do Clinicians Expect? Comparing Envisioned and Reported Violence for Male and Female Patients

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Mental health professionals' (MHPs') accuracy in assessing the risk of violence in female patients is particularly limited. Based on assessments made by 205 MHPs of 605 patients in an emergency room, this study explored potential causes of MHPs' poorer accuracy in assessing women's potential for violence. The dimensions that underlie MHPs' envisioned violence in patients were identified and were compared with those that characterized patients' reported violence during a 6-month follow-up period. There were three key findings from their study. First, violence envisioned by MHPs differed depending on their professional role and varied in its congruence with patients' reported violence. Second, patients' violence was organized by dimensions of domesticity and substance relatedness; women's violent incidents were more domestic than were men's. Third, when MHPs envisioned violence that was highly conditional on psychiatric deterioration and medication noncompliance, violence often did not occur.

Keywords: mental illness, gender, violence, risk assessment

Mental health professionals (MHPs) are required to assess an individual's risk of future violence in a broad range of legal and clinical contexts. In prototypic settings, MHPs must assess whether inpatients can safely be returned to the community and must monitor outpatients' risk of violence to determine whether intervention is needed to protect third parties from harm. Because inaccurate assessments exact a toll on patients and the public, investigators have long focused on MHPs' accuracy in forecasting violence. Research indicates that although MHPs possess modest ability to accurately assess risk (Borum, 1996), their accuracy in assessing the violence potential of female patients is particularly limited (Elbogen, Williams, Kim, Tomkins, & Scalora, 2001; McNiel & Binder, 1995).

This limitation has serious implications, given that MHPs must routinely assess women's risk of violence. Women are as likely as men to experience mental illness and more likely to seek treatment (Kessler et al., 1996; Regier et al., 1993). In contrast with other populations (Reiss & Roth, 1993; Swanson, Holzer, Ganju, & Jono, 1990), female psychiatric patients are as likely as male patients to become violent in the community (Hiday, Swartz, Swanson, Borum, & Wagner, 1998; Lidz, Mulvey, & Gardner, 1993). In a sample of nearly 1,000 former psychiatric inpatients followed for 1 year after discharge, Robbins, Monahan, and Silver (2003) found that women's rate of perpetrating serious violence was comparable to that of men (25% vs. 30%; typically, battery with injury), and women's rate of perpetrating minor violence exceeded that of men (37% vs. 31%; typically, battery without injury).

Although little is known regarding the reasons that MHPs are less accurate in assessing women's violence potential, their limited accuracy may reflect (a) underestimates of women's rate of violence or (b) additional misconceptions about the types of violence in which women and men are involved. There is ample evidence that MHPs underestimate female patients' rate of violence (Elbo-

gen, et al., 2001; McNiel & Binder, 1995). In one study, MHPs predicted that 22% of women and 45% of men assessed in a psychiatric emergency room would become violent within 6 months of their return to the community (Lidz et al., 1993). During this period, 49% of women and 42% of men were violent. These underestimates were made by MHPs of both genders from multiple disciplines and could not be explained by gender-related differences in the severity of violence (Skeem et al., in press). Thus, MHPs may simply be unaware that in psychiatric populations, women's rates of violence approximate those of men.

However, this lack of awareness may be fostered by both gender-related assessment biases and gender-related differences in the types of violence committed by patients. First, gender-related assessment biases may interfere with MHPs' ability to process risk-relevant information. People generally perceive women as less threatening, potent, and physically aggressive than men (Bettencourt & Miller, 1996; Eagly & Steffen, 1986) and behave less defensively with women in ambiguous situations (Harris & Miller, 2000). MHPs may share such schemas, given their underestimates of women's potential for violence and evidence that they form diagnostic hypotheses on the basis of gender-related stereotypes (Garb, 1997). Second, MHPs may underestimate women's violence potential in part because of a failure to perceive its home-related nature. Women's violence may be less publicly observable because it is disproportionately directed toward family members and occurs in the home, whereas men's violence is more likely to involve a nonrelative and occur in a public place, to cause serious injury, and to result in police contact (Hiday et al., 1998; Robbins et al., 2003).

In this study, we applied the conditional prediction model of judgment in an effort to shed light on MHPs' limited accuracy in assessing women's violence potential. This model was developed in an earlier study (Mulvey & Lidz, 1995) from observations of MHPs conducting 410 assessments in an emergency room. It represents how MHPs do (rather than how they should) assess risk. According to the model, MHPs develop contextualized judgments guided by implicit schemas of how a patient's violence will unfold. These schemas include *specifications* about the foreseen violent incident (e.g., act, cocombatant) and dynamic *conditions* (e.g., medication noncompliance) that can increase the likelihood of the violence occurring. For example, an MHP might believe that a patient is likely to argue with her husband at home. If the patient is intoxicated when the argument begins (dynamic conditions), the argument will intensify, and she will throw objects at and repeatedly hit her husband (specifications). Knowledge of how well MHPs' schemas for future violence comport with the specifications and conditions of patients' violent incidents is limited (Mulvey & Lidz, 1998; Skeem, Mulvey, & Lidz, 2000).

In this article, we compare the kind of violence that MHPs envisioned in men and women with the type of violence that patients later committed. By identifying the dimensions that underlie MHPs' envisioned acts of violence and patients' reported acts of violence, we can assess whether male and female patients differ on the dimensions identified and determine whether the envisioned dimensions are associated with MHPs' risk assessment accuracy.

Method

Patients who presented at a psychiatric emergency room were interviewed, as well as the MHPs who assessed them (see Lidz et al., 1993). Only those who provided valid informed consent were interviewed, in accordance with the protocol approved by the institutional review board. After patients were discharged from the emergency room (if not admitted) or hospital (if admitted), they were located in the community and followed for 6 months. During this period, patients and collateral informants (family member, significant other, or close friend) were interviewed three times (at 2, 4, and 6 months after discharge). These interviews were supplemented by reviews of official records. Baseline interviews focused on MHPs' envisioned violence, whereas follow-up interviews focused on the patients' involvement in violence. To ensure that the data accurately reflected whether at least one violent incident had occurred during the follow-up, we included in the analyses only cases in which there had been at least two follow-up interviews with the patient or three follow-up interviews, at least one of which included the patient.

The emergency room had a team-based sequence for processing patients, in which (a) a clinician interviewed the patient in detail to obtain information necessary to reach a disposition and shared this information with the attending psychiatrist, (b) the attending psychiatrist briefly "reinterviewed" the patient to explore unresolved issues and discuss the proposed disposition, and (c) the clinician and attending psychiatrist met to finalize the disposition (see Lidz, Mulvey, Apperson, Evanczuk, & Shea, 1992).

After a disposition was determined, the clinician and attending psychiatrist were asked to independently rate (on a 6-point scale, ranging from $0 = no\ concern$ to $5 = great\ concern$) their degree of concern that the patient might be violent toward others within the next 6 months. The ratings of the clinicians and attending psychiatrists were strongly correlated ($r = .68$). Lidz et al. (1993) summed these ratings to generate a total concern score (ranging from 0 to 10) and used this score to create two groups of patients: "predicted violent" (sum ≥ 3) and "predicted nonviolent" (sum $= 0$). Each predicted violent patient was matched with a predicted nonviolent patient on age, sex, race, and admission status (admitted vs. not admitted) to prevent MHPs from obtaining high rates of predictive accuracy on the basis of demographic differences. The original sample consisted of 357 matched pairs ($N = 714$). To address the aims of the present study, we extracted independent ratings of concern about future violence to permit separate analyses of clinicians' and attendings' envisioned violence.

Participants

Patients

Clinicians provided ratings of concern for 680 cases, and attendings provided ratings of concern for 667 cases. Because clinicians and attendings virtually always (90% of the time) saw the same patients, only the clinicians' patient sample is described here. The sample consisted of relatively young ($M = 28.3$ years of age, $SD = 11$), chiefly high-school–educated ($M = 12.2$ years of school, $SD = 3.2$), male (60.3%) patients who were equally likely to be White (52.2%) or African American (47.8%). According to their full chart diagnoses, the patients most commonly qualified for diagnosis of substance abuse disorder (33.1%), followed by affective disorder (19.6%), personality disorder (17.0%), schizophrenia or schizoaffective disorders (14.2%), and other (16.2%) disorders. Of these patients, 30.5% were diagnosed with comorbid substance abuse and *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM–IV*; American Psychiatric Association, 1994) Axis I mental disorders, and 10.0% were diagnosed with comorbid personality and *DSM–IV* Axis I mental disorders.

The aims of our study involved two different but overlapping subgroups of patients: the subsample of patients whom MHPs viewed as potentially violent ("envisioned violent" as diagnosed by clinicians, $n = 286$ patients,

and by attendings, $n = 272$ patients) and the subsample of patients who became violent during the follow-up period ("reported violent": $n = 308$). We included only envisioned and reported violence that occurred in the community. To avoid issues of data dependence, we extracted only the most serious envisioned and reported violent incident for each patient.

MHPs

Of the 143 clinicians who assessed risk in this study, 36% were junior resident psychiatrists, 30% were master's-level clinicians or licensed social workers, 21% were nurse-clinicians, and 12% were doctoral psychology interns. The majority (60%) of the clinicians were women. Of the 62 attendings who assessed risk in this study, 65% were attending psychiatrists and 35% were senior resident psychiatrists. (Nevertheless, attending psychiatrists completed 95% of the assessments.) Most (88%) of the attendings were male.

Measures

Violence Risk Assessments

MHPs' violence predictions were dichotomized (predicted violent vs. predicted nonviolent) using the thresholds established in the original study (Lidz et al., 1993). When MHPs had concerns about future patient violence, investigators asked them to provide violence specifications (e.g., "What violent acts do you think this person might commit?") and conditions (e.g., "[List] any changes in the patient's behavior pattern or life situation which might make the act more likely to occur"). After responding to these open-ended questions, MHPs were asked follow-up questions to elicit their views of particular specifications and conditions.

Specifications. The volunteered (free response) and endorsed (probe questions) responses of the MHPs were combined and coded to represent the envisioned act, cocombatant, and location. A violent act was subcoded as minor or serious violence (defined below in the *Violent Incidents* subsection). A *cocombatant* was coded as a spouse or family member, a friend (including girlfriend or boyfriend), an acquaintance (roommate, another patient, staff, others in structured settings), multiple/anyone (persons from multiple categories or no specific person), or a stranger. The location was coded as home (the patient's, cocombatant's, or other's home), a community institution (a residential placement or shelter), or a public place (a bar, street, hangout, school, outpatient treatment center, or a combination of public places).

Conditions. MHPs also were asked to assess the impact of several specific conditions that could make the violent act more likely to occur (e.g., "Do you believe that changes in the patient's alcohol use would make this act more likely to occur?"). MHPs' volunteered and endorsed conditions (present or absent) were coded into the categories of alcohol use, drug involvement (drug use or drug sale/purchase), financial problems, change in living conditions, relationship trouble, medication noncompliance, and psychiatric deterioration.

Violent Incidents

Patient violence was measured using information from record reviews and interviews with patients and collateral informants. To elicit information about violent incidents, interviewers administered an expanded version of the Conflict Tactics Scale (Straus & Gelles, 1990). A patient was judged to have been involved in a violent incident if any information source reported that the patient had laid hands on another person with intent to harm him or her or had threatened someone with a weapon in hand during the follow-up period. Verbal threats, incidents in which the patient was the victim of violence, and acts of parental discipline were excluded. A patient was judged to have been involved in a serious violent incident if the violence included rape, threats with a weapon in hand, use of a weapon,

injuries that required medical attention, and attempted homicide. Other violence was subcoded as a minor violent incident.

For each violent incident identified, interviewers asked respondents to provide an open-ended account of what had happened. They then asked a series of probe questions about the act, cocombatant, and location of the incident, as well as specific conditions that precipitated the incident. Research assistants integrated patients' and collateral informants' responses to postcode the specifications and conditions for the incidents. Coding categories for specification variables paralleled those for MHPs' envisioned violence; categories for the condition variables included patient alcohol use, drug involvement, employment (akin to "financial problems" in the MHPs' risk assessment categories), residence (akin to "change in living situation"), medication use (akin to "medication noncompliance"), and psychiatric deterioration. Although patients and collateral informants were not asked directly whether the patients' mental health had precipitated the incidents, research assistants used the open-ended incident descriptions and the interview data as a whole to rate the condition of psychiatric deterioration. The condition variables for reported incidents paralleled those for envisioned incidents, with the exception of "relationship trouble," which was not coded for reported incidents.

Results

Basic analyses performed to describe the nature of envisioned and reported violent incidents revealed that MHPs envisioned women as more likely than men to be violent in the home (see Table 1) and that women were more likely than men to engage in violence in the home and with a family member (see Table 2). Next, analyses were conducted to address the aims of the study.

Table 1

Mental Health Professionals' Risk Assessments of Patients' Violence Potential, by Patient Gender

	Assessments of patients			
	Clinicians' assessments		Attendings' assessments	
Variable	Women (%)	Men (%)	Women (%)	Men (%)
Cocombatant				
Spouse/family member	46	32	44	35
Friend	10	14	10	11
Acquaintance	27	31	27	24
Stranger	2	5	2	3
Multiple/anyone	16	19	18	27
Location	**		**	
Home	75	56	77	65
Community institution	6	3	8	2
Public place	19	40	15	32
Patient act of violence				
Minor	7	3	7	4
Serious	93	97	93	96
Conditions (present/yes)				
Alcohol use	51	64*	62	73
Drug involvement	43	44	56	56
Financial problems	28	35	27	30
Change in living situation	25	17	15	24
Medication noncompliance	30	32	30	28
Psychiatric deterioration	78	77	71	66
Relationship trouble	68	61	62	53

Note. * $p < .05$, ** $p < .01$ (χ^2 test of significance between genders within type of mental health professional making risk assessment).

Table 2
Patients' Violent Incidents by Gender

Variable	Women (%)	Men (%)
Cocombatant*		
Spouse/family member	41	30
Friend	27	20
Acquaintance	25	34
Stranger	4	12
Multiple/anyone	4	4
Location**		
Home	76	59
Community institution	3	5
Public place	21	37
Patient act of violence		
Minor	18	21
Serious	82	79
Conditions (present/yes)		
Alcohol use	25	34
Drug involvement	10	15
Employment (no job)*	81	70
Residence (no home)	2	3
Medication noncompliance	22	19
Psychiatric deterioration	1	3

Note. $* p < .05$, $** p < .01$ (χ^2 test of significance).

First, to identify dimensions that underlie MHPs' violence risk assessments and patients' violent incidents, we applied multiple correspondence analyses (MCAs). We then tested patients' scores on these dimensions to identify gender-related differences in envisioned and reported violence. Second, to compare dimensions for envisioned and reported violence as well as to test the stability of identified dimensions, we applied confirmatory factor analysis (CFA). Third, we assessed the relation between dimensions of envisioned violence and risk assessment accuracy.

Dimensions Underlying Envisioned Violence

MCA is a variant of canonical correlation analysis appropriate for analyzing relationships among categorical variables (Clausen, 1998). Conceptually, it may be viewed as a form of principal components analysis. Three indices are central to interpreting MCA results: (a) Discrimination measures describe the contribution of the variables (e.g., cocombatant) to the variance or inertia explained by each dimension, (b) quantifications describe the location of points (e.g., friends) for each variable in relation to the dimensions, and (c) object scores describe how each participant would have scored on the dimensions, had they been measured directly.

Clinicians

Extraction of dimensions. The MCA was conducted by applying the SPSS Version 11.0 homogeneity analysis via alternating least squares, or HOMALS, routine to the seven conditions and three specifications described by clinicians for patients' future violence. The scree test, interpretability of solutions, and reproducibility of solutions across data subsets and analytic routines (in SPSS, SAS, and S-PLUS) indicated that two- and three-dimension solutions were viable. Although both solutions were entertained,

the two-dimension solution was chosen because it was the most interpretable and parsimonious. This solution accounted for 36% of the total inertia and is shown in Table 3.

Discrimination scores for Dimension 1 indicated that the conditions of alcohol use and drug involvement contributed the most variance, with cocombatant and relationship trouble adding modestly. The quantification scores of these variables placed alcohol use, drug involvement, strangers or multiple/anyone (cocombatant), and relationship trouble at one end of the dimension, and the lack of these conditions and a spouse or family members (cocombatant) at the other. This dimension was labeled *substance relatedness* to capture the extent to which envisioned violence was precipitated by alcohol use or drug involvement.

Discrimination scores for Dimension 2 indicated that the cocombatant and location contributed the most variance. Quantification scores for these variables placed a spouse, family members, or friends (cocombatant) in the home (location) at one end of this dimension, and acquaintances or strangers (cocombatant) in public places or community institutions (locations) at the other. This dimension was labeled *domesticity* to reflect the extent to which the violence was home and family based.

Relation to gender. To assess gender-related differences in clinicians' envisioned violence, we performed t tests on patients' object scores. The two genders obtained significantly different domesticity scores, $t(284) = 2.17$, $p < .05$, with women obtaining higher scores ($M = 0.16$, $SD = 1.04$) than men ($M = -0.11$, $SD = 0.98$). There was a trend toward significant gender differences on the substance-relatedness dimension, $t(284) = 1.97$, $p = .05$, with women obtaining lower scores ($M = -0.13$, $SD = 0.10$) than men ($M = 0.11$, $SD = 0.07$).

Attendings

Extraction of dimensions. Next, we performed an MCA using the seven specifications and three conditions for the attendings' envisioned violence. Application of the three criteria specified earlier clearly indicated a two-dimension solution, which accounted for 37% of the total inertia (see Table 4). Discrimination scores for Dimension 1 indicated that alcohol use and drug involvement contributed the greatest amount of variance, with less contributed by relationship and financial troubles. Quantification scores indicated that alcohol use, drug involvement, and, to a lesser extent, interpersonal and financial problems characterize one pole of this dimension, whereas their absence characterizes the other pole. Although this dimension placed less emphasis on cocombatants than did the dimension identified for clinicians, it was labeled *substance relatedness* to capture the extent to which envisioned violence was precipitated by alcohol use or drug involvement.

Discrimination scores for Dimension 2 indicated that it largely was defined by psychiatric deterioration, cocombatant, medication noncompliance, and location. Quantification scores placed medication noncompliance and psychiatric deterioration (precipitating conditions), a spouse or family members (cocombatant) and home (location) at the one end of this dimension, and the absence of these precipitating conditions, strangers or acquaintances (cocombatant), and community institutions or other public places (location) at the other. Thus, this dimension was labeled *disorder relatedness* to represent the degree to which the largely domestic

Table 3

Discrimination and Quantification Scores for Dimensions Underlying Clinicians' Risk Assessments

	Substance Relatedness		Domesticity	
Variable	Discrimination	Quantification	Discrimination	Quantification
Cocombatant	.20		.59	
Spouse/family member		−0.62		0.80
Friend		−0.19		0.80
Acquaintance		0.21		−1.11
Stranger		0.97		−1.08
Multiple/anyone		0.58		0.06
Location	.16		.57	
Home		−0.04		0.64
Community institution		0.02		−0.89
Public place		0.50		−1.18
Patient act of violence	.04		.14	
Minor		−0.86		1.70
Serious		0.08		−0.08
Conditions				
Alcohol use	.52		.05	
No		−0.85		−0.27
Yes		0.62		0.18
Drug involvement	.51		.07	
No		−0.61		−0.23
Yes		0.83		0.29
Financial problems	.17		.04	
No		−0.27		0.29
Yes		0.61		−0.15
Change in living situation	.02		.12	
No		−0.06		−0.19
Yes		0.30		0.67
Medication noncompliance	.03		.10	
No		0.29		−0.22
Yes		−0.11		0.45
Psychiatric deterioration	.05		.02	
No		−0.40		−0.28
Yes		0.14		0.07
Relationship trouble	.20		.01	
No		−0.57		−0.15
Yes		0.34		0.07
Variance explained	52.8%		47.2%	

violence was envisioned as related to a patient's untreated or increasing psychiatric symptoms.

Relation to gender. The *t* tests of patients' object scores on these dimensions indicated no significant differences between the genders on either the substance-relatedness ($t[270] = -1.44$, *ns*) or disorder-relatedness, ($t[270] = -1.56$) dimensions. Attendings' envisioned violence appeared to include few gender-based distinctions.

Ruling Out Individual MHP Effects

Because there were more patients than MHPs in this study, additional analyses were performed to ensure that the results were not unduly affected by particular MHPs. Patients generally were distributed evenly among MHPs ($M = 4.2$ patients), but 4 outlying clinicians assessed between 34 and 42 cases each (nearly 5% of total assessments), and 2 outlying attendings assessed 56 and 95 cases, respectively (nearly 23% of total assessments). Nevertheless, MCA analyses that omitted these MHPs produced results

similar to those performed with the full sample, suggesting that these outliers did not unduly affect the results.

To further rule out potential clustering of patients within MHPs, we computed intraclass correlation coefficients (ICCs) for each of the 10 variables included in the MCA. All ICCs were less than .09, suggesting that there was not a great degree of similarity among patients assessed by the same MHP. Applying Muthén and Satorra's (1995) formula (1 + [average cluster size – 1] × ICC) to this maximum value (1 + [4.2 − 1] × .09 = 1.29) yields a value that falls well below the threshold of 2 set by the authors for determining whether clustering substantially affects estimates. Together, these results suggested that individual MHPs were unlikely to account for the nature of, or differences in, envisioned violence identified here.

Similarly, the MHPs' own gender was unlikely to account for differences in envisioned violence potential as rated by clinicians and attendings. Although clinicians were more likely to be female and attendings were more likely to be male, *t* tests conducted on the identified dimensions of envisioned violence revealed no sig-

Table 4

Discrimination and Quantification Scores for Dimensions Underlying Attendings' Risk Assessments

Variable	Substance/Relatedness		Disorder/Relatedness	
	Discrimination	Quantification	Discrimination	Quantification
Cocombatant	.11		.39	
Spouse/family member		−0.43		0.87
Friend		0.24		−0.01
Acquaintance		0.19		−0.84
Stranger		−0.35		−1.19
Multiple/anyone		0.48		0.22
Location	.08		.33	
Home		−0.15		0.63
Community institution		−0.55		−1.17
Public place		0.58		−0.78
Patient act of violence	.02		.12	
Minor		−0.65		1.43
Serious		0.04		−0.11
Conditions				
Alcohol use	.59		.00	
No		−1.13		0.03
Yes		0.52		−0.06
Drug involvement	.58		.02	
No		−0.87		0.11
Yes		0.67		−0.14
Financial problems	.19		.00	
No		−0.28		−0.04
Yes		0.69		−0.01
Change in living situation	.12		.03	
No		−0.18		−0.11
Yes		0.67		0.28
Medication noncompliance	.03		.37	
No		−0.12		−0.41
Yes		0.28		0.92
Psychiatric deterioration	.03		.40	
No		−0.23		−0.94
Yes		0.11		0.41
Relationship trouble	.21		.07	
No		−0.53		−0.32
Yes		0.40		0.12
Variance explained	54.1%		45.9%	

nificant MHP-gender-related differences. Together, these results suggest that the dimensions of envisioned violence identified for clinicians (substance relatedness and domesticity) and attendings (substance relatedness and disorder relatedness) were not limited to particular MHPs or gender groups.

Dimensions Underlying Reported Violence

Extraction of Dimensions

To identify the dimensions that underlie reported patient violence, we applied MCA to the six conditions and three specifications for violence. Application of the three criteria specified earlier suggested a two- or three-dimension solution. Ultimately, the two-dimension solution was retained as the most interpretable and parsimonious. This solution, shown in Table 5, accounted for 42% of the total inertia.

Discrimination measures indicated that cocombatant and location contributed (by far) the most to the first dimension. Quantifications indicated that a spouse or family members (cocombatant)

and home (location) characterized one end of the dimension, whereas strangers or acquaintances (cocombatant) and public places (location) defined its other pole. Given parallels to the dimension identified for clinicians' envisioned incidents, this dimension was labeled *domesticity* to reflect the extent to which the cocombatant and location of violence were home based.

Discrimination measures for the second dimension indicated that alcohol use, cocombatant, violent act, and drug involvement were the largest contributors. Quantifications indicated that alcohol and drug use (conditions), friends or multiple categories (cocombatant), and serious violence (acts) characterized one end of this dimension, whereas minor violence (acts) and strangers or acquaintances (cocombatant) characterized the other. This dimension differs somewhat from that identified for envisioned violence (i.e., there is more emphasis on serious violence and friends as cocombatants). Nevertheless, this dimension was labeled *substance relatedness* to reflect the extent to which the violence was preceded by alcohol or drug use or drug sale, involved friends or multiple cocombatants, and was relatively serious.

Table 5
Discrimination and Quantification Scores for Dimensions Underlying Patients' Violent Incidents

Variable	Substance relatedness		Domesticity	
	Discrimination	Quantification	Discrimination	Quantification
Cocombatant	.36		.83	
Spouse/family		−0.12		1.13
Friend		0.94		0.32
Acquaintance		−0.46		−0.92
Stranger		−0.47		−1.42
Multiple/anyone		1.43		−0.24
Location	.17		.72	
Home		0.22		0.67
Community institution		−1.86		−0.50
Public place		−0.21		−1.26
Patient act of violence	.34		.01	
Minor		−1.06		0.23
Serious		0.39		−0.01
Conditions				
Alcohol use	.41		.16	
No		−0.47		0.25
Yes		1.01		−0.68
Drug involvement	.31		.05	
No		−0.25		0.07
Yes		1.54		−0.67
Employed	.00		.04	
No		−0.01		0.08
Yes		−0.16		−0.37
Residence	.00		.05	
No		−0.23		−1.47
Yes		−0.03		0.01
Taking medications	.08		.12	
No		0.82		0.06
Yes		−0.36		0.66
Not applicable		−0.09		−0.27
Psychiatric deterioration	.11		.03	
No		−0.07		−0.05
Yes		2.31		1.18
Variance explained	47.6%		52.4%	

Relation of Dimensions to Gender

To assess the extent to which men and women differed across these identified dimensions, we performed t tests on object scores. The two genders obtained significantly different object scores on the domesticity dimension, $t(306) = 3.27$, $p < .001$, with women ($M = 0.27$, $SD = 1.03$) obtaining higher scores than men ($M = −0.14$, $SD = 1.19$). However, women and men did not differ on the substance-relatedness dimension, $t(306) = 0.86$, *ns*. Generally, then, the dimensions identified for reported violence parallel those connected with clinicians' envisioned violence.

Exploring the Stability and Comparability of Identified Dimensions

Because MCA is an exploratory technique that may miss three-way and higher order associations among variables, we completed hierarchical loglinear analyses to identify any such interactions. Only a few were identified (number of three-way associations: for attendings, three; for clinicians, two; for reported violence, zero). Nevertheless, we used CFA to evaluate the fit of the dimensions of envisioned violence and reported violence identified with MCA.

We also used CFA to test the degree of similarity between envisioned and reported violence.

The CFA models were fit within Mplus Version 3.1 (Muthén & Muthén, 2001) using weighted least squares estimation. Models were selected on the basis of comparisons between a set of alternative nested models. In comparing models, we considered a traditional index of fit (e.g., root-mean-square error of approximation [RMSEA] < .06; Hu & Bentler, 1995, 1999) but accorded the weighted root-mean-square residual (WRMR) special consideration. Yu and Muthén (2002) found that some traditional fit indices perform poorly with categorical data and cited the WRMR (<.90) as the most reliable index.

Stability of Identified Dimensions

For reported violence, CFA results replicated the two-factor structure found through MCA. According to the fit indices, the 2-factor model represented a good fit to the observed data (WRMR = .76; RMSEA = .04). For clinicians' envisioned violence, CFA results also replicated the MCA-based two-factor model, again demonstrating a good fit (WRMR = .88; RMSEA = .05). For attendings' envisioned violence, however, a three-factor

model (WRMR = .90; RMSEA = .05) was determined to be the most reasonable solution on the basis of both the absolute and comparative fit indices. In this case, the MCA-based two-factor model did not produce an acceptable level of fit (WRMR = .96; RMSEA = .07). The results were consistent with the MCA results that identified a unique weighting for the psychiatric deterioration aspect of the risk assessment schemas of the attending. It is also consistent with multigroup CFA results, which indicated a lack of factorial invariance across the dimensions of violence envisioned by clinicians and attendings.

Comparability of Envisioned and Reported Dimensions

Next, CFA was applied (using Mplus Version 3.1) to compare the dimensions of reported and envisioned violence. The results of these analyses were consistent with MCA-based results that pointed to a high degree of similarity between the nature of patients' reported violence and clinicians' envisioned violence but failed to find congruence between reported violence and attendings' envisioned violence. Specifically, an acceptable fit was obtained when clinicians' two-factor model for envisioned violence was imposed on patients' reported violence (RMSEA = .04, WRMR = .80). The fit of this model was further improved when reported employment (which differs from envisioned financial problems) and psychiatric deterioration (which did not contribute to clinicians' dimensions and had low base rates) were excluded from the model (RMSEA = .03, WRMR = .79).

For attendings, however, there was less convergence between envisioned and reported violence. Specifically, when the three-factor model found for attendings' envisioned violence was imposed on reported violence, a poor fit was obtained (RMSEA = .07, WRMR = .92). Similarly the two-factor model for attendings that was identified through MCA did not achieve an acceptable fit when imposed on the reported violence data (RMSEA = .07, WRMR = .95).

In summary, the results from the CFA analyses strengthen and extend MCA-based findings that (a) clinicians and attendings' schemas for envisioned violence are different, (b) the structure of patients' reported violence is organized by two dimensions, and (c) this structure for reported violence is congruent with clinicians' envisioned violence but incongruent with attendings' envisioned violence, which includes an aspect of disorder-relatedness.

Nature of Envisioned Patient Violence and Risk Assessment Accuracy

Finally, we explored the relationship between the nature of MHPs' envisioned violence and their accuracy in assessing risk (specifically, their positive predictive power). To assess how well the dimensions that underlie MHPs' envisioned violence predicted the occurrence of reported patient violence, we computed the degree of association between object scores on the identified dimensions of envisioned violence and predictive accuracy (i.e., whether violence occurred, given that it has been predicted). For both clinicians and attendings, the degree to which envisioned violence was substance related did not significantly predict whether violence occurred ($\eta = -.04$, *ns*; $\eta = -.03$, *ns*, respectively). For clinicians, predictive accuracy was also unrelated to the envisioned domesticity of the incident ($\eta = -.10$, *ns*). How-

ever, attendings' predictive accuracy was significantly poorer in cases in which envisioned violence was highly disorder related ($\eta = -.25$, $p < .01$).

Discussion

To our knowledge, this study is the first to describe the kind of violence that MHPs envision for men and women and to explore how well their assessments comport with patients' reported violence. The goal of the study was to shed light on the previously observed limitations of MHPs' assessment of violence risk in women. The study yielded three key findings. First, the type of violence that MHPs envision varies across role. The violent incidents that clinicians envision are organized by dimensions of substance relatedness and domesticity, whereas those envisioned by attendings also include a dimension of disorder relatedness. Clinicians envision women's violence as more highly domestic than men's, whereas attendings envision few gender differences. Second, patients' reported violence is organized by domesticity and substance-relatedness dimensions that are congruent with those of clinicians, both in their nature and relation to gender. Third, attendings' disorder-relatedness dimension is significantly associated with poor predictive accuracy. In cases in which attendings envision patient violence that is highly conditional on psychiatric deterioration or medication noncompliance, violence often does not occur. In this section, we discuss each of these findings and their implications for understanding MHPs' limited predictive accuracy regarding violence potential in women.

MHPs' Envisioned Violence in Patients

Our prior research (Lidz et al., 1993; Skeem et al., in press) indicated that MHPs were particularly limited in assessing women's violence potential, regardless of their own gender or professional role. We were interested in exploring whether MHPs merely underestimated women's risk of violence or also misperceived gender differences in the nature of violent incidents. The results of this study indicate that MHPs' risk assessments are underpinned by dimensions that vary both across role (clinician vs. attending) and in their relation to patient gender.

Clinicians' envisioned incidents were underpinned by dimensions of substance relatedness (drinking, using or selling drugs, and fighting with strangers or acquaintances) and domesticity (violence directed toward spouses and family members in the home). Attendings' envisioned incidents overlapped only partially with those of clinicians, with a very similar substance-relatedness dimension and a unique disorder-relatedness dimension (violence directed toward spouses and family members in the home involving medication noncompliance and psychiatric deterioration). CFA techniques provided further support for the distinct nature of the dimensions underlying attendings' and clinicians' envisioned violence. The violent incidents that clinicians envisioned for women were more highly domestic than those envisioned for men. None of the attendings' identified dimensions related to patient gender, suggesting that they expected few differences between men and women in the nature of their future violence.

We found it interesting that these differences were not attributable to individual MHPs nor to MHPs' gender. Although clinicians were more likely to be female and attendings were more likely to

be male, MHPs' gender was unrelated to the kind of violence that they envisioned the patients committing. These differences may, however, be attributable to systematic differences in MHPs' professional experience and theoretical orientations. Clinicians typically had less experience (e.g., junior resident psychiatrists) or less training in the medical model (e.g., master's-level clinicians) than did attending psychiatrists. Clinicians' envisioned violence appeared to emphasize social and contextual problems (domesticity), whereas attendings emphasize mental illness and the necessity for its medical treatment (disorder-relatedness). It is reasonable to conclude that these different dimensions arise from schemas in each professional group rooted in both life experience and professional socialization (see Macrae & Bodenhausen, 2000; Schneider, 1991). Another plausible (but not necessarily competing) explanation for these differences lies in the respective professional roles of clinicians and attendings. Typically in the emergency room, clinicians complete a lengthy interview with the patient and then discuss the case with the attending psychiatrist. The attending completes a brief "reinterview" with the patient, typically focusing on diagnostic clues and dispositional issues raised in the initial interview. Given this process, clinicians likely accessed a relatively broad range of information about patients on which to base their violence risk assessments. As a result, they may have relied less on experience-based schemas for, or stereotypes of, violence than attendings. Theoretically, the availability of greater case information would allow one to make more data-based (bottom-up), less theory-based (top-down) decisions about the case.

It is less likely that the differences found between clinicians and attending psychiatrists in envisioned violence are attributable to what clinicians told (or did not tell) attendings during case discussions. These discussions emphasized the material needed to reach a disposition, including the patient's dangerousness to others. Clinicians' and attendings' independent ratings of violence risk typically were in agreement. In fact, in the rare event that the two types of MHPs disagreed about a patient's risk in this emergency room setting, the disagreement often occurred because the clinician uncharacteristically had failed to mention the risk of violence (Lidz et al., 1992). This finding suggests that the content of the briefings may rarely explain risk assessment differences between the two groups. We believe the differences are training and role based, but this question is open for future research. This research could clarify whether and how systematic variations in violence schemas reflect differences between disciplinary cultures and professional roles.

Patients' Reported Violence

Even though clinicians and attendings had comparable rates of predictive accuracy (see Skeem et al., in press), the results of this study indicate that clinicians' envisioned violence had a much greater degree of overlap with patients' reported violence than did attendings' envisioned violence. We found that two dimensions organized reported patient violence: domesticity and substance-relatedness. The domesticity dimension was highly similar to that identified for clinicians' envisioned violence. The substance-relatedness dimension differed from that identified for clinicians' and attendings' envisioned violence only in that it placed greater emphasis on serious violent acts and on friends as cocombatants.

As was the case for clinicians' envisioned violence, women's reported violent incidents were significantly more domestic than men's. This general finding parallels past research results, which have indicated that female patients' violence more often occurs in the home with family members, whereas male patients' is more likely to occur in public places with a broader assortment of cocombatants (e.g., Hiday et al., 1998; Robbins et al., 2003). Notably, the finding that home-based, intrafamilial violence is a particularly common feature of women's violent crime (Daniel & Kashani, 1974; Greenfield & Snell, 1999; Rosenblatt & Greenland, 1974) has not been replicated in some recently conducted studies (Koons-Witt & Schram, 2003). At present, it is unclear whether this finding indicates that the nature and context of women's violence have shifted as women's violence and crime has become more frequent. Further descriptive research would help to sort out the significance of these differing findings.

The second dimension of substance-relatedness is consistent with the robust finding that substance abuse accompanies relatively commonly violence (e.g., Monahan et al., 2001). The substance-relatedness dimension identified in this study, however, indicates a broader organizing dimension that includes serious violence and friends or multiple parties as cocombatants. We found no significant differences between men and women in the substance relatedness of their violent incidents, in contrast with one past finding that men's violence is more often associated with alcohol and drug use (Robbins et al., 2003).

Envisioned Violence and Risk Assessment Accuracy

Although there are strong parallels between the substance-relatedness and domesticity dimensions of envisioned and reported violence, these dimensions for envisioned violence were not linked with greater risk assessment accuracy. Clinicians have schemas for future violence that are congruent with the nature of patients' reported violence, but this does not translate into significantly enhanced ability to identify the specific patients who will become involved in violence. Although impressive, this parallel construction is still relatively weak in accounting for the eventual outcome of violence, which may reflect a host of other factors.

However, that there appear to be no parallels between the attendings' disorder-relatedness dimension and reported patient violence. As shown in Tables 2 and 5, psychiatric deterioration was rarely observed before reported incidents, and neither psychiatric deterioration nor medication noncompliance emerged as an important contributor to the dimensions that organized reported patient violence. This finding is important because this disorder-relatedness dimension was the only significant predictor of MHPs' risk assessment accuracy. In cases in which attendings envisioned violent incidents characterized by high disorder-relatedness, they were substantially ($\eta = -.25$) less likely to be accurate. In other words, patients with highly disorder-related envisioned incidents were less likely to be violent than those with less disorder-related predictions.

It is possible that a large proportion of patients were meaningfully involved in treatment during the follow-up period and that MHPs accurately assessed their proximate risk of disorder-related violence and intervened to prevent it. On the other hand, there is evidence that the strongest predictors of violence are similar for those with and without mental disorders (Bonta, Law, & Hanson,

1998). For example, several large-scale investigations have found that substance abuse strongly predicts community violence among those with mental disorders, whereas psychiatric symptoms are relatively weak predictors for such violence (see Lidz et al., 1993; Monahan et al., 2001; Swanson et al., 1990). This lends some credence to the notion that highly disorder-related predictions are relatively likely to be inaccurate. Nevertheless, our finding that MHPs may overemphasize the relevance of clinical problems to patient violence requires independent replication.

Limitations, Conclusions, and Implications

This study has a number of strengths, including a large sample, prospective design, and highly textured representations of MHPs' envisioned violence and patients' reported violence. Nevertheless, it has two major limitations. First, because this study is the first comparison of the nature of envisioned and reported violence for men and women, its results need to be replicated. Although we used both exploratory and confirmatory techniques, an independent sample is required to replicate the proposed dimensions. Second, the subsamples of patients used to describe envisioned and reported patient violence are not identical. Because MHPs' risk assessment accuracy is limited, only some of the patients that they envisioned as potentially violent actually were violent during the follow-up period. We intentionally used these partially overlapping samples to shed light on any differences between the nature of MHPs' envisioned violence and patients' reported violence. We wished to go beyond the issue of simple accuracy to determine how MHPs think about violence risk and how their thoughts relate to reported violent incidents and patient gender. Future research, however, may focus on the narrow class of patients who are both assessed as and become violent to determine whether the results replicate.

In addition, the difficulty of measuring each of the possible conditions accurately may have affected the types of models that emerged for the envisioned and reported violence. For example, what constitutes substance abuse is a subjective judgment made by MHPs and patients, possibly using different metrics. Similarly, some patients and collateral informants may not describe psychiatric deterioration as occurring before a violent incident because they are not aware of such deterioration or lack insight about the role of mental illness in their lives. This would reduce the likelihood that psychiatric deterioration could emerge as salient to a dimension of reported violence. It would not, however, explain attendings' significantly lower rates of accuracy in predicting violence when they make highly disorder-related predictions. In cases in which attendings considered this factor salient, patients were still less likely to be violent. This aspect of the design indicates the need for any replication studies to include measures of conditions for violence that go beyond patients' and collateral informants' recent recall.

In our view, these limitations are not critical impediments to drawing some important conclusions from this study. The results of this study suggest that all of the hypotheses offered earlier help explain MHPs' limited accuracy in risk assessment of women. First, MHPs seem to simply underestimate women's violence potential, rather than mischaracterize it. For clinicians, envisioned violence was similar to reported violence, both in its nature and relation to patient gender, but this type of accuracy did not trans-

late into greater risk assessment accuracy. Second, the relationship between MHPs' professional role and the dimensions of envisioned violence suggests that experience-based assessment biases may reduce risk assessment accuracy. Attendings' envisioned violence was underpinned by a unique Disorder Relatedness dimension that was linked to poor risk assessment accuracy. One might conclude that more training in the medical model is much less likely to improve accuracy in predicting women's (or men's) violence than adopting a broader view of the transactional nature of violence and the factors that contribute to it.

More refined research clearly needs to be done before we are confident in our depiction of clinical judgment about future violence. Research with intervention designs would be particularly helpful. If MHPs' limited accuracy is based chiefly on underestimates of women's violence potential or on experience-based assessment biases, techniques that directly challenge, point by point, MHPs' misconceptions about the relationships between gender and violence might be required (Smith, 1993). The improvement of clinical assessments of violence rests on the continued pursuit of innovative methods for conceptualizing, characterizing, and improving the task of clinical judgment.

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