A survey of support systems for return to work in Japanese companies: a cross-sectional study

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Abstract: The present study aimed to survey systems in Japanese companies for supporting workers returning to work from sickness absence due to mental illness. A questionnaire survey was mailed to 3,545 companies. Support systems for return to work, sick leave, and multiple sick-listed (MSL) workers were examined. A total of 161 companies responded to the survey (response rate: 4.5%). About 80% of the companies expressed difficulty in dealing with workers with mental health problems. About half of all companies reported having reset period and financial compensation systems, as well as gradual resumption and trial attendance systems. Most large companies tended to have reset period and trial attendance systems. No association was found between company size and MSL rates. The most frequent diagnosis among workers was depression, and the mean number of sick leave days was 275.3. Although there might have been a selection bias due to the low response rate, the results of this study are expected to be useful for companies when formulating employment systems.

Key words: Depression, Employment regulation, Mental disorder, Recurrence, Return to work, Sick leave

Introduction

In a survey carried out by the World Health Organization, the lifetime incidence of some mental illnesses exceeds 10% in more than half of the countries surveyed1). In that survey, the incidence of mental illness was highest in the United States, at 26.4%1). In recent years, dealing with long-term absence from work due to a mental disorder has become a major issue in industrial hygiene. Many workers take sick leave due to mental health problems such as adjustment disorder and depression. Studies of workers suffering from depression report that the mean duration of sick leave is from 3 to 6 months2, 3). In Japan, the annual economic profits that would be gained from the elimination of depression and suicide (in other words, the social cost of depression and suicide) in 2009 were estimated at approximately 2.7 trillion yen4). In Sweden, the economic burden of mental illness is estimated at 9.4 billion euros annually5). In the United States, the economic burden grew from $77.4 to $83.1 billion over the decade of 1990 – 2000; 62% of this burden was workplace costs6). In addition to the burden placed on individuals, the effects of mental illness also cause tremendous damage to the economy. Mental disorders that cause people to take leave from work such as depression and adjustment disorder also have a high rate of relapse. The recurrence rate for depression is reported to be 25% after 1 year and 75% after 10 years, and some 25% of depressive cases become chronic7). In the workplace, after a worker has taken time off due to depression, repeated absences occur in 45% of all cases8). Stud-
ies to date have stated that the recurrence rate is associated with sex, age, and duration of previous sick leaves\(^9,^{10}\). It is also said that workers with a higher socioeconomic position are associated with a lower onset of work disability and lower rates of recurrence\(^11\). In addition, companies that have more than 100 employees and frequent conflicts between supervisors and workers are predictive factors of recurrent sickness absence\(^12\). Numerous factors appear to effect sick leave and recurrence due to mental illness.

Therefore, to allow workers to return to work with a minimal psychological burden and anxiety-free, it is extremely important to improve employment regulations. A number of studies of employment regulations have been conducted\(^13,^{14}\), as has a survey of the effects of corporate culture on sick leave\(^15\). However, few studies have sought to clarify the relationship between employment regulations and mental illness. The guidelines published by the Japanese Ministry of Health, Labour and Welfare (Guidelines on Support for Return to Work of Workers Who Have Taken Time Off Due to Mental Health Problems), hereinafter referred to as “Guidelines”) note the importance of trial attendance and consideration regarding the work assigned after a return to the workplace. However, the effectiveness of these measures has not been investigated\(^16\). It is expected that the various systems of support for return to the workplace and the financial compensation systems laid out in the employment regulations are effective in helping workers return to the workplace.

However, while companies take steps to address mental health according to their own employment regulations, it is unclear what kinds of systems actually provide effective support to workers. In this respect, investigating the types of employment regulations that companies should formulate in order to effectively contribute to the mental health of their workers would be extremely useful.

This study therefore focuses on workers’ long-term sick leave and repeated absences as evaluative indices of support systems for return to work. The present survey of Japanese companies was carried out to investigate support systems for return to work, duration of sick leave, and repeated absences. In the present study, long-term sick leave was defined as sickness absence for 30 days or more, and workers with repeated absences were defined as multiple sick-listed (MSL).

**Subjects and Methods**

**Target**

The survey targeted staff members in charge of personnel/labor affairs at 3,545 companies, all but one of which was listed on the Japanese stock exchange as of 2012, and at the Bank of Japan.

**Survey methods**

Questionnaire surveys regarding employment regulations and persons suffering from mental illness were sent and collected by postal mail to staff members in charge of personnel/labor affairs at 3,545 companies. The questionnaires were composed of items regarding the number of employees, the number of employees who had had long-term absences (30 days or more) from work (leave, sick leave, etc.) due to mental health problems as of January 1, 2013, whether company staff had ever felt difficulty in dealing with employees with mental problems, whether occupational health specialists such as occupational physicians, nurses, and psychologists were engaged in mental health problems, the start date of the absence for each sick-listed worker, the name of the illness given on the medical certificate for each sick-listed worker, the number of absent employees for whom this was a repeat absence, and details of the system for return to work (see supplementary file). Most, but not all, of the diagnoses on medical certificates were classified mainly based on the Diagnostic and Statistical Manual of Mental Disorders—IV—Text Revision (DSM-IV-TR) by the authors. We surveyed the number of sick leave days for each worker, but individual data for characteristics such as age, sex, education, job category, and working hours could not be obtained.

Items regarding the details of the system for return to work were drawn up with reference to the guidelines published by the Japanese Ministry of Health, Labour and Welfare\(^16\). The items in the guidelines related to employment systems include the following three systems:

1. **Financial compensation from workplace other than disability benefits received from the government** (financial compensation system).
2. **A system of trial attendance at the workplace during the period of absence in order to judge the suitability of returning to work prior to the actual return** (trial attendance system).
3. **A system for the gradual resumption of work with shorter working hours and consideration given to the type of work** (gradual resumption system).

On this basis, the present survey included questions regarding whether financial compensation, trial attendance, and gradual resumption systems were in place, and if so, the period of each of these systems. In Japan, all employers are obligated to guarantee workers’ employment for some
duration of their sick leave. Moreover, the number of days of sick leave is usually limited in the employment regulations of Japanese companies, even though some companies have introduced a system in which sick leave entitlement is reset if a worker works consecutively for a fixed period after taking time off due to illness (reset period system). Therefore, a question was included concerning whether the company had a reset period system, and if so, how long it had been in place. Many companies have the above systems in place as systems related to the recurrence of mental illness17).

Differences in the leave system are evident between large companies and small to medium-sized enterprises, depending on the size of the company18, 19). For the purposes of this study, we defined company by size as follows: small companies, 1 – 299 employees; medium companies, 300 – 999 employees; and large companies, 1,000 employees or more.

For statistical analysis, Pearson’s chi-square test was employed to assess the relationships between company size, presence of regulations for return to work, and MSL.

Ethical considerations

The objective of this study and the use and management of data were explained in writing, and return of the completed questionnaire signified consent to participate. Anonymity was maintained by providing self-addressed return envelopes that did not show the name of the company, so that no questionnaire could be linked to a particular company. This study was approved by the ethics committee of the University of Tsukuba (no. 691).

Results

Responses were received from 161 companies (response rate: 4.5%). Among these companies, 84 were classified as small, 46 as medium, 24 as large, and seven as unknown. A total of 129 companies (80.1%) reported experiencing difficulty in dealing with workers with mental health problems. Occupational health specialists were engaged in dealing with mental health problems in only 106 companies (65.8%). The characteristics of the participating companies are shown in Table 1. About half of the companies had reset and financial compensation systems. About 30% of companies had a trial attendance system, and about 40% had a gradual resumption system. The number of regulations for return to work according to company size is shown in Table 2. Large companies had significantly higher rates of reset and trial attendance systems ($p=0.031$ and $p<0.001$, respectively). Among the companies responding to the survey, a total number of 292 sick-listed workers were reported. The numbers of workers with their first episode of sick leave and classified as MSL are shown in Table 3. No significant differences were seen in the rates of first episode sick leave and MSL based on company size. When missing data were excluded, the number of sick leave days due to mental problems and their corresponding diagnoses were obtained from 177 workers (Table 4). The most common illness on medical certificates was depressive disorder/depressive symptoms (mean number of sick leave days: 275.3). Diagnoses with the longest duration of sick leave were neurosis and schizophrenia (mean number of sick leave days: 422.8 and 421.8, respectively).

Discussion

The main findings of the present study were that about half of the companies surveyed had reset and financial compensation systems, as well as gradual resumption and trial attendance systems. In terms of the relationship between these systems and company size, most large com-
The investigation was carried out in relation to employment regulations, and did not report finding any associations with mental illness. In 2007, a health impact assessment was carried out on the introduction of the “white-collar exemption,” a new system concerning autonomous working hours. That Japanese study referred to dissatisfaction, fatigue, and psychological stress due to long working hours, irregular working patterns, and shift work, and reported finding an association between some employment systems and either mental illness or symptoms regarded as the initial stages of mental illness. In other countries as well, many studies have reported associations between employment systems such as long working hours or shift work and depression or insomnia; however, few studies have reported a relationship between systems for return to work and mental illness. One report by Tsuchiya et al. showed that absence from work, employee attrition, relapse, and return to work among employees with mental health problems are associated with corporate health management systems. Although that study mentioned the number of people absent from work and the presence of health management systems, it did not examine the number of days absent from work or the duration of those systems.

The results of the present study demonstrated that large companies tended to have reset period systems. This suggests that workers with mental problems in large companies can continue working more easily than workers in small companies. This seems to be the risk associated with MSL. However, no relationship was observed between company size and MSL. Other risk factors might be related to MSL, but in this study, further analysis cannot be conducted due to the lack of detailed data on workers. The recurrence rate for depression is reported to be 25% after 1 year and 75% after 10 years, and although other diagnoses were included in the present study, the MSL rate was 25.7%. Many employees might resign from their company due to mental problems. No association was found between the MSL rate and company size in the present study, but the results from a study in the Netherlands suggested that large companies (more than 100 workers) were

Table 2. Number of regulations for return to work according to company size

<table>
<thead>
<tr>
<th>Company size</th>
<th>Reset period (n=150)</th>
<th>Financial compensation (n=151)</th>
<th>Trial attendance (n=154)</th>
<th>Gradual resumption (n=154)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>present</td>
<td>absent</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td>Small (1–299)</td>
<td>34 (41.5)</td>
<td>48 (58.5)</td>
<td>38 (45.8)</td>
<td>45 (54.2)</td>
</tr>
<tr>
<td>Medium (300–999)</td>
<td>24 (54.5)</td>
<td>20 (45.5)</td>
<td>25 (54.3)</td>
<td>21 (45.7)</td>
</tr>
<tr>
<td>Large (≥ 1,000)</td>
<td>17 (70.8)</td>
<td>7 (29.2)</td>
<td>16 (72.7)</td>
<td>6 (27.3)</td>
</tr>
<tr>
<td>Total (n=146)</td>
<td>217 (74.3)</td>
<td>75 (25.7)</td>
<td>292</td>
<td></td>
</tr>
</tbody>
</table>

MSL, multiple sick-listed; Pearson Chi-Square, p = 0.884.

Table 3. Workers with their first episode of sick leave and classified as MSL

<table>
<thead>
<tr>
<th>Company size</th>
<th>Number of sick-listed workers (n=292)</th>
<th>First episode</th>
<th>MSL</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>present</td>
<td>absent</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td>Small (1–299) (n=80)</td>
<td>31 (77.5)</td>
<td>9 (22.5)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Medium (300–999) (n=45)</td>
<td>70 (73.7)</td>
<td>25 (26.3)</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Large (≥ 1,000) (n=21)</td>
<td>116 (73.9)</td>
<td>41 (26.1)</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>Total (n=146)</td>
<td>217 (74.3)</td>
<td>75 (25.7)</td>
<td>292</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Disease name on medical certificate and sick leave days

<table>
<thead>
<tr>
<th>Disease name on medical certificate</th>
<th>n (%)</th>
<th>Sick leave days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia</td>
<td>6 (3.4)</td>
<td>421.8 (388.1)</td>
</tr>
<tr>
<td>Depressive disorder/depressive symptoms</td>
<td>126 (71.2)</td>
<td>275.3 (235.3)</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>3 (1.7)</td>
<td>386.3 (502.7)</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>8 (4.5)</td>
<td>309.0 (224.9)</td>
</tr>
<tr>
<td>Neurosis</td>
<td>4 (2.2)</td>
<td>422.8 (195.8)</td>
</tr>
<tr>
<td>Somatoform disorder</td>
<td>3 (1.7)</td>
<td>140.7 (144.1)</td>
</tr>
<tr>
<td>Adjustment disorder</td>
<td>15 (8.5)</td>
<td>354.4 (319.7)</td>
</tr>
<tr>
<td>Autonomic dysregulation</td>
<td>9 (5.1)</td>
<td>250.3 (228.9)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (1.7)</td>
<td>177.7 (25.5)</td>
</tr>
<tr>
<td>Total</td>
<td>177 (100)</td>
<td>288.5 (249.5)</td>
</tr>
</tbody>
</table>

All medical certificates were issued by a doctor; SD, standard deviation.

The other hand, company size was not significantly related to repeated absence. The reason of major sick-listed workers was depression, and the mean sick leave days was 275.3 days. However, a major limitation of this study was the low response rate (4.5%), which increases the possibility that there might have been a selection bias and makes the interpretation of the results difficult.

In a previous study carried out in Japan, 351 occupational physicians were surveyed with regard to whether companies had stipulations for sick leave and financial compensation or trial attendance periods, as well as employee decisions to return to work. That factual investigation was carried out in relation to employment regulations, and did not report finding any associations with mental illness.
a predictive factor of recurrent sickness absence\textsuperscript{12}). Possible reasons for these varied results could include cultural differences between the Netherlands and Japan, as well as differences in the definition of recurrence.

The prevalence of mental illness is reported to increase during recessions\textsuperscript{26}, suggesting that financial compensation is important for the mental health of workers. However, only half of the companies in this survey had financial compensation systems. Although Japan has a statutory 18-month financial compensation system, the financial coverage only accounts for two-thirds of the salary. It is therefore important for compensation systems to cover more than two-thirds of the salaries of workers with mental health problems.

**Strengths and Limitations**

This study surveyed regulations for return to work among various sizes of companies, particularly the durations of such systems. Companies formulating systems for employees returning to work are expected to be able to utilize these results as reference for workers who have been absent due to mental illness.

However, at the same time, the response rate was low, at 4.5%, and therefore the responses cannot be regarded as representative of companies in general. Response rates of 5.2% and 13.6% were reported in previous studies in which companies were surveyed by mail\textsuperscript{18, 19}. The lower response rate seen in the present study was likely because this survey was more detailed than those used in previous studies. In addition, our survey included questions that asked specifically about the number of absences and MSL workers. Furthermore, the response rate among companies with more than 1,000 workers was about 20%, although only about 15% of the companies we analyzed had over 1,000 workers. In addition, an analysis of individual illnesses would be beneficial, as duration of illness and recurrence rates are known to differ depending on the illness; however, the number of participants in this study was too small to allow such an analysis.

In addition, the numbers of workers who resigned after sickness absences due to mental illness, suicide, and transfer to another company have been underestimated. Furthermore, because only one diagnosis is typically written on a medical certificate, the possibility of comorbidities cannot be excluded. The possibility of a reporting bias should also be considered, in that some companies might be reluctant to publicly report sickness absence. A survey in which every worker is given a medical examination would be ideal, but carrying out a survey of that nature is unrealistic. A future task will be to examine the effectiveness of a survey that targets occupational physicians who examine workers firsthand.

**Conclusion**

This study described the number of regulations for return to work, diagnoses, and duration of sick leave in various sizes of Japanese companies. The presence of these systems tended to depend on company size. In addition, 25% of workers surveyed repeated sickness absence due to mental problems. The results of this study are expected to be useful for companies when formulating employment systems.

**Acknowledgement**

The authors wish to thank the staff of all the companies that participated in this survey.

**Disclosure of funding**

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**Conflict of interest**

The authors declare that they have no competing interests.

**References**


Supplementary: Questionnaire

A. Please tell us about your workplace.

Q1. Please indicate the number of employees (full-time) at your workplace and the number of those eligible for routine medical checkups.

- Number of full-time employees (    )
- Number of people eligible for routine medical checkups (    )

Q2. Please indicate the industrial sector to which your company belongs. Circle one of the choices listed below.

1. Agriculture, Forestry and Fisheries  
2. Mining  
3. Construction  
4. Food  
5. Textile Products  
6. Pulp and Paper  
7. Chemicals  
8. Pharmaceuticals  
9. Petroleum and Coal Products  
10. Rubber Products  
11. Glass and Ceramic Products  
12. Iron and Steel  
13. Non-Ferrous Metals  
14. Metal Products  
15. Machinery  
16. Electronics  
17. Transport Equipment  
18. Precision Machinery  
19. Other Products  
20. Electricity and Gas  
21. Land Transportation  
22. Shipping  
23. Aviation  
24. Warehouse and Transport  
25. Information and Telecommunication  
26. Wholesale  
27. Retail  
28. Banking  
29. Securities and Commodity Futures Trading  
30. Insurance  
31. Other Financial Services  
32. Real Estate  
33. Service  

B. Please tell us about the current status of your employees on leave of absence.

Q1. Have you ever encountered any difficult situations in dealing with employees with mental health issues?

1. Yes  
2. No  

Q2. Are any of your employees that specialize in occupational health, such as occupational physicians, health nurses, registered nurses, and clinical psychotherapists, involved in supporting employees with mental health issues who are on leave of absence or have returned to work?

1. Yes  
2. No  

Q3-1. Please indicate the number of employees who were on leave of absence due to mental health issues for 30 consecutive days or more (leave of absence, sick leave, annual paid holiday, etc.) as of January 1, 2013.

- Number of employees on leave of absence (    )
- Average days of absence as of January 1 mean (    ) days

* If it is difficult to provide an answer in the above format, please indicate the corresponding periods individually. Upon availability, please record the diagnosis as stated on the medical certificate.

<table>
<thead>
<tr>
<th>Leave Start Date</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eg 03/27/2012</td>
<td>Depressive state</td>
</tr>
<tr>
<td>1(Month/Day/Year)</td>
<td></td>
</tr>
<tr>
<td>2(Month/Day/Year)</td>
<td></td>
</tr>
<tr>
<td>3(Month/Day/Year)</td>
<td></td>
</tr>
</tbody>
</table>

Q3-2. Of the employees on leave in Q3-1, please indicate the number who had taken two or more absence periods of 30 consecutive days or more. (    ) employee(s)

Q4. Of the employees who were on leave for 30 consecutive days or more due to mental health issues (leave of absence, sick leave, annual paid holiday, etc.), please indicate the number who returned to work during the last fiscal year (between April 1, 2011 and March 31, 2012) and their mean duration of absence.

- Number of employees who returned to work (    )
- Mean duration of absence mean (    ) days

* If it is difficult to provide an answer in the above format, please indicate the corresponding periods individually. Upon availability, please record the diagnosis as stated on the medical certificate.

<table>
<thead>
<tr>
<th>Leave Start Date</th>
<th>Leave Return Date</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eg 07/02/2006</td>
<td>09/18/2012</td>
<td>Autonomic Imbalance</td>
</tr>
<tr>
<td>Eg 04/07/2011</td>
<td>07/25/2011</td>
<td>Depression</td>
</tr>
<tr>
<td>1 Month/Day/Year</td>
<td>Month/Day/Year</td>
<td></td>
</tr>
<tr>
<td>2 Month/Day/Year</td>
<td>Month/Day/Year</td>
<td></td>
</tr>
<tr>
<td>3 Month/Day/Year</td>
<td>Month/Day/Year</td>
<td></td>
</tr>
</tbody>
</table>

*
C. Please tell us about the leave of absence policy of your full-time employees.

Q1. There is an employment security policy (sick leave, rest and recuperation leave, etc.) for non-work related sicknesses or injuries.
   1. Yes (→ Go to Q2) 2. No (→ Go to Q3)

Q2. If you responded “Yes” to Q1, please answer the following questions.
   What is the coverage period of the employment security policy (sick leave, rest and recuperation leave, etc.)?
   1. Standardized period unrelated to years of employment (____) years (____) months
   2. Based on years of employment
      (Minimum ____ years ____ months, Maximum ____ years ____ months)
   3. Dependent on the type of illness
   4. Dependent on both the number of years of employment and type of illness
   5. Other (____________________)

Q3. Is the employment security coverage period (sick leave, rest and recuperation leave, etc.) accumulated if an employee who returned to work is on leave again due to the same sickness or injury?
   1. Continually accumulated
   2. Accumulated once it exceeds a fixed period (*)
      (____) months and (____) days
   3. No

   * Eg) When the fixed period is 5 days

   In the above case, the leave of absence period was calculated as 10 days.

Q4. Is there a reset period (accumulated days is reset to zero) for the employment security coverage period (sick leave, rest and recuperation leave, etc.)?
   1. Yes (*)
      (____) months (____) days
   2. No

   * Eg) When the reset period is 20 days

Q5. Other than disability benefits received from the government, is there a period of time where some type of financial compensation (financial benefits from health insurance, the company, and mutual aid associations) is paid during a leave of absence?
   1. Yes
      Maximum period (____ years and _____ months)
   2. No

Q6. Is there a system in place where employees can engage in rehabilitation or conduct rehabilitation training at the workplace while on leave of absence status?
   1. Yes, there is. (→ Go to Q7) 2. No, there isn’t. (→ Go to Q8)

Q7. If you responded “1. Yes, there is.” to Q6, please answer the following questions.
   In that case, what is the maximum allowed length of time?
   1. _____ years _____ months _____ days

Q8. Upon termination of the leave of absence, is there a staged return to work system in which employees are allowed to gradually return to work, such as working half days?
   1. Yes, there is. (→ Go to Q9) 2. No, there isn’t. (→ Go to Q10)

Q9. If you responded “1. Yes, there is.” to Q8, please answer the following questions.
   In that case, what is the maximum allowed length of time?
   1. _____ years _____ months _____ days

Q10. If you responded “2. No.” to Q6, please answer the following questions.
   In that case, what is the maximum allowed length of time?
   1. _____ years _____ months _____ days
Q10. Is there a follow-up system in place for employees who return to work?
   1. The occupational physician, health nurse, registered nurse, or clinical psychotherapist conducts consultation sessions.
   2. A staff member of the Human Resource Department conducts consultation sessions.
   3. There are no established follow-up procedures.
   4. Other
      ( )