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## **Violent Ideation in Medical Patients in Four Insurance Systems**

by

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# Violent Ideation In Medical Patients in Four Insurance Systems

## Abstract

Most of the literature on violent patients has focused on patients in psychiatric facilities. Little is known about violent patients in the general medical setting, although it would seem that violent and dysfunctional behavior may predispose patients towards injury. These effects were explored using census-matched community and physical rehabilitation patient samples, from whom background information and BHI profiles were obtained. The results found that the patient group reported significantly more violent ideation (VI) than did the community group. VI was also significantly associated with involvement in worker=s compensation or personal injury insurance systems, work conditioning programs, the BHI Hostility scale, and a number of other psychosocial factors.

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The rate of violence in the United States is markedly higher than in most other industrialized nations. The homicide rate in the United States is

Violence in the medical setting is not uncommon. In one study, patient aggression was found to affect 25% of general practitioners (Hobbs, 1991). Another study found that 9% of medical students reported being physically assaulted by their patients (Ellwood & Rey, 1996) . It has also been found that most patients' assaults were triggered by staff-patient interaction (Cheung, Schweitzer, Tuckwell, & Crowley, 1997).

This study was intended to gain information about the frequency of reported violent ideation (VI) in physically injured medical patients, and identify associated psychological and systemic variables. It was hypothesized that VI would increase with length of time in treatment, with the highest proportion of patients with VI being in tertiary care settings, while the lowest proportion would be found in primary care. This was predicted as common rehabilitation protocols tend to refer psychologically dysfunctional patients on to secondary and tertiary treatment centers (Mayer, et al, 1994). Additionally, psychologically dysfunctional patients are in general more prone to delayed recovery, more prone to becoming disabled, and are thus likely to represent an increasing proportion of the patient population as length of time in treatment continues (Gatchel, Polatin, & Mayer, 1995).

A number of studies have found that job dissatisfaction and other psychosocial factors are

The data used here was collected during the BHI validation study (Bruns, Disorbio & Copeland-Disorbio, 1996), but is unreported elsewhere. The subjects of the patient group were recruited by one of their health care providers, and were reimbursed for their participation. A total sample of 777 patients was obtained. From this sample, the 527 patient

four times higher than Canada, and eight times higher than Japan (Bureau of Justice Statistics, 1996; Canadian Centre for Justice Statistics, 1991; United Nations, 1996). The same is true of the rates of many other violent crimes in these countries.

It would seem a reasonable assumption that persons with violent tendencies are injured at least as often as persons without such tendencies. Indeed, their dysfunction-al behavior may predispose them towards actual or claimed injury. In a prospective study of worker=s compensation back injury claims, it was found that worker antisocial personality traits predicted future back injury reports (Bigos et al., 1991). When such persons do report injuries, they present special treatment challenges.

Most of the literature on angry or violent patients has focused on patients in psychiatric facilities, who may in fact have been hospitalized specifically because they were a danger to themselves or others. But while aggressive or violent behavior is anticipated in psychiatric facilities, and the staff is trained to assess and manage such tendencies, general medical settings are often ill prepared to deal with such issues (ECRI, 1996) .

risk factors for filing a worker=s compensation injury report (Bigos, et al., 1991; Bongers, deWinter, Kompier, & Hildebrandt, 1993; Helliwell, Mumford, Smeathers, & Wright, 1992; Sauter & Swanson, 1996; Ursin, Endresen, & Ursin, 1988). Based on this, it was also predicted that VI would be highest in worker=s compensation. It was also predicted that patients would be higher in VI than nonpatients, as patients were more likely to be distressed, and persons with preexisting aggressive tendencies may be more likely to sustain injuries.

## Method

### Subjects

Patient and community samples were gathered from a total of 2,262 subjects in 36 U.S. States at over 90 sites during the BHI validation studies. The final normative patient sample was comprised of 527 patients who were currently in treatment for a physical injury. The community sample was comprised of 725 community subjects. The demographics of both groups approximated the U.S. Census for race, education, age, and gender. All of the subjects were adults ranging in age from 18 to 65.

### Procedure

subjects were selected at random as the BHI patient normative sample.

A similar procedure was used with the subjects of the community sample, who were recruited through advertisements, and who were also reimbursed for their time. The community normative sample was comprised of 725 community subjects,

who were selected at random from a pool of 1485 community subjects.

Subjects were administered the BHI-R, and additional data was also gathered. The BHI-R was administered anonymously. Subjects signed an informed consent form stating that the information would be used for research purposes only, and that no results or feedback from this test would be given. They were also informed that the information would not influence the course of their clinical care. Subjects were classified as having violent ideation (VI) if they positively endorsed a item stating "I think about killing the people who have caused me problems."

#### Instrumentation

The mean BHI scores of patients with VI were compared to the mean scores of patients without VI using ANOVA tests. The mean scores were significantly different on all 14 BHI scales. Eleven of the BHI scales were significantly elevated at  $p < .0001$  (Depression, Anxiety, Hostility, Borderline, Dependency, Chronic Maladjustment, Substance Abuse, Family Dysfunction, Doctor Dissatisfaction, Job Dissatisfaction and Somatic Complaints), while one was significantly depressed at  $p < .0001$  (Perseverance). Two other BHI scales were significantly elevated at  $p < .05$  (Pain Complaints and Muscular Bracing) (see Table 1). The frequencies of reported VI in the BHI patient sample was compared to the frequency of VI reported by community members. The community member's rate of VI was lower at 6.3%. In contrast, the proportion of patients with VI was found to be almost 50% higher at 9.3%. This overall difference was not significant though ( $\chi^2 p = .0514$ ).

The proportion of patients with VI did vary significantly ( $\chi^2 p < .005$ ) depending on the insurance system the patient was in (see Table 2). The lowest proportion of patients with VI was found in the private health insurance system (which includes pay-for-service insurance, health maintenance organizations, preferred provider organizations and other modes of health care delivery). The proportion there was found to be 2.8%. Next highest were patients in the Medicare/Medicaid system, where a 9.7% rate was found. In contrast, in both patients with worker's compensation or personal injury insurance, the rate of VI was 11.8%.

Patient VI was also associated with type of rehabilitation program. The proportion of patients reporting VI ranged from 6% in acute occupational/physical therapy, to 13% in chronic pain programs and 27% in work conditioning programs. A  $\chi^2$  analysis found this to be significant as well ( $p < .0005$ ) (see Table 3).

There were a number of other significant findings as well. It was found that patients who reported VI were more likely to be in litigation for the injury ( $\chi^2 p < .01$ ), have a lower level of education ( $\chi^2 p < .05$ ), be more likely to smoke tobacco ( $\chi^2 p < .0005$ ), have a traumatic brain injury ( $\chi^2 p < .05$ ),

The Battery for Health Improvement (BHI) is a 202-item inventory designed for the psychological assessment of medical patients. It is included within a larger 600-item research version (BHI-R), which was administered to the subjects in this study. The BHI has 14 scales which assess factors related to delayed recovery from a medical condition such as somatization, dissatisfaction with physicians, and psychological and physical symptom magnification. It also has a number critical items pertaining to dangerousness to self and others, and a history of physical or sexual assault.

## Results

report more frequent divorces ( $\chi^2 p < .05$ ), have a plan to kill themselves ( $\chi^2 p < .0001$ ) and report surviving a childhood sexual assault ( $\chi^2 p < .005$ ).

In contrast, patients reporting VI were not different with regard to gender, type of orthopedic injury, or number jobs held in the last five years from patients not making such reports.

## Discussion

The higher rates of BHI reports of VI seen in secondary (work conditioning) and tertiary (chronic pain) treatment could be attributable to preexisting hostile traits. Angry or dysfunctional patients may be more likely to enter the medical system, and less likely to leave. In particular, there seems to be substantial evidence that persons who are unhappy with their work are more likely to file a report of an injury at work (NIOSH, 1997). It is also possible that persons with VI are more likely to be injured. For example, persons with VI may be more aggressive drivers and have more accidents. On the other hand, it may be that hostile patients may demand more treatment, or exhibit delayed recovery. This should be fertile area for further research.

Table 1. Analysis of Variance for BHI Scores for Patients With and Without Violent Ideation

Scale	df	Mean Score VI Group	Mean Score Non-VI Group	F
Depression	1	59.4	49.0	52.7****
Anxiety	1	61.2	48.8	71.7****
Hostility	1	65.8	48.4	172.1****
Borderline	1	63.3	48.6	118.1****
Symptom Dependency	1	56.8	49.3	26.3****
Chronic Maladjustment	1	59.8	48.9	58.8****
Substance Abuse	1	56.4	49.4	23.3****
Perseverance	1	42.6	50.8	31.8****
Family Dysfunction	1	60.3	49.1	61.7****
Job Dissatisfaction	1	55.2	49.6	19.3****
Doctor Dissatisfaction	1	55.6	49.5	17.2****
Somatic Complaints	1	57.2	49.3	29.0****
Pain Complaints	1	53.1	49.4	6.09*
Muscular Bracing	1	54.9	49.4	13.4***

\*p< .05  
n = 527      \*\*p<.01      \*\*\*p <.001      \*\*\*\*p<.0001

Table 2. Percentage of Patients Reporting Violent Ideation in Four Insurance Systems

Insurance System	No		Yes		Total	
	Count	Row %	Count	Row %	Count	Row %
Auto / Personal Injury	52	88.1	7	11.8	59	100
Medicare / Medicaid	28	90.3	3	9.7	31	100
Private Health Insurance	176	97.2	5	2.8	181	100
Worker=s Compensation	149	88.1	20	11.8	169	100
Other / Unknown	73	83.9	14	16.1	87	100
otal	478	90.7	49	9.2	527	100

df = 4    c<sup>2</sup> = 17.975      c<sup>2</sup> p value = .0012

Table 3. Frequency of Reported Violent Ideation in Primary, Secondary and Tertiary Rehabilitation

	Acute Pt/Ot		Work Conditioning		Chronic Pain		Total	
	Count	Col%	Count	Col%	Count	Col%	Count	Col%
VI Reported	13	5.8	10	27.0	12	13.5	35	10.0
VI Not Reported	210	94.2	27	73.0	77	86.5	314	90.0
Total	223	100	37	100	89	100	349	100

$df = 2$        $c^2 = 17.38$        $c^2$  p value = .0002

The BHI scale most closely associated with VI in this study was the Hostility scale. The mean difference on the Hostility scale between the VI and non VI groups was over 17 T-score points. This appears to be a clinically significant difference. A strong relationship between VI and Hostility was anticipated, though.

It seems likely that patient hostile traits may increase the risk of VI developing in the future, although this remains to be empirically tested. An alternate explanation is that elevated rates of VI in secondary and tertiary treatment could also be attributable to reactive or state anger. Persons who have been injured could exhibit higher levels of VI as part of an angry reaction to the pain or frustrations they have faced.

Patient stress and frustration may be heavily influenced by systemic variables. Of particular significance here is that the rate of VI in patients in work conditioning programs was more than twice as high as those in chronic pain programs. In most protocols, work conditioning programs are regarded as secondary treatment, and persons who do not succeed there or who are judged to be too medically or

By definition, the mandate of a work conditioning program is to prepare the patient for an immanent return to work. In contrast, this mandate is not an assumption inherent in chronic pain programs. It is possible that the pressures of work conditioning programs increase patient stress levels, and subsequently increase anger and VI. The stressors involved could include feeling pressured to return to a disliked job, a fear of being terminated following return to work, or anger over feeling pressured to perform vigorous and perhaps painful exercises. Elevations on the BHI Doctor Dissatisfaction and Job Dissatisfaction scale are associated with VI reports, and may tap into aspects of systemic stressors. This merits further investigation.

More broadly, health care is becoming more adversarial. With the rise of managed care, there are more controls than ever on treatment, and studies indicate a rising consumer dissatisfaction with HMOs. Recent *Time*/CNN polls have found that the percentage of persons who are satisfied with their health care is dropping (Gorman, 1998). Consequently, it seems plausible that systemic forces are playing a role in patient frustration, and in patient VI as well.

In general, this study found that worker's compensation

The relationship between VI and violent behavior in medical patients is not fully understood. However, there is broad support for the general relationship between cognition, emotion and behavior (Ellis, 1962; Beck, 1976; Craighead, Craighead, Kazdin & Mahoney, 1994). Recent research

psychologically dysfunctional may be referred on to tertiary level chronic pain programs (Mayer et al., 1994). Based on this referral criteria, it had been hypothesized here that the incidence of patients with psychological dysfunctions in chronic pain programs would exceed that in secondary level work conditioning programs. It was further hypothesized that this would include a higher rate of VI in chronic pain programs. The reverse was true.

If patient selection effects did not produce the observed higher frequency of VI in work hardening programs, then the possibility that systemic variables were involved must be carefully considered. Work conditioning programs, by their nature, may make greater behavioral and emotional demands than other types of rehabilitation programs. Even though the number of subjects was not large, the fact that 27% of this sample of patients in work hardening programs were reporting VI is a sobering statistic. The work hardening patients reported VI at twice the rate seen in patients with chronic pain, and 4.5 times the rate VI of patients in acute physical therapy.

and personal injury insurance systems are associated with a higher frequency of patient VI than was observed in patients with private health care insurance. These are insurance systems involve compensation, frequent litigation, and in many case have been more managed. With regard to private insurance systems, this study did not differentiate between various private health insurance systems, such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs). This would certainly be an interesting comparison.

The level of anger and VI detected in this study indicates that extreme patient anger cannot be overlooked. Possible ways of explaining these effects include that patients with VI may be more likely to be involved in an accident, report an injury, enter treatment, or exhibit delayed recovery. On the other hand, pressures within the health care system itself may elicit anger or violent ideation. Some treatment regimens are stressful. For example, pressuring a patient to perform needed but painful exercises is stressful and may elicit anger. Similarly, preventing or delaying a patient from receiving desired treatment may also increase the risk of VI developing.

supports the contention that there is a relationship between ideation, angry affect, and behavior (Eckhardt, Barbour, & Davison, 1998; Deffenbacher et al., 1996). Thus the presence of VI in the clinical setting would be a cause for concern, and would suggest that a further evaluation is

warranted, and that an intervention should be considered.

The presence of patient VI has clear ramifications for those working in the clinical setting. Primary prevention here should involve not only the identification of hostile patients at risk for VI and aggression. It should also involve identifying programs or systems where a higher incidence of VI is likely to be observed. Once at-risk patients or programs are identified, interventions can be attempted.

When VI is present in the clinical setting, it would be important to assess the patient for the presence of hostile tendencies. Hostility and VI may predispose a client toward aggression. As noted previously, though, staff-patient interaction and systemic variables may serve as the precipitating cause of aggressive behavior. As more is known about VI and aggressiveness in medical settings, there will be an increased opportunity to develop effective interventions. This may include managing the concerns of a hostile person with an injury, as well as designing health care delivery systems that do not unnecessarily antagonize patients.

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