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Efficacy of a Rework Program for Sick Leave due to Depressive Disorders

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Abstract

Objectives: Sick leave due to depressive disorders is a burden to the individual as well as an important socioeconomic problem. In Japan, the Rework Program was developed to improve work readiness and to prevent relapse in employees who took sick leave. However, there is a lack of scientific evidence supporting its efficacy. The aim of this study was to assess the Rework Program's efficacy following the patient's return to work and for relapse prevention.

Methods: The subjects included 21 patients who participated in the Rework Program at our university hospital. We compared the working periods of the participants in the 12 months before and the 12 months after the Rework Program and examined changes in the Rework Assist Program Assessment Sheet (RAPAS) scores.

Results: Seventy six percent of the patients returned to work after the program, and over 90% of those who returned to work did not take another sick leave during the 12 months follow-up. The working periods after the program were significantly longer than those before the program for all participants. In participants who completed our program, the mean RAPAS scores for "attendance," "assertiveness," "coping behaviors," "initiative," and "ability to assimilate critical feedback" were significantly higher than those before the program.

Conclusion: The present study suggests good efficacy of the program on return to work and on relapse prevention following the initial return to work. In addition, the RAPAS score changes reflected changes in cognition and behaviour following completion of our Rework Program.

Keywords: Rework program; Sick leave; Relapse prevention; Depressive disorder; Cognitive behavior therapy.

Introduction

Job loss, absence from work, and decreased productivity due to depressive disorders are not only a heavy burden to individuals but also are important problems in clinical psychiatry from a socioeconomic point of view [1-3]. In Japan, the cost of depressive disorders due to unemployment, absence from work, and low productivity following the return to the workplace is estimated to be 920 billion yen [4]. This cost significantly surpasses the direct cost of inpatient and outpatient care combined for depressive disorders, which is 180 billion yen [4].

Patients with depressive disorders tend to take long-term sick leave [5-8]. Previous reports from Finland [8] and the Netherlands [7] indicated that the average length of sick leave was a few months. Furthermore, workers who went on long-term sick leave due to depression were at an increased risk for future recurrent sick leaves [9]. A report from Japan suggested that the frequency of past sick leaves was a significant predictor of future sick leaves [10]. In a longitudinal study in Japan, 49.3% of workers who returned to work after their first sick leave due to depression took another sick leave after 8.5 years; 28.3% and 42.0% took another sick leave 1 and 3 years following their return to work, respectively [11]. These studies indicate that reintegration into society following sick leave due to depression is difficult, and that development of a special intervention method is essential.

Labor policies and environments differ by country; therefore, a culturally specific intervention method suitable to unique situations in each country is required for reintegration into society for individuals who take sick leave due to depression. Compared with Europe and the United States, employment in Japan is often described as "membership-based employment" and many employers guarantee lifetime employment and a seniority wage system. On the other hand, opportunities to change jobs are limited and the employer dictates the employee's duties and responsibilities. Therefore, individuals in Japan are often asked to return to the same workplace following their sick leave. Consequently, there is a higher risk of relapse in this type of labor system, where the individual returns to work and experiences the same difficulties; their symptoms have been treated but their work environment has not changed [12,13].

Modification of cognitive behavioral characteristics and improving coping skills are required to promote mental health in patients with depressive disorders [13]. Therefore, the Rework Program, a group-centered rehabilitation program, was developed to improve work readiness and prevent relapse of patients who take sick leave [13]. Although the Rework Program has spread rapidly within Japan due to the needs of individuals and the society, there is no standardized version of the program nor sufficient scientific evidence supporting the Rework Program's efficacy at this time [14].

Wakayama Medical University Hospital began its Rework Program in May of 2013. Our program is based on a cognitive behavioral therapy approach. We consider our program to be a safe pseudo-workplace; we focus on relapse prevention while coaching the patients on how to understand their own vulnerability, to plan measures against their own vulnerability, and to implement those measures. In order to assess our program's efficacy following return to work and on relapse prevention, we compared the working periods of the participants 12 months before and 12 months after the Rework Program. Further, we

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Cases	Age (years)	Gender	Education (years)	Age at onset first depressive episode	Time of sickness absence	Total periods which did not work before our program (months)	Periods which did not work just before our program (months)	Periods participated in our rework program (months)	The scores of QIDS-J at the time of recruit
case 1	31	M	16	22	3	14	8	11	3
case 2	24	F	16	23	1	11	11	17	9
case 3	49	F	15	33	3	20	5	10	4
case 4	47	F	16	45	1	22	22	4	3
case 5	46	M	16	44	7	21	14	6	2
case 6	24	M	16	23	2	15	5	10	5
case 7	46	M	16	41	3	15	9	2	7
case 8	51	M	12	51	1	4	4	9	6
case 9	36	M	16	35	2	6	4	7	11
case10	58	F	16	53	2	25	3	4	0
case 11	46	M	18	45	1	3	3	5	12
case 12	27	F	17	24	3	21	11	15	4
case 13	40	M	16	39	1	13	8	13	2
case 14	41	M	16	39	2	18	6	9	1
case 15	44	M	16	33	4	15	15	9	5
case 16	47	M	16	46	1	12	12	1	10
case 17	37	F	14	31	3	15	13	6	12
case 18	53	M	16	51	1	31	31	4	6
case 19	26	M	16	26	1	4	4	12	12
case 20	32	F	14	29	5	30	17	3	2
case 21	47	M	16	36	7	49	5	2	3

Table 1: Demographic data and baseline characteristics.

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Office Work Individual interview	Groupwork	Personal computer work	Groupwork	Psycho- education
PM	Office work Cognitive- behavioral group therapy	Office work	Yoga/ Aroma		Group Psycho- therapy

Table 2: Rework program in Wakayama Medical University hospital.

examined the pre- to post-intervention change of the Rework Assist Program Assessment Sheet (RAPAS) scores, which is used to determine the patient's readiness to return to work.

Subjects and Methods

Subjects

The subjects were 21 patients who participated in the Rework Program at Wakayama Medical University Hospital from May 2013 to January 2016. The subjects were recruited from patients who visited the neuropsychiatry outpatient clinic at our university hospital or who were referred to our department by other psychiatric outpatient clinics with a specific recommendation for the Rework Program. The standard criteria for participation were (1) psychiatric outpatients with depression, (2) medically certificated sickness absence, (3) at least 32 working hours a week before sickness absence, (4) enlisted in social insurance, and (5) patients who were interviewed by their occupational physician. Patients with alcohol or drug dependence, schizophrenia, or schizoaffective disorder were excluded from our Rework Program.

The patients' psychiatric diagnoses were major depressive disorder (n=19), bipolar II disorder (n=1), and dysthymic disorder (n=1), as determined by Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria. Among them, 13 patients were public servants and 8 patients worked in the private sector. Characteristics of the patients are shown in (Table 1).

This study was a retrospective patient record review, and was approved by the ethical committee of Wakayama Medical University. In this study, "sick leave" was defined as more than 1 month of continuous suspension from work with a medical certificate for depression or depressive mood. The subjects were patients who had difficulty returning to work. The average number (standard deviation [SD]) of sick leaves was 2.6 (1.9) and the total average period (SD) that the patient did not work prior to recruitment was 17.3 (10.7) months.

Introduction of our Rework program

The staff comprised a nurse, a psychiatric social worker, and two psychiatrists. Our program employed a cognitive behavioral strategy in which patients were asked to reflect on their illness onset, gain insight into their cognitive-behavioral pattern, and taught to cope with their vulnerabilities. Our Rework Program provided full-day treatment: 9 am to 4 pm, 4.5 days a week (Table 2).

Office work

The participants engaged in individual work. In the first part of the program, they read business-related materials or books about cognitive behavior therapy to improve their concentration and work ability. Then, they reflected on their illness onset in order to understand their own characteristic cognitive-behavior patterns. Finally, they summarized ways in which they could cope with their own vulnerability.

Individual interview

The participants consulted with the Rework program staff about their problems and their "rework readiness" was assessed.

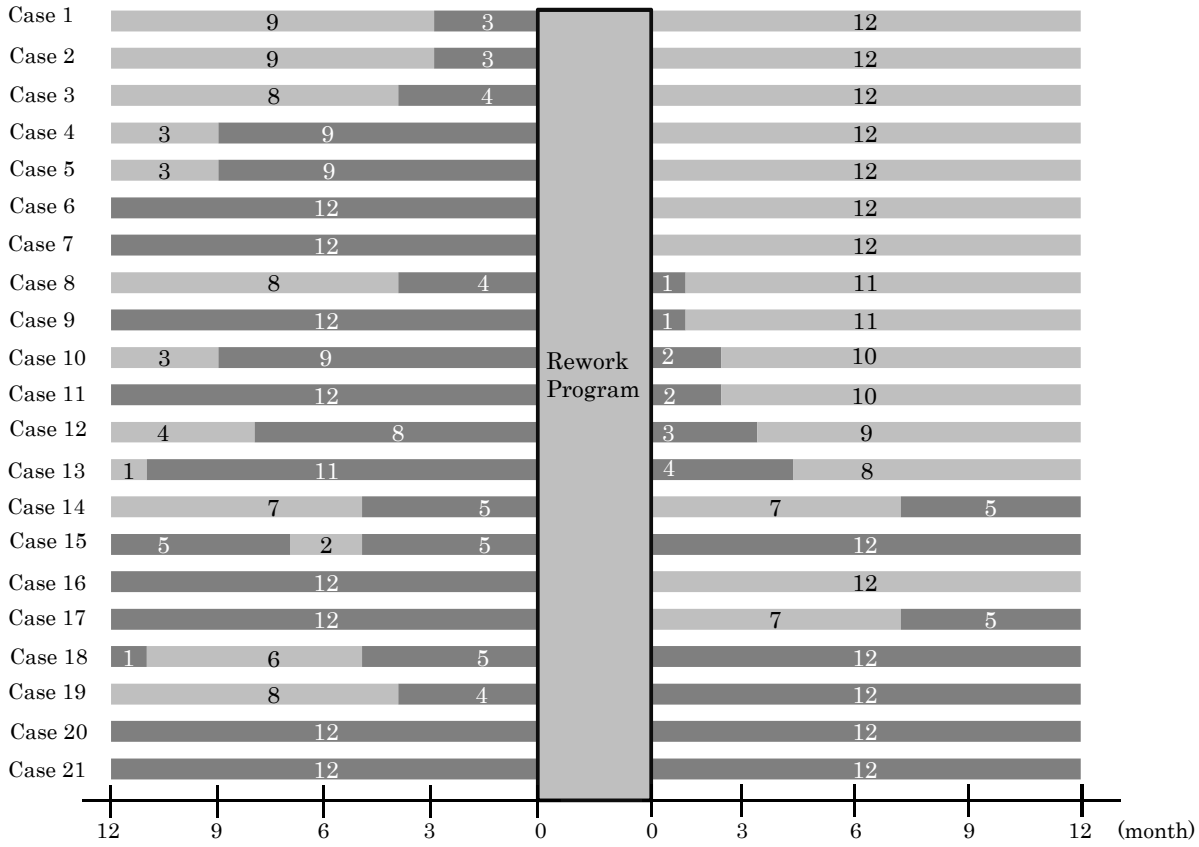

Figure 1: The working periods of all participants during 12 months before and after our program are showed. Case1-15 completed the program and Case16-21 did not. The dark gray show period of sick leave and light gray show period of work.

Psycho-education

The psycho education consisted of 8 sessions, and aimed to help the patient understand the nature of their illness. The contents included stress, relapse prevention, medication, social resources, depression, reflection on illness onset, assertiveness, life rhythm, and career anchors.

Yoga and aroma therapy

These approaches were used for relaxation and to address mental and physical strain.

Group work

The patients engaged in time-limited group tasks to promote role performance, planning, and cooperation. A sense of self-efficacy was acquired through the accomplishment of group tasks.

Group psychotherapy

The patients received counseling on topics of their choosing and sought advice from other participants on problem solving.

Cognitive behavioral group therapy

A well-trained psychiatrist led each cycle: one cycle was composed of 8 sessions, with each session running approximately 120 min. The sessions included cognitive restructuring, problem solving, behavioral activation, and assertion. The participants aimed to understand these skills and to develop strategies to cope with work stress using these skills.

RAPAS

In order to assess rework readiness, we used the RAPAS, a widely used tool in Japan [15]. The instrument assesses 12 items: attendance, sleepiness/fatigue, concentration, conversational ability, cooperativeness, assertiveness, induced annoyance, role performance, coping behaviors, emotional stability, initiative, and ability to assimilate critical feedback. The assessment is scored on 4-point Likert-type scale, with descriptions of anchor points [12]. The standard criteria for completion of the Rework Program were (1) an average score on the RAPAS of more than 3.5, with no domain scored as 1; (2) 95% or greater program attendance over the preceding 2 months; and (3) the ability of the participant to reflect on the process of illness onset and to understand and cope with their own vulnerability.

Statistics

The effect of the Rework Program on relapse prevention after returning to work was assessed: 12-month working periods before and after the Rework Program was compared using the Wilcoxon signed-rank test. In addition, the RAPAS scores before and after the Rework Program was compared using paired *t*-tests.

Results

Of the 21 participants, 15 completed our program; 14 of the 15 participants who completed our program returned to work. Two of the 6 participants who did not complete our program returned to work. Of the 16 participants who returned to work, only 1 participant took sick

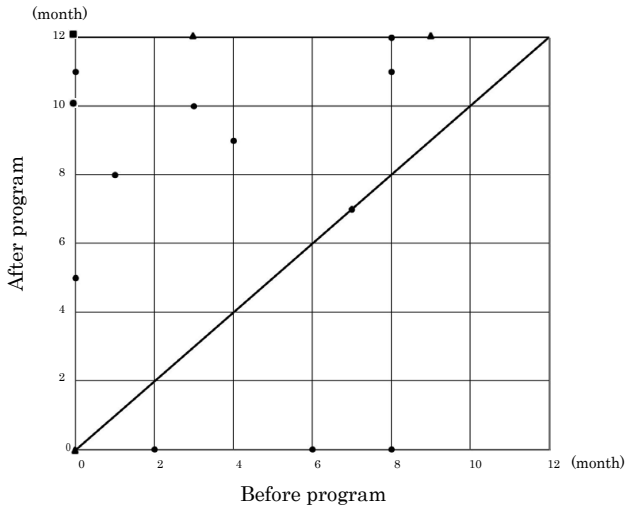

Figure 2: The scatter diagram which were compared the working periods before and after our rework program The horizontal line shows the working periods before Rework Program and vertical lines shows the working periods after Rework Program. The black dot means one patient, the triangle means two patients and the square means three patients.

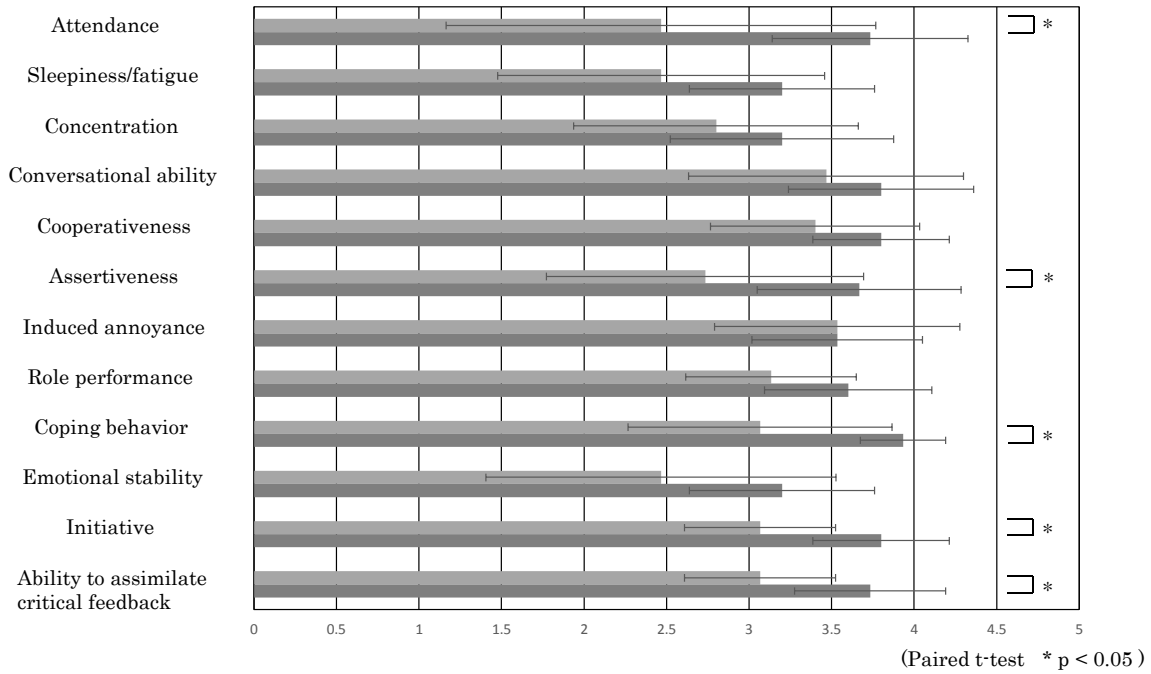

Figure 3: The mean scores of Rework Assist Program Assessment Sheet before and after the program The light gray bar shows scores of RAPAS before program and dark gray bar shows scores of RAPAS after program. Error bar represent one standard deviation. The differences in mean scores of "attendance" "assertiveness" "coping behaviors" "initiative" and "ability to assimilate critical feedback" of RAPAS are significant between before and after the program.

leave during the 12 months follow-up period. The mean duration for our program was 7.6 months. (Figure 1) shows the working periods of all participants during the 12 months before and after our program. The working periods after the program were significantly longer than those before the program (p=0.002, Wilcoxon signed-rank test; (Figure 2). In participants who completed our program, the mean scores of the following items in RAPAS were significantly higher after the program than those before program completion (attendance; p=0.005, assertiveness; p=0.002, coping behaviors; p=0.003, initiative; $p < 0.001$, ability to assimilate critical feedback; p=0.001, paired t-test; (Figure 3).

Discussion

To our knowledge, this was the first study to examine the efficacy of the Rework Program on return to work and relapse prevention by comparing the working periods of the participants during the 12 months before and after the program. Our program targeted patients with depressive disorders who had difficulty returning to work or had taken repeated sick leaves due to depression: 76% of the patients returned to work after the program, and over 90% of those who returned to work did not take another sick leave during the 12 months follow-up. Furthermore, the working period duration of the participants was

longer during the 12 months after the program compared with the 12 months prior to the program.

Supporting patients with depressive disorders in their return to work is an important clinical challenge. The high percentage of patients taking another sick leave after their initial return to work has been particularly problematic [14,15]. In a Japanese study investigating the percentage of workers taking another sick leave following their initial return to work showed that approximately half of the patients took another sick leave [11]; this finding is consistent with a previous report from the Netherlands [7]. There are two retrospective cohort studies on the efficacy of the Rework Program within the Japanese labor environment [16,17]. A single-group retrospective cohort study reported that 77.5% of patients continued to be employed 1 year after their return to work following completion of a Rework Program [16]. A retrospective cohort study with a control group showed that those who completed a Rework Program had a significantly better job retention rate than those who did not [17]. In our program, the participants were considered to be at high risk of future recurrent leaves because they were employees with frequent or long leaves of absence. Predictive factors for recurrent sick leaves include a previous history of absence due to depression [9,10] and a long leave of absence due to sickness [7]. In our study, 16 out of 21 participants returned to work, and only 1 patient required another medical leave during the 12 months follow-up. Our sample size was small but our results were better than those of previous studies [16,17]. In addition, our comparison of the working periods 12 months before and after the program revealed that the participants worked more days following, relative to before, the program. Therefore, the present study suggests good efficacy of the program on the return to work and on relapse prevention following the initial return to work.

In this study, we examined pre- to post-intervention changes in the RAPAS scores in patients who completed the program. The RAPAS, which assesses readiness for returning to work, is used as an instrument to evaluate if a patient successfully completed a Rework Program [13]. A previous study suggested that this scale has good validity in predicting if an individual could successfully return to work and not relapse after returning [15]. Among our participants, the scores for "attendance," "assertiveness," "coping behaviors," "initiative," and "ability to assimilate critical feedback" were significantly increased following program completion. Most of the individuals who completed our program successfully returned to work; all but one patient maintained their employment for 12 months. Therefore, these changes in RAPAS items may be associated with readiness for returning to work and relapse prevention.

The patients' aims in our program were to review the sequence of events leading to their sick leave, to understand their own cognitive behavioral characteristics, to create measures against their own vulnerabilities, and to implement those measures. As a strategy to reach those goals, cognitive behavioral therapy skills were used. It is suggested that the RAPAS score changes reflected changes in cognition and behavior through accomplishment of our Rework Program. To our knowledge, this is the first study to report changes in the RAPAS scores pre- and post-Rework Program. RAPAS score changes may depend on differences in the program content among institutions. Therefore, future studies should investigate whether RAPAS score changes differ by program content as well as the association between score changes and return to work ratio and relapse prevention in order to build a more efficient and cost effective program.

Limitations

The limitations of this study are that it was retrospective without a control group and that although the patient's work duration was evaluated; the patient's performance was not. Furthermore, when evaluating the efficacy of a Rework Program, the impact of the socioeconomic environment of the medical care zone of the facility on the participants, program content, and results of the Rework Program need to be considered. Because our program lasted more than 7 months on average, we enrolled individuals who were able to take relatively long leaves. Our university hospital is located in a provincial city where there are few private companies with conditions of employment that provide stability for workers; therefore, many of our participants were civil servants. Effective program content and the degree of the program's effect on returning to work and on relapse prevention might differ between private company employees and civil servants. In the future, multiple institutions that implement a Rework Program should cooperate and carry out prospective multi-site randomized studies to accumulate scientific evidence, and each institution should develop a program that is suited to the socioeconomic characteristics of the region that they serve.

Conclusion

In summary, we employed a Rework Program with patients with a depressive disorder who had difficulty returning to work or had recurrent sick leaves. Seventy six percent of the patients returned to work, with over 90% of those who returned to work not taking another sick leave at the 12 months follow-up. Of all the participants, the duration of work during the 1-year period after the program was significantly longer than that during the 1-year period prior to the program. Successful treatment of depression entails not only treatment of depressive symptoms but also re-integration of the patient into society. The patients in our program gained insight into their own vulnerabilities, and then planned and implemented measures to counteract their vulnerabilities through cognitive behavioral therapy. This experience led to resilience against challenges in the workplace as well as other life events. Further enhancement of the Rework Program would contribute to more fulfilling lives for individuals with depression.

Conflict of Interest

The authors declare that there are no conflicts of interest.

Sources of Funding

None.

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