The Relationship Between Length of Vocational Disability, Psychiatric Illness, Life Stressors and Sociodemographic Variables.

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Abstract

Objective: The primary objective of this study was to examine the relationship between vocational disability, psychiatric illness, life stressors and sociodemographic factors.

Method: Information on a variety of variables was obtained from insurance files of 147 subjects who had submitted claims for monetary compensation on grounds of psychiatric symptoms.

Results: The majority of subjects received a diagnosis of mood disorder or anxiety disorder. Extended vocational disability was associated with longer duration of psychiatric illness, rating of poorer prognosis by the treating physician, and lower income and occupational levels. Individuals with recent onset of disability reported more stressors than those experiencing extended disability.

Conclusion: Although longer duration of psychiatric illness was associated with vocational disability, other variables play an important role in accounting for extended vocational disability.

Introduction

Psychiatric patients commonly experience occupational disability as part of their impairment in general psychosocial functioning. Estimates suggest that depression alone accounts for loss of 172 million work days each year in the United States. As well, patients with mood disorders experience more impairment in role functioning than those with chronic medical conditions such as hypertension, diabetes and arthritis. Furthermore, epidemiological research indicates that psychopathology is related to vocational disability across cultures, even after controlling for severity of physical disease. A conservative estimate of the direct annual cost of treatment for psychiatric disability in the United States in 1980 was $17.2 - 19.9 billion of which approximately $7.4 billion was for services. The true burden of psychiatric illness is much higher when indirect costs including monetary compensation, health care use, and loss of productivity and wages are considered.

Greenberg et al. concluded that while the direct cost for treatment of depression in 1990 was $12.4 billion in the U.S., morbidity costs related to the workplace are nearly double that amount.

The staggering personal and social cost of psychiatric disability in a time of rising health care expense and diminishing resources, emphasizes the need for research on vocational disability associated with psychiatric disorders. Despite this, there is a relative lack of research...
on variables that predict extended disability. Recent studies suggest that greater severity and longer duration of psychiatric disorder is associated with prolonged impairment\textsuperscript{11-13}. In a longitudinal study of depressed medical patients, Von Korff and his colleagues\textsuperscript{13} concluded that there is synchronicity between depression and disability over time, such that improvement in severity of depression is associated with reports of fewer annual days of work-related disability. Furthermore, even patients with minor symptoms of depression experience significant disability\textsuperscript{5,14} and those reporting comorbid substance abuse problems have more disability days than individuals having only one disorder\textsuperscript{15}. As well, the presence of a coexisting chronic physical or medical condition has been linked to poorer physical, social and role functioning among individuals diagnosed with psychiatric disorders\textsuperscript{6}.

In contrast, few sociodemographic variables appear to have consistent relationship with vocational disability. Trotter et al. reported that patients whose symptoms manifest at an earlier age are more likely to return to work following a period of disability\textsuperscript{16}. Parallel to this, individuals who develop their symptoms at an older age are less likely to resume work\textsuperscript{17}. In addition, individuals with psychiatric disability are more likely to be female, not currently married, and black\textsuperscript{18} or Hispanic\textsuperscript{19}. However, caution should be exercised in interpreting these latter findings, as extraneous variables such as lower socioeconomic status, lack of education and training, and restricted access to quality health-care could have greater influence than race or gender per se in predicting extended work disability.

Aside from sociodemographic and other patient variables, external factors must be considered in the onset and course of work-related disability. The diathesis-stress model of psychopathology postulates that stress is an important antecedent to development of psychological disturbance\textsuperscript{20}. Subsequent work disability results from an interplay of personal, family and work-related factors\textsuperscript{21}. However, little is known about the contribution of each of these factors to occupational disability. Multivariate research is needed to explain how these factors are related to the course of disability. Further, as the likelihood of disability may be influenced by availability of mental health services, studies done in the other jurisdictions may not be generalizable to the Canadian context where universal health care is seen as a priority.

The study described here assessed the relationship between vocational disability and variables including age of onset of psychiatric illness, duration of psychiatric disorder, presence of comorbid psychiatric disorders, coexistence of physical and psychological complaints, physicians' ratings of prognosis, life stressors, income level, and occupational status in a sample of insurance claimants with psychiatric diagnoses.

**Method**

Cases reviewed for this study were referred to the principal investigator (P.C.) from a large national insurance company over the course of January 1992 to December 1992. Due to the stature of this insurance firm, cases originated from all the provinces across Canada. The primary purpose of referral to the principal investigator was to obtain clarification and advice on the psychiatric status of disability claimants.

Data for the purpose of this study were collected from medical documents included in the insurance files of these cases. The data reduction was completed by a research assistant blind to the major aim of this investigation. Although not formally evaluated, the insurance case files tended to be very comprehensive. Documents reviewed for collection of data included application forms for disability benefits and narrative reports completed by the treating physicians, copies of clinical records, reports of independent psychiatric assessments, consultation and treatment notes.
from psychologists, neuropsychologists and records of rehabilitation consultants involved in the care of cases being considered. Information obtained through this process was categorized as follows:

Disorder-related data: Illness specific items included DSM-III-R$^{22}$ Axis I and Axis II diagnoses, duration of psychiatric illness (time of onset to time of data collection), length of vocational disability, and the treating physician's rating of prognosis (good, fair, poor). Vocational disability, in this context, was defined as inability to return to work on a full or part-time basis.

Demographic information: Items related to demographic information included age, gender, level of education, occupation and income level.

Life stressors: Data were collected with respect to the number of life stressors present, including work and employment-related stress, presence of medical illness, medical illness in a family member, personal loss, financial problems, legal problems, side-effects from medications, past or current physical abuse and interpersonal conflicts. Information related to life stressors was collected concurrently with patients' application for disability benefits. Although the number of stressors was tallied, the nature of the data collection methodology did not allow to assess for the severity of stressors.

Data Analysis: First, descriptive statistics were calculated to provide information about characteristics of the sample. Next, intercorrelations were assessed for variables in the prediction model. As a final step, multiple regression analysis was performed to evaluate the impact of predictor variables (age of illness onset, number of DSM-III-R$^{22}$ diagnoses, presence of coexisting physical and psychological complaints, duration of psychiatric disorder, physicians’ rating of prognoses, total number of stressors, income level and occupational status) on the criterion variable (length of vocational disability).

Results
The sample consisted of 90 females and 57 males. Most respondents had been employed in either clerical (44.2%) or administrative (26.5%) jobs while fewer had been employed in higher executive positions (4.1%) or as skilled manual labourers (8.8%), machine operators (5.4%), or unskilled labourers (10.9%). Less than one-third of the sample (29.9%) reported having had post-secondary education. Nearly two-thirds of the sample (63.9%) presented with psychological symptoms only, while a minority of subjects (37.4%) presented with both psychological and physical symptoms. All cases had at least one Axis I diagnosis while 6.8% were listed as having an Axis II diagnosis. The majority of subjects were diagnosed with mood disorders (71.4%) and/or anxiety disorders (24.5%). With respect to prognosis, treating physicians rated 29.9% of respondents as having a good prognosis, 16.3% of subjects as having a fair to moderate prognosis and 53.7% of subjects as having a poor prognosis.

Table 1
Characteristics of the study sample (n=147).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years</td>
<td>43.97</td>
<td>9.65</td>
</tr>
<tr>
<td>Onset age of psychiatric illness</td>
<td>39.38</td>
<td>10.64</td>
</tr>
<tr>
<td>Income level in thousands</td>
<td>34.40</td>
<td>14.20</td>
</tr>
<tr>
<td>Duration of psychiatric illness (Months)</td>
<td>54.99</td>
<td>60.60</td>
</tr>
<tr>
<td>Duration of vocational disability (Months)</td>
<td>34.05</td>
<td>27.44</td>
</tr>
<tr>
<td>Number of Axis I and Axis II diagnoses</td>
<td>1.34</td>
<td>.56</td>
</tr>
<tr>
<td>Number of current stressors</td>
<td>3.03</td>
<td>1.43</td>
</tr>
</tbody>
</table>

Table 1 describes other characteristics of the sample. Most patients were in their mid-thirties to their early fifties (mean=44 years) and seemed to suffer from chronic psychiatric symptoms prior to the onset of vocational disability (mean duration of psychiatric illness = 55 months; mean duration of vocational dis-
Table 2
Bivariate correlations between duration of disability and predictor variables (n=147).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of disability</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of illness onset</td>
<td>-.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income level</td>
<td>-.23*</td>
<td>.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational category</td>
<td>-.23*</td>
<td>-.02</td>
<td>.40**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of illness</td>
<td>.50**</td>
<td>.06</td>
<td>-.16</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prognosis</td>
<td>.40**</td>
<td>.16</td>
<td>-.11</td>
<td>.06</td>
<td>-.35**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total diagnoses</td>
<td>.28**</td>
<td>-.04</td>
<td>-.19</td>
<td>.06</td>
<td>.12</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total current stressors</td>
<td>-.24*</td>
<td>-.13</td>
<td>-.19</td>
<td>.00</td>
<td>.08</td>
<td>.12</td>
<td>-.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-existing physical complaints</td>
<td>.02</td>
<td>-.07</td>
<td>.02</td>
<td>.12</td>
<td>-.08</td>
<td>.06</td>
<td>-.02</td>
<td>-.26*</td>
<td></td>
</tr>
</tbody>
</table>

* p<.01
** p<.001

Note: Numbers 1-9 at the top of the table represent the variables listed to the left in ascending order.

Table 3
Predictors of duration of vocational disability (n=147).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Beta</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of illness onset</td>
<td>.04</td>
<td>.54</td>
<td>n.s.</td>
</tr>
<tr>
<td>Income level</td>
<td>-.26</td>
<td>-3.15</td>
<td>.001</td>
</tr>
<tr>
<td>Occupational category</td>
<td>-.21</td>
<td>-2.60</td>
<td>.01</td>
</tr>
<tr>
<td>Duration of psychiatric illness</td>
<td>.36</td>
<td>4.08</td>
<td>.001</td>
</tr>
<tr>
<td>Total Axis I and Axis II diagnoses</td>
<td>.11</td>
<td>1.38</td>
<td>n.s.</td>
</tr>
<tr>
<td>Prognosis</td>
<td>.24</td>
<td>3.10</td>
<td>.001</td>
</tr>
<tr>
<td>Presence of co-existing physical complaints</td>
<td>-.01</td>
<td>-.15</td>
<td>n.s.</td>
</tr>
<tr>
<td>Number of current stressors</td>
<td>-.22</td>
<td>-3.02</td>
<td>.001</td>
</tr>
</tbody>
</table>

Total Multiple R: .64
R Squared: .41
Adjusted R Squared: .37
Multivariate F (8,119): 10.15
p: .001

ability = 34 months). The sample also represented a relatively affluent group with about two-thirds of the cases reporting an annual income between $20,000 and $48,000. Furthermore, the majority of patients identified the presence of at least one stressor in their current life.

Table 2 presents intercorrelations among variables in the prediction model. Several predictor variables were significantly correlated with length of vocational disability, although few of them correlated with one another. In addition, there was no evidence of multicollinearity among variables.
The results of multiple regression analysis are presented in Table 3. Of note, the eight predictor variables shown in Table 3 accounted for 37% of the variance in duration of disability, a highly significant finding (p < .001). The most significant individual predictors were duration of psychiatric disorder, the treating physician's rating of prognosis, total number of current stressors, income level and occupational category. Individuals with a longer duration of psychiatric illness, those given a poorer prognosis, and those having lower income and occupational status levels were more likely to have vocational disability for a longer period. Individuals with recent onset of disability tended to report more current stressors than those experiencing extended disability.

Discussion
This study examined the influence of psychiatric illness, life stress and sociodemographic background on vocational disability among individuals with psychiatric diagnoses. Consistent with past research, the majority of insurance claimants received a diagnosis of mood and/or anxiety disorder. A significant amount of variance in length of vocational disability was explained by the prediction model. In particular, longer period of vocational disability was associated with psychiatric patients having chronic symptoms, ratings of poor prognosis, fewer current life stressors and lower income and occupational levels.

Not surprisingly, and in keeping with past research, longer duration of psychiatric disorder was the most powerful predictor of extended disability. As the course of psychiatric disorder and the occurrence of vocational disability often correspond, early intervention to manage the underlying disorder may lead to reduction in work disability. However, about 91% of the variance in the duration of disability was not accounted for by length of psychiatric illness. Clearly, other variables play an important role in vocational disability.

The finding that prognosis as rated by the patient's physician also predicted duration of vocational disability suggests that the treating physician is often able to predict the course of vocational disability with reasonable accuracy. However, caution must be exercised in interpreting the association between physicians' prognostic statements and length of vocational disability. In some cases, physicians were aware of patients' vocational disability status at the time of providing prognosis ratings. Physicians stating the prognosis were also involved in the treatment of these patients. Consequently, their bias may have led them to aim at symptom control rather than cure of illness and an under-emphasis on vocational rehabilitation. In addition, the possibility of self-fulfilling prophecy for the patient who is aware of prognosis cannot be ruled out. Furthermore, insurance companies may be more willing to provide compensation to individuals rated by their physicians as having poor prognosis for longer periods of time. In some cases, this may impede rehabilitative efforts. Despite these caveats, it must be noted that physicians, with their knowledge and expertise, are often in the best position to predict the course of illness. Their prognostic statements are generally based on an integration of first-hand, in-depth information about the patient and the consequent degree of occupational impairment. As such, the value of prognostic statements should not be underestimated and should be studied further in future research.

Patients having lower income and occupational levels also experienced longer duration of disability. Perhaps these individuals have more limited opportunities for rehabilitation even in the context of the Canadian healthcare system which emphasizes universal access. Further, individuals in the lower socioeconomic classes generally have fewer social and material resources than persons with higher income and occupational status levels. By contrast, opportunities for return to previous employment, modified work, new employment, and job retraining are generally available to a greater extent to individuals at
the upper end of the occupational ladder. Also, insurance companies may emphasize rehabilitation treatment for this group as their disability benefits are relatively higher.

Finally, patients who were disabled for shorter periods of time reported a higher number of stressors as compared to those with long term disability. This finding contradicts the assumption that the course of disability is extended by increasing numbers of current life stressors. Rather, this study suggests that life stressors are especially relevant during the onset and first several months of psychiatric disability. Perhaps the individual is more likely to report stressors related to employment, legal and financial problems, difficulties with medication side effects and family stress during this time. However, after a period of transition, some adaptation to this new life circumstance may occur. This interpretation is consistent with past research indicating that the first several months of unemployment are associated with the highest increases in emotional distress while more extended periods of unemployment are related to greater stability in emotional status\(^{24}\). This is in keeping with the common observation that certain stressors, particularly those arising from the workplace, re-emerge with a transition back to employment.

While this study highlights potential risk factors related to extended vocational disability among a specific group of psychiatric patients, its limitations must be acknowledged. First, results were based on observations of a privileged sample of individuals with private disability coverage. The relatively high income level of the sample suggests that the sample was atypical of psychiatric patients in general. The criteria by which the insurance company makes the referral to a specific psychiatrist was also unknown. Therefore, our findings may not be necessarily applicable to broader populations of psychiatric patients. In addition, data were collected from a retrospective review of disability claimants' insurance records which included medical information from various sources. Although areas assessed were clinically and conceptually important, future research must supplement single item indices with psychometrically sound multiple item self-report measures, observer ratings and objective data whenever possible. To bolster prediction models further, assessment protocols should also include sound measures of work-related variables (e.g., job availability, satisfaction with previous employment, employment commitment), self-efficacy expectations, personality functioning and social support. Finally, the cross-sectional nature of this study precludes a discussion of causal relations. It is possible that duration of disability has a causal influence on the duration of psychiatric disorder, ratings of prognosis, and number of comorbid diagnoses rather than vice versa. Hence, relationships described in this paper are correlational rather than causal.

References


