

FIELD STUDY

Links between organizational preparedness and employee action to seek support among a Japanese working population with chronic diseases

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Abstract

Objectives: This study examined the association between workplace rules and training programs regarding combining employees' work and treatment for chronic diseases, and actions actually taken by employees to manage this issue. These workplace measures (rules and training programs) are consistent with the Japanese Guideline for Workplace Patient Coordination and Disease Treatment.

Methods: In February 2018, we conducted an online, cross-sectional survey of 1134 employed individuals with chronic diseases who needed workplace support to combine work and disease treatment. All participants were aged 18–65 years and lived in Japan. We investigated associations between workplace rules and training programs (two items) and employee actions (eight items), using a questionnaire based on the guideline and logistic regression analysis.

Results: In total, 76.5% of the participants said they had reported their chronic disease to their employer (manager, personnel department, or occupational physician). However, less than half (47.5%) had submitted a written report about their job to their doctor. Employees were more likely to take action in workplaces that had rules or training programs than in workplaces without such measures. More actions were taken among employees in workplaces with both rules and training programs than in those with either measure alone.

Conclusion: It is important to establish rules to support employees with chronic diseases and provide training to improve awareness of these rules to encourage employees with chronic diseases to take action to access the support they need.

KEYWORDS

chronic disease, employee retention, organizational factor, work participation

1 | INTRODUCTION

A growing concern in the field of occupational medicine is the ability to work among people with chronic and intractable

diseases (eg, cancer).¹ Advances in diagnostic techniques and treatment methods in recent years have greatly improved the quality of life among people with chronic diseases. Survival rates have increased for diseases once considered

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“untreatable,” and many of these diseases are now viewed as chronic, long-term conditions.¹ At the same time, the age of the workforce is increasing because of general population aging and the increasing retirement age in developed countries.² The prevalence of chronic diseases increases with age, meaning an increasing proportion of people in the working population are affected by chronic diseases.^{3,4}

A significant proportion of people with chronic diseases experience physical, emotional, and social problems (eg, fatigue, pain, cognitive deficits, anxiety, and depression), all of which may become chronic.⁵⁻⁷ The long-term medical and psychological effects of chronic diseases or their treatment may also cause impairments that diminish physical and emotional employability.^{8,9} However, employment is associated with a higher quality of life.¹⁰ Encouraging people with chronic diseases to combine work and disease treatment also benefits aging societies economically. Workplace interventions to enable people with chronic diseases to combine work and treatment are therefore an important factor in improving their ability to continue working.¹¹⁻¹⁵

A number of Western countries have adopted policies to improve employment opportunities for people with chronic diseases.¹⁶ The Japanese government has recently promoted “work style reforms.” These reforms include: the introduction of the first-ever legal cap on overtime hours; rules to establish the “equal work, equal pay” principle by improving working conditions for people with irregular job status; and a new system that allows some corporate employees to be paid based on their performance rather than hours spent in the workplace. Improvement of employment support for people with chronic diseases is also part of the package of work-style reforms.¹⁷

In 2016, the Japanese Ministry of Health, Labour and Welfare launched the “Guideline for Workplace Patient Coordination and Disease Treatment.”¹⁸ This guideline aimed to prevent employees with chronic diseases from worsening their condition by work. The guideline states that employees need to take the first step to combine their work and disease treatment; for example, by “report[ing] to the workplace (eg, manager, personnel department, occupational physician) about the illness” and “ask[ing] the workplace for support to combine work and disease treatment (to continue the job while undergoing disease treatment).” Moreover, the guideline recommends that workplaces create rules and training programs to shape the organizational climate and promote coordination of work and disease treatment for employees with chronic diseases. These measures are considered a key part of organizational preparedness.

To promote the process of workplace patient coordination and disease treatment, the guideline recommends that employers establish rules on how to support (or employ) workers with chronic diseases, and provide training programs to increase awareness of these rules among

employees and supervisors.¹⁸ Promotion of the process, rules, and training programs should be an important part of occupational health practice to prevent avoidable retirement because of chronic diseases.¹⁸ Previous studies reported that return to work is influenced by personal factors¹⁹ (eg, age, education, gender, and personal predictions about ability to return-to-work)²⁰ and work-related factors (eg, heavy manual work²¹ and perceived control over work situations¹⁹). However, little attention has been paid to organizational factors such as preparedness. This study aimed to examine the associations between organizational preparedness and employees’ actions in practice. Organizational preparedness was defined as the presence of rules and training programs about workplace patient coordination and disease treatment in the workplace.

2 | SUBJECTS AND METHODS

2.1 | Participants and survey method

A cross-sectional online survey was conducted in February 2018 with participants registered with a Japanese web survey company. The Japanese web survey company regularly collects information about chronic diseases from registrants. These chronic diseases included: acquired immune deficiency syndrome, Alzheimer's-type dementia, aplastic anemia, bipolar disorder, cancer, cerebral hemorrhage, cerebral infarction, cerebrovascular dementia, chronic renal failure, Crohn's disease, depression, fibromyalgia, hemophilia, Lewy body dementia, myasthenia gravis, myelodysplastic syndrome, myelofibrosis, metabolic endocrine disease, mixed connective tissue disease, multiple sclerosis, Parkinson's disease, rheumatoid arthritis, schizophrenia, subarachnoid hemorrhage, systemic lupus erythematosus, and ulcerative colitis. In total, 89,874 people with chronic diseases aged 18-65 years were randomly invited to participate in a screening survey for the present study. Participants who answered “yes” to three screening questions were invited to complete the survey: “Are you currently suffering from any diseases or disorders that are not curable over a short period and require repetitive/continuous treatment (eg, cancer, stroke, cardiac disease, diabetes, hepatitis, connective tissue disease, intractable neurological disease)?”; “Are you currently working?”; and “Do you currently need some support from the company you work for in order to continue your job while undergoing appropriate medical treatment?” A small financial incentive was offered for responding to the survey (equivalent to a few US dollars). The web survey company invited randomly selected registrants to complete the survey, and ceased recruitment when the total number of participants reached the target, which was set at 1100 for financial reasons. The sex ratio was 1:1.

2.2 | Employees' actions to combine work and disease treatment in the workplace (action)

Action was determined by participants' responses to eight questions (translated from Japanese): "Item 1. Did you report to the company (your manager, personnel department, occupational physician, etc) about your illness?"; "Item 2. Did you ask the company for support to combine your work and disease treatment (to continue the job while undergoing medical treatment)?"; "Item 3. Did you ask your doctor's opinion about continuing your work?"; "Item 4. When you asked your doctor, did you submit a written report on your job?"; "Item 5. Did you submit the doctor's report to the company?"; "Item 6. Do you consult or review your work with the company based on the doctor's report, in order to combine your work and disease treatment?"; "Item 7. Do you receive any support to combine your work and medical treatment based on the doctor's report?"; and "Item 8. Can you regularly talk with the company about the support you receive to combine your work and disease treatment?" These measures were developed based on actions listed in the workplace support process in the Guideline for Workplace Patient Coordination and Disease Treatment.¹⁸ For example, the guideline indicates employees should report their illness to the workplace (eg, manager, personnel department, occupational physician) and ask for workplace support to combine work and disease treatment. Participants were asked to respond to each question with "yes" or "no." All participants were required to answer Items 1-3 and 8. If participants answered "yes" to Item 3, they were asked to answer items 4-7 ($n = 518$).

2.3 | Workplace rules and training programs (rules and training program)

The presence of rules and training programs were determined by participants' responses to two questions: "In your workplace, are there any rules and/or basic policies to provide concrete support for combining work and disease treatment?" and "In your workplace, is knowledge about combining work and disease treatment provided through in-company training programs or on other occasions?" These questions were designed to reflect the recommendations of the Guideline for Workplace Patient Coordination and Disease Treatment.¹⁸ The guideline indicates rules should be established to clarify the process, and a training program is necessary to disseminate the rules. These measures are deemed necessary to prepare the organizational environment to promote the combination of work and disease treatment for employees with chronic diseases. Responses were initially measured on a three-point scale (1 = yes, there are; 2 = no, there are not; and 3 = I don't know), and then dichotomized as: 0 = no (no, there are not or I don't know) and 1 = yes (yes, there are).

2.4 | Potential confounders

Demographic and occupational characteristics were considered potential confounders, and measured using a self-administered questionnaire. Demographic characteristics included sex, age, area of residence, marital status, children, household income, and educational attainment. Age was classified into five groups: 18-29, 30-39, 40-49, 50-59, and 60-65 years. Area of residence was classified into eight groups based on administrative divisions: Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku, and Kyushu/Okinawa. Marital status was classified into two groups (unmarried and married) and having children was classified into two groups (yes and no). Household income was classified into three groups: low (<3 million yen/y), middle (3-5 million yen/y), and high (>5 million yen/y). Educational attainment was classified into three categories: junior high school or high school, technical college or junior college, and university or graduate school.

Occupational characteristics included weekly working hours, employment status, occupation, employment as a registered disabled person, company size, and industry. Weekly working hours were categorized as: ≤ 40 , 41-60, and ≥ 61 hours. Employment was assessed using the six options in the Japanese labor force statistics²²: manager/executive, regular employee (full-time worker), contract employee (part-time worker), part-time laborer, dispatched worker, and temporary/day laborer. We dichotomized responses as regular employment (manager/executive and regular employee) and non-regular employment (contract employee/part-time worker, part-time laborer, dispatched worker, and temporary/day laborer). We classified occupation based on skill level and skill specialization using the International Standard Classification of Occupation (ISCO).²³ Participants were asked whether or not they were currently employed as a manager; those who were not managers were asked whether they were classified as professional, technical, clerical, service, or manual. We further classified the ISCO groups based on participants' employment characteristics, including levels of authority, specialized knowledge and expertise, and career opportunities in each occupation. Based on these occupational groups, participants were divided into three occupational categories: (a) manager; (b) white-collar (professional/technical/clerical/service); and (c) blue-collar (manual). Employment as a registered disabled person was assessed with the question: "Were you hired as a registered disabled person?" Response options were "yes" and "no." Company size was classified into six groups (<10, 10-49, 50-299, 300-999, and ≥ 1000 employees, and public sector). Industry was dichotomized as manufacturing or non-manufacturing (including commerce, finance, and social welfare).

2.5 | Statistical analysis

Logistic regression was used to examine potential associations between rules and training programs and employee actions. In the series of regression analyses, we first conducted crude analyses between rules and training programs in the workplace and the study outcome (employees' actions). Next, we adjusted for sex, age, area of residence, marital status, having children, household income, educational attainment, weekly working hours, employment status, occupation, employment as a registered disabled person, company size, and industry. All analyses were performed using Stata 15SE (StataCorp, College Station, TX), with statistical significance set at $P < 0.05$. In addition, we analyzed the distribution of participants' background characteristics by actions (Appendix S1) and rules and training programs (Appendix S2). These analyses aimed to clarify any associations between participants' socioeconomic status and actions, and company size and rules/training programs.

3 | RESULTS

In total, 1134 individuals (567 males and 567 females) participated in this study. Participants' background characteristics are shown in Table 1. About three-quarters of participants (76.5%) stated that they had told their company (eg, their manager, personnel department, occupational physician) about their chronic illness (Item 1). Less than half of the participants (47.5%) had submitted a written report about their job to their doctor (Item 4). About two-thirds (64.6%) reported that they worked less than 40 h/wk. The largest age group was those aged 50-59 years. Overall, 12.4% of the participants reported they had been hired as a registered disabled person. Participants in higher socioeconomic groups were more likely to take action to combine work and disease treatment (Appendix S1). The presence of rules and training programs was more common among larger companies (Appendix S2).

Figure 1 shows the results of the multiple logistic regression analyses of associations between rules and training programs and employee actions. Overall, employees were more likely to take action if they worked in workplaces that had either rules or training programs than in workplaces without rules/training programs. More actions were taken by employees in workplaces with both rules and training programs than in workplaces with either measure alone. This association was observed for Item 2 ("Ask the company for support"), Item 3 ("Ask your doctor's opinion about continuing your work"), Item 4 ("Submit a written report about your job to the doctor"), Item 5 ("Submit the doctor's report to the company"), Item 7 ("Receive some support based on the doctor's report"), and Item 8 ("Regularly talk with the company

about the support you receive"). The highest odds ratio (OR) was for the association between rules and training programs and Item 4 (submission of a written report about the job to a doctor) (OR 14.7, 95% confidence interval 6.7-32.4) (see Appendix S3).

4 | DISCUSSION

This study investigated associations between organizational preparedness for employees to combine work and disease treatment and actions taken by employees with chronic disease in Japan. Although the majority (76.5%) of participants has informed their employer about their chronic illness (Item 1), only 47.5% had provided their doctor with a written report about their illness (Item 4). Employees in workplaces with rules or training programs were more likely to take action than those in workplaces without such measures. Employee action was also more likely in workplaces with both rules and training programs than in workplaces with just one of these measures. To encourage employees to combine work and disease treatment, employers should consider personal and work-related factors¹⁹⁻²¹ and organizational preparedness through establishing relevant rules and training programs.

The guideline states that the process of combining work and disease treatment requires proactive action from employees.¹⁸ We found that employees were more likely to take action (eg, ask for support) when their employer provided training programs about combining work and chronic disease treatment, than when their workplace simply had rules about this process. With one exception (Item 2: Ask the company for support), associations between training programs and employees' actions were weaker when the actions involved consulting (eg, Item 3: Ask your doctor's opinion about continuing your work and Item 6: Consult or review with the company how you work) or were passive (eg, Item 7: Receive some support based on the doctor's report). To promote support to combine work and disease treatment, employers need to establish rules and actively provide information to employees via training programs to encourage them to take action when necessary.

Both rules and training programs had the most effect on an employee submitting a written report about work to their doctor. Doctors can provide opinions about adjustments needed at work.²⁴ This means they need information about the individual's job to assess the employee's fitness to work. If workplace rules or training programs were not in place, doctors were less likely to obtain the necessary information to adjust the gap between employees' health conditions and work demands.

The context of policies to improve employment opportunities for people with chronic diseases differs between

TABLE 1 Participants' characteristics (n = 1,134)

	n (%)
Sex	
Male	567 (50.0)
Female	567 (50.0)
Age, y	
18-29	76 (6.7)
30-39	219 (19.3)
40-49	359 (31.7)
50-59	377 (33.2)
60-65	103 (9.1)
Area of residence	
Hokkaido	59 (5.2)
Tohoku	73 (6.4)
Kanto	396 (34.9)
Chubu	201 (17.7)
Kinki	218 (19.2)
Chugoku	52 (4.6)
Shikoku	37 (3.3)
Kyushu/Okinawa	98 (8.6)
Marital status	
Unmarried	541 (47.7)
Married	593 (52.3)
Have children	
Yes	532 (46.9)
No	602 (53.1)
Household income	
Low (<3 million yen/year)	190 (16.8)
Middle (3-5 million yen/year)	315 (27.8)
High (>5 million yen/year)	629 (55.5)
Educational attainment	
Junior high school or high school	246 (21.7)
Technical college or junior college	258 (22.8)
University or graduate school	630 (55.6)
Working hours per week	
≤40	733 (64.6)
41-60	351 (31.0)
≥61	50 (4.4)
Employment status	
Regular	923 (81.4)
Non-regular	211 (18.6)
Occupation	
Manager	53 (4.7)
White collar	952 (84.0)
Blue collar	129 (11.4)
Employed as registered disabled person	
Yes	141 (12.4)

(Continues)

TABLE 1 (Continued)

	n (%)
No	993 (87.6)
Company size, no. of employees	
<10	121 (10.7)
10-49	153 (13.5)
50-299	274 (24.2)
300-999	178 (15.7)
≥1000	329 (29.0)
Public sector	79 (7.0)
Industry	
Manufacturing	201 (17.7)
Non-manufacturing	933 (82.3)
Item 1. Report to the company about illness	
Yes	867 (76.5)
No	267 (23.5)
Item 2. Ask the company for support	
Yes	617 (54.4)
No	517 (45.6)
Item 3. Ask doctor's opinion about continuing work	
Yes	518 (45.7)
No	616 (54.3)
Item 4. Submit a written report on your job to the doctor ^a	
Yes	246 (47.5)
No	272 (52.5)
Item 5. Submit the doctor's report to the company ^a	
Yes	328 (63.3)
No	190 (36.7)
Item 6. Consult/review with the company about how you work ^a	
Yes	375 (72.4)
No	143 (27.6)
Item 7. Receive support based on the doctor's report ^a	
Yes	289 (55.8)
No	229 (44.2)
Item 8. Regularly talk with the company about the support received	
Yes	496 (43.7)
No	638 (56.3)

^aIf participants answered "yes" to Item 3 (n = 518), they were asked to answer items 4-7.

Western countries and Japan. In Western countries, the "Workplace Patient Coordination and Disease Treatment" movement highlighted an urgent need to address the

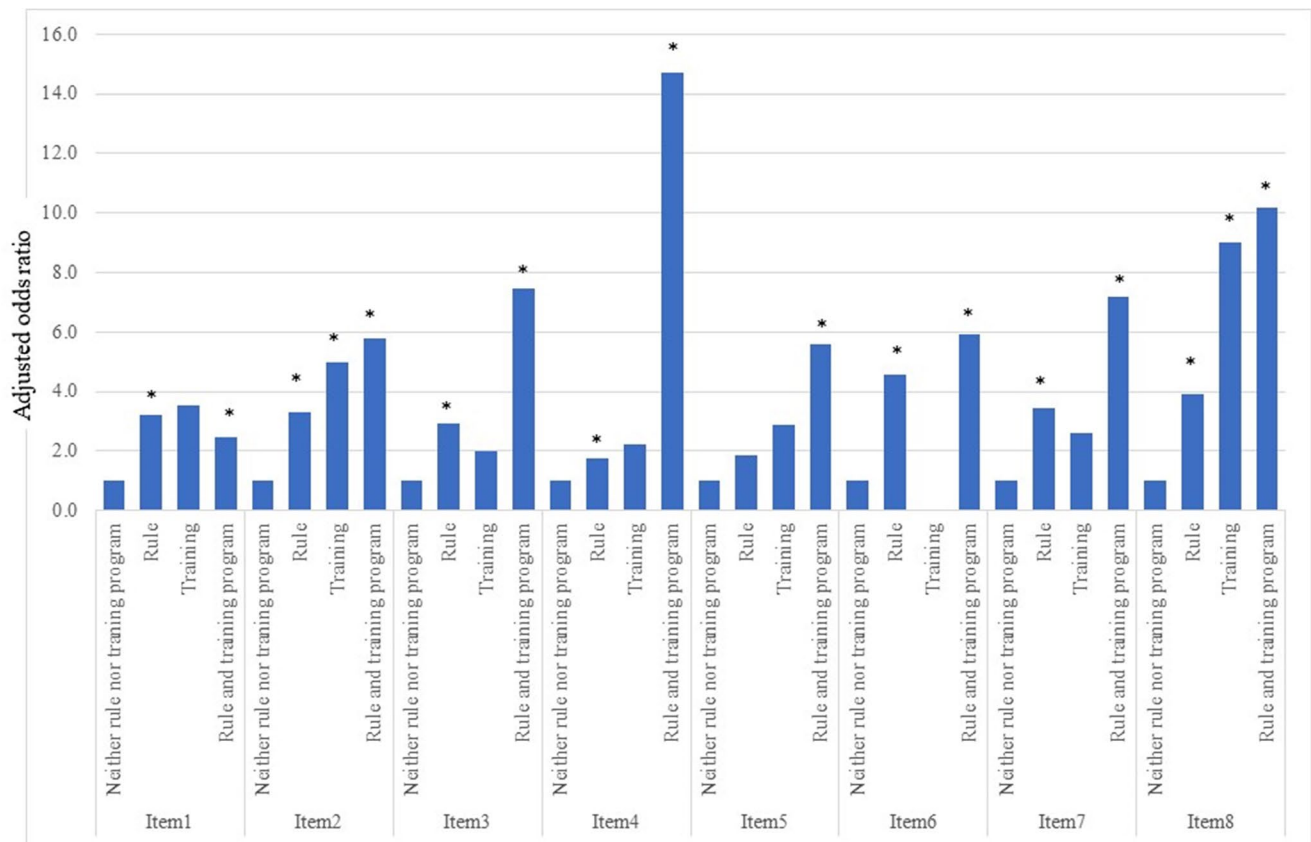


FIGURE 1 Association of rules and training program with action. Item 1. Report to the company about your illness. Item 2. Ask the company for support. Item 3. Ask your doctor's opinion about continuing your work. Item 4. Submit a written report about your job to the doctor. Item 5. Submit the doctor's report to the company. Item 6. Consult or review with the company how you work. Item 7. Receive some support based on the doctor's report. Item 8. Regularly talk with the company about the support you receive

“medicalization” of labor market problems by tackling the widespread use of disability benefits across the OECD and promoting labor market participation among people with disabilities.^{16,25-27} In Japan, the movement was created by a labor shortage because of the declining birth rate and aging population.¹⁷ Moreover, the definition of a worker with disabilities differs between Western countries and Japan. This difference in definition may affect employers' attitudes toward combining work and disease treatment.

This study had some limitations. First, information about rules and training programs was obtained from employees, and was based on their perceptions. The associations between rules/training programs and action might therefore be overestimated. Other study designs, such as obtaining information about rules and training programs from companies or interventional studies, are needed to determine the exact associations between rules, training programs, and employee actions. Second, our study population needed to have internet access to complete the survey, and therefore might have been more aware of the balance between work

and treatment through access to online information.^{28,29} Our results are not completely generalizable to those without internet access, or to other countries and settings. Furthermore, the socioeconomic status of our participants was higher than Japanese working population (Appendices S1 and S2). This might have resulted in overestimation of the associations between rules and training programs and employees' actions. Third, further studies are needed to evaluate whether other confounding factors may provide possible mechanisms for the observed attenuation in the associations between rules, training programs, and actions. For example, we had no information about individual diseases or their severity. Fourth, the study was cross sectional, meaning that no causal relationships could be determined. A further interventional study is needed to clarify potential causal associations between rules, training programs, and actions in the Japanese working population. Finally, we could not confirm the actual diagnosis of participants who judged that their work capacity was limited because of symptoms related to a chronic disease or side effects of their treatment.

4.1 | Policy implications

Our findings suggest that establishing rules to support employees with chronic diseases and provision of training programs to improve awareness of these rules leads to encouraging employees to take action to access support. Following the guideline is a first step in promoting workplace patient coordination and disease treatment. Driving awareness of the guideline among employers (especially in small and medium-sized businesses) may be important to promote workplace patient coordination and disease treatment. It may also be important for employers to consider how to support passive actions or those that involve consultation (eg, between the employee and workplace) to further encourage employees to take action.

In conclusion, our findings indicate it is necessary for workplaces to establish rules to support employees with chronic diseases, and provide training programs to increase employee awareness of how to combine their work and disease treatment.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

DISCLOSURE

Approval of the research protocol: The study aims and protocol were approved in 2018 by the Kitasato University Medical Ethics Organization (B17-160). *Informed Consent:* Participants were informed in advance that their participation was strictly voluntary and that all information provided would remain confidential. Those who consented to participate were able to access a designated website on verification of their personal information, after which they could complete the survey online. Participants had the option not to respond to any part of the questionnaire, and could discontinue participation at any point. *Registry and the registration no. of the study/trial:* N/A. *Animal studies:* N/A. *Conflict of interest:* The authors declare no conflict of interest relating to this article.

AUTHOR CONTRIBUTIONS

HE conceived the study, collected and analyzed the data, and led the writing of the manuscript; AT, AI, and YK made

substantial contributions to improve the conception and design of the study, including writing the protocol and revising it critically for important intellectual content.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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