ORIGINAL ARTICLE

What Patient Attributes Are Associated With Thoughts of Suing a Physician?

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ABSTRACT. Fishbain DA, Bruns D, Disorbio JM, Lewis JE. What patient attributes are associated with thoughts of suing a physician? Arch Phys Med Rehabil 2007;88:589-96.

Objective: To address a neglected research area: the attributes of rehabilitation patients associated with "thoughts of suing a physician" (S-MD).

Design: The S-MD statement "I am thinking about suing one of my doctors" was administered to 2264 people, along with the Battery for Health Improvement (BHI 2). Items predictive of S-MD were identified.

Setting: Acute physical therapy, work hardening programs, chronic pain programs, physician offices, and vocational rehabilitation programs.

Participants: Participants included 777 rehabilitation patients and 1487 nonpatient community-dwellers.

Interventions: Not applicable.

Main Outcome Measures: We used a multivariate analysis of variance to determine which of the 18 BHI 2 scales predicted the S-MD statement. Items from the scales found to be predictive, plus other variables, were then used in a chi-square analysis that compared people who wished to sue with those who did not. We then used a stepwise regression analysis with significant items from the prior analyses to build a model for predicting a potential S-MD patient.

Results: The highest percentage (11.5%) of patients affirming the S-MD statement were those involved in workers' compensation and personal injury litigation, compared with only 1.9% of community-living subjects. Stepwise regression of BHI 2 variables produced a 13-variable model explaining 38.04% of the variance. A logistic regression of demographic variables (eg, education, ethnicity, litigiousness) explained 20% of the variance.

Conclusions: Anger ($P<.001$), mistrust ($P<.001$), a focus on compensation ($P<.001$), addiction ($P<.001$), severe childhood punishments ($P<.001$), having attended college ($P<.001$), and other patient variables were associated with thoughts of suing a physician.

Key Words: Malpractice; Rehabilitation.

BECAUSE OF ITS RISING costs in both human and financial terms, medical malpractice has become a major concern in the health care field. It is estimated that in addition to more than $5 billion dollars in annual malpractice premiums and billions of dollars in court costs,[1] "defensive medicine" procedures performed to protect against increasing litigation add as much as $97.5 billion annually to the cost of medical services.[2] Thus, research into the causes of malpractice litigation is indicated.

In analyzing the reason for a malpractice suit, it is helpful to separate its causes into 4 general areas[3]: specific attributes of the injury (negligence vs none); provider (physician) attributes; the physician-patient relationship; and patient attributes. Research into specific attributes of the injury has indicated that negligence may not be a major factor in whether a lawsuit is initiated.

Actual negligence appears to be poorly correlated with the incidence of lawsuits.[4,5] For example, clinical analysis of 100 medicolegal cases found negligence to be an issue in slightly more than half (56%).[6] In those lawsuits where no negligence was found (44%), reasons for filing the lawsuit were: inability to come to terms with the disease or its end results (21%); lack of understanding of the disease process (16%); and unreasonable medicolegal action (7%).[6] Such data indicate that patients are sometimes dissatisfied with their care for reasons other than that of alleged negligence.

Some evidence suggests that another reason for initiating a malpractice suit pertains to patient dissatisfaction with the physician-patient relationship.[3,7-9] Here, information from the risk management services division of St. Paul Fire and Marine Insurance Company indicated that of 100 hospitalized patients who could legitimately bring a malpractice action against a medical care provider for failure to act or for acting inappropriately, less than 10% did.[10] Similar studies found litigation rates of 16%[11] and 13%.[5] This finding may be explained by the strength of the patient-physician relationship[5,10] and physician-patient communication.[9,12]

Research into provider (physician) attributes associated with malpractice suits has also been limited. It appears that the number of lawsuits incurred by a medical practitioner does not relate to the quality of medicine practiced.[13] One study,[14] however, found that a surgeon's tone of voice may be related to his/her malpractice history. Similarly, another study[9] found that the amount of time spent with a patient, good communication skills, and use of humor were also associated with a practitioner not having a malpractice claim history.

There has been a paucity of research into patient attributes associated with the initiation of a malpractice suit. At present, it appears that women[15] and people who are more affluent and have a higher education level[16] are more likely to initiate malpractice suits. Nothing is known about the personalities of

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This study was conducted without external funding. The study, however, reanalyzed data from a previous study that was funded and supported by Pearson Assessments.

A commercial party having a direct financial interest in the results of the research supporting this article has conferred or will confer a financial benefit upon 1 or more of the authors. Bruns and Disorbio receive Battery for Health Improvement 2 royalties.

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0003-9993/07/8805-11021$32.00/0
doi:10.1016/j.apmr.2007.02.007

the patients initiating lawsuits[17] except that on the basis of clinical observation, some studies have concluded that patient anger was a factor.[3,18,19] Thus, at present, we have little knowledge about patient attributes that are associated with the initiation of a malpractice suit. This is significant because others[20] have postulated that because of these patient attributes, the initiation of some lawsuits may be secondary to reasons that the physician can "neither anticipate nor control." These patients may have a "low threshold" for filing a lawsuit.[21] If such patients can be identified, they might be treated with greater care.[21]

This study addressed medical malpractice by investigating a group of patients who reported thoughts of suing a physician. We attempted to discern some patient attributes associated with these thoughts. To our knowledge, this is the first such study to be reported.

METHODS

The statement "I am thinking about suing one of my doctors" (S-MD), which was the focus of this study, was 1 of 600 questions and/or statements in the Battery for Health Improvement research version (BHI-R), and the Battery for Health Improvement 2 (BHI 2),[22] which is a shorter version of the BHI-R. We administered the BHI-R to subjects in this study and scored the BHI 2 scales from the BHI-R.

The BHI 2 is a standardized test intended for use in the psychologic assessment of medical patients and is based on a biopsychosocial theory[23] and has been integrated into clinical protocols.[24] To establish its validity and reliability, the test was examined under a formal process that included development of theory-based items, review by a panel of expert judges, confirmatory factor analysis, comparison of test scales to criterion variables, and analyses of test-retest and internal reliability.[22] The test has also received favorable third-party reviews.[25,26] A weakness of this recently published instrument is that it has not yet been used in any longitudinal studies.

The BHI 2 has 18 scales: 2 validity scales (self disclosure, defensiveness); 4 physical symptoms scales (somatic complaints, pain complaints, functional complaints, muscular bracing); 3 affective scales (depression, anxiety, hostility); 5 character scales (borderline, symptom dependency, chronic maladjustment, substance abuse, perseverance); and 4 psychosocial scales (family dysfunction, survivor of violence, doctor dissatisfaction, job dissatisfaction). We did not include the job dissatisfaction scale in the analyses in this study because many of the subjects were not in the workforce.[22]

We administered the BHI-R to 777 rehabilitation patients who were being treated for pain or a physical injury; they were from 30 states in all 4 geographic regions of the United States. They were recruited by posters or flyers given to them by their health care providers in a variety of settings: acute physical therapy, work hardening programs, chronic pain programs, physician offices, and vocational rehabilitation settings. The patients were also drawn from various payer systems (Medicare, private insurance, workers' compensation, auto insurance), and their diagnoses included a range of orthopedic injuries, headache and head injuries, fibromyalgia, and chronic regional pain syndrome. Any patient who wished to participate was accepted into the study. The only exclusion criteria were being less than 18 or more than 65 years old and being unable to read at the 6th grade level. Of the 777 patients, 527 were selected to approximate U.S. Census demographics for sex, age, ethnicity, and level of education.[22]

Another 1487 community-living subjects from 16 states in all 4 geographic areas of the United States were also administered the BHI-R in order to develop the nonpatient BHI-R control group. These subjects, recruited through newspaper advertisements and posters, were recruited to match the demographics of race, education, age, and sex. No subject was excluded on the basis of past or present medical or psychologic diagnoses. A subset of the community sample (n=725), representing the community norm group, was selected by matching the subjects to U.S. Census demographics for sex, age, ethnicity, and level of education. All community-dwelling subjects were asked if they had any serious medical conditions and those who reported having none constituted the "healthy" subset of the community sample.

The BHI-R was administered anonymously to all participants; they signed an informed consent stating that their information would be used for research purposes only and that no results or feedback would be given. Patients were informed that the information would not influence the course of their clinical care. The S-MD statement "I am thinking about suing one of my doctors" was scored on a Likert-scale format, with the responses being "strongly disagree," "disagree," "agree," and "strongly agree" being assigned scores respectively of 1 through 4. This made it possible to assess not only the presence of the thought of suing a physician, but also the strength of the associated feelings.

Data Analysis

Data were analyzed using the SPSS software.[a] Frequency and descriptive statistics were calculated to check all relevant characteristics of the data. Although the total number of patient and community subjects was 2264, the large number of variables (600, not including demographic data and other information) precluded the use of many statistical approaches. We addressed this difficulty by using a statistical means to identify promising groups of variables and then focusing on them. Additionally, there were different types of data, ranging from categorical data such as sex to continuous data such as standardized psychologic test scores. These differing types of data required different statistical approaches.

Before we conducted additional analyses, we randomly split the combined patient and community-dwelling subjects into a developmental phase sample (1811 subjects) and a cross-validation sample (453 subjects). The latter sample was used to assess validity and reliability of the S-MD regression equations. None of the cross-validation sample was used during the developmental phase.

In the preliminary step, we separated by patient and community-dwelling subsets the percentage of respondents who reported that they were thinking about suing one of their physicians (table 1). Next, we did a multivariate analysis of variance (MANOVA) to examine the relationship between all the 18 scales of the BHI 2 and the S-MD item. For this analysis, the S-MD variable was transformed to a dichotomy. Subjects were classified as having thoughts of suing their physician if they agreed or strongly agreed with the S-MD statement. The differences between the S-MD and non-S-MD groups on 14 of the 18 scales of the BHI 2 were highly significant (table 2).

Next, we used those BHI 2 scales from the MANOVA that were most closely associated with the S-MD item ($P<.01$) as independent variables in a stepwise regression equation (table 3) using the development group. Note that our purpose in this study was to make it possible to predict who will sue a physician, so in that sense, this is the primary dependent variable and all other variables are the independent ones. In the MANOVA, though, this distinction is reversed. This is because of an artifact of the particular statistical analysis and is not really indicative of the distinction between independent and dependent status because both types of analyses are attempts to

Table 1: Percentage of Respondents Who Reported That They Were Thinking About Suing One of Their Physicians

Reference Group	n	% Yes
Community	1487	1.9
Healthy-subset of community	1329	2.0
Census-matched subset of community*	725	2.8
Patient	777	5.4
Census-matched subset of patients*	527	6.1
Patients in workers' compensation or personal injury litigation	216	11.5
Headache or head injury	90	6.7
Neck injury	113	4.4
Upper-extremity injury	233	4.3
Low back injury	345	5.5
Lower-extremity injury	197	6.1

NOTE. Census-matched subsets of subjects were obtained from 106 sites in 36 states and were stratified to match U.S. Census demographics.

distinguish attributes of patients who want to sue a physician from the attributes of those who do not. To check for spurious findings, we did a stepwise regression on the cross-validation group and found similar results.

We then studied BHI 2 critical items in a 2×2 chi-square analysis using the development group to assess the relationship between those variables and the S-MD variable. In addition, because the previous analysis (see table 3) had demonstrated that the doctor dissatisfaction scale explained the greatest amount of variance (24.1%), the 10 individual items (questions from this scale) were also used individually in the chi-square analysis to see which aspects of this scale were the most predictive (table 4). The same type of chi-square analysis was performed on demographic and non-BHI 2 variables thought to potentially play a role in predicting the S-MD variable (table 5).

In the next analysis, using the development group, we used significant ($P<.01$) variables from the previous analyses (see tables 4, 5) as independent variables in a stepwise regression model to assess the predictability of the S-MD variable (table 6). For this analysis, we used the 4-point rating scale version of the S-MD variable.

In the final analysis (table 7), demographic variables found to be significantly related to S-MD were used as independent factors to assess their combined impact on the S-MD variable in a logistic regression framework. For this analysis, we used the dichotomous version of the S-MD variable. The demographic variables were age, education, sex, ethnicity, insurance status, and litigation status. Sequential logistic regression analysis was then performed to test the individual contribution of each predictor in the omnibus step chi-square and Nagelkerke R^2. Table 7 includes the regression coefficient, omnibus step chi-square and significance level, Nagelkerke R^2, Wald statistic, and odds ratio (OR).

RESULTS

Table 1 shows the percentage of the reference group samples who said that they were thinking about suing one of their treating physicians. The highest percentage (11.5%) was in the sample of patients who were workers' compensation or injury litigation cases.

MANOVA Analyses of BHI 2 Scales and the S-MD Item

Table 2 shows the results of the MANOVA using the BHI 2 scales as the dependent variables and S-MD as the independent variable. To check for spurious findings, given that all scales were highly significant except for perseverance, we also conducted a stepwise regression on the cross-validation group and found similar results.

Stepwise Regression for Prior Significant BHI 2 Scales With S-MD as the Dependent Variable

We then conducted a stepwise regression with the significant variables from the prior MANOVA analysis as the independent variables. The final R^2 was .28 with a final model significant F ratio ($F_{6,1804}=118.27$, $P<.001$), which included doctor dissatisfaction, substance abuse, survivor of violence, somatic complaints, borderline, and family dysfunction scales. Dissatisfaction with a doctor was the strongest predictor of thoughts of suing, based on the relative weights of the estimates. While statistically significant, the other 5 variables only accounted for an additional 4% of the variance in the S-MD variable (see table 3).

Table 2: Results of MANOVA With BHI 2 Scales as the Dependent Variables and S-MD as the Independent Variable

Dependent Variable	Mean T Score* Non-S-MD	Non-S-MD SD	Mean T Score* S-MD	S-MD SD	F	*P*
Somatic complaints	46.3	8.7	53.4	11.1	39.00	<.001
Pain complaints	45.5	9.4	51.3	13.8	21.71	<.001
Perception of function	43.6	10.0	50.5	10.5	28.52	<.001
Muscular bracing	46.1	9.8	51.2	9.1	15.96	<.001
Depression	45.6	9.6	53.1	10.0	34.74	<.001
Anxiety	47.7	10.0	52.7	11.0	14.59	<.001
Hostility	48.0	9.7	55.0	10.0	30.36	<.001
Borderline	47.6	9.4	54.5	10.1	31.87	<.001
Symptom dependency	45.3	11.1	52.9	11.3	27.10	<.001
Chronic maladjustment	47.4	9.7	53.0	10.7	19.18	<.001
Substance abuse	48.6	8.9	52.7	9.7	12.46	<.001
Perseverance	51.3	9.3	49.4	11.1	2.40	.121
Family dysfunction	47.9	9.7	52.8	9.9	14.62	<.001
Doctor dissatisfaction	46.3	9.9	56.5	13.0	60.50	<.001
Survivor of violence	47.4	9.1	52.9	9.5	21.05	<.001

NOTE. n=1811, $F_{15,1795}=118.27$, $P<.001$.
Abbreviation: SD, standard deviation.
*T scores are standardized scores with a mean of 50 and an SD of 10.

Table 3: Final Model for Stepwise Regression Results for S-MD as the Dependent Variable With Significant BHI 2 Scales From Prior MANOVA Analysis as Independent Variables

Dependent Variable	Independent Variable	Order of Entry into Equation	Cumulative R^2	Regression Equation Coefficient	F	*P*
S-MD	Doctor dissatisfaction	1	.241	.022	249.3	<.001
	Substance abuse	2	.262	.007	19.8	<.001
	Survivor of violence	3	.269	.009	23.1	<.001
	Somatic complaints	4	.272	−.005	11.3	<.001
	Borderline	5	.278	.01	24.2	<.001
	Family dysfunction	6	.282	−.01	11.9	<.001

NOTE. n=1811, $F_{6,1804}=118.27$, $P<.001$.

Chi-Square Analyses of Clinical Variables and Doctor Dissatisfaction Items With the S-MD Variable

The items on the doctor dissatisfaction scale were subjected to further analysis to see which ones had the most predictive power. Additionally, we assessed BHI 2 critical items having to do with violent ideation, entitlement, and other important clinical variables. Table 4 shows the results of the chi-square tests of the doctor dissatisfaction items and BHI 2 critical items with S-MD. Table 5 presents the results of demographics and non-BHI 2 variables with the S-MD variable.

Stepwise Regression for Prior Significant Independent BHI 2 Items With S-MD as the Dependent Variable

We conducted a stepwise regression with the significant variables from the chi-square analyses as the independent variables. This statistic determined the combination of variables for predicting S-MD, with the final adjusted R^2 being .38 with a significant F ratio ($F_{13,1797}=84.87$, $P<.001$), and included 13 different BHI 2 items. "Angry with MD," "Forced to see MD don't trust," "Thoughts of killing people," and "Frequent thoughts of suicide" were the strongest predictors of the wish to sue, based on the relative weights of the estimates and the amount of variance that each item explained. The first 2 items were taken from the doctor dissatisfaction scale of the BHI 2 and the last 2 were other BHI 2 items. Table 6 displays the final results of the model. Using the 20% holdout sample for cross-validation, the final adjusted R^2 decreased slightly to .32. Using the Cronbach α, these items exhibited an internal reliability of .70 at cross-validation.

Table 4: Significant Chi-Square Values of Doctor Dissatisfaction Items and Critical BHI 2 Variables With S-MD

Comparison Variable	n (Both Variable and S-MD)	n (S-MD)	χ^2 Statistic	*P*	OR	95% CI
Angry with MD*	22	60	50.02	<.001	10.09	5.74–17.74
Harmful treatment*	9	60	11.15	<.001	4.39	2.07–9.24
Forced to see MD don't trust*	18	60	54.08	<.001	15.54	8.33–29.00
Imagining symptoms*	13	60	2.18	.14	1.93	0.86–4.35
MDs only want money*	25	60	52.25	<.001	9.29	5.39–16.02
MDs never help*	11	60	7.26	<.007	2.80	1.42–5.51
Same old treatment*	28	60	9.20	<.003	2.27	1.35–3.80
MDs don't listen*	25	60	22.27	<.001	3.87	2.28–6.57
Some MDs are idiots*	31	60	18.94	<.001	3.22	1.92–5.41
Reason to mistrust MD*	30	60	17.84	<.001	3.13	1.87–5.25
Hearing voices†	6	52	13.74	<.001	8.73	3.40–22.41
Nothing seems real†	11	49	11.94	<.001	3.96	1.99–7.86
Addiction to prescription meds†	8	60	11.57	<.001	5.03	2.27–11.12
History of substance treatment†	11	60	8.01	.005	2.97	1.51–5.86
Fear of dying†	11	60	8.47	.004	3.08	1.56–6.08
More than one week in jail†	7	60	2.18	.14	1.93	0.86–4.35
Flashbacks†	16	60	10.66	<.001	2.92	1.62–5.27
Severe childhood punishments†	26	60	23.71	<.001	3.98	2.35–6.74
Thinking about killing†	13	60	17.71	<.001	4.93	2.58–9.43
Feeling dangerous†	10	60	13.39	<.001	4.73	2.31–9.72
Many violent thoughts†	12	60	8.74	.003	2.99	1.55–5.77
Thinking about killing MD†	12	60	28.07	<.001	0.11	0.05–0.21
Suicidal ideation†	13	60	20.63	<.001	5.78	3.00–11.11
History of suicide attempt†	16	60	13.64	.001	3.43	1.89–6.21
My concerns are more important than those of others†	19	60	12.86	.001	3.02	1.72–5.29
Expects special attention†	19	60	9.38	.002	2.53	1.45–4.43
Somebody owes me for pain and suffering†	24	60	39.02	<.001	6.68	3.88–11.47
I should be paid for the rest of my life†	28	60	12.02	.001	2.56	1.52–4.30

NOTE. n=1811.
Abbreviations: CI, confidence interval; OR, odds ratio.
*Items from doctor dissatisfaction scale of the BHI 2.
†BHI 2 critical item.

Table 5: Chi-Square Values of Demographic and Non-BHI 2 Variables With S-MD

Comparison Variable	n (Both Variable and S-MD)	n (S-MD)	χ^2 Statistic	*P*	OR	95% CI
Male	38	60	9.90	.002	0.43	0.25–0.74
Nonwhite race	27	60	24.79	<.001	4.06	2.40–6.85
Workers' compensation insurer	17	60	6.93	.008	2.28	1.28–4.06
Has attorney for health care concerns	24	60	39.26	<.001	6.72	3.91–11.55
Not college educated	41	60	21.34	<.001	3.47	2.00–6.03
Suicidal plan	8	60	9.18	.002	4.06	1.85–8.89
System will cheat you	37	60	30.84	<.001	4.41	2.59–7.50
Wants attorney to push people around	13	60	9.95	.002	3.11	1.64–5.88
System should pay me what I'm owed	36	60	24.86	<.001	3.77	2.23–6.39
Should always be prepared for court	31	60	12.01	<.001	2.52	1.50–4.22
It won't be right till somebody pays me	13	60	21.13	<.001	5.93	3.08–11.42
MDs get rich off of my suffering	13	60	31.35	<.001	10.03	5.09–19.78
My job is collecting what I am owed	8	60	15.67	<.001	7.13	3.16–16.06
Society should take care of me	15	60	15.96	<.001	4.02	2.19–7.41
Not getting care I deserve	29	60	31.12	<.001	4.73	2.81–7.98
Nobody can do enough for me	10	60	16.92	<.001	6.05	2.92–12.55
MDs should change their schedules for me	12	60	17.02	<.001	5.09	2.60–9.95

NOTE. n=1811.

Logistic Regression for Significant Variables From Prior Analyses as the Independent Variables With S-MD as the Dependent Variable

We conducted a logistic regression with demographic variables as the independents and S-MD as the dependent variable. The independent variables were: education, ethnicity, sex, and attorney involvement in health care matters. We did a sequential logistic regression analysis to test the individual contribution of each predictor in the fit of the model with the omnibus step chi-square and Nagelkerke R^2. Table 7 includes the regression coefficient, omnibus step chi-square and significance level, Nagelkerke R^2, Wald statistic, and OR. The overall chi-square for the analysis was significant (χ^2_4 test= 119.1, $P<.001$) and the model classified 95% of the subjects correctly. All variables were significant predictors of the wish to sue according to the Wald test. The odds of reporting a desire to sue a physician were decreased by 35% for lower levels of education and by 78% if the subject did not have an attorney involved who was involved in health care issues. The probability of suing a physician was increased by a multiplicative factor of 3.63 if the subject was of a race other than white. Other variables were insignificant and were not retained in the final model.

DISCUSSION

This is the first study known to us that has addressed the question of which patient attributes are associated with a wish to initiate a malpractice lawsuit against his/her physician. First, we attempted to determine the prevalence among both rehabilitation patients and community-dwellers of a wish to sue a physician. That wish was present in a range from 1.9% to 2.8% in the community sample and from 4.3% to 11.5% in the patient sample. The highest prevalence was in the workers' compensation and personal injury litigation subsample (11.5%) (see table 1). The 2 subsets of our data may be of particular importance in regard to establishing prevalence for the wish

Table 6: Final Model for Stepwise Regression Results for S-MD as the Dependent Variable With Significant Items From Prior Chi-Square Analyses as Independent Variables

Dependent Variable	Independent Variable	Variable Entry Order	Percentage of S-MD Variance Accounted For (R^2)	Regression Coefficient (B)	F	*P*
S-MD	Angry with MD*	1	.233	.173	61.09	<.001
	Forced to see MD don't trust*	2	.288	.133	26.86	<.001
	Thoughts of killing people†	3	.328	.128	42.86	<.001
	My job is being disabled and collecting what I am owed	4	.343	.075	8.21	<.005
	MD is getting rich off of my suffering	5	.351	.070	6.70	<.01
	MDs should change their schedules to fit mine	6	.356	.058	7.43	<.01
	Addiction to prescription drugs†	7	.361	.076	13.45	.001
	Frequent thoughts of suicide†	8	.365	.103	20.44	<.001
	Want the system to pay me money	9	.370	.044	10.76	<.002
	At times I wish I were dead†	10	.373	−.047	9.50	<.003
	Somebody should pay me for my suffering	11	.376	.062	7.12	<.01
	Severe childhood punishment†*	12	.379	.041	8.01	<.01
	Flashbacks of painful memories†	13	.380	−.035	5.56	.02

NOTE. n=1811, $F_{13,1797}=84.87$, $P<.001$.
*Items from doctor dissatisfaction scale of the BHI 2.
†Other BHI 2 item.

Table 7: Final Model Logistic Regression Results for S-MD as the Dependent Variable With Significant Scales From Prior Analyses as Independent Variables

Variable	Variable Entry Order	Regression Coefficient (B)	χ^2 (*df*), *P*	Percentage of S-MD Variance Accounted for (R^2)	Wald, *P*	OR
Education	1	−0.44	39.6 (1), .001	.09	8.8, .003	0.65
Nonwhite race	2	1.29	34.0 (1), .001	.16	19.7, .001	3.63
Attorney involvement in health care	3	−1.52	21.9 (1), .001	.20	24.7, .001	0.22

to sue. The census-matched subset of community-dwellers showed a 2.8% prevalence rate of S-MD, while the census-matched rehabilitation subset had a 6.1% prevalence rate of S-MD.

Next, we analyzed 2 types of data in different ways. First, these data included dichotomous variables such as sex of the patient or whether the patient reported hearing voices. We analyzed the relationship of S-MD versus non-S-MD to these variables using chi-square and OR statistics. This approach is useful for identifying what signs may indicate an increased risk of the patient suing.

These data also included continuous variables, including standardized psychologic test scores. These scores are commonly used with psychologic testing to develop at-risk testing profiles. Typically, the use of continuous variables such as these permits a greater precision of measurement than dichotomous variables. Because, however, statistics that analyze continuous variables (eg, MANOVA and stepwise linear regression) do not produce ORs, these approaches must be considered separately.

Information From Dichotomous Variables

The BHI 2 dichotomous variables that yielded the most significant ORs (see table 4) were: forced to see MD don't trust (OR=15.54); angry with MD (OR=10.09); MDs only want money (OR=9.29); hearing voices (OR=8.73); somebody owes me for my pain and suffering (OR=6.68); suicidal ideation (OR=5.78); addiction to prescription medication (OR=5.03); and thoughts of killing people (OR=4.93).

The highest ORs for demographic and non-BHI 2 variables (see table 5) were: MDs get rich off my suffering (OR=10.03); my job is collecting what I am owed (OR=7.13); having an attorney for health care concerns (OR=6.72); nobody can do enough for me (OR=6.05); it won't be right until somebody pays me (OR=5.93); and MDs should change their schedules to fit mine (OR=5.09). Given the large number of variables, many of which involved symptoms that were infrequently reported, it was not possible to create an overall high-risk group, or generate an overall OR. A logistic regression model using demographic data, however, explained 20% of the variance, with the greatest amount being explained by the subject's education level (higher), race (nonwhite), and representation by an attorney.

Overall, the dichotomous data above suggest that patients who report S-MD are more likely to report feeling forced by an insurer or other party to see a physician who the patient does not trust, perhaps because he/she may perceive the physician as an agent of "the system." For whatever reason, this patient has cynical beliefs about physicians, feels anger toward them, and also reports higher levels of certain types of psychopathology. Patients who reported thoughts of suing were more likely to report suicidal or homicidal ideation, addiction to prescription medications, hearing voices, and other symptoms. These data also suggest that patients reporting thoughts of suing are focused on being compensated for their medical difficulties, may have feelings of entitlement, and may have already involved an attorney in their health care.

Information From Continuous Variables

The data from the continuous variables (see tables 2, 3) suggest that the single strongest scale score was an elevated score on the BHI 2 doctor dissatisfaction scale. This scale was designed to identify patients who harbor a deep antipathy toward physicians. A high score on this scale suggests that the patient is very angry with 1 or more physicians and perceives physicians in general as uncaring, untrustworthy, incompetent or ineffective, and motivated only by money. This scale score was the strongest single predictor identified in this study, with the S-MD subjects receiving a mean standardized score on this scale that was a full standard deviation higher than that of their non-S-MD counterparts (see table 2). Although the thought of suing is probably influenced heavily by events such as negligence and poor outcome in the course of medical care, this scale by itself accounted for more than 28% of the variability in S-MD. Other scale variables identified were substance abuse vulnerabilities, a history of multiple episodes of violent and/or sexual abuse, family dysfunction, somatization, and borderline personality traits.

The final stepwise regression model (see table 3) explained 38% of the variance in S-MD, with the greatest percentage of the variance being explained by anger and cynical beliefs directed toward physicians (doctor dissatisfaction scale items). Other variables that characterized these patients in the stepwise regression were: being forced to see a physician who was not trusted (also a doctor dissatisfaction scale item), being violence prone, having a belief in entitlement, possible addiction, depressed or suicidal, childhood trauma, and possible posttraumatic stress disorder.

Overall, these results indicate that the patient who contemplates suing his/her physician has the following characteristics: He/she is nonwhite, has a higher educational level, is a workers' compensation patient, and has an attorney. This patient has cynical beliefs about physicians in general and is angry with the physician who he/she may have been forced to see. He/she may also have significant psychiatric problems such as addiction, depression or suicidal ideation, violent ideation, posttraumatic stress disorder symptoms, and is from a dysfunctional family with a history of abuse in childhood. Finally, this patient also has feelings of entitlement and is focused on compensation.

S-MD, Patient Attributes, and Causality

Because this was a correlational study, it was not possible to determine the causal relationship between S-MD and other variables. Alternate causal relationships for some of the identified variables are readily apparent and this creates a "chicken or the egg" type of question about "which came first." For example, it is possible that angry feelings directed toward the medical profession are pre-existing attitudes and predispose a

patient toward suing and frivolous litigation. Even though anger is widely regarded as a predisposing factor,[3,18,19] it can be argued that the thought of litigating may produce angry feelings, and that this accounts for the relationship of anger to S-MD. While this is possible, some evidence suggests that the variables in this study may be pre-existing.

In contrast to affective variables such as anger, which are changeable psychologic "states," some of the risk factors for S-MD we identified are "trait" type variables. Traits are durable attributes of a person and do not readily change. For example, race, level of education, and history of treatment for substance abuse are trait-type variables. Thus, even though correlational data cannot determine causality by itself, trait variables such as these exclude some causal interpretations and may suggest others.

For example, we found that anger at physicians was associated with wanting to sue. It is possible that pre-existing anger predisposes a patient to sue. An alternate causal scenario, though, is that a medical error occurs and produces both S-MD and anger. In contrast, we also found that a college education is associated with an increased frequency of filing a lawsuit. In this case, however, while a college education could incline a person to use the legal system, a medical error could not cause a college education. As a result, when trait variables are being considered, the nature of the variable may make it possible to logically rule out certain causal interpretations and in so doing, suggest another.

While some of the identified risk factors are state variables (eg, anger, suicidal ideation), and others are clearly traits (eg, sex, race, education, and scales based on life history such as substance abuse and survivor of violence), some of the BHI 2 scales contain both state and trait items.[22] Measures such as these are less changeable than affective states but are still subject to change in reaction to life events. For example, the doctor dissatisfaction scale assesses more than just anger; it attempts to assess a broad, underlying belief system about the medical profession.[22] As such, it is probably less easily changed than an affective state because 1 type of trait is a deeply engrained belief system.

As noted in the Introduction, the issue of patient attributes associated with initiation of a lawsuit has not been extensively addressed in the literature. There is, however, direct and indirect support for some of our findings. The first of these is socioeconomic status. Here, the literature indicates that the poor do not sue more and that the affluent are more likely to file a lawsuit.[16] We also found that patients with higher levels of education are more likely to sue.

The second finding, which has some support in the literature, was that of patient anger.[3,18,19,27] Lindberg[27] previously investigated this variable in the only experimental study done in this area of research. He exposed several subjects to sand in a university building's basement. He then had an alleged "construction worker" tell the subjects that exposure to the sand would damage their lungs. He found that the subjects who perceived danger and had the personality characteristic of anger contemplated filing a lawsuit. Some clinical case study insight data[19] have also found "the underlying cause of almost every lawsuit is patient anger regarding some aspect of the patient-doctor relationship."

The third finding—race (nonwhite)—as a variable in predicting lawsuits may also have some indirect support in the literature based on clinical observation. It is well established that poor communication between patients and physicians can result in lawsuits.[9,21] It has been proposed, however, that this is not a deficit in the physician's interpersonal skill but reflects language and cultural differences between patients and physicians and, perhaps, unexpressed prejudice by the physician against the patient.[28] This could then be a potential explanation for the finding about race (nonwhite).

The fourth finding, which may have some indirect support in the literature, is that of depression and suicidal tendencies. The literature indicates that patients sue when they are unable to come to terms with their disease or its end result.[6] Because "not coming to terms" may lead to depression, such data may then be indirectly related to our finding.

The fifth finding, which is addressed but not supported in the literature, is that of sex differences. The literature claims that women file more lawsuits than do men,[14,15] but we found that sex was not a factor in contemplating a lawsuit. Suing and contemplating suing are operationally different. As such, they may have different predictive variables, which could be the reason for this discrepancy.

Study Limitations

Our subjects included both community-dwellers and patients recruited from rehabilitation and pain treatment sites. Although ours was a diverse group of subjects from many sites, we are uncertain whether the data of patients in rehabilitation and pain settings can be generalized to patients in other medical settings. Some variables, such as patient anger, are consistent with those found in the literature, while most other variables are general in nature and not exclusive to the rehabilitation and pain settings. At this point in time, however, we know of no studies that have explored differences in the dynamics of litigiousness across medical settings; further research into this area is indicated.

As we noted in our Introduction, in alleged malpractice situations approximately 10% of patients proceed with lawsuits. Our data pertain to a patient's thoughts of suing his/her physician, which is not the same as actually filing a lawsuit. Therefore, it is not known how helpful our data would be in identifying patients who will sue their physicians. Such data can only be gathered from a prospective study. Nevertheless, because it is likely that lawsuits would originate in a population that contemplates suing, our results may be helpful in addressing this problem.

CONCLUSIONS

In some patient groups, thoughts of suing a physician are not uncommon, and this has been determined to be associated with some patient attributes. While events that occur in a medical setting, such as poor outcomes or medical errors, probably contribute substantially to thoughts of suing, research shows that only a small percentage of patients involved in alleged medical errors resort to litigation. The presence of psychologic risk factors may influence who sues and who does not. Future research in this area may now begin to test the validity of these patient attribute variables in those patients who actually proceed with lawsuits.

Acknowledgments: We thank the staff of Pearson Assessments for its invaluable help in collecting the data. Pearson Assessments was involved in data collection in the original study, in which data were gathered for the purpose of developing the psychologic scale. Pearson Assessments, however, had no role in the design or statistical analysis of this study, nor did Pearson Assessments provide any funding, support, or input. This study's findings were the result of a reanalysis of the data after the original study was completed.

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