

SOCIAL ISOLATION, IMPULSIVITY AND DEPRESSION AS PREDICTORS OF AGGRESSION IN A PSYCHIATRIC INPATIENT POPULATION

Christopher J. Ferguson, Ph.D., Patricia M. Averill, Ph.D.,
Howard Rhoades, Ph.D., Donna Rocha, M.D., Nelson P.
Gruber, M.D., and Pushpa Gummattira, M.D.

Aggressive behavior among psychiatric inpatients remains an issue of concern for staff, families and patients themselves. At the present time, studies examining prediction of aggression among psychiatric inpatients have focused mainly on diagnostic or demographic risk factors. Unfortunately little is known about specific social functioning and personality risk factors that may help identify specific individuals at risk for aggressive behavior. Given that many individuals who have engaged in violent criminal behavior have been observed to experience a combination of social isolation, depression and impulsiveness, it is possible

Christopher J. Ferguson, M.S., is Assistant Professor, Department of Psychology, University of Wisconsin – Whitewater, Whitewater, WI.

Patricia M. Averill, Ph.D., Howard Rhoades, Ph.D., and Nelson P. Gruber, M.D., are Associate Professors, University of Texas – Houston Medical School, Department of Psychiatry and Behavioral Sciences, Harris County Psychiatric Center, Houston, TX.

Donna Rocha, M.D., and Pushpa Gummattira, M.D., are Assistant Professors, University of Texas – Houston Medical School, Department of Psychiatry and Behavioral Sciences, Harris County Psychiatric Center, Houston, TX.

Address correspondence to Christopher J. Ferguson, M.S., Department of Psychology, University of Wisconsin – Whitewater, 800 West Main St., Whitewater, WI 53190; e-mail: CJFerguson1111@aol.com.

that this same combination of traits may function as a predictor of aggression among psychiatric inpatients. The current study examines whether psychiatric inpatients with a combination of social isolation, depression and impulsivity are significantly more likely to become aggressive than other psychiatric inpatients without that combination of factors. Results indicated that impulsivity functioned as a positive predictor of aggression, whereas depression acted as a protective factor. Perceived social support did not appear to relate strongly to aggression. Further, physicians' ratings of hostility were more predictive of aggressive incidents than were self-reports of hostility. Clinical implications of these findings are discussed.

KEY WORDS: aggression; psychiatric inpatient; impulsivity; depression.

Aggression and violent behavior are arguably among the chief concerns among staff, families and clients on inpatient psychiatric units. Given that research has indicated that individuals with severe mental illnesses are at risk for aggressive behavior (1), and inpatient psychiatric units, by definition, congregate a number of mentally ill individuals together in a situation that is often crowded, constricted and potentially abrasive, it appears that little practical progress has been made in identifying inpatients who may be at particular risk for aggressive or violent behavior. Although situational variables, such as lax and uncontrolled ward environment can increase the risk of aggression (2), so too are certain individuals at greater risk for aggressive behavior than others. Specifically, despite the fact that some factors related to diagnosis and demographics have been identified as risk factors (3), this helps little in distinguishing risk level between individuals with a given diagnosis or background. The purpose of this study is to examine several potential risk factors related to social functioning, depression and impulsivity that may place certain individuals at higher risk for aggressive behavior.

Risk Factors for Aggression in Psychiatric Facilities

Aggression in inpatient facilities can generally be conceptualized as an interaction between an individual and the environment in which he or she finds themselves. As such both the individual and his or her environment can contribute risk factors to the equation. Some individuals may be of so little risk for aggressive behavior that they will be passive and compliant under the most intrusive and hostile of circumstances. Others are so at risk for aggressive behavior that any set

of circumstances would be likely to elicit an aggressive response. Most individuals fall somewhere in between, and for them identifying the extent to which they are at risk and modifying the environment or their treatment plan appropriately may be instrumental in reducing that risk (4).

Regarding situational variables that can increase aggression in inpatient facilities, a number of studies have documented facility specific factors that increase the number of violent incidents in those facilities. As noted by Bellus et al. (2), increasing chaos and decreasing staff control on an inpatient unit is likely to increase the incidence of aggressive behavior on that unit. Even for a given unit, certain times of day may be trigger points for aggressive incidents. For example, in one 17-year analysis of violent incidents at a psychiatric hospital in England (5) it was found that violent incidents peaked during meal times, medication disbursement and staff shift-change, all times at which "chaos" on the unit could be expected to increase, and staff control decrease.

Not surprisingly, staff experience and other qualities can play a role in the incidence of aggressive behavior on a psychiatric inpatient unit. Personality characteristics of the staff member may also have a potential impact. In one survey of psychiatric inpatients as well as psychiatric staff (6), patients found that staff members who were overly controlling or poor communicators were particularly likely to precipitate incidents of aggression. Clearly, staff training, experience, communications and sensitivity toward clients are potential mitigating factors in preventing violence.

As to the training and experience of staff, a study of assault incidents by 287 patients in four psychiatric hospitals in Taiwan (7) found that assaults were less likely to occur on staff who had more experience and who had received specialized training for aggression management. Similarly, staff-to-patient ratio was predictive of aggressive behavior by patients. Further, a study by Cunningham et al. (8) found that staff who were younger and less experienced reported being involved in more aggressive confrontations with clients. These results suggest that staff training programs may be instrumental in reducing violent and aggressive behavior by agitated clients or patients. Interestingly, a study by Sjostrom et al. (9) on the effectiveness of a staff-training program for reducing patient violence on an inpatient unit identified some limits to focusing on staff exclusively as progenitors of aggressive or violent incidents. Specifically, although the training program reduced the extent to which staff perceived patients as violent or aggressive, actual violent incidents were not reduced, nor were the number of staff injuries on the unit. As such, despite the observation that psychiatric staff can

exacerbate or instigate violence on their units, it remains evident that a certain degree of risk is related to the qualities of the individual admitted for psychiatric problems.

Individual Risk Factors

Not surprisingly a number of studies have focused on patient diagnosis as a possible risk factor for aggression. Generally speaking, it is impossible to make blanket statements of risk based solely upon diagnosis (10). At the same time a number of studies have highlighted particular diagnoses or diagnostic patterns such as schizophrenia with antisocial personality disorder (11), schizophrenia with substance abuse (12), depression (13) or bipolar disorder (14). Yet even to the extent that clinical diagnosis may indeed be a risk factor for violence, noting diagnosis alone as a risk factor is not particularly helpful for inpatient psychiatric hospitals in which diagnoses such as schizophrenia or bipolar disorder or comorbid substance abuse may be fairly common. In other words, using general diagnostic criteria alone for assessing violence risk will result in the identification of a large proportion of the psychiatric inpatient population as being at risk for violence, without providing more specific triage information about those individuals most at risk.

Other research has focused on features of mental illnesses that may predict future aggression. A number of studies have focused on specific symptoms of schizophrenia and other psychotic illnesses that may be predictive of future violence. Unfortunately the data in this area are fragmented and contradictory. In examining the symptoms of schizophrenia, several studies have suggested that the severity of negative psychotic symptoms, such as confusion and social isolation, is predictive of violence, but that positive symptoms such as hallucinations are not (e.g. 15,16). Other studies have found positive symptoms to be more predictive of aggressiveness (e.g. 17).

Examining interpersonal qualities of individual patients has shown some promise in predicting aggression on psychiatric inpatient units. Not surprisingly, impulsivity has shown some value as a predictor of inpatient aggression. For example in a study of 385 male institutionalized violent offenders (18), impulsivity and antisocial personality were found to be significant predictors of aggression on the unit. Thus, even among a sample of individuals with a history of violence, impulsivity serves as a significant predictor of future violence. At the same time, the results of this study must be interpreted with some caution as it could be argued that the baseline rate of impulsivity in a population of

violent offenders would be higher than in the population of generally mentally ill individuals.

One study (19) examined the link between impulsivity, suicidality and aggression in 61 forensic psychiatric inpatients. A significant difference was found between violent offenders with suicidal ideation and a history of attempts as compared to violent offenders without suicidal ideation or history of attempts. A higher degree of impulsivity was found for violent offenders who were also suicidal. These results suggest that for some individuals prone to violent behavior, violence and self-destruction may be linked by an individual tendency toward poor impulse control and behavioral regulation.

In one study, men on parole for a violent crime were found to be more prone to select a quick "impulsive" reward for a particular behavior instead of a time-delayed "better" reward, than were men on parole for nonviolent crimes (20). Similarly a study of hospitalized women (21) found that women with high impulsivity were less likely to delay gratification during a reward for performance task and were more likely to respond aggressively toward individuals whom they perceived as being in their way.

Furthermore, social isolation with depression has been identified as a potential risk factor for aggressive behavior. For instance, in a study of elementary school children (22), it was found that a subset of children with social isolation (active-immature isolation) were at particular risk for aggressive behavior. Social isolation also appears to be a risk factor for aggressive behavior among cognitively-impaired nursing home residents (23). Surprisingly, although the inpatient mentally ill population is potentially at risk for social isolation, research on this variable as a potential predictor of violent behavior remains sparse.

Depression has been particularly linked with aggression by parents toward their children. For example, in a study of 49 parents who were in treatment for physically abusing their children, depression level as measured by the Beck Depression Inventory was significantly correlated with acts of aggression toward their children (13). The authors observed that aggressive behaviors by this group of parents appeared to be impulsive and driven by an anger reaction to aversive stimuli or events. As such, depression and impulsivity appear to be linked as risk factors for parental aggression toward children. Furthermore, depressive disorders have been found to be more common among parents who abuse their children than control groups (24). Given that depression appears to be a component of impulsive aggression of some parents toward their children, it may be that depression can also increase risk of violence toward other adults, particularly psychiatric staff members

who may be sources of frustration and unpleasant emotions, as well as relative strangers. Little research to date has examined this link, however.

Fava (25) also found that aggressive behavior was common among individuals experiencing depression. In a cohort of depressed individuals, Fava found that 44% had experienced "anger attacks" or brief periods of impulsive rage resulting either in destruction of property or assault on another person. These periods often included symptoms of tachycardia and sensations of panic, and were highly impulsive, leading Fava to conclude that these bursts of anger were, in some ways, similar to a panic attack. Similarly, Tardiff & Sweillam (26) found that aggressive behaviors were common among individuals who had attempted suicide.

Berkowitz (27) has suggested that depression may contribute to aggression by bringing on unpleasant emotions or stimuli within the individual. Although for many individuals the reaction to depression may be to withdraw, for some individuals depressed emotions may increase sensations of anger, particularly toward perceived sources of the unpleasant emotions. This transference of depression to anger may result in impulsive aggressive behaviors unless these urges are brought under proper restraint.

To date, few studies have examined the potential relation between impulsivity, social isolation and depression as potential risk factors for aggression in psychiatric inpatient adult populations. The purpose of the present study is to remedy this gap in the literature and to examine the utility of these three potential risk factors in identifying potentially aggressive hospitalized individuals. Specifically, it is hypothesized that all three variables will be predictive of aggressive behavior. This hypothesis will be examined across three measures of aggressiveness: self-reported hostility, physician's ratings of resistance and hostility, and documented incidents of aggression on the unit. Further, although males may be prone to more aggressive behaviors than females, it is hypothesized that this general pattern of risk factors will be applicable to both male and female inpatients.

METHOD

Participants

Two hundred and twelve patients who were admitted to the University of Texas-Houston Harris County Psychiatric Center (UT-HCPC),

between January 2000 and December, 2002 were included in the study. During their stay at UT-HCPC, all patients remained on locked inpatient units. UT-HCPC is funded partially by the State of Texas to provide most of the inpatient acute psychiatric care for indigent patients who live with Harris County. However, patients with insurance also are admitted to the facility. All of the patients received discharge diagnoses based on DSM-IV criteria, which were assigned by the attending physicians. Of these participants, 133 (62.7%) were male and 79 (37.3%) were female. Regarding ethnicity, 86 (40.6%) were Caucasian, 95 (44.5%) were African American, 27 (12.7%) were Hispanic, 2 (0.9%) were Asian American, and 2 (0.9%) were Other. Their mean age at admission was 34.6 (SD = 12.78) years. They had an average of 3 admissions to HCPC (SD = 3.56) and averaged 12.5 days (SD = 8.0) during their current stay. In regards to diagnosis, 54 (25.4%) were diagnosed with major depression or other mood disorders, 44 (20.8%) were diagnosed with bipolar disorder, 103 (48.6%) were diagnosed with schizophrenia or other psychotic disorders, 2 (1.0%) were diagnosed with substance use withdrawal, 1 (0.5%) was diagnosed with post-traumatic stress disorder, 2 (1.0%) were diagnosed with an impulse control disorder and 6 (2.8%) had deferred diagnosis on Axis I and Axis II. Due to the short duration of stay, establishing a consistent pattern of behavior required for diagnosis of a personality was not possible, as such, personality disorder diagnoses were not reported for these participants. Regarding violent or aggressive behavior, 108 (51%) had documented incidents of aggressive behavior on the unit. This group was matched by diagnostic category against 104 (49%) patients without violent histories. This was done by randomly selecting a group of appropriate "control" patients, using SPSS software and using a Mann-Whitney U test to assure that this group did not differ from aggressive patients in respect to frequency of diagnoses. Demographic data are summarized in Table 1.

As part of an ongoing program evaluation study, all adult patients were asked to complete self-report measures of general psychiatric symptomatology (see below) within the first 24 hours of admission to the unit and 24 hours prior to discharge. Further, attending psychiatrists completed rating scales of behavior, based upon their interviews with the patients on admission and discharge. Because the patients may not have completed all forms, different *N*'s may be noted in the results. For this study only admission rating scales and questionnaires were used. Because these data were gathered as part of our ongoing clinical program evaluation, and are part of an archival database, no informed consent was obtained. Permission was granted by both the institution's Committee for the Protection of Human Subjects and by the

TABLE 1
Presentation of Patient Demographic Variables

Gender	
Male	133 (62.7%)
Female	79 (37.3%)
Ethnicity	
Caucasian	86 (40.6%)
African-American	95 (44.5%)
Hispanic/Latino	27 (12.7%)
Asian-American	2 (0.9%)
Other	2 (0.9%)
Age	
Mean	34.6
Standard deviation	12.78
Diagnosis	
Depressive/Mood Disorder	54 (25.4%)
Bipolar Disorder	44 (20.8%)
Schizophrenia/Psychosis	103 (48.6%)
Substance Abuse	2 (1.0%)
PTSD	1 (0.5%)
Impulse Control Disorder	2 (1.0%)
Diagnosis Deferred	6 (2.8%)
Aggression	
Yes	108 (51%)
No	104 (49%)

hospital research committee to conduct this study. In addition HIPPA requirements have been observed.

Measures

The Brief Psychiatric Rating Scale—Anchored (BPRS, 28) is an 18-item clinician-rated instrument designed to measure a variety of symptoms associated with psychopathology. Items are rated on a 7-point Likert scale ranging from “not present” to “very severe,” and behavior examples, or anchors, are provided for each item’s rating options. Reliability and validity of the BPRS have been well documented across studies (29,30). Recently, psychometric analysis has supported the application of four factor-derived dimensions (resistance, negative symptoms, psychological discomfort, and positive symptoms) of the BPRS-A in acute inpatient settings (31).

The Brief Symptom Inventory (BSI, 32) is a 53-item self-report inventory used to measure nine primary symptom dimensions including: somatization, obsessive-compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism, as well as three global scores.

The Beck Depression Inventory (BDI-II, 33) is a well-known, 21-item self-report inventory designed to assess current depressive symptomatology, which can be applied to a variety of settings and populations.

The Multidimensional Scale of Perceived Social Support (MSPSS, 34) is a 12-item self-report inventory designed to assess the degree to which an individual perceives themselves as being supported by friends, family and significant others. This measure has demonstrated good reliability and validity in empirical evaluations (34).

The Barratt Impulsiveness Scale (BIS, 35) is a 30-item self-report measure designed to measure impulsive behaviors and thoughts. The BIS has been demonstrated to have good reliability and validity in clinical samples (36).

Statistical Analysis

In order to examine the utility of depression, impulsivity and perceived social support in predicting aggression, a series of stepwise multiple regression analyses were conducted to assess this issue from three directions. These included self-reported hostility, as measured by the BSI, physicians' ratings of resistance and hostility as measured by the BPRS, as well as documented incidents of seclusion and restraint on the unit. In addition, these measures of aggression were correlated with each other in order to determine whether there was agreement between self-reported hostility, physicians' ratings of hostility, and actual incidents of aggressive behavior.

RESULTS

In order to examine whether depression, impulsivity and perceived social support would predict self-reported hostility, the BDI, BIS, and MSPSS as well as gender and diagnosis were entered into a stepwise regression equation with the BSI hostility scale as the dependent variable. The results indicated that the current model significantly predicted self-reported hostility ($F_{2,177} = 92.80, p < .001, R^2 = .51$). An examination of the beta-weights revealed that depression and impulsivity were both

positive predictors of self-reported hostility, but that perceived social support was not nor was gender or diagnosis.

Regarding physicians' ratings of resistance and hostility, the BDI, BIS, and MSPSS as well as gender and diagnosis were entered into a stepwise regression equation with the BPRS resistance scale (31) as the dependent variable. Although the results indicated that the proposed model significantly predicted physicians' ratings of resistance and hostility ($F_{1,171} = 7.44, p < .01, R^2 = .04$), an examination of the beta-weights revealed that impulsivity was a significant *negative* predictor of physicians' ratings of resistance and hostility. As such, these results disagree with those found for self-reported hostility. Perceived social support, once again, as well as depression were not significant predictors of resistance or hostility nor was gender or diagnosis.

As to documented incidents of aggressiveness on the unit, the BDI, BIS, and MSPSS as well as gender and diagnosis were entered into a stepwise regression equation with the number of documented aggressive incidents resulting in seclusion or restraint on the unit as the dependent variable. The results indicated that the proposed model was not a significant predictor for documented aggressive incidents on the unit.

Given that these initial results suggest some degree of discrepancy between self-reported hostility, physician's ratings of hostility and aggression and actual incidents of aggressiveness on the unit, correlational analyses were conducted in order to examine the relative degree of agreement between these three outcome variables. Results indicated that physicians' ratings of aggressiveness at admission were significantly correlated with documented aggressive incidents on the unit, $r = .36, p < .001$, with $r^2 = .13$. Self-reported hostility was not a significant predictor of aggressiveness on the unit.

Given these results, a further stepwise multiple regression was conducted to examine whether adding physicians' ratings of resistance and hostility to a predictive model would be useful in predicting documented incidents of aggression on inpatient units. Specifically, the BDI, BIS and MSPSS, along with the BPRS Resistance scale as well as gender and diagnosis were entered into a stepwise regression model, with documented incidents of aggressiveness as the dependant variable. The results indicated that adding physicians' ratings of resistance and hostility contributed to the overall equation ($F_{1,171} = 33.25, p < .001$) with an $R^2 = .16$. An examination of beta-weights indicated that only physicians' ratings of resistance were a positive predictor of aggression. Perceived social support as well as depression and impulsivity did not function as a significant predictor.

TABLE 2
Summary of Significant Regression Findings

<i>Dependant variable</i>	<i>F-statistic</i>	<i>R²</i>	<i>Predictor variable</i>	<i>Beta</i>
BSI Hostility	92.80**	.51	BDI total	.62**
			BIS total	.13*
			MSPSS	N/A ^a
BPRS Resistance	7.44**	.04	BDI total	N/A ^a
			BIS total	-.20**
			MSPSS	N/A ^a
Aggressive Incidents	1.37	.01	BDI total	N/A ^a
			BIS total	N/A ^a
			MSPSS	N/A ^a
Aggressive Incidents	33.25**	.16	BDI total	N/A ^a
			BIS total	N/A ^a
			MSPSS	N/A ^a
			BPRS Resistance	.40**

*Significant at $p \leq .05$.

**Significant at $p \leq .01$.

^aDenotes predictor variable removed from stepwise regression.

A summary of significant regression findings is presented in Table 2.

DISCUSSION

The results of the current study demonstrate several interesting and significant findings. Of the three hypothesized predictors of aggression, impulsivity, as measured by the Barratt Impulsivity Scale and depression as measured by the Beck Depression Inventory, appear to be the best positive predictor of self-reported hostility. However these findings do not extend to actual aggressive incidents on an inpatient unit. As such, it does not appear that self-report data related to these constructs has proven helpful in identifying individuals at risk for aggressive behavior on inpatient units. Although some individuals may rate themselves higher in regards to psychological variables such as depression, impulsivity and hostility, such ratings do not appear to necessarily translate to aggressive behavior.

Initially, this data appears to be contrary to the prevailing literature. Although it is not surprising that impulsivity and depression should correlate with self-reported hostility, it is surprising that such self-reported symptoms do not appear predictive of aggression. It may

be that individuals admitted to inpatient facilities may be generally poor at self-monitoring and their self-reported data particularly error-prone thus reducing its effectiveness in predicting outcomes such as aggression. This appears likely particularly in regards to the relative successfulness of physicians' ratings in predicting aggression. In particular, individuals may generally be poor in monitoring their own relative level of impulsivity in a meaningful and reliable way. Further, depression may have differential effects on different individuals in an inpatient facility. Although for some individuals, depression may exacerbate aggressive behaviors, for others it may function as a protective factor by increasing lethargy and inaction. As such it may be difficult to find a reliable link between depressed mood and aggression.

Surprisingly, perceived loss of social support did not function as a significant predictor of aggressiveness. Individuals who were aggressive on an inpatient psychiatric unit were no more likely to report perceived loss of social support than individuals who were not aggressive. This finding refutes the notion of aggressive individuals as typically socially isolated or rejected in relation to their peers. One possible explanation for this finding in inpatient settings could be that perceived social support is endemically low for psychiatric inpatients as a whole (e.g. 37), thus variance is limited. Indeed, the mean social support score of 3.4 (SD = 2.0) for the current total sample is in the "below average" range for this scale. As such, given the generally low levels of social support among this population, this variable may not be able to serve as an accurate predictor of aggressiveness.

One interesting finding of the current study is the apparent disconnect between self-reported hostility, physicians' ratings of resistance and hostility and actual documented acts of aggression on a psychiatric inpatient unit. Specifically, self-reported hostility did not correlate with aggressive incidents, while physicians' ratings did. As such, physicians' ratings of hostility and resistance at admission appear to be better predictors of aggressiveness than are self-reported ratings of hostility. This may be because individuals who are continually hostile may also likely be experiencing significant ongoing depression, and this depression may actually act as a protective factor for aggression on an inpatient unit. Much of the aggression on inpatient units may be due to a sudden change of mood, rather than a simmering hostility. As such, individuals may consider themselves low in anger and hostility during the time they fill out self-report data, but high degrees of stress while on the unit may cause them to resort to anger and aggression when they feel "put upon" by some aversive stimuli. However, such individuals may exhibit low insight into their feelings of hostility,

therefore limiting their ability to inhibit behavioral aggressiveness on these feelings.

Although the results of this study suggest that physicians' ratings appear to be useful in predicting aggressiveness of patients on an inpatient psychiatric unit, several caveats bear mentioning. It must be noted that this predictive model of aggressiveness on psychiatric inpatient units may not be generalizable outside the psychiatric unit. Aggressiveness on the unit may tend to be reactionary, and may differ from other forms of aggression that may exist in a patient's home life, including instrumental or premeditated aggression. As such, non-aggressiveness on a psychiatric unit is not necessarily a reliable indicator of patient lack of aggression off of the unit or in the community. This is particularly true for individuals who have a prior history of aggression in other settings. As with all measures of psychological functioning, the current predictive model of inpatient aggression should not be extended beyond the confines for which it was intended.

Future directions include continued examination of the relation between depression and aggression. Although previous literature has suggested that depression can be a predictive factor for aggression in both adults and children, the current study suggests that it is not predictive of aggression on an inpatient psychiatric unit. It would be beneficial to engage in follow up research with psychiatric inpatients to examine whether depression reverts back to a positive predictor of aggressiveness once patients are removed from the relative structure of the psychiatric unit. It may be that the neutrality that depression exhibits on the inpatient unit does not continue after discharge. Such research could assist in reconciling these disparate findings. Further research examining the link between the risk of aggression on inpatient units and continued risk for aggression after discharge may be useful in assisting clinicians in making more reliable plans for patient discharge. Specifically, can nonaggressive psychiatric inpatients reliably be expected to remain nonaggressive after discharge, and vice-versa? It is possible that clinicians may be tempted to generalize their observations of patient behavior on the unit to discharge when such generalizations may not be appropriate.

The current study contributed to the identification of ratings that may set some individuals apart as being at higher risk for aggressive behavior on a psychiatric inpatient unit. It is hoped that these findings will assist clinicians in identifying at-risk patients early in the admission process, and tailor therapeutic interventions appropriately to minimize risk to patients and staff without impinging on patients' rights. It is further hoped that this paper will foster discourse into the

nature of aggression among the mentally ill, and the intrapersonal factors that may contribute to it.

REFERENCES

1. Steinert T, Sippach T, Gebhardt R: How common is violence in schizophrenia despite neuroleptic treatment? *Pharmacopsychiatry* 33:98–102, 2001.
2. Bellus S, Vergo J, Kost P, et al: Behavioral rehabilitation and the reduction of aggressive and self-injurious behaviors with cognitively impaired, chronic psychiatric inpatients. *Psychiatric Quarterly* 70:27–37, 1999.
3. Daffern M, Howells K: Psychiatric inpatient aggression: A review of structural and functional assessment approaches. *Aggression and Violent Behavior* 7:477–497, 2002.
4. Monahan J, Steadman H: Violence risk assessment: A quarter century of research, in *The Evolution of Mental Health Law*. Edited by Frost L, Bonnie R. Washington DC, American Psychological Association, 2001.
5. Gudjonsson G, Rabe-Hesketh S, Wilson C: Violent incidents on a medium-secure unit over a 17-year period. *Journal of Forensic Psychiatry* 10:249–263, 1999.
6. Duxbury J: An evaluation of staff and patient views of and strategies employed to manage inpatient aggression and violence on one mental health unit: A pluralistic design. *Journal of Psychiatric and Mental Health Nursing* 9:325–337, 2002.
7. Chou K, Lu R, Mao W: Factors relevant to patient assaultive behavior and assault in acute inpatient psychiatric units in Taiwan. *Archives of Psychiatric Nursing* 16:187–195, 2002.
8. Cunningham J, Conner D, Miller K, et al: Staff survey results and characteristics that predict assault and injury to personnel working in mental health facilities. *Aggressive Behavior* 29:31–40, 2003.
9. Sjoström N, Eder D, Malm U, et al: Violence and its prediction at a psychiatric hospital. *European Psychiatry* 16:459–465, 2001.
10. Hall H, Ebert R: *Violence Prediction: Guidelines for the Forensic Practitioner*. Springfield, Charles C. Thomas, 2002.
11. Rasmussen K, Levander S: Violence in the mentally disordered: A differential clinical perspective. *Issues in Criminology and Legal Psychology* 24:127–130, 1995.
12. Hoptman M, Yates K, Patalinjug M, et al: Clinical prediction of assaultive behavior among male psychiatric patients at a maximum-security forensic facility. *Psychiatric Services* 50:1461–1466, 1999.
13. Mammen O, Kolko D, Pilkonis P: Negative affect and parental aggression in child physical abuse. *Child Abuse & Neglect* 26:407–424, 2002.
14. Miller R, Zadolinyi K, Hafner R: Profiles and predictors of assaultiveness for different psychiatric ward populations. *American Journal of Psychiatry* 150:1368–1373, 1993.
15. Hodelet N: Psychosis and offending in British Columbia: Characteristics of a secure hospital population. *Criminal Behavior and Mental Health* 11:163–172, 2001.
16. Ehmann T, Ross D, Au T, et al: Aggression among patients with treatment refractory psychoses. *Schizophrenia Research* 24:14, 1997.
17. Arango C, Barba A, Gonzalez-Salvador T, et al: Violence in inpatients with schizophrenia: A prospective study. *Schizophrenia Bulletin* 25:493–503, 1999.
18. Wang E, Diamond P: Empirically identifying factors related to violence risk in corrections. *Behavioral Sciences and the Law* 17:377–389, 1999.

19. Stalenheim E: Relationships between attempted suicide, temperamental vulnerability and violent criminality in a Swedish forensic psychiatric population. *European Psychiatry* 16:386–394, 2000.
20. Cherek D, Moeller G, Dougherty D, et al: Studies of violent and nonviolent male parolees: II. Laboratory and psychometric measurements of impulsivity. *Biological Psychiatry* 41:523–529, 1997.
21. Dougherty D, Bjork J, Huckabee H, et al: Laboratory measures of aggression and impulsivity in women with borderline personality disorder. *Psychiatry Research* 85:315–326, 1999.
22. Rubin K, Mills R: The many faces of social isolation in children. *Journal of Consulting and Clinical Psychology* 56:916–924, 1988.
23. Chen Y, Ryden M, Feldt K, et al: The relationship between social interaction and characteristics of aggressive, cognitively impaired nursing home residents. *American Journal of Alzheimer's Disease* 15:10–17, 2000.
24. Famularo R, Fenton T, Kinscherff R, et al: Mother and child post-traumatic stress disorder in cases of child maltreatment. *Child Abuse & Neglect* 18:27–36, 1994.
25. Fava M: "Anger Attacks": Possible variants of panic and major depressive disorders. *American Journal of Psychiatry* 147:867–890, 1990.
26. Tardiff K, Sweillam A: Assault, suicide and mental illness. *Archives of General Psychiatry* 37:164–169, 1980.
27. Berkowitz L: Toward a general theory of anger and emotional aggression: Implications of the cognitive-neoassociationistic perspective for the analysis of anger and other emotions, in *Perspectives on Anger and Emotion: Perspectives in Social Cognition*, 4th ed. Edited by Wyer R, Krull, T. Hillsdale, NJ, Lawrence Erlbaum & Associates, 1993.
28. Overall J, Gorham D: The Brief Psychiatric Rating Scale. *Psychological Reports* 12:578–602, 1962.
29. Overall J, Henry B, Markett J: Validity of an empirically derived phenomenological typology. *Journal of Psychiatry Research* 9:87–99, 1972.
30. Overall J, Woodward J: Conceptual validity of a phenomenological classification of psychiatric patients. *Journal of Psychiatry Research* 12:215–230, 1975.
31. Lachar D, Bailey S, Rhoades H, et al: New subscales for an anchored version of the Brief Psychiatric Rating Scale: Construction, reliability and validity in acute psychiatric admissions. *Psychological Assessment* 3:384–395, 2001.
32. Derogatis L, Melisaratos N: The Brief Symptom Inventory: An introductory report. *Psychological Medicine* 13:595–605, 1983.
33. Beck A, Steer R: *Beck Depression Inventory: Manual*. San Antonio, TX, The Psychological Corporation, 1987.
34. Zimet G, Dahlem N, Zimet S, et al: The multidimensional scale of perceived social support. *Journal of Personality Assessment* 52:30–41, 1988.
35. Barratt E, Stanford M: Impulsiveness, in *Characteristics of the Personality Disordered*. Edited by Costello C. New York, Wiley, 1995.
36. Patton J, Stanford M, Barratt E: Factor structure of the Barratt Impulsiveness Scale. *Journal of Clinical Psychology* 51:768–774, 1995.
37. Garnefski N, Doets T: Perceived social support and dysfunctioning in "clinical" and "normal" adolescents. *Journal of Adolescence* 23:753–762, 2000.

Copyright of Psychiatric Quarterly is the property of Kluwer Academic Publishing and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.