

The Role of Physical Health Functioning, Mental Health, and Sociodemographic Factors in Determining the Intensity of Mental Health Care Use Among Primary Care Medical Patients

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The present study examined sociodemographic and attitudinal predisposing factors (gender, age, marital status, health insurance, household income, attitudes about mental health care), and need/illness variables (depression severity, physical and mental health functional status) as predictors of past-year mental health care use intensity (i.e., visit counts) and use/nonuse. The sample included 283 adult primary care patients from the Midwestern United States in a cross-sectional study. Nonlinear regression models demonstrated that past-year treatment use intensity was significantly associated with both married status and poorer physical health functioning, while the use (vs. nonuse) of treatment was associated with depression severity. A sociodemographic and attitudinal multivariate predictor model only explained 5% of the variance in treatment use intensity, but a need/illness model significantly contributed an additional 23% variance. Poorer physical health functioning was significant in predicting treatment use intensity, while depression severity was significant in predicting the use (vs. nonuse) of treatment. Results demonstrate the particular importance of physical health problems in determining the intensity of mental health care use, and depression severity in determining the use/nonuse of treatment, notwithstanding the restricted sociodemographic contour of the sample.

Keywords: primary care, health disparities, mental health service use, functional impairment, behavioral model of health care use

A significant disparity continues to exist between the need for and actual use of mental health services nationally. For instance, studies of the general population indicate that between

only one fifth to one third of individuals with a mental disorder recently sought mental health care (Kessler, Demler et al., 2005). Among the minority of those in need of treatment who *do* seek mental health care, a significant proportion appear to prefer discussing their mental health problems with their primary care physicians, thus bypassing the mental health specialty service sector (Del Piccolo, Saltini, & Zimmerman, 1998; Wang et al., 2006). However, relatively little research has sufficiently explored factors that predict primary care patients' use of mental health care.

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The Behavioral Model of Health Service Use

One important and widely used theoretical framework for understanding individual determinants of health care use is Andersen's behavioral model of health care use (Andersen & Newman,

1973), with decades of empirical support (Andersen, 1995), and substantial relevance in determining *mental* health care utilization. The model proposes that three main factors contribute to an individual's use of health care: (1) *predisposing* characteristics, including relatively stable biological (e.g., gender) and social structure variables, as well as health belief attributes (e.g., attitudes about treatment); (2) *enabling* variables, involving social and economic characteristics (e.g., health insurance possession, availability of care) that play a role in the person's access to care; and (3) *need* variables, involving objective and/or subjective evaluations of one's illness. These three factors are important in understanding equities or disparities in treatment access, with equity indicated when need variables are found most important in determining treatment use, and disparities indicated when predisposing or enabling variables are found most important (Andersen, 1995).

Correlates of Mental Health Care Use

Numerous large-scale studies of the general population have examined correlates of mental health care use, essentially using variables that fit well within Andersen's (1995) behavioral model. Predisposing variables consistently related to mental health treatment use include being female, Caucasian, unmarried, younger, and possessing a more positive attitude toward treatment (e.g., Elhai & Ford, 2007; Elhai, Grubaugh, Richardson, Egede, & Creamer, 2008; Kessler, Chiu, Demler, & Walters, 2005; Lewis et al., 2005; Mojtabai, 2007; Wang et al., 2005). Significant enabling variables across studies include unemployment and urban residence (e.g., Bland, Newman, & Orn, 1997; Elhai & Ford, 2007; Fikretoglu, Elhai, Liu, Richardson, & Pedlar, 2009; Kessler, Demler et al., 2005). Finally, consistently found need variables include mood, anxiety, and substance use disorders (e.g., Elhai & Ford, 2007; Fikretoglu et al., 2009; Lewis et al., 2005; Parslow & Jorm, 2000). However, it is especially important to emphasize that need variables seem to be most strongly and consistently related to treatment use, after accounting for the effects of predisposing and enabling variables (Bland et al., 1997; Elhai & Ford, 2007; Elhai, Grubaugh et al., 2008; Fikretoglu et al., 2009). That is, although predisposing and enabling variables often predict mental health care use across stud-

ies, their effects are not as robust nor as consistently related to treatment use as need variables are (Elhai & Ford, 2007).

A handful of studies have examined mental health care use associations in primary care patients, an especially important population to study since primary care is the fastest growing sector of mental health care delivery (Wang et al., 2006). These studies have found significant relationships with mental health care use for predisposing variables such as female gender, middle age, trauma exposure and positive treatment attitudes (Elhai, Patrick, Anderson, Simons, & Frueh, 2006; Simon, VonKorff, & Durham, 1994; Walker et al., 1999), enabling variables such as lower household income (Elhai, Voorhees, Ford, Min, & Frueh, 2009), and need variables such as depression and post-traumatic stress disorder symptom severity (Elhai et al., 2006; Elhai et al., 2009), anxiety, depressive, and alcohol use disorder diagnoses (Ford, Tennen, Trestman, & Allen, 2005). Furthermore, a recent study conducted in primary care ($n = 187$) found that predisposing and enabling variables contributed 22% variance in mental health care use intensity, but mental and physical health need variables contributed an additional 21% unique variance above and beyond the predisposing/enabling model (Elhai et al., 2009). With only a small number of such studies, additional investigation on this issue, with the sophisticated methodological and analytic enhancements discussed below, is needed.

Study Aims

The purpose of the current study is to better understand which variables are most related to mental health services used in the past year, specifically among primary care medical patients. Based on findings from prior studies, we examined several predisposing sociodemographic and attitudinal variables (marital status, gender, age, and attitudes toward mental health treatment), enabling variables (income and health insurance possession), and need variables (depression, and general mental and physical health-related functional status) for associations with mental health care use intensity.

The present study offers several advantages over previous studies on this topic. First, we examined correlates of mental health care use in the context of a theoretical (and empirically

supported) model (Andersen, 1995), often neglected in previous reports. Second, rather than solely examining correlates of the *use versus nonuse* of treatment, a more rudimentary means of fully examining treatment utilization, the present report also examined correlates of treatment use *intensity*, by exploring treatment visit counts. Since most individuals have had no recent mental health visits, such analysis was not possible until the last decade when analytic techniques were specifically developed to model such highly skewed and zero-laden dependent variables as mental health care visits (Afifi, Kotlerman, Ettner, & Cowan, 2007; Elhai, Calhoun, & Ford, 2008). In fact, few papers have examined treatment use intensity in primary care (Elhai et al., 2006; Elhai et al., 2009), and thus the present report replicates and expands this emerging, state-of-the-art method of examining mental health care use intensity. We hypothesized that several predisposing and enabling variables from past research would predict mental health care use and use intensity, but that need variables would represent more robust associations.

Method

Participants and Procedure

The current study was conducted in the waiting room of a public, primary care clinic affiliated with the medical school of a medium-sized Midwestern city. Data collection occurred during the spring of 2007, and no previous reports have analyzed these data. Adults (between ages 18 and 70) consecutively presenting for primary care medical appointments ($n = 344$) were asked to participate in a brief, 10- to 20-min, voluntary paper-and-pencil survey. No monetary compensation was offered. Of those invited, 283 adult patients participated, for a response rate of 82%.

Participants included 96 men (33.9%) and 187 women (66.1%), mapping well onto the clinic's gender composition. The sample ranged in age from 18 to 69 years ($M = 37.06$, $SD = 12.98$), and in schooling from 9 to 24 years ($M = 14.26$, $SD = 2.21$). The majority of the sample was White ($n = 276$, 97.5%), paralleling local demographic characteristics (U.S. Census Bureau, 2004). Most participants reported being currently married ($n =$

168, 59.4%), and employed full-time ($n = 217$, 77.2%). Annual household income level was fairly well-distributed across income categories, with slightly more than half of participants ($n = 147$, 51.9%) reporting income between \$35,000 and \$80,000.

Measures

Several measures were administered as part of the survey packet. Those relevant to the present study are described below.

Demographic survey. The demographic survey inquired about such demographic characteristics as gender, age, ethnic and racial background, and so forth.

Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF). This 10-item self-report measure of attitudes toward seeking mental health care was developed by Fischer and Farina (1995), and uses a 4-point Likert scale (0 = *disagree* to 3 = *agree*), with four reverse-scored items. It has demonstrated test-retest reliability of .80 (Fischer & Farina, 1995). Among medical patients, this measure has revealed internal consistency of .87, and is moderately correlated with recent mental health care utilization (Elhai, Schweinle, & Anderson, 2008). Higher total scores indicate more positive treatment attitudes.

Health Survey Short Form-12 (SF-12). The SF-12 (Ware, Kosinski, & Keller, 1996) is a self-report instrument that measures perceived physical and mental health functional impairment. Scores are calculated for a physical health composite variable (PCS) and mental health composite variable (MCS), offering good test-retest reliability (.86-.89 and .76-.77, respectively), and associated with a number of health and mental health criteria, respectively (Gill, Butterworth, Rodgers, & Mackinnon, 2007; Ware et al., 1996). Lower PCS and MCS scores indicate poorer functioning.

Center for Epidemiological Studies-Depression Scale Short Form (CES-D Short Form). The CES-D Short Form (Shrout & Yager, 1989) is a 5-item self-report depression screen based on the original 21-item CES-D developed by Radloff (1977), assessing symptoms over the past 2 weeks. The measure has demonstrated adequate sensitivity (.95) in screening for depression and specificity (.71), very close to that

of the original CES-D. Higher total scores indicate greater depression symptom severity; thus we did not use this measure to classify participants with a depression diagnosis.

Health and service utilization assessment. The National Comorbidity Survey's Health and Service Utilization Assessment is an interview-based instrument with behaviorally specific questions regarding the previous use of mental health care across a range of service providers (Priest, Rabbi, or Minister; General Practitioner or Family Physician; Psychiatrist; Cardiologist, Obstetrician/Gynecologist, or other physician; Psychologist; Social Worker; Counselor; Nurse, Occupational Therapist or other; Spiritual/Faith Healer, Natural Therapist, Herbalist, or other; and Other Professional; Kessler et al., 1999). This measure was adapted into a self-report survey, querying outpatient mental health service utilization for both lifetime and recent (past-year) treatment use, and for the frequency of recent use, for each of the types of providers above (Elhai et al., 2006). Specifically, respondents were asked about their use of services from the provider types for "problems with your emotions, nerves, mental health, sleep, or your use of alcohol or drugs." For the purpose of the current study, visit counts were summed across providers in order to examine past-year mental health care use intensity (ranging from 0 and higher). Thus, this summation variable did not exclusively represent mental health visits from mental health providers. However, the resulting diversity in this count variable reflects research demonstrating that the mental health specialty sector is not always used for mental health care, but rather the medical and health sector is rapidly becoming the more popular venue for seeking mental health-related treatment (Del Piccolo et al., 1998; Wang et al., 2006). In analyzing this variable dichotomously, "use" of services was defined as one or more visit, and "nonuse" was defined as no visits in the past year.

Statistical Analysis

The present study examined several variables and their ability to predict mental health service use among individuals who presented for primary care services. Two mental health service use dependent variables were used: (1) service use intensity, and (2) use versus nonuse. The variables were grouped accord-

ing to the behavioral model (Andersen, 1995). The predisposing/enabling model included gender (coded "1" for men and "2" for women), age, marital status (coded "1" for currently married and "0" for not married), attitudes toward mental health care (ATSPPH-SF), annual income (coded "1" for above \$50,000 and "0" for below \$50,000), and health insurance possession (coded "1" for insured and "0" for uninsured). Need variables included depression severity (CES-D Short Form), physical and mental health functional impairment (PCS and MCS, respectively).

We examined univariate and multivariate associations between the predictor variables and past-year mental health visit counts. We used zero-inflated negative binomial (ZINB) regression, a type of nonlinear, count regression model using maximum likelihood estimation, and specifically designed for modeling low base-rate dependent variables with many zero values (Hall & Zhengang, 2004; Long, 1997). ZINB regression assumes two latent groups, including "always zero" and "not always zero" groups, fitting the equivalent of a logistic regression model to predict group membership. Subsequently, cases are weighted based on group status to additionally model the full range of count values using a negative binomial regression model. Evidence suggests that ZINB regression outperforms other regression methods in modeling mental health visit counts (including two-part models examining use/nonuse separately from use intensity; Bao, 2002; Elhai, Calhoun et al., 2008).

An a priori power analysis was conducted using SPSS Sample Power software, albeit based on linear regression. A desired power of .90 (two-tailed, assuming alpha of .05) was specified, and the current study needed 142 subjects to achieve that level of power in detecting a medium effect size ($R^2 = .13$) with nine predictor variables. Therefore, the sample of 283 subjects probably produced adequate power.

Results

Of the 283 participants, 11 were excluded from the univariate analyses due to substantial missing data (missing more than 20% of item-level responses), and 6 additional subjects were

Table 1
Proportion of Respondents Visiting Various Providers for Mental Health Reasons in the Past Year (i.e., at Least One Visit)

Provider type	<i>n</i> (%)
Priest, rabbi, or minister	14 (5.1)
General practitioner or family physician	63 (23.2)
Psychiatrist	20 (7.4)
Cardiologist, obstetrician/gynecologist, or other physician	16 (5.9)
Psychologist	22 (8.1)
Social worker	0 (0)
Counselor	28 (10.3)
Nurse, occupational therapist, or other	13 (4.8)
Spiritual/faith healer, natural therapist, herbalist, or other	6 (2.2)
Other professional	5 (1.8)

excluded from multivariate analyses for that reason. For the remaining subjects, maximum likelihood procedures were used to estimate the small amounts of missing item-level data (Schafer & Graham, 2002). Multicollinearity was found not to be a problem for the multivariate analysis, based on a bivariate correlation matrix; the two largest intercorrelations were found between the MCS and CES-D ($r = .56$), and between income and marital status ($r = .41$). CES-D scores ranged from .00 to 15.00 ($M = 3.99, SD = 3.22$), MCS scores ranged from 23.93 to 65.46 ($M = 42.91, SD = 6.44$), and PCS scores ranged from 28.85 to 57.55 ($M = 46.59, SD = 5.56$).

The majority of respondents reported no mental health visits in the past year ($n =$

165, 60.7%). Twenty-six participants (9.6%) reported 1 visit, 22 (8.1%) reported 2 visits, 10 (3.7%) reported 3 visits, 12 (4.4%) reported 4 visits, 20 (7.4%) reported 5–10 visits, and only 17 (6.3%) reported more than 10 visits (maximum was 66 visits). Table 1 demonstrates that primary care providers were the most widely utilized provider type for mental health reasons. All participants endorsing more than four visits reported having health insurance coverage; however, many visits did not necessarily require health insurance, since (as stated above) they involved providers such as clergy and other spiritual healers. Because of the significant skew (5.45) and kurtosis (35.80) found, presenting means and standard deviations is not appropriate.

Table 2 demonstrates results modeling the intensity of mental health care use using univariate ZINB analyses ($n = 272$); being married ($B = .74, p = .02$) and poorer physical health functioning ($B = -.08, p < .001$) were significant. Additionally, ZINB analyses modeling the use versus nonuse of mental health care (not shown in the Table because of predominantly nonsignificant associations) indicated that only greater depression severity was associated with the use (in contrast to nonuse) of services ($B = -.65, SE B = .32, z = -2.89, p < .01$; although positive b coefficients indicate greater service use *intensity*, negative b coefficients indicate an increased *likelihood* of service use). Incident rate ratios indicate that married participants used 110% more visits than unmarried participants did, and each decrease of one-point

Table 2
Zero-Inflated Negative Binomial Regression, Predicting Mental Health Service Use Intensity

Variable	Univariate					Multivariate				
	<i>B</i>	<i>SE</i>	<i>z</i>	<i>p</i>	<i>IRR</i>	<i>B</i>	<i>SE</i>	<i>z</i>	<i>p</i>	<i>IRR</i>
Gender	.13	.37	.36	.72	1.14	-.13	.38	-.35	.73	.88
Age	.02	.01	1.55	.12	1.02	.01	.02	.43	.66	1.01
Marital status	.74	.32	2.34	.02*	2.10	.44	.34	1.30	.19	1.55
Attitudes about treatment	.03	.02	1.24	.21	1.03	.05	.03	1.75	.08	1.05
Insurance	1.63	.85	1.93	.05	5.10	.69	.87	.80	.43	1.99
Income	.09	.34	.27	.78	1.09	.12	.32	.39	.69	1.13
Physical functioning	-.08	.02	-3.24	.00**	.93	-.06	.03	-2.27	.02*	.94
Mental health functioning	-.04	.02	-1.57	.12	.96	.00	.03	.19	.85	1.00
Depression severity	.09	.05	1.94	.05	1.09	.04	.06	.77	.44	1.04

Note. IRR = incident rate ratio or exponentiated regression coefficient, indicating the percentage change in visit counts associated with a one-unit increase in the predictor variable.

* $p < .05$. ** $p < .01$.

for physical health functioning was associated with 7% more visits.

The multivariate ZINB model ($n = 266$) including only predisposing and enabling variables was not significant for predicting mental health service use, $\chi^2(6) = 8.67, p > .05$ (Nagelkerke's $R^2 = .05$). The need ZINB model ($n = 266$), after controlling for predisposing and enabling variables, added a substantial amount of additional variance in the outcome variable, $\chi^2_{\text{change}}(3) = 11.97, p < .05$ (Nagelkerke's $R^2_{\text{change}} = .23$). Only poorer physical health functioning was significant in the final multivariate model for service use intensity ($B = -.06, p = .02$), with each decreased point for physical health functioning associated with 6% more visits (see Table 2). In modeling the use versus nonuse of services (results not shown in the Table), only greater depression severity was significant in the final multivariate model ($B = -1.00, SE B = .35, z = -2.82, p < .01$). The Vuong test for non-nested models supported the use of ZINB regression over a standard negative binomial regression model, $z = 2.93$, one-sided $p < .001$; and the likelihood ratio (LR) test for overdispersion was also significant, LR $\chi^2(1) = 591.46, p < .0001$, indicating that zero-inflated Poisson regression would be inappropriate (these tests are reviewed in Elhai, Calhoun et al., 2008).

Discussion

The current study examined potential correlates of mental health care use intensity in a sample of patients treated in a primary care medical clinic. Overall, 39% of participants used mental health services in the past year. This estimate is similar to previous estimates of mental health care used in a 6-month time-frame (24%–38%) from other public primary care clinics (Elhai et al., 2006; Elhai et al., 2009). Findings demonstrated significant individual (univariate) relationships between mental health care use intensity and both being married and reporting poorer physical health-related functioning, with depression severity predicting the use (vs. nonuse) of treatment. While the predisposing/enabling multivariate model was not statistically significant, the physical/mental health need model explained a substantial and statistically

significant amount of additional variance in mental health service use intensity. Although mental health distress (i.e., depression severity) was related to the use (vs. nonuse) of mental health care, it was not related to the amount of use; only physical health-related functioning was a significant correlate of the amount of mental health service utilization.

The finding that mental health treatment use intensity was more associated with need than with predisposing or enabling variables is consistent with the original hypothesis, and supportive of previous studies (Bland et al., 1997; Elhai & Ford, 2007; Elhai, Grubaugh et al., 2008; Fikretoglu et al., 2009). On one hand, this finding appears to be obvious, in that the need for services (based on impairment level) *should* be most associated with the actual use of services. However, emerging research on this issue suggests that sociodemographic characteristics play a relatively minor role in access to mental health treatment use, and instead, need plays a much more dominant role (e.g., Elhai & Ford, 2007). Elhai and Ford (2007) found some evidence of socioeconomic disparity in mental health care use prior to the health care industry's radical changes in the early to mid-1990s when health maintenance organizations (HMOs) were substantially growing, but less evidence in current times. However, it should be noted that because Whites represented 98% of the sample, we were unable to include race or ethnicity in the predisposing/enabling predictor model. Thus, the question of potential racial disparities in health care access or utilization (U.S. Department of Health & Human Services, 2001) could not be addressed in this study.

For univariate results, being married was a significant correlate of treatment use intensity. This finding was unexpected, based on the significant association for nonmarried status from previous research findings (e.g., Sareen, Cox, Afifi, Yu, & Stein, 2005; Wang et al., 2005). Being married could decrease the need for mental health care because marriage often involves social support, which itself can buffer mental health problems (e.g., Norris, Kaniasty, & Scheer, 1990). However, it is also plausible that being married allows for one spouse to encourage the other to obtain treatment, which may not otherwise occur if they were not married. A

facilitative effect of marriage on the use of mental health services would be consistent with self-determination theory's postulate that relatedness as well as autonomy and competence are essential to self-motivation (Ryan & Deci, 2000).

The other significant univariate finding for treatment intensity was for physical health-related functioning, which was also the only significant variable in the final multivariate treatment use intensity model. We expected that mental health need (e.g., mental health-related functioning, depression severity) would be more strongly associated with treatment use intensity than physical health need was, but this was not the case. However, depression severity was the only correlate of the use (vs. nonuse) of treatment. Thus, when controlling for other variables, depression severity appears to account for *access* to mental health care in this sample, but physical health need appears to account for the *intensity* in which patients accessed treatment.

Research has demonstrated the comorbidity of mental and physical health problems in primary care settings (Wittchen, Lieb, Wunderlich, & Schuster, 1999) which may be a possible explanation for our significant finding for physical health impairment. Mental health-related functioning was not significant, and given the moderately strong relationship between the PCS and MCS (although the scores were designed to be relatively orthogonal, Ware et al., 1996), it may be that physical health-related functioning "captured" variance in treatment utilization that it may share with mental health-related functioning.

Other predisposing and enabling variables were not significantly related to treatment use nor the intensity of use, despite associations found in previous studies cited above. These variables include gender, education, age and health insurance. It is possible that we possessed insufficient statistical power to detect such relationships. On the other hand, as stated above, demographic characteristics may be only weakly related to mental health care use (Elhai & Ford, 2007).

Finally, attitudes toward mental health treatment were expected to be associated with the amount of use of mental health services, but in fact this was not the case. The measure used to assess these attitudes has been shown

to be robust psychometrically (Elhai, Schweinle et al., 2008), so it is unlikely that measurement bias obscured an actual relationship. Responses to the attitudes measure tended to be relatively midrange with few instances of extremely negative or positive attitudes reported toward mental health treatment. It is possible that with a larger, more representative general sample and greater dispersion of scores that an association between negative attitudes and decreased mental health services utilization might emerge.

Limitations

There were several limitations to the current study that should be considered. First, the sample was limited primarily to English speaking, Caucasian individuals who were registered patients at a specific primary care clinic in the Midwest, and thus the geographic and racial/ethnic scope was limited. Also, since we recruited patients from the pool with medical appointments (rather than from all registered patients), sampling may have been skewed to the more ill subset of clinic users. Participation was by voluntary self-selection; thus, while the participation rate was relatively high and the sample's demographic characteristics were comparable to those of the overall clinic population, the use of a self-selected convenience sample may have introduced bias into the findings.

Furthermore, we only implemented self-report surveys, and thus we did not include diagnostic instruments to assess depressive or other mental disorders; use of such diagnostic interviews could have resulted in significant mental health correlates of treatment use intensity. The self-reported amount of use of mental health services also may not be an accurate index of actual utilization, although self-reported utilization has been shown to generally correspond to archival data (e.g., electronic medical record attendance data), and archival records also may be subject to errors (Wallihan, Stump, & Callahan, 1999). Additionally, multivariate analyses included only 266 patients, and increasing the sample size could have led to more statistical power and thus more significant associations. Finally, since we asked about the recent use of mental health care, this study's results essentially pertain to *presently* evaluated correlates of

recent treatment use intensity. Future research should evaluate correlates of prospective treatment utilization, a virtually unexamined issue in previous studies.

The study limitations described above are balanced by several important study strengths, including importance and novelty of the topic, a strong theoretical framework (Andersen, 1995), a sophisticated focus on mental health care use *intensity* that improves upon the exclusive reliance on *use versus nonuse* outcomes in many prior studies, a high participation rate of an understudied clinical population (i.e., primary care patients' use of mental health services), and advanced statistical analyses to account for highly skewed and zero-laden variables (i.e., number of mental health care visits). In combination, the study strengths and robust findings help ameliorate concerns about the study's limitations.

Conclusion

The current findings are especially relevant to both mental health and medical providers working in the primary care health service sector. Results highlight the need for primary care providers to consider discussing mental health care with patients who are experiencing problems in functioning that appear to be primarily related to physical illness or injury, rather than only with patients who report or show evidence of mental health problems such as depression. Patients with relatively poorer physical health-related functioning (regardless of socioeconomic status) also are candidates for screening for mental health problems, particularly if their physical health-related functioning deteriorates or remains stably problematic despite appropriate medical care. These patients may be suffering from psychosomatic illness or from the demoralization that can accompany persistent disabling medical illness. In either case, an adequate course of mental health treatment may enhance not only psychosocial but also physical health-related functioning.

Study findings also suggest that mental health providers who are treating patients with physical health-related functional impairments should be alert to the possibility that increased intensity of mental health care utilization may indicate a need for additional medical evaluation, treatment, or rehabilita-

tion. While most patients in the present sample were not "high utilizers" of mental health services, a small number reported a very large number of mental health visits. Those patients may have needed and benefited from extensive mental health treatment, but they also may have been using excessive mental health services in lieu of resolving physical health problems. Further research is needed to disentangle the potentially complex relationships between physical health-related functioning/impairment and mental health treatment utilization.

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