

Relationship between treatment and period of absence among employees on sick leave due to mental disease

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Abstract: This study used health insurance claims data to examine the relationship between the length of sick leave and treatment administered to employees who received middle- to long-term accident and sickness benefits for ≥ 91 d due to mood disorders, anxiety, and dissociative, stress-related, somatoform and other nonpsychotic mental disorders. Employees who received psychotherapy had significantly shorter leaves of absence over one year compared to those that did not. Treatment with psychotropic drugs was significantly higher among those on leave for ≤ 365 d than those on leave for ≥ 366 d. Age, sex and hospital treatment were not significantly associated with length of sick leave. These results suggest that professional psychological treatment is associated with length of sick leave.

Key words: Sick leave, Mental health, Health insurance claims data, Professional psychological treatment, Return to work

Introduction

Time lost due to illness is an important economic and social issue. Black reported that around 175 million working days were lost due to sickness absenteeism in 2006, despite the state of health and employment in Britain being better than ever¹⁾. This is equivalent to seven days for each working person. In addition, around 7% of the working-age population is unemployed and receiving incapacity

benefits due to long-term health conditions or disabilities. While it is obvious that being healthy is important for maintaining the ability to work, evidence suggests that working has a positive impact on health: a review reported that work is beneficial for both physical and mental health and that the effect is much larger than the harmful effects of long-term unemployment or the absence of long-term illness²⁾.

Mental health diseases are an important cause of long-term sick leave. A multi-center occupational cohort study in Japan showed that mental illness was the most common reason for men aged 20–59 yr and women aged 20–49 yr to take sick leave for 30 d or more³⁾. Additionally, a cohort

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study in Sweden showed that more than 90 d of absenteeism due to psychiatric disorders affects all-cause and cause-specific mortality⁴). Previous studies have reported factors associated with return to work. Known measures that inhibit return to work are age, longer span of mental problems before taking a leave of absence, duration of sick leave, unrecognized efforts at work and negative work evaluation^{5, 6}). First-time sick leave due to mental health problems is a known factor for earlier return to work⁷).

Previous studies have reported the effectiveness of interventions for return to work from sick leave due to mental disease. A randomized clinical trial showed that collaboration between psychiatrists and occupational physicians has a positive effect on return to work⁸). Another randomized controlled trial showed that a systematic program for promoting treatment of depression improves clinical outcomes⁹). However, there is currently no study to have quantitatively clarified the effect of different treatments provided during sick leave.

The purpose of this study was to examine the relationship between length of sick leave and treatment administered to employees who received middle- to long-term accident and sickness benefits due to mood disorders, anxiety, and dissociative, stress-related, somatoform and other nonpsychotic mental disorders using health insurance claims data.

Subjects and Methods

Study design

This was a retrospective cohort study using the anonymized health insurance claims data provided by one health insurance society of a property insurance company group and data on accident and sickness benefits paid during the sick leave. Health insurance claims data contains such information as treatments performed and drugs used. Accident and sickness benefits data include such information as the diseases that caused the leave of absence and the duration of leave. This study was conducted with approval from the Institutional Review Board of the University of Occupational and Environmental Health, Japan.

Inclusion and exclusion criteria

We used health insurance claims data of approximately 110,000 employees from the 7 yr from FY 2008 to FY 2014 to evaluate the amount of medical resources invested during the leave period. We also used data of the 1,152 employees from the payment records of accident and sickness benefits for payments initiated after October 2008

and completed before September 2014. Of the employees who received accident and sickness benefits, 956 could be linked to both health insurance claims data and accident and sickness benefits data. Among these, employees who took sick leave due to mood disorders or neurotic, stress-related and somatoform disorders and whose leave was longer than 90 d were included in the study to limit the target population to high-risk employees⁴) (n=356). Of these, we included a total of 239 employees who did not retire at the completion of the payment period for accident and sickness benefits and excluded those who lost their eligibility for health insurance in the same month as that during which the payment period for accident and sickness benefits ended (n=117).

Period of receiving accident and sickness benefits and other covariates

We divided the subjects into two groups to evaluate the difference in medical care provided during the leave according to the payment period length for accident and sickness benefits: those receiving benefits for ≤ 365 d and those receiving benefits for ≥ 366 d. Given that sex and age are known to affect return to work⁵), we used sex and age data contained in accident and sickness benefits data for analysis. To examine the effect of treatment on the leave period, we used information on the presence/absence of psychotherapy, hospitalization, psychiatric hospitalization, and drug therapy contained in health insurance claims data. According to the Japanese medical insurance system, psychotherapy is defined as a treatment method in which psychiatrists continuously provide instructions and advice to improve a patient's interpersonal relationships and social adaptive capacity¹⁰). Psychotherapy was regarded as present if hospitalization, hospital visit, or psychotherapy at home was indicated in health insurance claims data. Hospitalization was regarded as present if a health insurance claim for hospitalization was issued regardless of the ward type. Psychiatric hospitalization was regarded as present if the basic charge for psychiatric hospitalization appeared in health insurance claims data. Drug administration was regarded as present if sedative-hypnotics, anxiolytics, or psychotropics were prescribed.

Statistical analyses

To examine the effect of treatments conducted during the leave period, multivariate logistic regression analysis was performed with the payment period length for accident and sickness benefits (≤ 365 or ≥ 366 d) as an outcome variable. Stata (ver.14) was used for statistical analysis.

Table 1. Characteristics of patients by period of receiving accident and sickness benefits

	Period of receiving benefits ≥ 91 d and ≤ 365 d (n=120)	Period of receiving benefits ≥ 366 d (n=119)	<i>P</i>
Sex, female, n (%)	58 (48)	68 (57)	0.17
Age, mean (SD)	37.9 (11.3)	39.2 (10.1)	0.33
Psychotherapy, n (%)	109 (91)	79 (66)	<0.01
Hospitalization, n (%)	9 (7.5)	6 (5.0)	0.44
Admission to psychiatric ward, n (%)	6 (5.0)	2 (1.7)	0.15
Non-administration of psychotropic drugs, n (%)	12 (10)	42 (35)	<0.01

SD: standard deviation.

Table 2. Odds ratios for receiving accident and sickness benefits for over one year (≥ 366 d) by logistic regression

	Univariate			Multivariate		
	OR	95%CI	<i>p</i>	OR	95%CI	<i>p</i>
Sex, female	1.43	0.85–2.37	0.17	1.57	0.89–2.75	0.12
Age	1.01	0.98–1.03	0.33	1.02	0.99–1.05	0.19
Psychotherapy	0.20	0.09–0.41	<0.001	0.37	0.15–0.92	0.033
Hospitalization	0.65	0.22–1.90	0.43	1.22	0.25–6.08	0.81
Admission to psychiatric ward	0.32	0.64–164	0.174	0.41	0.04–3.88	0.44
Non-administration of psychotropic drugs	4.91	2.42–9.93	<0.001	2.60	1.07–6.31	0.035

OR: odds ratio; CI: confidence interval.

Results

Table 1 shows the characteristics of employees on leave grouped according to the length of the payment period for accident and sickness benefits. There were significantly more employees who underwent psychotherapy in the group receiving benefits for ≤ 365 d compared to the group receiving benefits for ≥ 366 d. There were significantly more employees who were not administered psychotropic drugs in the group receiving benefits for ≥ 366 d compared to the group receiving benefits for ≤ 365 d.

Table 2 shows the odds ratios (ORs) of the associations between various factors and leave period. Multivariate analysis indicates the presence of a significant correlation between inpatient/outpatient psychotherapy and a shorter leave period (OR=0.37; 95%CI=0.15–0.92; $p=0.033$). There was also a significant correlation between the non-administration of psychotropic drugs and a longer leave period (OR=2.60; 95%CI=1.07–6.31; $p=0.035$).

Discussion

We examined the relationship between the length of sick leave and the type of treatment administered during the leave period. There were significantly more employees who received psychotherapy and psychotropic drugs

among those whose leave was ≥ 91 d and ≤ 365 d, compared to those on leave for ≥ 366 d.

The use of health insurance claims data provided this study with three key strengths. First, it enabled the confirmation of all medical interventions for which insurance was claimed. The health insurance claims data contained information on individual medical treatments and drugs, enabling detailed analysis. Although it was not possible to confirm the medical interventions provided to self-pay patients who did not use health insurance, these comprised very few cases¹¹⁾. Second, we conducted secondary use of insurance claims data, and did not need to collect new data. Health insurance claims data specifications are standardized throughout Japan, and can therefore be used for large-scale research. Third, to our knowledge, this is the first study to examine the effect of different medical treatments conducted during sick leave on the length of leave using insurance claims data.

We found that treatment with psychotherapy was correlated with a shorter period of leave. Several meta-analyses have indicated that psychotherapy contributes to a reduction in depressive symptoms^{12, 13)}. Another meta-analysis indicated that psychotherapy improves quality of life¹⁴⁾. Together, these findings suggest that professional psychological treatment may contribute to a shorter sick leave period.

We also found that the non-administration of psychotropic drugs was correlated with a longer leave period. Employees who were not administered psychotropic drugs during the benefit period accounted for approximately 10% of the ≥ 91 d and ≤ 365 d leave group and approximately 35% of the ≥ 366 d leave group. A cross-sectional study showed that medication adherence can affect the clinical outcome of patients with depression¹⁵. A randomized clinical trial showed that treatment initiation and a participation program can enhance clinical outcomes by improving medication adherence¹⁶. Our results suggest that appropriate administration of psychotropic drugs contributes to a shorter leave period.

We consider that our results from the health insurance claims data were comparable with those of these previous studies. Although we cannot categorically compare our findings because of differences in definitions, the non-administration rate was 23% overall, which is consistent with the non-adherence (medication was taken <25% of the prescribed time) rate of 23% in a previous prospective cohort study for patients with bipolar disorder¹⁷.

This study has some limitations. First, we used data from a single health insurance society. Because most insured persons of this health insurance society are service employees, this study may not apply to other types of business employees. Second, accident and sickness benefits are paid several months after the start of sick leave. Furthermore, since the time to the start of payment varies for each individual, the leave period may not be accurate. Third, we cannot rule out the potential effect of unadjusted factors. For example, previous research has reported that co-workers' understanding and the cause of leave can affect the leave period, but we did not adjust for such factors in this study⁵.

In summary, our findings suggest that inpatient/outpatient psychotherapy conducted during the payment period for accident and sickness benefits is correlated with a shorter leave period. We also found that the non-administration of psychotropic drugs is correlated with a longer leave period.

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