CHAPTER TWO

The Progression of Employees with Mental Disorders through Disability Benefits Systems

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This study is part of a larger investigation that explored the phenomenon called the Progression of Disability Benefits (PODB). PODB refers to the migration of workers with work-limiting disabilities through a system of economic disability benefits, resulting for some in their ultimate placement into the Social Security disability system. The present study focuses on 6,035 claims submitted to a large disability insurance company for financial support following the development of a mental disorder and examines the PODB phenomenon within this population. The study found significant relationships between demographic, work-related, International Classification of Diseases volume 9 (ICD-9) disorder, and benefit claims patterns. Claimants receiving mental disability benefits were more likely to be younger, female and to progress to advanced benefits than those with physical disabilities. Mental disability claims were most often based upon mood disorders, followed by anxiety/stress-related and substance-related disorders. Mood and anxiety disorder clusters were comprised predominantly of females, whereas claimants with substance-related disorders were predominantly male. Mental disorder type varied across U.S. geographical regions and industry types. PODB varied across disability type, gender, geographical region, and industry type.

The results of this study are part of a larger investigation that documents the Progression of Disability Benefits (PODB) phenomenon. PODB refers to the migration of workers with work-limiting disabilities through a system of economic benefits resulting in their ultimate placement into the Social Security Administration (SSA) disability system. Specifically, the study documented the movement of claimants from short-term disability benefits (STD) to long-term disability (LTD) to Social Security Disability Insurance (SSDI). As was established in the companion article (McMahon, Danczyk-Hawley, Reid, Flynn, Habeck, Kregel, & Owens, 2000), systematic movement through the PODB is related to claimants' gender, age, disability type, region of residence and the industry in which they are employed. The aim of this study was to further explore the PODB as it relates specifically to mental disorders.

Faced with rising health care costs, employers are under increasing pressure to improve productivity levels and reduce absenteeism due to disability. And, while the cost of providing health coverage has received much attention, growing disability benefit costs have elicited growing concern. According to industry studies, the average direct cost of disability as a percentage of payroll totals 6.3%, including the costs of workers compensation, sick pay, short-term disability (STD), and long-term disability (LTD). In addition, the average indirect costs of disability-which include the costs of overtime, replacement and accommodation, as well as lost productivity and lowered firm output-is almost 7% of payroll (Washington Business Group on Health [WBGH] & Watson Wyatt, 1999).

Disability management specialists have advocated that to reduce the direct and indirect costs of disability in the workplace, an integration of all disability related programs should occur, including workers compensation, STD, LTD, and medical care, thereby reducing the occurrence of cost-shifting among the various benefit programs. Such shifting has resulted in increased firm expenditures, and overall reduced output (Schwartz, 1984; Butler, Gardner, & Gardner, 1998).

During the past decade, the number of employers providing integrated benefit programs has risen (WBGH & Watson Wyatt,1999). However, the management of disability claims in the private sector has consistently relied on an approach that actively aids the individual in obtaining SSDI benefits resulting in costs shifting to the public SSA disability system when return to work fails (Hunt, Habeck, Owens, & Vandergoot, 1996). Concurrently, participation in Social Security programs by people with disabilities has grown from less than 4 million in the mid-1980s, to 11 million in 1996 (Daniels & West, 1996). Over the same period, the percentage of those returning to employment from SSDI has remained at less than 1 percent (Daniels, & West, 1996). The United States General Accounting Office (GAO) reports that costs to taxpayers for the cash and health care benefits for beneficiaries in the public disability programs in 1995 amounted to $101 billion (National Institute on Disability and Rehabilitation Research [NIDRR], 1999).

Actions of the private sector appear to have an impact on the public disability program. The companion article to this piece (McMahon et al., 2000) documents the migration of individual workers who developed a work-limiting health condition from their coverage within employer-provided disability insurance benefits to their public beneficiary status under SSDI. Among the findings, it was discovered that individuals with mental disorders were more likely to progress to advanced disability status (McMahon et al., 2000).

Mental Health Claims

As health care costs grew in the 1990s, employers and insurers discovered that mental health care costs were increasing at rates higher than those associated with other health conditions. By the mid 1990s, a sample of employers reported that 25% or more of their total dollars spent in health care went toward mental health claims, which accounted for only 7% of overall claimants (Thesis, 1994; Winegar & Bistline, 1994). This growth has not ceased. Currently, mental disorders are the primary diagnosis in 10 to 20 percent of disability claims and a secondary diagnosis in up to 65 percent of disability claims (Effective, 1999), costing $150 billion annually (Psychiatric, 2000).

A study conducted by UNUM Life Insurance Company (1997), North America's largest disability insurer at that time, also suggests an acceleration in disability claims based on mental disorders. UNUM found that STD claims based on mental disorders had increased by 33% since 1993 and that LTD claims based on mental disorders had risen by 316% since 1989 (compared to a 154% increase for all LTD claims). Mental/nervous claims now account for 8% of all LTD claims (WBGH & National Institute on Mental Health [NIMH], 1999).

The rapid rise in mental disability claims has not been limited to the private sector. In SSA's disability system, the number of beneficiaries with mental disorders rose by more than 165% between 1989 and 1995, growing from 412,000 to 1.1 million individuals (Gettlin, 1997). Mental health disorders currently represent the single most prevalent cause of disability in claims under Title II of SSA, encompassing roughly 26.8% of all awards (Social Security Bulletin, 2000).

The purpose of the present study was to expand upon the McMahon et al. (2000) study, focusing in detail on claims for financial support following the development of mental disorders. Furthermore, this study examined the PODB phenomenon as it relates to demographic and work-related variables within this population of mental health claimants.

METHODS

The database was extracted from the UNUM/Provident Life Insurance Company, and includes all consecutive short-term disability (STD) claims filed with UNUM from January 1, 1994 to December 31, 1996 from claimants who were also insured for long-term disability (LTD) by UNUM. The resulting sample included 77,297 consecutive claims for STD. From this sample, 6,035 cases involving mental health claims were extracted for further study. Data included demographic and work-related variables (i.e., age, gender, region of residence, and employer SIC code), ICD-9 disorder code, and information about the progression of claims based on STD, LTD and SSDI benefits. See McMahon et al. (2000) for further details about the database.

RESULTS

Data analyses focused on three domains: attributes of claimants with mental vs. physical disabilities; attributes of claimants with various mental disorder types; and the examination of PODB as it relates to mental health disabilities across the variables of age, gender, geographic region, industry type, and mental disorder subtype.

MENTAL VS. PHYSICAL DISABILITIES

The first set of analyses examined the claimants for mental disability benefits as a whole, and it contrasted these claimants with claimants receiving disability benefits based on physical disorders in regard to demographics, geographic region, industry-type, and the PODB. Table 1 below outlines these data for the first three variables.

Table 1: Mental vs. Physical Disorders

Disability Type	N	Mean Age	Percent of Claimants by Gender		Percent of Claimants by Region				Percent of Claimants by Industry				
			Male	Female	NE	S	MW	W	Goods	Gov/ Trans	Retail	Finance	Services
Mental	*6035*	*38.67*	*32.9*	*67.1*	*35.6*	*28.1*	*21.4*	*14.9*	*26.0*	*8.7*	*9.9*	*9.4*	*46.0*
Physical	*71262*	*42.00*	*36.0*	*64.0*	*39.5*	*30.5*	*20.1*	*9.9*	*30.5*	*5.3*	*12.1*	*8.2*	*43.9*

Demographics

Compared to the larger sample of claims based on physical disabilities, mental health claimants were slightly more likely to be female (8.2% vs. 7.2% across groups, 67.1% vs. 64.0% of claimants within groups). A chi-square test of independence of these distributions was significant, $\chi^2(1, N = 77013) = 22.98$, $p<.001$. To measure the strength of this relationship, we used the Phi statistic, a measure of association which accounts for sample size and has a range of 0 (no association) to 1 (perfect association). In this case, Phi equals .02, $p<.001$, indicating a very small, yet still statistically significant relationship. Mental health claimants were also younger (38.67 vs. 42.00 years at the time of initial STD claim; $t(77293) = 21.34$, $p<.001$).

Geographic Region. Examining differences in claim patterns across geographic regions of the U.S., there is a significant relationship between disability status (mental vs. physical) and geographic region ($\chi^2(3, N = 77297) = 173.94$, $p<.001$). Phi equals .05, $p<.001$. The range for this variable was from lows of 7.1% and 7.2% of cases for the Northeast and South regions claiming mental disabilities, to a high of 11.3% of claimants from the West.

Industry Type. Examining the breakdown of claimants by industry type, we find a significant relationship between disability type and industry type ($\chi^2(4, N = 77264) = 190.67$, $p<.001$). Phi equals .05, $p<.001$. Examining the range, individuals with mental disability claims comprise a low of 6.4% of cases in the retail/wholesale industries and 6.7% in the goods produced cluster. Industries in the government/transportation cluster reported nearly double the frequency of mental disability claimants at 12.1% of all disability claims**.**

Progression of benefits. Considering the progression of disability benefits, we find a significant relationship between disability type (mental vs. physical) and disability status (STD, LTD, SSDI), $\chi^2(2, N = 77297) = 159.53$, $p<.001$. Phi equals .05, $p<.001$. Individuals with mental disorders are more likely to progress to advanced status (including LTD or SSDI benefits) than are individuals with physical disability claims. 10.9% of mental disability claimants progressed to LTD benefit status compared to 7.3% of claimants with physical disabilities. Similarly, an additional 5.6% of mental disability claimants progressed to SSDI benefits, compared to 3.8% of claimants with physical disabilities, making a total of 16.5% of mental disability claimants progressing to advanced benefit status, versus 11% of physical disability claimants. Table 2 below outlines these data.

Table 2: Progression of Disability Benefits by Disability Benefit Level

Disability Type	Relative Percent of Claimants by Disability Benefit Level		
	STD	LTD	SSDI
Mental	*83.5*	*10.9*	*5.6*
Physical	*88.9*	*7.3*	*3.8*

Mental Disorder Clusters

The second set of analyses examined clusters of mental disorder types in regard to frequency of claims, demographic and work variables, and the progression of disability benefits.

Mental disorder clusters. Data were available for all 6,035 mental disability claimants (100%) with respect to type of disorder (ICD-9 code). To increase interpretability, ICD-9 categories were collapsed into six clusters versus the original 28 categories coded by practitioners. As the ICD-9 coding scheme is no longer used, codes were clustered as they fit into the ICD-10 scheme, which not only is the standard for reimbursement coding in many settings, but also corresponds more closely with the DSM-IV coding scheme familiar to most mental health practitioners. Table 3 on the following page documents the manner in which the codes were collapsed.

In the revision of the ICD codes, some codes were split, with some subtypes falling under one category and other subtypes reassigned to a different category. These reassigned codes were sometimes at the sub-disorder level, and the present data were not reliably coded at that level. Thus, we chose to cluster these codes where they appeared to best fit. One code that was split was the "Other Nonorganic Psychoses" category. Although this could be clustered under either Schizophrenia or Mood/Affective disorders depending on the precise symptom pattern (but unknown to us), ICD-9 criteria for coding under this category specified that the condition be attributable to a recent life experience or stressor. Thus, it seemed most appropriate to cluster it under the Anxiety/Neurotic and Stress-related category. In any case, as it comprises only 2.6% of the data for this cluster, it should not unduly influence the results.

As can be seen in Table 3, Mood/Affective disorders comprised the largest category of mental disability claims, making up 57.7% of all cases. The Anxiety/Neurotic/Stress-Related and Substance-Related clusters comprised the majority of the remaining cases (27.5% and 14.0%, respectively). The remaining clusters (Schizophrenia/Paranoid States, Organic, and Other) contributed only 4.8% of claims combined.

Demographics. Table 4 on page 7 and Figure 1 on page 8 detail results regarding the relationship of mental disorder cluster and demographic variables. Using a chi-square analysis, we found that the variables of gender and mental disorder cluster are not independent of one another, $\chi^2(1, N = 6016) = 689.52$, $p<.001$. Phi is .34, $p<.001$, indicating a moderate and significant relationship. Compared to the overall gender distribution for mental disability claimants, claimants under the Mood and Anxiety coding clusters were more likely to be female (74.0% and 74.1%, respectively, vs. 67.1% for all mental disorders). Claimants with Organic disorders, primarily disorders resulting from brain injury, reflected the same gender distribution as was found in the physical disabilities (64% female). The Schizophrenia cluster was nearly equally divided between males and females. Most striking is the gender distribution of the Substance-related disorders, with males comprising where only 32.9% of the total subjects are males.

The relative pattern of the age distribution across mental disorder clusters generally corresponded to that found in the initial examination of the mental vs. physical disabilities, essentially an inverted U distribution. A one-way ANOVA revealed significant differ-

ences between the clusters ($F(5,29)= 12.19$, $p<.001$). Examining the ranges across clusters, claimants for substance-related disorders were youngest, with a mean age of 36.5. The other clusters, listed in order of increasing mean age, were other (37.8) mood (38.8), schizophrenia (38.8), anxiety/stress (39.4), and organic (41.6).

Table 3: Mental Disorder Clusters and Subtypes

Cluster	N	Percent of Total	ICD-9 Code	ICD-9 Title	N	Percent of Category
Mood/Affective	*3240*	*53.7%*	*296*	*Affective Psychoses (depressive, manic-depressive)*	*2445*	*75.5%*
			311	*Depressive Not Otherwise Classified*	*795*	*24.5%*
Anxiety/ Neurotic	*1660*	*27.5%*	*300*	*Neurotic (e.g., anxiety, hysteria, phobias, OCD, neurotic, depression, hypochondriasis)*	*1005*	*60.5%*
			298	*Other nonorganic psychoses ("attributable to a recent life experience")*	*43*	*2.6%*
			308	*Acute stress reaction*	*203*	*12.2%*
			309	*Adjustment reaction*	*409*	*24.6%*
Substance-Related	*843*	*14.0%*	*291*	*Alcohol psychoses (e.g., DTs, Korsakov's)*	*10*	*1.2%*
			292	*Drug psychoses (e.g., withdrawal, chronic hallucinations)*	*14*	*1.7%*
			303	*Alcohol dependence*	*495*	*58.7%*
			304	*Drug dependence*	*255*	*30.2%*
			305	*Nondependent alcohol or drug abuse*	*69*	*8.2%*
Schizophrenia/ Paranoid States	*114*	*1.9%*	*295*	*Schizophrenia*	*92*	*80.7%*
			297	*Paranoid States*	*22*	*19.3%*
Organic	*81*	*1.3%*	*290*	*(Pre)senile Dementia*	*7*	*8.6%*
			293	*Transient Organic Psychotic*	*19*	*23.5%*
			294	*Other Organic Psychotic*	*6*	*7.4%*
			310	*Nonpsychotic disorders following brain damage*	*49*	*60.5%*
Other	*97*	*1.6%*	*301*	*Personality*	*16*	*16.5%*
			302	*Sexual*	*2*	*2.1%*
			306	*Physiological dysfunction arising from mental factors*	*8*	*8.2%*
			307	*Special NOS (e.g., eating, sleep, tics)*	*49*	*50.5%*
			312	*Conduct/impulse (e.g.,impulse control, pathological gambling, pyromania)*	*6*	*6.2%*
			313	*Disturbance of emotions specific to childhood*	*2*	*2.1%*
			314	*Hyperkinetic syndrome*	*6*	*6.2%*
			315	*Development delay*	*1*	*1.0%*
			316	*Psychic factors associated with other diseases*	*4*	*4.1%*
			317-319	*Mental retardation*	*3*	*3.1%*

Table 4: Demographic Variables by Mental Disorder Cluster

		Total Sample	Mental Disorder Cluster					
			Mood	Anxiety	Substance	Schizophrenia	Organic	Other
Age -- N and Percent of Mental Disorder Clusters	Mean Age	38.7	38.8	39.4	36.5	38.9	41.6	37.8
	15-24	300 5.2%	161 5.0%	74 5%	59 7.0%	7 6.2%	4 4.9%	5 5.2%
	25-34	1878 31.2%	960 29.7%	523 31.5%	308 36.6%	31 27.4%	19 23.5%	37 38.1%
	35-44	2233 37.1%	1237 38.3%	551 33.2%	334 39.7%	49 43.4%	28 34.6%	34 35.1%
	45-54	1184 19.7%	658 20.4%	371 22.4%	105 12.5%	19 16.8%	18 22.2%	13 13.4%
	55+	413 6.9%	212 6.6%	139 8.4%	35 4.2%	7 6.2%	12 14.8%	8 8.2%
Age -- Percent of Age Groups	15-24	100%	51.9%	23.9%	19.0%	2.3%	1.3%	1.6%
	25-34	100%	51.1%	27.8%	16.4%	1.7%	1.0%	2.0%
	35-44	100%	55.4%	24.7%	15.0%	2.2%	1.3%	1.5%
	45-54	100%	55.6%	31.3%	8.9%	1.6%	1.5%	1.1%
	55+	100%	51.3%	33.7%	8.5%	1.7%	2.9%	1.9%
	Total	100%	53.6%	27.6%	14.0%	1.9%	1.3%	1.6%
Gender -- N and Percent of Mental Disorder Clusters	Male	1981 32.9%	839 26.0%	429 25.9%	602 71.8%	52 46.0%	29 35.8%	30 30.9%
	Female	4035 67.1%	2392 74.0%	1226 74.1%	237 28.2%	61 54.0%	52 64.2%	67 69.1%
Gender -- Percent of Age Groups	Male	100%	42.4%	21.7%	30.4%	2.6%	1.5%	1.5%
	Female	100%	59.3%	30.4%	5.9%	1.5%	1.3%	1.7%
	Total	100%	53.7%	27.5%	13.9%	1.9%	1.3%	1.6%

A Levene analysis of equality of variance rejected the null hypothesis that the variances were equal across cluster types (Levene (5,29)=10.43,p<.001). Thus, we used the Tamhane T2 post-hoc test to examine differences across clusters, which is a conservative non-parametric test based on the t statistic that does not assume equal variances across groups. This test revealed significant pairwise differences between the Substance-related disorders and each of the Mood (p<.001), Anxiety (p<.001), and Organic (p<.01) clusters. Thus, although there were not reliable age differences between most clusters of mental disorders, claimants with substance-related disorders stood out as significantly younger than most others who filed mental disability claims.

FIGURE 1: Gender Percentage by Mental Disorder Cluster

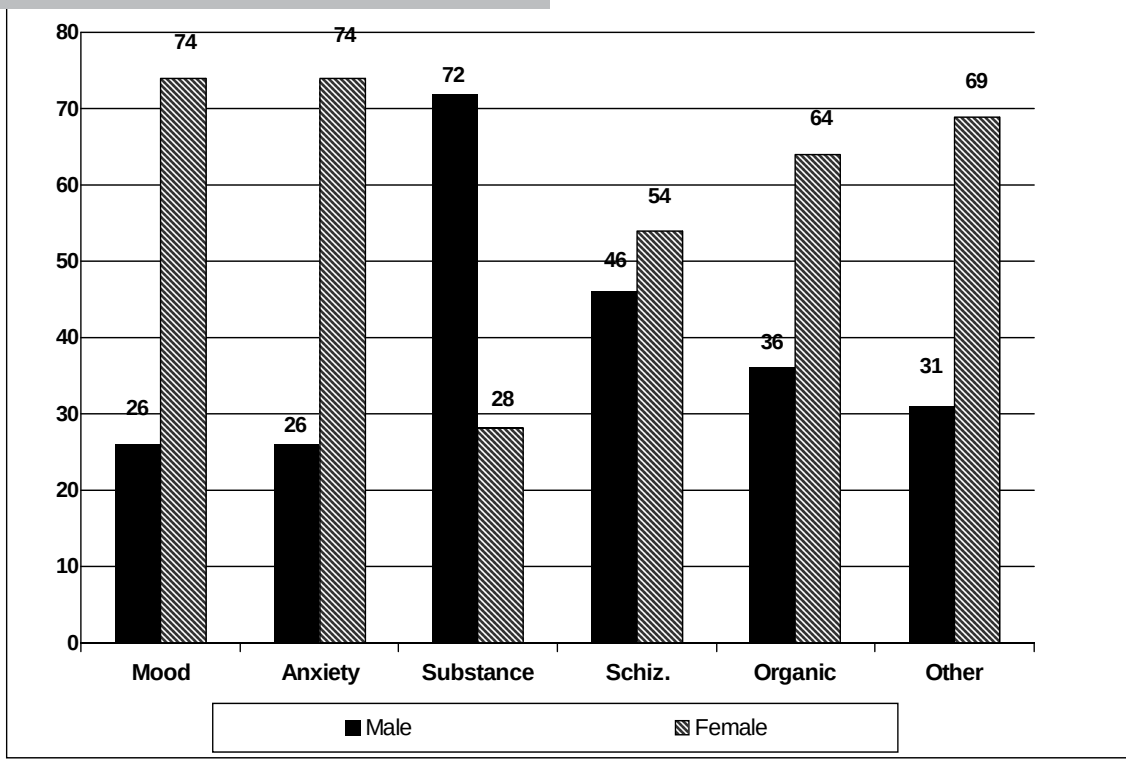


Figure 2 on the following page presents the percentage of total mental disability claims across age categories, broken down by the clusters. This figure represents differences in the likelihood of particular mental disability claims across age brackets. Across all brackets, mood/affective disorders represent the largest percentage of claims, holding steady between 51 percent and 56 percent of claims across age brackets. Claims based upon anxiety or stress-related disorders were consistently the second most frequent across age brackets. However, these claims increased across age clusters from a low of 24 percent of all mental disability claims in the youngest bracket to a high of 35 percent of claims in the age bracket representing the 35 to 44 year age range, then holding relatively steady across the other two age categories. In the youngest age bracket, Substance-related claims represented a close third in frequency. However, it is noteworthy that these claims appear to have steadily decreased as we examined the more advanced age brackets, to a low of 8 percent of all mental disability claims in the age bracket representing workers 55 years and older. Although not shown in Figure 2, claims based upon organic and other causes remained steady between one and three percent across all age brackets.

Geographic region. Table 5 on the following page outlines the data regarding the relationship of mental disorder cluster and employment variables. A Chi-square test of independence revealed that the variables of mental disorder cluster and geographic region were not independent, $\chi^2(15, N = 6035) = 61.63, p<.001$), but they have a relatively small association (phi=.10, p<.001). Table 5 shows the percentage of mental disability claims attributed to each of the clusters by geographic regions of the United States. Across regions, Mood disorders remained the most frequently reported claim, with little variability across regions, ranging from 52.7% to 55.5% of claims. The percentage of claims attributed to Anxiety disorders showed greater variation across regions, from a low of 23.6% of claims in the South to a high of 34.0% of claims in the West. Substance-related claims also show greater variability across regions from a low of 10.2% of claims in the West to a high of 16.3% of claims in the South.

FIGURE 2: Percentage of Mental Disorder Clusters by Age Categories

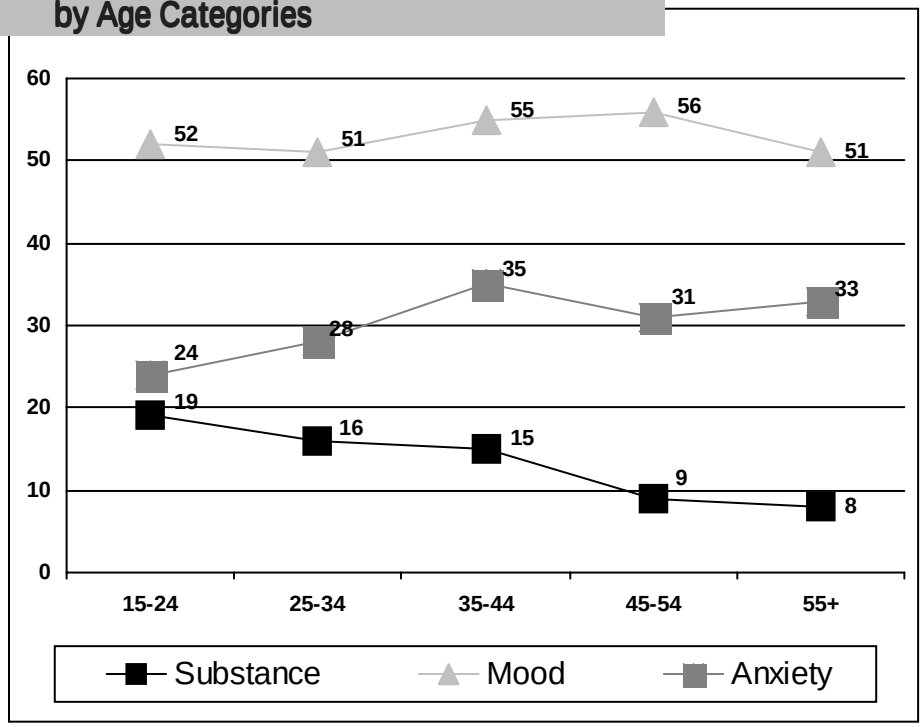
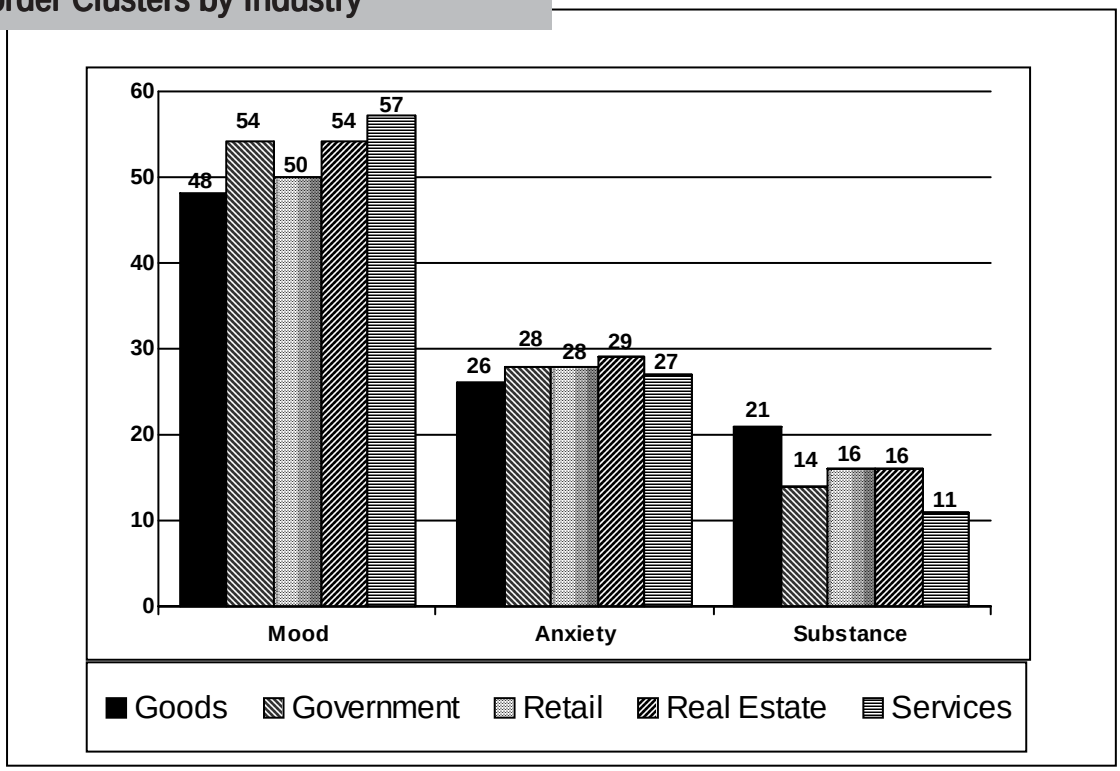


Table 5: Employment Variables by Mental Disorder Cluster

		Total Sample	Mental Disorder Cluster					
			Mood	Anxiety	Substance	Schizophrenia	Organic	Other
Geographic Region	*Northeast*	*2151 100%*	*1133 52.7%*	*588 27.3%*	*330 15.3%*	*43 2.0%*	*28 1.3%*	*29 1.3%*
	South	*1696 100%*	*924 54.5%*	*401 23.6%*	*276 16.3%*	*29 1.7%*	*28 1.7%*	*38 2.2%*
	Midwest	*1289 100%*	*715 55.5%*	*365 28.3%*	*145 11.2%*	*30 2.3%*	*15 1.2%*	*19 1.5%*
	West	*899 100%*	*468 52.1%*	*306 34.0%*	*92 10.2%*	*12 1.3%*	*10 1.1%*	*11 1.2%*
Industry Type	*Goods*	*1565 100%*	*758 48.4%*	*405 25.9%*	*321 20.5%*	*35 2.2%*	*22 1.4%*	*25 1.5%*
	Govt.	*524 100%*	*281 53.6%*	*147 28.1%*	*72 13.7%*	*9 1.7%*	*7 1.3%*	*8 1.5%*
	Retail	*595 100%*	*296 49.7%*	*172 28.9%*	*96 16.1%*	*10 1.7%*	*9 1.4%*	*12 1.5%*
	Real Estate	*569 100%*	*309 54.3%*	*187 32.9%*	*46 8.1%*	*9 1.6%*	*7 1.2%*	*11 1.9%*
	Services	*2776 100%*	*1591 57.3%*	*749 27.0%*	*307 11.1%*	*51 1.8%*	*36 1.3%*	*42 1.5%*
TOTAL		*6035 100%*	*3240 53.7%*	*1660 27.5%*	*843 14.0%*	*114 1.9%*	*81 1.3%*	*97 1.6%*

IndustryType. Figure 3 shows the frequency of claims for mental disorder clusters across industry types. Although the relative ranking of the Mood, Anxiety, and Substance-related disorders remained consistent across industry categories, a chi-square analysis revealed that the variables of industry type and mental disorder cluster type were not independent, ($\chi^2(20, N = 6029) = 108.76$, $p<.001$). Phi revealed a relatively small, yet significant association (phi = .13, $p<.001$). Across industries, the services and government industries had relatively more claimants with mood disorders, the finance/real estate industry had relatively more claimants for anxiety and stress-related disorders, and the goods and retail industries led in substance-related claims.

FIGURE 3: Percentage Breakdown of Mental Disorder Clusters by Industry



PROGRESSION OF BENEFITS

Data from claimants receiving mental disability benefits were examined in light of the benefit type. In this section, we present our findings regarding the progression through mental disability benefits payment systems across the variables of age, gender, geographic region, industry type, and mental disorder subtype. Table 6 on the following page outlines these data.

Demographics. A one-way analysis of variance (ANOVA) revealed significant age differences between the disability benefit categories ($F(2,6032)= 23.61$, $p<.001$). Examining the ranges across categories, claimants receiving only STD benefits were youngest, with a mean age of 38.35 years. LTD claimants had a mean age of 39.53. SSDI claimants had a mean age of 41.85. A Levene analysis of equality of variance rejected the null hypothesis that the variances were equal across disability benefit types (Levene $(2,6032)= 4.61$, $p<.01$). Thus, we again used the Tamhane T2 post-hoc test to examine differences across clusters. This test revealed significant pairwise differences between each of the three groups.

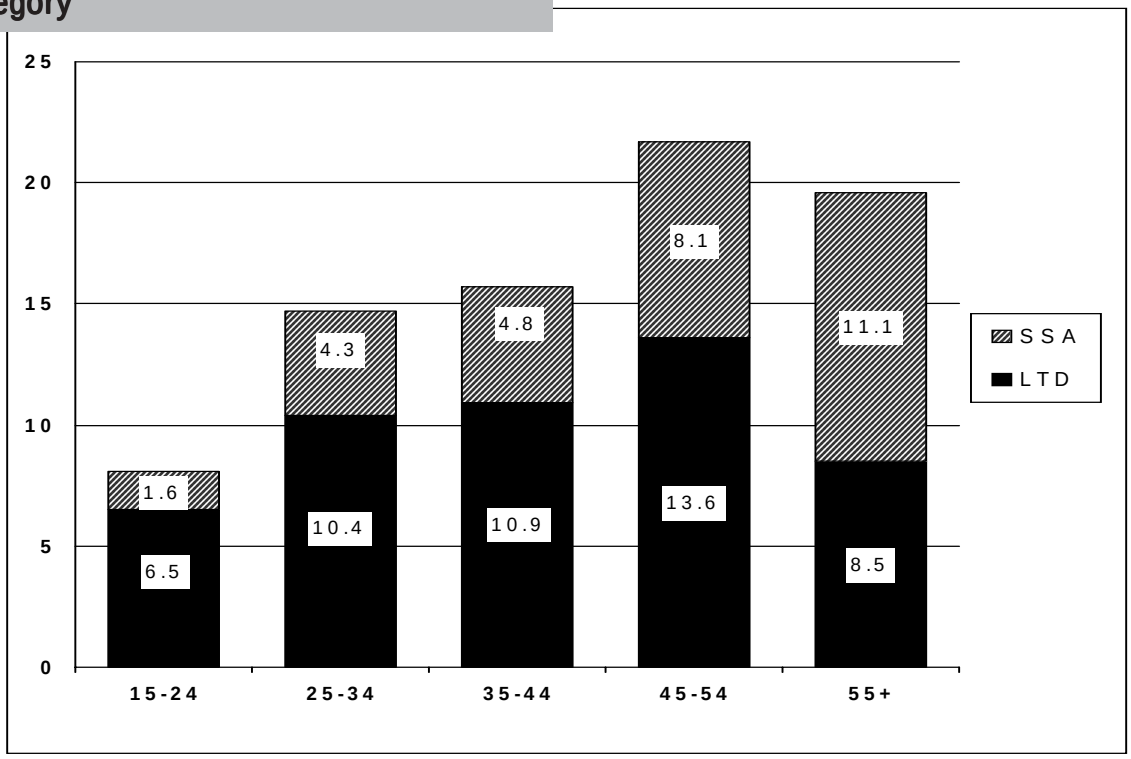
Table 6: Percent of Claimants Progressing through Disability Benefit Levels by Demographic, Geographic, Industry and Mental Disorder Cluster

		Benefit Level		
		STD	LTD	SS
Age	*15-24*	*91.9*	*6.5*	*1.6*
	25-34	*85.4*	*10.4*	*4.3*
	35-44	*84.3*	*10.9*	*4.8*
	45-54	*78.3*	*13.6*	*8.1*
	55+	*80.4*	*8.5*	*11.1*
Gender	*Male*	*86.4*	*9.3*	*4.3*
	Female	*82.1*	*11.6*	*6.2*
Geographic Region	*Northeast*	*84.7*	*9.9*	*5.5*
	South	*84.5*	*10.6*	*5.0*
	Midwest	*83.9*	*9.9*	*6.1*
	West	*78.4*	*15.1*	*6.5*
Industry Type	*Goods*	*90.0*	*6.5*	*3.5*
	Government	*75.6*	*18.3*	*6.1*
	Retail	*86.1*	*9.7*	*4.2*
	Real Estate	*80.1*	*11.2*	*8.6*
	Services	*81.5*	*12.1*	*6.4*
ICD-9 Category	*Mood/Affective*	*80.2*	*12.6*	*7.2*
	Anxiety/Neurotic and Stress-related	*84.6*	*11.3*	*4.1*
	Substance-related	*95.6*	*3.8*	*0.6*
	Schizophrenia/Paranoia	*78.1*	*10.5*	*11.4*
	Organic	*89.0*	*8.6*	*12.3*
	Other	*80.4*	*9.3*	*10.3*
	TOTAL	*83.5*	*10.9*	*5.6*

Figure 4 on the following page presents data regarding the percentage of claimants receiving advanced disability benefits across the five age categories. These data show that the range of those receiving advanced benefits (LTD or SSDI) progresses from a low of 8.1% of all mental disability claimants in the 15 to 24 age category to a high of 21.7% of mental disability claimants in the 45 to 54 age range. Overall, the percentage of mental disability claimants who receive advanced disability benefits progresses upward to the 45 to 54 age category, before dipping slightly to 19.6% in the 55 and over category.

A chi-square test of independence to assess the relationship between disability benefit category and gender revealed that these two variables were not independent ($\chi^2(2, N = 6016) = 18.27, p<.001$). Phi revealed a small, yet significant, association, (phi = .06, $p<.001$). Females with mental health claims were more likely to receive advanced benefits, with 17.8 % of claimants receiving advanced benefits, compared to 13.6% of male claimants.

FIGURE 4: Percent of Claimants Progression to Advanced Disability Benefits by Age Category



Geographic Region. A chi-square test of independence was used to assess the relationship between geographic region and disability benefit type revealed that these two variables were not independent, $\chi^2(6, N = 6035) = 24.72$, $p<.001$. Phi reveals a small, yet significant association, phi = .06, $p<.001$. The percentage of claimants progressing to advanced benefits ranges from a low of 15.4% of mental disability claimants in the North-east to a high of 21.6% of claimants in the West.

Industry Type. Examination of the relationship between industry type and disability benefit category revealed that these two variables were not independent ($\chi^2(8, N = 6029) = 100.91$, $p<.001$). Phi revealed a somewhat larger association, (phi = .13, $p<.001$). Figure 5 on the following page presents data regarding the percentage of claimants progressing to advanced disability benefits industries. The percentage of mental disability claimants receiving advanced benefits ranges from a low of 10.0% of claimants in the Goods category, which comprises such industries as agriculture, construction, and manufacturing, to a high of 24.4% in the Government services category, comprised of such industries as transportation, sanitation, electric, and gas service, and public administration.

Mental Disorder Clusters. A chi-square test revealed a relationship between mental disorder clusters and level of disability benefits ($\chi^2(10, N = 6035) = 144.32$, $p<.001$). Phi reveals a mild association, (phi = .16, $p<.001$). Claimants with schizophrenia or paranoid states, organic disorders or "Other" (personality disorder, mental retardation, eating disorders) appear the most likely to progress to advanced benefits on a percentage basis, although Mood/Affective disorders remain the most frequent in terms of raw numbers. Least likely to progress are those with Substance-related disorders. Individuals with anxiety/stres-related disorders, are also among the least likely to progress to more advanced disability claims categories. Figure 6 on the following page highlights this variability across mental clusters in regard to the categories of LTD and SSDI.

FIGURE 5: Percent of Claimants Receiving Advanced Disability Benefits by Industry Type

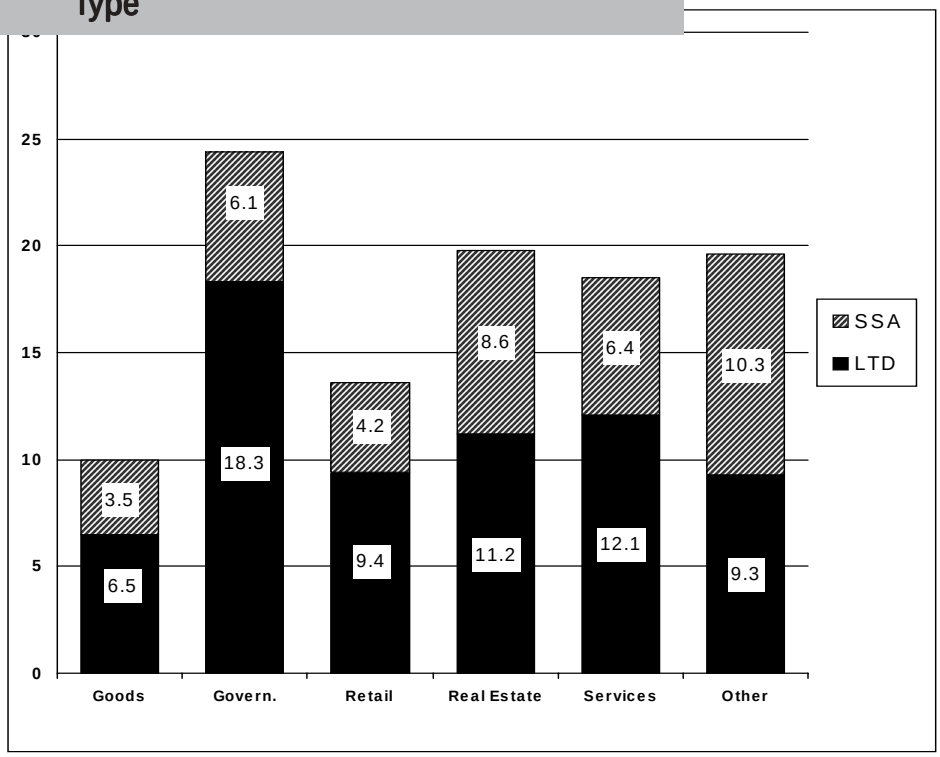
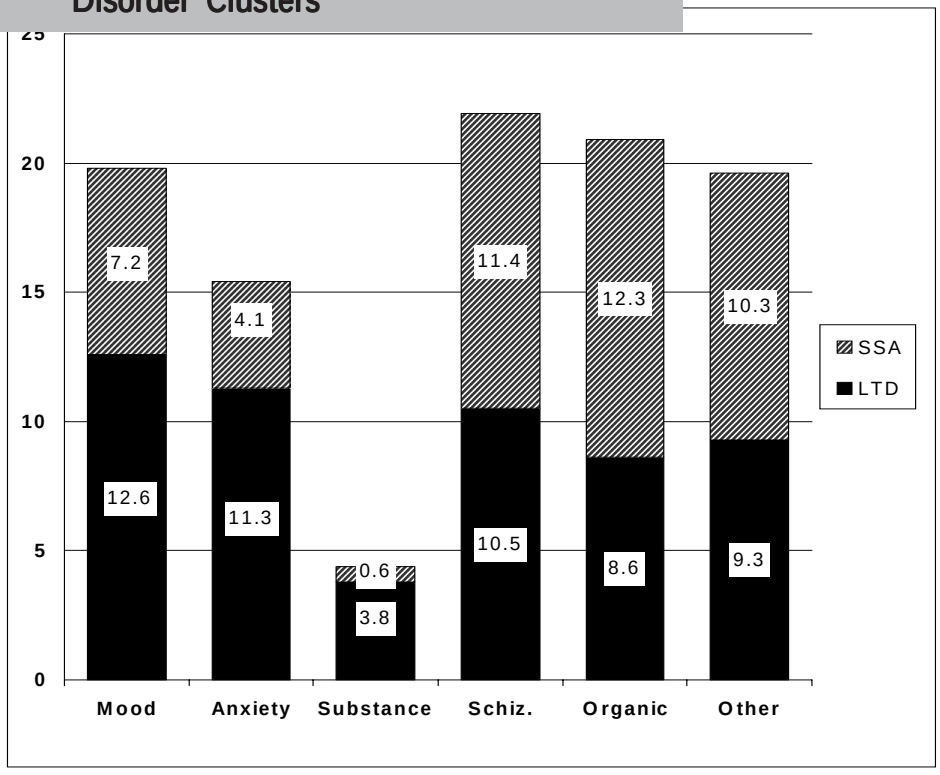


FIGURE 6: Percent of Claimants Progressing to Advanced Disability Benefits by Mental Disorder Clusters



Discussion

This study documented relationships among the variables of disability type (mental vs. physical), mental disorder category, age, gender, geographic area, industry and disability status. In the present study, mental disability claims represented approximately eight percent (8%) of overall disability claims. Claimants with mental disorders tended to be younger than those with physical disorders and were slightly more likely to be female. Each of these two findings is consistent with previous research (Rupp & Scott,1995; WBGH & NIMH, 1999; Department of Health and Human Services [DHHS], 1999). Mental disability claims were highest in the western region of the United States and in the government/transportation industry. Individuals with mental disorders were nearly 50% more likely to progress to advanced benefits than those with physical disorders.

The majority of mental disability claims were for mood disorders, primarily major depression, consistent with previous research (Pratt & Laura, 1999). Approximately one in four claims was based upon anxiety/stress-related disorders and approximately one in seven was based upon Substance-related disabilities. Claims based upon schizophrenia were in the one to two percent range, consistent with population estimates of this disorder (American Psychiatric Association, 1994). Previous research reports that individuals experiencing depression tend to be younger and are twice as likely to be female (WBGH & NIMH, 1999). In the current data set measuring age at initial STD claim, claimants with Mood disorders were only younger than those with anxiety or organic disorders, and nearly three out of four cases based on Mood disorders were filed by females. Substance-related disorders were found to disable workers earlier, with nearly 2.5 years less of productive work time.

The mood and anxiety disorder clusters were comprised predominantly of females. Substance-related disorders were predominantly male. These findings are consistent with previous research (Krohe, 1994). Schizophrenia was almost evenly split between males and females, also consistent with a considerable body of research on this disorder.

Perhaps the strongest finding in terms of the relationship between mental disorder type and industry type is related to the frequency of claims for substance-related disorders. In the goods industry, which is comprised of fields such as construction, manufacturing, and agriculture, one in five mental disability claims was based on a substance-related disorder. The stands in contrast to the finance, insurance, and real estate industries, from which fewer than one in ten claims were for Substance-related problems.

In regard to the PODB phenomenon, 16.5 percent of individuals with mental disability claims progress to advanced benefit status (LTD or SSDI). Females were somewhat more likely to progress than males (17.8 percent vs. 13.6 percent). Companies based in the western region of the United States reported substantially greater passage to advanced disability benefits (21.6 percent of all mental disability claimants) than the other regions (such as the Northeast with only 15.6 percent). The government services industries, including transportation, communications, public utilities, and public administration, advanced 24.4 percent of all mental disability claimants to LTD or SSDI benefits. The goods industry cluster, in contrast, had only 10 percent of all mental disability claimants progress to advanced benefit status. Examining the PODB in relation to mental disorder category, individuals with schizophrenia or paranoid states were most likely to progress to LTD (10.5 %) or SSDI (11.4%) status. Only 4.4% of individuals with Substance-related disorders progressed to either LTD or SSDI status (although it is important to note that the U.S. government removed Substance-related disorders from eligibility for SSDI benefits

during the data collection period for this study). Of individuals who received benefits based on the mood disorders, by far the most common basis of all mental disability claims, 19.8% advance to either LTD (12.6%) or SSDI (7.2%) status.

LIMITATIONS AND DIRECTIONS FOR FUTURE STUDIES

This study represents an initial attempt to explore the migration of workers with mental health claims through a system of economic disability benefits (i.e., STD, LTD, SSDI), and investigate variations in that movement across additional worker and employer variables (i.e., worker age, gender, mental disorder, region of residence, benefit status, and employer SIC code). The results of these analyses support the basic premise of this study that these factors influence the progression of disability benefits phenomenon. However, this study is clearly exploratory and results should be viewed as preliminary.

Several features of the data set may affect the generalizability of the findings. To minimize data variations due to claims handling, this data set included only claimants who were insured for both STD and LTD by UNUM. In 1991, only 44% of American workers were insured for STD, and 25% were insured for LTD (National Academy of Social Insurance, 1996). Therefore, this sample represents a minority of workers whose employers provided both forms of coverage purchased from the same insurer. In addition, it should be noted that private disability insurance typically has been more restrictive in the coverage of mental disorders versus physical disorders. Among the reasons, insurers feared coverage of these services would lead to high costs associated with long-term psychotherapy and extended hospital stays. Some insurers refused to cover mental health treatments; others limited benefits (Frank , McGuire, & Goldman, 1996). Furthermore, this data set had large variation among employers in their disability performance. Claimants represented 4,285 employers, yet largest 100 of these accounted for a full 54.2% of total claims. Also, most claimants in this sample work for large employers (500 or more workers). Clearly, additional studies should assess the work environment and how employer policies and practices relate to PODB for people who have mental health disabilities.

Furthermore, other employee benefit provisions and how they interact with the PODB experience ought to be analyzed. Current studies reveal that health plans that treat mental disorders similar to physical disorders, with managed but not strongly limited coverage, experience a reduction in total health care costs while returning an employee back to work sooner. A study conducted by John Hopkins on data from the UNUM Corporation found that employers who had low deductibles in their health benefit plan had one-fifth the rate of mental health disability claims compared to employers with higher deductibles; in addition, the rate of return-to-work was about 50 percent higher, and the duration of disability about one-third the length. When mental health carve-outs were

used (i.e., policy features that aim to facilitate access to specialty outpatient care while restricting inpatient care), the duration of disability was reduced by 38% (Salkever, Goldman, Purushothaman, & Shinogle, 2000). In addition, according to a Harvard study, employees without adequate mental health coverage skipped 1.5 to 3.2 more days of work per month than their covered co-workers (Kessler, Barber, Birnbaum, Frank, Greenberg, Rose, Simon, & Wang, 1999).

There are important implications of this study, both for employers and for more general public policy. Given the previously discussed rapid rise in mental health claims and their associated costs in the private sector, as well as the prevalence of mental health disorders as the foremost cause of disability for claimants in the Social Security system, better understanding of the progression through compensation systems for people with these disabilities is essential. Knowing which types of claims tend to become involved in the progression through compensation systems, and which demographic characteristics tend to be associated with such progression, we can hypothesize about the causes and design studies to examine the efficacy of targeted interventions.

For example, knowing that workers in the government services industries have nearly double the rate of mental health disability claims, compared to those in retail/wholesale or goods-producing industries, we might hypothesize that the government services jobs tend to involve greater levels of stress. We could then study the levels of stress actually experienced in those jobs, implement stress-management interventions, and examine whether such interventions change the patterns of claims for mental health disabilities. Even if workers are not claiming that the disability is work-related (keeping in mind that the subject population for this study did not include work-related injuries), employers may benefit substantially from minimizing mental health disability problems among their workers. One way of assessing the efficacy of interventions such as Employee Assistance Programs would be to compare the mental health PODB ratios for employers with and without such programs.

The United States Social Security Administration should also have a keen interest in the efficacy of interventions such as Employee Assistance Programs. If we can halt the progression through disability systems for people who have mental health disabilities, we can reduce the number of individuals pushed unnecessarily onto the Social Security roles. Currently, when individuals with mental health disabilities move into the Long Term Disability (LTD) system of private insurers, the insurers have considerable incentive to facilitate their claimants' application for Social Security benefits, to shift costs from the private insurer to the government. As a matter of public policy, it would seem prudent for the Social Security Administration to provide incentives for better management of mental health disabilities, to prevent their progression from short-term through long-term to frequently permanently disabled status within the Social Security System.

In conclusion, we believe that the results of this initial study have generated some useful findings regarding mental disorders and the phenomenon of PODB. This descriptive study primarily examined basic bivariate combinations, allowing for a basic understanding of the variables in isolation. A multivariate examination of these data would allow for a better understanding of the relative contribution of the variables to understanding and predicting the progression of disability benefits. Future studies should further analyze the progression of disability benefits among mental health claimants while accounting for additional worker and workplace factors that may influence the migration. Studying additional information regarding claimant occupation, employee benefit and compensation programs, and employer policy and practices related to disability, would allow us to more fully understand the PODB and its interaction with other employee and employer variables.

REFERENCES

American Psychiatric Association (APA). 1994. Diagnostic and Statistical Manual of Mental Disorders 4th ed. New York: American Psychiatric Association.

Butler, R.J., Gardner, B.D., & Gardner, H.H. (1998). More than cost-shifting: Moral hazard lowers productivity. *The Journal of Risk and Insurance*, 65(4), 671-688.

Daniels, S. M. & West, J. (1996). Return to Work for SSI and SSDI Beneficiaries: Employment Policy Changes. In Rupp, K. & Stapleton, D.C. (Eds.), *Growth in Disability Benefits*. Michigan: Upjohn Institute for Employment Research, 1-31.

Department of Health and Human Services. (1999). *Mental Health: A Report of the Surgeon General*. Washington, D.C.

Effective Program for Managing Mental Health Disabilities Can Spell Huge Savings for Businesses While Returning Employees to Work. (1999, May 18). *Business Wire*, p.

Frank, R.G., McGuire, T.G., & Goldman, H. (1996). *Buying in the public interest*. Washington, D.C.: Bazelon Center.

Gettlin, R.H. (1997). A renewed battle looms over mental health coverage. *Best's Review-Life-Health Insurance Edition*. (97) 9: pg.18.

Hunt, H.A., Habeck, R.V., Owens, P., & Vandergoot, D. (1996). Lessons from the private sector. In J. Mashaw, V. Reno, R.V. Burkhauser, & M. Berkowitz (Eds.), *Disability, work and cash benefits*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Kessler R.C., Barber C., Birnbaum H.G., Frank R.G., Greenberg P.E., Rose R.M., Simon G.E., Wang P. (1999). Depression in the workplace: effects on short-term disability. *Health Affairs*. 18(5):163-71.

McMahon, B.T., Danczyk-Hawley, C.E., Reid, C., Flynn, B.S., Habeck, R., Kregel, J., & Owens, P. (2000). The Progression of Disability Benefits. *Journal of Vocational Rehabilitation. 15*.

Mental Illness Costly to Companies.. (July, 1999). *Business and Management Practices*, p. 28.

Murray, C.L., & A.D. Lopez. (Eds.). 1996. *The global burden of disease. A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, MA: Harvard University.

NIDRR. (1999). *Chartbook on Work and Disability in the United States, 1998*. Washington, D.C.

Pratt, L. (1999). Making the disability connection. *Canadian Business and Current Affairs, 6, 27-33.* Maclean Hunter.

Psychiatric Disabilities Cost Employers $150 Billion Annually. (2000*). Financial Executive*, 16 (1): 12.

Rupp, K., & Scott, S.G. (1995) Trends in the Characteristics of DI and SSI Awardees and Duration of Program Participation. *Social Security Bulletin* 59(1):3-21.

Salkever, D.S., Goldman, H., Purushothaman, M., & Shinogle, J. (2000). Disability Management, Employee Health and Fringe Benefits, and Long-Term-Disability Claims for Mental Disorders: An Empirical Exploration. *Milbank Quarterly* 78(1): 79-113.

Schwartz, G. (May, 1984). Disability costs: The impending crisis. *Business and Health.*

Thesis, G.A. (1994). Considerations under capitated behavioral health care services. *Medical Interface,* 7(10), 123-129.

U.S. Social Security Administration. 2000. *Social Security Bulletin: Annual Statistical Supplement*. Washington, D.C.

Washington Business Group on Health, & National Institute of Mental Health. (1999). *Investing in Workplace Productivity: Innovations in Managing Indirect Mental Health Costs.* Washington, D.C.

Washington Business Group on Health, & Watson Wyatt. (1999). *Staying@Work-Increasing Shareholder Value Through Integrated Disability Management* (Third annual survey report). Washington, DC.

Winegar, N., & Bistline, J.L. (1994). *Marketing mental health services to managed care*. New York: Haworth.