Return to Work Following Mental Health-Related Absences: Effective Evidence-Based Reinstatement Support

Yoko Sugimoto
Health Care Center, Panasonic Health Insurance Organization

In response to requests from employers, the Department of Mental Health of the Panasonic Health Insurance Organization administers a reinstatement support panel to facilitate the return to work of employees who have been absent due to mental health issues. Since 2006, before convening a pre-reinstatement panel meeting for each patient, we have been conducting questionnaire surveys and performing various psychological tests during medical checkups, so as to examine correlations between survey and test findings and employees' performance after returning to work. The aim is to identify and clarify various factors influencing employees after returning to work, and the evidence obtained has been applied to provide more effective support. It has been found that generally, subjects who communicate well with healthcare personnel, Human Resources Department staff, and supervisors have a favorable prognosis after returning to work. In April 2013 a new reinstatement system for employees with mental health issues was introduced, under which a reinstatement support team is established for each employee with mental health issues to aid their return to work and minimize the risk of further mental health-related absences after reinstatement.

I. Introduction

Clinical depression in workplaces has gained increasing attention as a social issue in Japan, and the national government, public institutions, and companies have begun taking active steps to aid employees with mental health issues. As a rule, companies provide support according to their specific circumstances and needs in accordance with the Ministry of Health, Labour and Welfare (MHLW) "Support Guide for Workers Absent from Work due to Mental Health Problems to Return to Workplaces" (Revised March 2009) (Ministry of Health, Labour and Welfare 2009). Provisions for absence from and return to work, and programs to support employees, have made noticeable progress. Companies are taking the initiative in performing screenings to determine the feasibility of reinstating employees after mental health-related absences, and the accuracy of these screenings is improving. In recent years there have been progress reports that gauge the effectiveness of specific in-house reinstatement support systems and programs (Nanba 2012). Meanwhile prognosis surveys and pre-reinstatement rehabilitation programs run by the Vocational Center for Persons with

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Disabilities, a public institution, or reinstatement support centers at medical institutions, are reported to be effective in facilitating sustained employment after reinstatement. At the same time, such programs are still scarce, and Nagata (2012) has proposed measures and studies including the following: (i) Organization-wide preventive measures adopted in accordance with each employer's particular circumstances, and assessment of whether these measures are working (ii) Assessments of the relationships between occupational stress, work engagement, and social support, and intervention studies from the standpoint of positive mental health (iii) Development and assessment of effective reinstatement support programs (iv) Development and efficacy evaluation of basic professional education and training programs for young workers (v) Suicide prevention measures in the workplace and evaluations thereof, and (vi) Cost-benefit analysis of the above measures.

Against the above-described backdrop of mental health measures and related research in the business world, the Department of Mental Health of the Panasonic Health Insurance Organization has been commissioned by employers to administer a reinstatement support panel for employees returning to work after absences due to mental health issues. Since 2006, the Department has also been performing ongoing prognoses after employees' reinstatement following mental health-related absences. These include assessment of the employee's work continuation following reinstatement, compared against the results of psychological tests performed during medical examinations at time of reinstatement, responses to optional questionnaires administered one month before reinstatement, and other information obtained during medical examinations (Sugimoto, Takahashi, and Shinohara 2008; Sugimoto and Matsuda 2009; Sugimoto 2011a; Sugimoto 2011b; Sugimoto 2011c) The aim is to clarify what factors influence work conditions after reinstatement, so as to provide effective support to employees experiencing mental health issues.

Here I will describe one company's approach to smooth reinstatement of employees after mental health-related absences, taking into account the results of research conducted over the past six years and the current status of our reinstatement support efforts, from various viewpoints including those of members of the employees' divisions and health management staff.

The Center's reinstatement support panel has a history stretching back to January 1962. Since then the panel has been implemented, in conjunction with interviews with persons suffering from mental disorders, as one means of managing mental health (Kitagawa 1962). Thus the panel has an even longer history than the Department of Mental Health itself, which commenced operations in September 1963 when the Panasonic Health Insurance Organization was established. The panel, attended by psychiatrists, psychologists, and occupational health nurses from the Center as well as occupational health physicians and nurses from the health care center of the division to which the employee absent for mental health reasons belongs, assesses from a medical standpoint whether the employee is truly ready for reinstatement after the employee's attending physician has diagnosed him or her as eligible to return to work. Before the panel meets, there are preliminary medical exami-

nations by psychiatrists and psychological tests by psychologists, providing additional material to supplement the picture of the patient's clinical condition. Also, prior to the panel's meeting, occupational health physicians and nurses from the employee's division hold discussions with human resources staff and supervisors from that division, and have interviews with the employee in question, so as to evaluate the workplace environment to which the employee will be returning and identify issues impacting the feasibility of reinstatement. Participating members share their respective insights and the panel evaluates the subject's health status from a medical perspective. Thus the employee's division can obtain the panel's opinions with regard to various aspects of reinstatement and reinstatement support, on the premise that the final reinstatement decision will be made by the division itself.[1]

II. Content and Analytical Methods of This Study

The target group consisted of 1,045 Panasonic Group employees who consented to participate in this study during medical examinations at time of reinstatement. The group was 84.9% male (887 employees) and 15.1% female (158 employees), with an average age of 39.9 for men (±7.78) and 35.3 for women (±7.59). The study was conducted over more than five years, from February 1, 2006 to August 4, 2011 (Table 1).

Data for the study was used in accordance with the Panasonic Health Insurance Organization Health Care Center's "Guidelines for the Use of Panasonic Health Insurance Organization Data for Health Policy Formulation and Academic Study," and prior to the study, Health Care Center Data Extraction Requests were submitted and the permission of employees' division managers and the Health Care Center director obtained.

The scales employed for the study were determined by the Department of Mental Health based on responses to 35 questions, filled in by the subjects themselves, which were formulated on the basis of clinical observation. The questions covered seven items: (i) Sleep patterns, (ii) Use of time during leave of absence, (iii) Time spent outside the home, (iv) Family members' understanding of the situation, (v) Relationship to the workplace, (vi) Relationship to medical institutions, and (vii) psychological state during leave of absence. Responses to questions regarding day-to-day routines and psychological condition were on the four-level Likert scale from "Disagree" to "Agree"; questions on sleep and time spent out of the home were given direct responses (number of hours); responses to questions on regular visits to medical institutions and contact with the workplace were in "yes/no" form; and questions on time usage, contact with other people, etc. had multiple-choice responses. Responses to multiple-choice questions were converted to binary data prior to analysis.

With regard to multiple-choice questions on the five synthetic variables (anxiety about the future, family members' cooperation and understanding, regularity of sleep

[1] As the reinstatement support program was revised in April 2013, this description applies to administration of the system through March 2013.

Table 1. Breakdown of Subjects by Age Group (N=1045)

(%)

	Male N=887	Female N=158
20–29 yrs.	84 (9.5)	40 (25.3)
30–39 yrs.	341 (38.4)	75 (47.5)
40–49 yrs.	350 (39.5)	34 (21.5)
50–59 yrs.	112 (12.6)	9 (5.7)

patterns and day-to-day routines, feelings of panic or remorse, frequency/duration of falling back asleep after waking, and usage of free time) identified in a 2009 study (Sugimoto and Matsuda 2009) employing the same questionnaire, the term of observation was said to begin with the medical examination at time of reinstatement and end with the subject's second leave of absence or resignation due to illness. Kaplan-Meier analysis was used to calculate the cumulative work continuation rate with the medical examination at time of reinstatement as a start point, and three assessment points afterward: convening of the reinstatement support panel (two weeks afterward), six months after reinstatement, and one year after reinstatement.

With regard to the six POMS (Profile of Mood States, Japanese version) factors and five subscales of the new TEG II (Tokyo University Egogram) as well, the term of observation was said to begin with the medical examination at time of reinstatement and end with the subject's second leave of absence or resignation due to illness, and Kaplan-Meier analysis was used to calculate the cumulative work continuation rate with the medical examination at time of reinstatement as a start point, and three assessment points afterward: convening of the reinstatement support panel (two weeks afterward), six months after reinstatement, and one year after reinstatement.

With the six POMS factors expressing emotional state (Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, and Confusion-Bewilderment) and the five new TEG II subscales expressing ego state (Critical Parent, Nurturing Parent, Adult, Free Child and Adapted Child) as well as gender, occupation, age, number of leaves of absence, and mental health condition, categorized into groups, as independent variables, and work continuation or discontinuation (leave of absence or resignation due to illness) as dependent variables, the Cox proportional hazards model was used to assess the risk of absence or resignation from work. Occupations were placed in three categories: manufacturing (assembly line work), development (engineering, systems, and research), and administration (sales, service, and office work). Age groups consisted of 22–29 years, 30–39 years, 40–49 years, and 50–59 years of age. To examine variables relating to number of leaves of absence, subjects were subdivided into those with two or fewer leaves of absence, and those with three or more. In terms of mental health condition, subjects were given an ICD-10 diagnosis and divided into four groups: Group 1 (F31: Bipolar affective disorder), Group 2 (F32: De-

pressive episode, F33: Recurrent depressive disorder, and F34: Persistent mood [affective] disorders), Group 3 (F41: Other anxiety disorders, F43: Reaction to severe stress, and adjustment disorders, and F45: Somatoform disorders), and Group 4 (F20: Schizophrenia and F60: Specific personality disorders). With regard to the POMS factors (Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, and Confusion-Bewilderment), raw score was converted to a T-score. With the POMS case study indicators as a reference (Yokoyam, Shimoyama, and Nomura 2002), for the purposes of this study, subjects with a T-score of 60 or above were categorized as "critical" except for the Vigor-Activity factor, for which those with a T-score under 40 were categorized as "critical" and others categorized as "noncritical" For each of the factors, subjects were divided into two groups according to T-score, with the critical group assigned a value of 1 and the noncritical group assigned a value of 0.

For each of the five subscales on the new TEG II, those in the 50th percentile or above were assigned a value of 1 as the high group, and those below the 50th percentile were assigned a value of 0 as the low group. It should be noted that with regard to the validity scales and question scales of the TEG, data judged unreliable based on the new TEG II handbook was eliminated (TEG Study Group, Department of Psychosomatic Medicine, Faculty of Medicine, the University of Tokyo 2006, 35). (S-PLUS version 8.1 was used for statistical analysis.)

III. Results

To place findings in context, other information about subjects was recorded, including marital status. 539 men (60.8%) and 52 women (32.9%) were married, 321 men (36.2%) and 90 women (57.0%) had never been married, and 27 men (3.0%) and 16 women (10.1%) were divorced or had deceased spouses (Table 2).

In terms of academic history, 14 men (1.6%) and five women (3.2%) had graduated junior high school only, while 228 men (25.7%) and 51 women (32.3%) had completed high school. 71 men (8.0%) and 12 women (7.6%) had graduated college of technology or professional training college, three men (0.3%) and 18 women (11.4%) had completed junior college, 395 men (44.5%) and 51 women (32.3%) were university graduates, and 176 men (19.8%) and 21 women (13.3%) had completed graduate school.

Engineering and research were the most common fields among the subjects, and university graduates were the most numerous, followed by those completing high school. It is notable that the subjects tended to be highly educated and to be engaged in intellectually demanding work (Figure 1 and Table 2).

The most common condition among the ICD-10 diagnoses was F33: Recurrent depressive disorder at 25%, with these subjects accounting for 60% of those in the F30–F39 (Mood [affective] disorder) category (Figure 2).

All 1,045 of the subjects (887 men [84.9%], 158 women [15.1%]) gave responses to

Table 2. Subjects' Background (N=1045)

(%)

	Male N=887	Female N=158
Marital status		
Married	539 (60.8)	52 (32.9)
Single	321 (36.2)	90 (57.0)
Other (divorced or spouse deceased)	27 (3.0)	16 (10.1)
	Male N=887	Female N=158
Highest level of education completed		
Junior high school	14 (1.6)	5 (3.2)
High school	228 (25.7)	51 (32.3)
College of technology / Professional training college	71 (8.0)	12 (7.6)
Junior college	3 (0.3)	18 (11.4)
University	395 (44.5)	51 (32.3)
Graduate school	176 (19.8)	21 (13.3)

the multiple-choice questions regarding "use of time during leave of absence." With regard to the five synthetic variables, when responses with missing values were eliminated, 1,032 subjects (875 men [84.8%], 157 women [15.2%]) gave responses covering all items, and this data set was used for analysis. POMS assessments were performed for 760 subjects (635 men [83.6%], 125 women [16.4%]), and the new TEG II for 966 subjects (819 men [84.8%], 147 women [15.2%]).

It can be inferred from the findings that compared to workers with two or fewer leaves of absence, those with three or more are more likely, after reinstatement, to take future leaves of absence or undergo recurrence of symptoms leading to resignation. The cumulative work continuation rate for each group is shown in Table 3.

The results of psychological tests indicated that those whose "vigor" scores on the POMS assessment placed them in the critical category had low cumulative work continuation rates at all three observation points (two weeks after medical examination for reinstatement, six months later, and one year later) (Table 3). Meanwhile, those in the "high" group (50th percentile or above) on the Free Child scale of the new TEG II had high cumulative work continuation rates at all three observation points as well (Table 3).

When the Cox proportional hazards model was applied, those with vigor scores low enough to be "critical" had a hazard ratio of 1.48 (1.07–2.05) compared to those not "critical," making this a significant indicator ($p<0.05$) (Table 4).

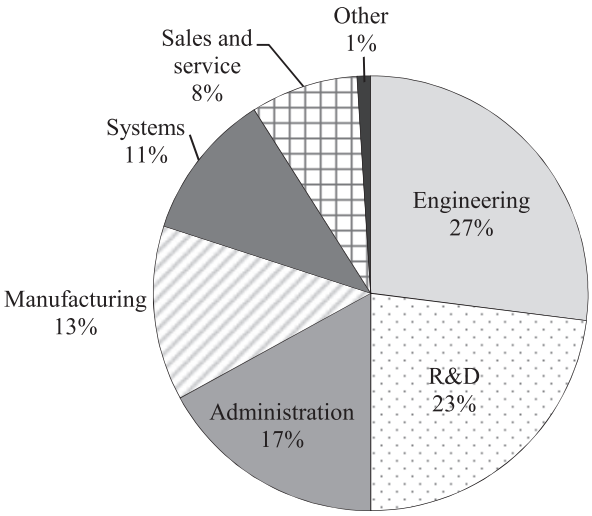

Figure 1. Breakdown by Occupation

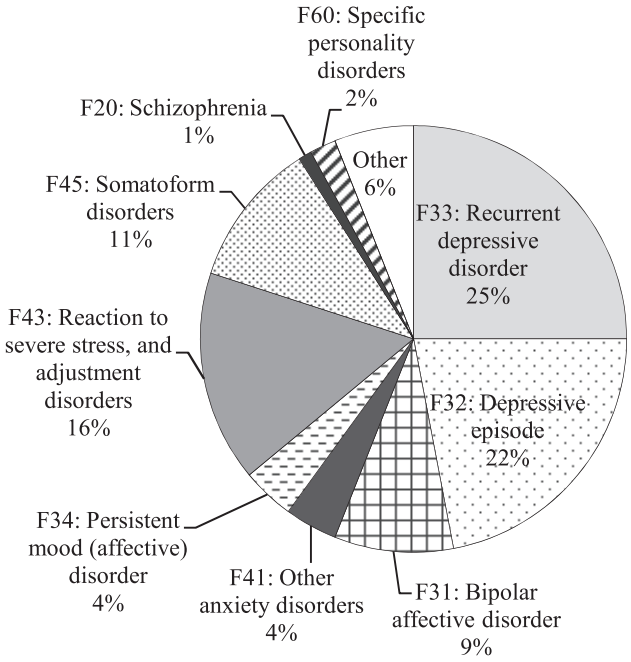

Figure 2. Breakdown of ICD-10 Diagnoses

Table 3. Cumulative Work Continuation (CWC) Rate

Moderator variables		Three or more N=113		Two or fewer N=932		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
Number of leaves of absence	2 wks later	89.4	83.7–95.1	93.3	91.7–94.9	p < 0.01
	6 mos. later	63.1	53.9–72.4	75.4	72.5–78.2	
	1 yr later	50.0	39.7–60.3	62.1	58.7–65.4	
Five factors related to use of time during leave of absence		Irregular N=57		Regular N=489		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
Regularity of sleep patterns and day-to-day routines	2 wks later	88.1	84.5–91.6	95.4	93.8–96.9	p < 0.01
	6 mos. later	67.5	62.3–72.7	77.1	73.9–80.3	
	1 yr later	52.9	47.1–58.7	64.6	60.8–68.4	
Multiple-choice questions regarding use of time during leave of absence		Unselected N=557		Selected N=488		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
②Helping with housework	2 wks later	91.6	89.3–93.9	94.5	92.4–96.5	p < 0.01
	6 mos. later	70.2	66.3–74.1	78.5	74.7–82.2	
	1 yr later	56.0	51.5–60.5	66.1	61.6–70.5	
		Unselected N=503		Selected N=542		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
④Using a computer	2 wks later	93.2	91.0–95.4	92.6	90.4–94.8	p < 0.05
	6 mos. later	77.0	73.2–80.8	71.4	67.5–75.3	
	1 yr later	64.2	59.7–68.8	57.7	53.3–62.2	
		Unselected N=712		Selected N=333		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
⑦Other	2 wks later	92.4	90.5–94.4	94.0	91.4–96.5	p < 0.05
	6 mos. later	72.5	69.1–75.9	77.4	72.8–82.0	
	1 yr later	58.2	54.4–62.1	66.5	61.1–72.0	
POMS		Critical group N=141		Noncritical group N=619		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
Vigor scale	2 wks later	83.7	77.6–89.8	94.7	92.9–96.4	p < 0.01
	6 mos. later	64.4	56.4–72.4	76.9	73.5–80.4	
	1 yr later	51.3	42.3–60.4	64.2	60.0–68.4	
New TEG II		Below 50th percentile N=575		50th percentile or above N=391		Log rank test p-value
		CWC rate	95%CI	CWC rate	95%CI	
Free Child scale	2 wks later	92.2	90.0–94.4	95.4	93.3–97.5	p < 0.01
	6 mos. later	72.0	68.3–75.8	78.9	74.7–83.1	
	1 yr later	57.5	53.2–61.8	67.6	62.6–72.6	

95% CI: 95% confidence interval.

Table 4. Hazard Ratio of POMS and New TEG II Subscales

	POMS (N=760)	Hazard ratio	95% confidence interval	p
T-A	(Noncritical group)	1.00	—	0.56
	(Critical group)	0.96	0.86–1.09	
D	(Noncritical group)	1.00	—	0.95
	(Critical group)	1.01	0.62–1.65	
A-H	(Noncritical group)	1.00	—	0.50
	(Critical group)	1.20	0.69–2.10	
V	(Noncritical group)	1.00	—	$p < 0.05$
	(Critical group)	1.48	1.07–2.05	
F	(Noncritical group)	1.00	—	0.08
	(Critical group)	1.24	0.97–1.58	
C	(Noncritical group)	1.00	—	0.87
	(Critical group)	0.95	0.55–1.63	
	New TEG II (N=966)	Hazard ratio	95% confidence interval	p
CP	(Low value group)[a]	1.00	—	0.51
	(Non-low value group)[b]	1.08	0.84–1.40	
NP	(Low value group)	1.00	—	0.16
	(Non-low value group)	0.84	0.66–1.07	
A	(Low value group)	1.00	—	0.90
	(Non-low value group)	1.01	0.79–1.30	
FC	(Low value group)	1.00	—	$p < 0.05$
	(Non-low value group)	0.73	0.56–0.94	
AC	(Low value group)	1.00	—	0.94
	(Non-low value group)	1.00	0.79–1.27	

[a]Low value group: below the 50th percentile.

[b]Non-low value group: the 50th percentile or above.

Notes: 1. All variables input at once for analysis.

2. Independent valuables are, age: 20–29 years, 30–39 years, 40–49 years, 50–59 years; gender; occupation: manufacturing, development, administration; number of leaves of absence: three or more, two or fewer; disorder: group 1, group 2, group 3, group 4.
3. The independent variable “three or more absences” in POMS showed a significant difference ($p<0.05$).
4. The independent variables “disorder group 1” and “three or more absences” in New TEG II showed a significent difference ($p<0.05$).

Noteworthy among the new TEG II scales was the Free Child scale, on which those in the 50th percentile or above had a hazard ratio of 0.73 (0.56–0.94) compared to those below the 50th percentile, meaning that high scores on this scale were correlated with a 27% risk reduction ($p<0.05$) (Table 4). Note that variables are plugged in at once and stepwise regression is not used.

The questionnaire results were cross-referenced with the five synthetic variables, and it was found that those with "③ regular sleep patterns and day-to-day routines" had high cumulative work continuation rates at all three observation points (two weeks after medical examination for reinstatement, six months later, and one year later) (Table 3). High cumulative work continuation rates at all three observation points were also observed for those who selected "② helping with housework" as a response to the question regarding use of time during leave absence. Also, this study found that the group selecting "④ using a computer" had low cumulative work continuation rates at all three observation points, while the rate was high among those selecting "⑦ other."

When the Cox proportional hazards model was applied, those with high "regularity of sleep patterns and day-to-day routines" had a hazard ratio of 0.70 (0.56–0.87) compared to those with low regularity, meaning that high scores on this item were correlated with a 30% risk reduction ($p<0.01$) (Table 5).

With regard to "use of time during leave of absence," those who selected "② helping with housework" had a hazard ratio of 0.65 (0.52–0.81) compared to those who did not, meaning this response was correlated with a 35% risk reduction ($p<0.01$), while those selecting "④ using a computer" had a hazard ratio of 1.27 (1.02–1.59) compared to those who did not, making this a significant indicator ($p<0.05$). Also, as the selection of "⑦ other" as a response to the question regarding specific use of time during absence emerged as a significant indicator ($p<0.05$) in this study, I will summarize here the contents of free responses describing this use of time.

When subjects who selected "⑦ other" (approximately 32% of the total) were asked to provide details, the most common response was "rehabilitation programs or daytime use of welfare facilities," followed by "reading or studying" (self-study of English or job-related subjects), "fitness or sports," and "going out of the house, for walks, etc."

To provide further information on free responses describing "use of time during leave of absence": Among those who selected "Agree" in response to the item "I thought about what I needed to do before going back to work, set goals and pursued them," a large number of respondents provided the following specifics: "establishing a stable day-to-day routine," "visiting a reinstatement support facility," and "rebuilding my physical strength." With regard to "going out of the house," respondents frequently specified objectives for going out as follows: (i) Shopping or dining out (ii) Visiting a reinstatement support facility (iii) Exercise in order to build physical strength (iv) Taking a walk (v) Reading at the library. Places often visited included "supermarkets or shopping centers," "libraries," and "reinstatement support facilities," with many visiting parks or places around their neighborhoods as well. In terms of "hobbies pursued during leave of absence," the most common responses were (i) sports (ii) reading and (iii) listening to or performing music.

These findings provide highly meaningful information on employees' use of time during leaves of absence for mental health reasons. In the future I intend to analyze these results in greater detail. Meanwhile, in the latter part of this paper I will present case studies

Table 5. Hazard Ratios for Questionnaire on Use of Time during Leave of Absence

Five factors pertaining to use of time during leave of absence (N=1032)		Hazard ratio	95% CI[a]	p
Low level of anxiety about the future		1.00	—	0.25
(High)		1.14	0.90–1.46	
Low level of cooperation and understanding from family members		1.00	—	0.12
(High)		0.84	0.68–1.04	
Irregular sleep patterns and day-to-day routines		1.00	—	p < 0.01
(Regular)		0.70	0.56–0.87	
Feelings of impatience or remorse not strong		1.00	—	0.91
(Strong)		1.01	0.80–1.27	
Going back to sleep infrequently		1.00	—	0.29
(Frequently)		1.12	0.90–1.38	
Multiple choices regarding use of time during leave of absence (N=1045)		**Hazard ratio**	**95% CI[a]**	**p**
① Taking it easy	(Not selected)	1.00	—	0.17
	(Selected)	1.19	0.92–1.52	
② Helping with housework	(Not selected)	1.00	—	p < 0.01
	(Selected)	0.65	0.52–0.81	
③ Watching TV	(Not selected)	1.00	—	0.23
	(Selected)	0.87	0.70–1.09	
④ Using a computer	(Not selected)	1.00	—	p < 0.05
	(Selected)	1.27	1.02–1.59	
⑤ Playing video or computer games	(Not selected)	1.00	—	0.17
	(Selected)	1.22	0.92–1.61	
⑥ Pursuing hobbies	(Not selected)	1.00	—	0.57
	(Selected)	1.06	0.86–1.31	
⑦ Other	(Not selected)	1.00	—	p < 0.05
	(Selected)	0.74	0.58–0.94	

[a] 95% confidence interval.

Notes: 1. All variables input at once for analysis.

2. Independent valuables are, age: 20–29 years, 30–39 years, 40–49 years, 50–59 years; gender; occupation: manufacturing, development, administration; number of leaves of absence: three or more, two or fewer; disorder: group 1, group 2, group 3, group 4.
3. The independent variable “three or more absences” in the five factors pertaining to use of time during leave of absence showed a significent difference ($p<0.01$).
4. The independent variable “three or more absences” in the multiple-choice questions to use of time during leave of absence showed a significent difference ($p<0.01$).

in which this information was used to assist with reinstatement.[2]

IV. Observations and Clinical Applications

In terms of moderator variables, there is a significant inverse correlation between taking three or more leaves of absence and work continuation thereafter (Table 3). This reinforces the findings of numerous prior studies, and is evidence of the existence of highly difficult cases entailing repeated absences and reinstatement, or of serious clinical conditions such as bipolar disorder. It appears that employees who take repeated leaves of absence despite being given adequate consideration in the workplace have come to view such absences as commonplace and have lowered resistance to the idea of taking leave again. From the six-month observation point onward there is a major disparity in cumulative work continuation rate, and with regard to long-term work continuation, it is necessary to adopt a different approach with employees whose repeated leaves of absence and reinstatements total three or greater.

In these cases, when the reinstatement support panel convenes, consideration is given to employee tendencies and advice offered from medical and psychological perspectives, including ongoing assistance from the health center in readapting to the workplace after reinstatement. When employees lack the proper attitude towards reinstatement or are otherwise unprepared to return to work, they are encouraged to take part in rehabilitation programs or visit external EAP (Employee Assistance Program) counseling facilities. However, the most challenging cases are often greatly influenced by factors unique to the individual. These cases are often difficult to handle and require individual analysis and careful consideration, as there is no one-size-fits-all solution.

The results of psychological tests administered during medical examinations prior to convention of the reinstatement support panel indicate that subjects with critical scores on the Vigor scale of the POMS assessment, or who scored lower than the 50th percentile on the Free Child scale of the TEG test, have a significant risk of taking further leaves of absence or resigning for mental health reasons (Tables 3 and 4). These findings suggest that for employees on leaves of absence, recovering drive and vigor at least by the time of the medical examination prior to reinstatement, and ensuring they are not in a repressed or depressed emotional state, are positive contributors to work continuation thereafter. It is very important to note that the POMS and TEG scores are highly accurate predictors of performance after reinstatement, and play a key role as indicators of readiness to return to work.

The POMS and TEG tests, which are already in use in other fields and place relatively little burden on administrators and subjects alike, can not only be used proactively as a means of assessing preparedness for reinstatement, but also as self-monitoring tools after

[2] The findings elaborated here include additions and revisions to the content presented at the 76th Annual Convention of the Japanese Psychological Association.

reinstatement and for a wide range of other purposes. At Panasonic, during initial preventive mental health training, the new TEG II is sometimes used as a self-care-oriented teaching aid.

The field of psychology has thus far generally taken an approach that emphasizes mental disorders and problems, but in recent years there has been a trend towards "positive psychology" that focuses on subjects' strengths and positive traits, and aims to boost the health and happiness levels of organizations (Seligman 2011). In line with this trend, the field of occupational mental health has also been increasingly focused on "work engagement," a concept defined as a three-part composite of vigor, dedication, and absorption. Here vigor is defined as "high levels of energy and mental resilience while working" (Shimazu 2012; Schaufeli and Dijkstra 2012, 1–38). While the vigor or drive assessed by POMS is not exactly the same as the vigor that forms part of work engagement, it is extremely important to recognize that maintaining a certain level of vigor, drive and energy is an essential prerequisite for work continuation. Use of work engagement assessment scales as one of the post-reinstatement evaluation methods is currently under consideration.

It has been pointed out that there is a need for more objective assessments of the condition of workers who take leaves of absence due to mental health issues. From a neurological standpoint, numerous studies have employed functional magnetic resonance imaging (fMRI) or single-photon emission computed tomography (SPECT) scans to examine relationships between brain states, cognitive functioning during task completion, and depression (Hedden et al. 2008; Kanba and Utsumi 2011, 179–202), while in the occupational health field, there have been reports on the correlations between subjective fatigue experienced by depression sufferers and diminished functioning of the prefrontal cortex, or decline in blood flow to the frontal lobe (Ogawa 2010). With regard to correlations between depression and cerebral blood flow, in the past few years there has been a dramatic increase in research (Ogawa 2012) on connections between depression and decreased cognitive functioning using NIRS (near-infrared spectroscopy) optical topography, approved by the Ministry of Health, Labour and Welfare (MHLW) of Japan in 2009 as an advanced medical technique for differential diagnosis of depression. If progress in studies such as these further clarifies parallels between degree of recovery from depression and changes in cerebral blood flow, it could assist with post-reinstatement prognosis and more objective assessment of employees reinstated after mental health-related leaves of absence, primarily for depression, and facilitate effective follow-up treatment of mental disorder sufferers even if they have few subjective symptoms.

At the Department of Mental Health of the Panasonic Health Insurance Organization, in addition to carrying out the studies outlined above, we obtained research support from the Foundation of the Japanese Certification Board for Clinical Psychologists in April 2012, and have been administering the Self-Diagnosis Checklist for Assessment of Workers' Accumulated Fatigue and the new Stroop Test II to assess factors impacting work continuation after reinstatement. These assessments aim to clarify further the correlations between "vigor

and drive," "fatigue" and work continuation, which have been apparent in studies thus far. While employees who had taken leave for mental health reasons were taking the new Stroop Test II, volumes of hemoglobin alteration in the frontal brain region were experimentally measured using a near-infrared cerebral blood flow evaluation system, and the results compared to readings for healthy employees. We are amassing data to be used for multifaceted examination of correlations between neurological state and work continuation, as well as parallels with the vigor, drive and fatigue that we continue measuring with standard psychological tests. While this research is still in progress, it has already found that employees who had taken leave for mental health reasons had significantly lower rates of accurate task completion than healthy employees, and there were disparities in hemoglobin alteration in the frontal brain region as well. In addition, these employees had noticeably poor self-awareness of fatigue, and the findings suggest possible problems with neural energy efficiency during task completion. We will continue to examine the details and compile a final report on the findings.

The results of questionnaires distributed to employees revealed that among the five synthetic variables "regularity of sleep patterns and day-to-day routines," and in terms of use of time during leave of absence "② helping with housework," were correlated with improved work continuation after reinstatement (Tables 3 and 5). As we accumulate more data, this trend remains consistent across the board. The demonstrable connection between regular sleep patterns and daily routines at the time of the medical examination for reinstatement, as well as helping with housework during the month prior to the medical examination, and high probabilities of work continuation six months and one year after reinstatement, will prove highly useful in providing guidance to employees on use of time during leave of absence in the future. Conversely, "using a computer" was correlated inversely to work continuation at all three observation points, and from the additional information provided in employees' free answers, it was evident that in particular Net surfing, online games and other unstructured leisure use of computers had a negative impact (Tables 3 and 5). From a clinical standpoint, during pre-reinstatement counseling, many employees were unable to complete assigned tasks on a computer in the given period, taking large amounts of time and accumulating fatigue. By supplementing the questionnaire with further items about specific uses of computers, we aim to gain a more precise picture of the specific factors.

There are five stages in the reinstatement support process (Sugimoto 2013, 98), and we believe that effective support can be provided if we make optimum use of psychological tests and questionnaire responses at each stage. In terms of individual prognosis, employees taking leaves of absence for mental health reasons are seen as going through the stages of acute, recovering, preparing for reinstatement, and negotiating reinstatement, before returning to work (AERA 2009, 22). Here, I will present some case studies of employees provided with support and counseling at the Department of Mental Health that makes use of the

above research findings.[3]

Case Study 1

Male, 20–29 age group, engineer, university graduate, unmarried, diagnosed with depression, three leaves of absence

As a university student, the subject had a period when he was unable to cope and stayed indoors for a length of time, missing classes as the university. After graduating he was hired by the company during Japan's so-called economic bubble period. Soon after completing training for new employees and being assigned to a division, he was unable to adapt to the new environment and took a short leave of absence. Afterward, thanks to thoughtful consideration on the part of his supervisor and others, things went smoothly for one or two years.

However, after the collapse of Japan's economic bubble, new employees that were his juniors began performing extremely well, all of them being outstanding workers who were hired despite extremely sluggish employment conditions. The subject felt anxious as a result. Under these circumstances, when he was placed on a new project and asked to fulfill quotas, and the project happened to be in an unfamiliar field that required considerable study, he was unable to complete tasks during normal working hours and worked increasing amounts of overtime. He came home late every night and ate dinner and went to bed late, but even then was unable to sleep, and began drinking more alcohol. The employee was on a flex-time system that required him to be at work during core hours, and he was present, but worked in chronically poor physical condition. In this state he was unable to concentrate at work and his progress was slow, sparking an incident in which he argued over work procedures with a junior colleague to whom he had formerly provided instruction, and their supervisor had to intervene. After this his motivation declined and absences from work increased. Concerned, the employee's superior consulted occupational health physicians in the health care center of his division, who referred the employee to us for examination.

On examination, the subject appeared to be burned out and exhausted, yet when the topic turned to the co-worker with whom he had argued, or to his dissatisfaction with his supervisor, his expression suddenly became extremely animated and hostile. Rather than being a classic case of depression, his case was rooted in an immature personality leading to inability to adapt to the workplace and resulting in a depressive state. It appeared to fit the "contemporary depression model" becoming increasingly common among young people. To recover from severe fatigue and depression, he was diagnosed as requiring rest, and began his second leave of absence.

After he stopped working, his symptoms disappeared relatively quickly, and after recovering he spent the remainder of his leave of absence on activities he enjoyed such as

[3] The details of case studies have been modified in part or elements of other cases have been added to prevent identification of specific individuals.

hobbies and travel. Being back in good condition, he was reinstated in the same division as before.

After reinstatement, he was given special consideration by the company and treated protectively by his supervisor, and his work progressed smoothly once again. However, he received a shock when his performance evaluation at the end of the fiscal year was poorer than expected, and he lost motivation and once again went into a decline. Dejected and lacking confidence, he made statements to the effect that there was no point in living, and with suicidal ideation and depression more serious than before, he was once again given a leave of absence.

During this third leave of absence his symptoms stubbornly persisted, and he stayed at home practically bedridden, appearing for medical examinations unshaven and sloppily dressed. After a lengthy period his condition improved somewhat, and as there was a need to overhaul his day-to-day routines, he began receiving counseling along with medical examinations.

Initially, during weekly counseling sessions, he was asked to produce a chart of his daily routine, which was checked by the counselor. The chart showed that he went to bed at 1:00 or 2:00 AM and woke up around 8:00 or at times as late as 10:00 AM. He spent long periods of time playing video games or surfing the Internet, and it was evident he went entire days without doing anything productive. The employee lived alone, with his mother visiting two or three times a month to clean and cook. It was necessary to change his lifestyle to the extent that he could fend for himself, and the first steps were to instruct him to wake up at 7:00 AM and limit the amount of time spent on video games or Internet surfing. At first he was unable to get up at the designated time, and only ate a light breakfast before commencing to play video games, so it was suggested that he disconnect the game console from the TV and put it in the closet, and place strict limits on computer use as well. Reluctantly, he agreed and put the proposals into effect, but without the video games he began spending longer times watching TV or using the computer, and only left the house to stock up on food at the convenience store or supermarket. In order to break out of this behavior pattern, he was instructed to begin each day by (i) first of all changing clothes and grooming himself, and then (ii) going to the nearby convenience store to buy breakfast, the newspaper, etc. After he had more or less adapted to this new schedule, the list of daily activities was gradually increased to include cleaning the house after breakfast, doing simple stretches indoors, getting exercise, and so forth.

The next step was to start going to the gym two or three times a week, and on days when he did not go the gym, to go to the library or elsewhere—in any case, to go out of the house more and more often. While his physical condition varied from day to day, he was able to adhere to a regular schedule. Unfortunately when things were getting back on track, he went out drinking with a friend and got carried away, drinking until the wee hours of the morning. Afterward he felt ill and once again his day-to-day lifestyle fell into chaos. During counseling, which had previously focused on reflecting on his approach to work tasks and

relationships with co-workers (while taking into consideration his narcissistic tendencies and fragile ego), this episode was discussed. It was evident that despite making the greatest possible efforts, he was easily swept along by the tide of events, and measures to address this were explored.

During his leave of absence, the employee also met regularly with staff from his division's health care center, and the staff made contact with his attending physician as needed. From this it became clear that he had difficulty communicating with others in the workplace (extremely judgmental, he dealt harshly with those he disliked or disrespected, but on the other hand was excessively swayed by the opinions of those he liked and trusted.) It seemed that he might benefit from a rehabilitation program run by the Vocational Center for Persons with Disabilities, where he could interact with others in the same situation, and so he was advised to participate.

The subject agreed with surprising readiness to attend the program at the Vocational Center, and the program produced extremely positive results, indicating that communication with others in a similar position was beneficial as expected. After completing the rehabilitation program as scheduled, he was diagnosed as eligible for reinstatement, and submitted a request to return to work. The reinstatement support panel members shared a consistent understanding of the employee's above-described interpersonal behavior patterns and personality traits as well as his lack of confidence in his own competency as an employee, and there was a discussion of how his situation should be handled. The employee was removed from his previous project and reassigned to a supervisor he trusted, under whom he performed routine auxiliary tasks. To ensure consideration for the employee's situation, occupational health physicians in the division shared the reinstatement support panel's information with the Human Resources department and his supervisors, and he was officially reinstated. After reinstatement, while there was a period during which he appeared tired toward the end of the week, he was able to recover by taking it easy on the weekends, and after a few months was able to complete a week of work without difficulty. After reinstatement the employee continues visiting the Department of Mental Health periodically for examinations and counseling, and is given follow-up support. His division's occupational health physicians also conduct regular interviews, and he continues attending a follow-up program at the Vocational Center in order to associate with the fellow rehabilitation program alumni he got to know there. One year after reinstatement, he continues working with no difficulties.

Case Study 2

Male, 40–49 age group, R&D manager, graduate school, married, diagnosed with depression, two leaves of absence

The subject is naturally meticulous and has a strong tendency toward perfectionism. During his first 20 years on the job, Japan's economy was thriving and the company's business results constantly improving, and despite an extremely busy schedule he worked with

great vigor and was steadily promoted. Even after promotion to a managerial position, he had no difficulties for several years, but when the company's business entered a new phase of development he began taking part in various projects and committees besides his regular work, and was not only busy but also frustrated that his work was not progressing as he hoped. He increasingly worked late or on weekends and began suffering from insomnia, and even when finally able to sleep he would wake up in the middle of the night and be unable to fall asleep again, reporting for work day after day in an exhausted state. In this condition he was unable to concentrate when sitting down at his desk and unable to collect his thoughts, and spent more time spacing out. His supervisor could not stand by and watch this, and recommended an examination at the Health Care Center. The Center referred him to the Department of Mental Health, where he was examined. The employee was diagnosed on the spot with depression requiring medical leave, and he began his first leave of absence.

During this leave of absence he took it easy at home, and after three months with the help of medication he was able to sleep normally. His condition improved and he was eager to go back to work, but after reinstatement he fell back into the same state as before and was unable to complete his duties, and was assigned to take another leave of absence. This time it was recognized that the employee's feelings of guilt toward the company and desire to make up for the time taken off had caused him to return to work too quickly the first time, and led to the reappearance of his symptoms. To prevent a reoccurrence, he was to be given thorough treatment and counseling during this next leave of absence.

Near the beginning of his second leave of absence, the employee was experiencing shock over having to take time off again, and he lost confidence and became extremely dejected. He was encouraged to rest as much as possible and counselors made efforts to listen patiently and acceptingly to his thoughts until his mood improved somewhat. Once his condition had stabilized, he was instructed to create a chart of his day-to-day routine, and it became clear that he was waking up each morning at 6:30 along with his wife, who went to work. This was around the same time he had woken up when he was working, but it was evident that after his wife left home he hardly went outdoors and spent much time spacing out in front of the TV in the living room. His only trips outdoors were to accompany his wife shopping on weekday evenings or on weekends. To improve matters, he was first of all encouraged to change clothes after waking up, and even if he stayed home, to move about by cleaning up after breakfast, doing other housework and so forth.

The next step was to do household tasks such as laundry and cleaning up during the morning, in place of his wife, and to take a walk for 30 minutes or so every day. At first he was resistant to the notion of going out by himself on weekdays, so he was asked to try taking a long way around when accompanying his wife on shopping trips on weekday evenings, first getting accustomed to taking walks before incorporating walks purely for the sake of walking into his daily routine. Eventually he began leaving the house at the time he would have left for work, and making the 40-minute trip to the library where he spent the morning reading, then spending the afternoon doing housework or other tasks. Once he had gotten

used to this routine and seemed to be nearly ready for reinstatement, he began heading for the nearest train station each morning before going to the library, as a sort of rehearsal for returning to work.

During this period, it became apparent in his counseling sessions that the employee was extremely serious, with strong tendencies toward perfectionism, and an overwhelming sense of obligation to complete job tasks himself and behave in a manner becoming a manager. Cognitive therapy was administered to help him adjust his perceptions. Finally he was diagnosed as eligible to return to work, and an application was made for convention of a reinstatement support panel. The panel shared a unanimous recognition that his dutiful and meticulous nature was accompanied by a rigidity of thought and inability to deal flexibly with a wide variety of work situations, causing him to take too much upon himself and fall into poor condition especially at the end of business periods or before deadlines. The panel discussed means of addressing these behavior patterns.

The conclusion reached was that the employee should be removed from actual managerial duties for the time being, and instead be assigned administrative work without deadlines. Information shared with the panel by his division's occupational health physicians was also conveyed effectively to his supervisors and the Human Resources Department, and an official reinstatement decision was made with HR taking his circumstances into account. After reinstatement, he was at first fatigued at the end of each day and was exhausted over the weekends, but he gradually readjusted to working. He continued undergoing examinations and counseling in the Mental Health Department, and had regular interviews with his division's occupational health physicians. A year later his prognosis was favorable and he continued to work without difficulties.

In this case the subject was capable of readjusting his lifestyle patterns autonomously, and was not enthused with the idea of visiting a Vocational Center, so instead a rehabilitation program was designed specifically for him and implemented successfully. This was a case where support was provided making effective use of factual evidence gathered during research studies.

This case indicates that prognoses are highly favorable, and long-term work continuation can be achieved, when the status of an employee on mental health-related leave is closely tracked, treatment and advice are tailored to his or her degree of recovery, and after reinstatement health care center staff, human resources personnel and supervisors share information with one another, allocate duties and provide support to the employee based on an understanding of his or her symptoms, personality traits, stance toward work, and behavior patterns. In these cases, specialist staff must share information from various standpoints and capitalize on their expertise in various areas so as to provide support to mental disorder sufferers with maximum effectiveness.

V. Steps Taken by the Company

In line with Japan's national Healthy Japan 21 public health campaign, Panasonic in 2001 launched a Healthy Panasonic 21 initiative entailing unified efforts by the company, labor union, and health insurance society. After 10 years, the program was further elaborated as the Healthy Panasonic 2018 initiative, which aims to achieve "a 100% healthy Panasonic Group" by the 100th anniversary of the company's foundation in 2018. Emphasis is placed on mental health, one of the five key areas of focus designated (mental health, neural and cardiac conditions, loss of stamina and musculoskeletal disorders, cancer, and dental health).[4]

Also, in April 2013 the company's medical leave and reinstatement program was updated in response to the growing number of employees taking repeated leaves of absence for mental health reasons. For employees who appear to be in poor mental states, reinstatement support teams are formed before they go on medical leave, as soon as symptoms become apparent. If employees do go on leave they are provided with support geared toward reinstatement throughout their absence, and further support following reinstatement to achieve smooth re-adaptation to the workplace and prevent reoccurrence of mental disorders. The entire Panasonic Group is making a concerted effort to minimize the number of mental health-related leaves of absence.

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