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Research Article

FACTORS INFLUENCING CONTINUING EMPLOYMENT AMONG PATIENTS WITH MOOD DISORDERS

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Abstract

Background and objectives: The number of workers taking temporary leave due to clinical depression is increasing, and the probability that these workers will take such leave again after returning to work is high. In response to this dilemma, institutions involved in psychiatric care across Japan now implement "rework programmes," aiming to help employees resume work without relapsing to depression. Methods: This programme has several forms. Between May 2017 and June 2019, 32 patients on temporary leave due to a depressed mood participated in group psychotherapy at our clinic. Of these patients, 21 patients who were able to return to work without a recurrence of symptoms, evaluated upon reinstatement, and followed up for 1 year were analysed in this study. The participants were divided into two groups: a continued employment group (n=16) consisting of patients who were still working one year after reinstatement and a repeat leave group (n=5) consisting of those who took temporary leave again within the first year. Differences in psychiatric symptoms, social function, cognitive function, readiness to return to work, and other factors were compared between the two groups. Results: The continued employment group was likely to have better social function, cognitive flexibility, and executive function when returning to work. Conclusion: These preliminary results indicate that social functions and cognitive functions might be associated with continued employment. ***ASEAN Journal of Psychiatry, Vol. 23(8), August, 2022; 1-9.***
Keywords: Mood Disorder, Return to Work, Rework Programme, Employment, Mental Health

Introduction

Although the number of employees taking temporary leave for clinical depression has increased, one study found that these employees are likely to take leave again after returning to work [1]. Moreover, in Japanese IT companies, the recurrence of symptoms or repeat leave of absence is most likely to occur within the first year of reinstatement [2]. These reports suggest that failing to improve individual resilience leads to higher rates of recurrence and repeated leave

after reinstatement. Support activities designed to foster individual resilience with the aim of continued employment after returning to work, known as "rework programmes," are provided at employment support centres and institutions involved in psychiatric care across Japan [3]. While there are many forms of these programmes, a multicentre study investigating the effects of rework programmes compared 323 participants who had completed a rework programme to 100 who had only received ordinary treatment, and found that programme completion significantly prevented recurrence [4].

Most institutions offering rework programmes begin the programme after symptom improvement and remission and require an additional to three six months to complete the programme6. At the same time, most workers struggle to secure enough leave, and the challenge of getting long-term leave is even more pronounced at small- and medium-sized businesses. Thus, it is important to identify the key factors leading to continued employment and to promote efficient preparation for returning to work. To address these issues, the present study aimed to investigate the associations between continued employment and factors such as depressive symptoms, social adaptation, cognitive function, and readiness to return to work at the time of decision to return [5].

Methods

Study design and participants

This prospective cohort study used data from patients undergoing outpatient treatment at the Mental Health Center of the Department of Neurology and Psychiatry at the Hospital of the University of Occupational and Environmental Health, Japan [6]. The patients satisfied the following selection criteria.

1. Workers on temporary leave for mood disorder (*i.e.,* depressive disorders or bipolar disorders in the diagnostic and statistical manual of mental disorders: DSM-5) 7.
2. Age ≥ 20 years, male or female
3. Expressing a desire to return to work
4. Had been judged fit to participate by an attending physician
5. Had provided voluntary written consent

The exclusion criteria were as follows:

1. Had been diagnosed with schizophrenia or organic mental disorder
2. Had been judged unfit by a doctor for any other reason

After obtaining consent for study participation, we collected basic information on background factors and conducted a group psychotherapy session once a week for 120 min. We performed the following evaluations when it was decided that a participant would return to work: the Montgomery-Asberg Depression Rating Scale (MADRS) 8, the Quick Inventory of Depressive Symptomology (QIDS) 9, cognitive function (evaluated using Cognitrax® on PC), social function evaluated using Social Adaptation Self-Evaluation Scale [SASS]) 10, intrinsic motivation evaluated using the Behavioural Inhibition System/Behavioral Activation System (BIS/BAS)) 11, and the 26-item version of the World Health Organization Quality of Life scale (WHO-QOL-26) 12.

We then performed a prospective follow-up assessment for one year. Participants who were able to continue working for one year were classified into the continued employment group, while those who took an additional leave of absence during the first year were classified into the repeat leave group, and the differences between these groups at the time of reinstatement were investigated [7]. This study was approved by the ethics committee of the University of Occupational and Environmental Health (approval number: H29-127), and written informed consent was obtained from all participants [8].

Statistical analysis

Among the evaluated factors, categorical variables were analysed using Fisher's exact test, and differences in mean scores were compared using the *t*-test with a significance level of $P < 0.05$. Multivariate analysis was performed using logistic regression modelling, with factors showing significant differences in the univariate analysis analysed by forced entry [9]. This is because of the necessity to reduce multivariate factors to account for the small sample size [10]. All statistical analyses were performed using EZR software version 4.0.2, which was used to calculate the R.

Results

Of the 32 participants who consented to study participation 29 with depressive disorders and three with bipolar disorders, four were excluded from analysis for discontinuing participation, one

for discontinuation due to increased symptoms, one for resignation from work, three for not returning to work, and two for missing evaluations at the time of reinstatement [11]. The remaining 21 participants were divided into a continued employment group of 16 participants 15 with depressive disorders and one with bipolar disorder who had successfully continued working for one year after reinstatement, and a repeat leave group of five participants four with depressive disorders, one with bipolar disorder who had taken additional leave [12]. The rate of continued employment was 76.2% (16/21).

The background factors for both the groups are listed in Table 1. Sex, age, number of episodes, number of leave periods, use of medication, and workplace accommodation upon reinstatement reduced workload, incremental increase in workload, transfer to a different position did not differ significantly between the groups [13]. The univariate analysis results for each factor evaluated are shown in Table 2. The two groups did not show significant differences in the MADRS, QIDS, total SASS, quality of life, intrinsic motivation, WHO-QOL, and BIS/BAS scores [14]. In assessments based on the cognitive function scales, the continued employment group showed significantly higher scores for cognitive flexibility and executive function than the repeat leave group at the time of reinstatement (P=0.04). In assessments of social adaptation, SASS scores were higher in the continued employment group than in the repeat leave group at the time of reinstatement continued employment group: 34.6 ± 5.7, repeat leave group: 28.2 ± 6.5, P=0.04). Among the factors showing significant differences in univariate analysis (SASS, executive function, and cognitive flexibility, logistic regression analysis showed no significant differences, but SASS scores tended to be higher in the continued employment group (P=0.06) (Table 3).

Table 1. Analysis of factors in the continued employment and repeat leave groups

	Continued employment	**Repeat leave**
	(n=16)	(n=5)
Age, mean (yr)		
≥ 40	13 (81.3%)	2 (40%)
<40	3 (18.8%)	3 (60%)
Sex		
Male	12 (75%)	5 (100%)
Female	4 (25%)	0 (%)
Mood episodes		
One	8 (50%)	3 (60%)
Two or more	8 (50%)	2 (40%)
Number of leave episodes		
One	11 (68.8%)	3 (60%)
Two or more	5 (31.3%)	2 (40%)
Psychiatric medications		
Yes	15 (93.8%)	5 (100%)
No	1 (6.3%)	0 (0%)
Reduced workload		
Yes	14 (87.5%)	5 (100%)
No	2 (12.5%)	0 (0%)
Incremental increase in workload		

Yes	13 (86.7%)	5 (100%)
No	3 (18.8%)	0 (0%)
Transfer to a different position		
Yes	8 (50%)	2 (40%)
No	8 (50%)	3 (60%)

Table 2. Univariate analysis of the difference between the continued employment and repeat leave groups.

	Continued employment(n=16)			**Repeat leave(n=5)**			
	n	**%**	**Mean±SD**	**n**	**%**	**Mean±SD**	**p**
MADRS							
≤ 10	16	100		5	100		
≥ 11	0	0		0	0		
							1
QIDS							
≤ 5	9	56.3		2	40		
≥ 6	7	43.8		3	60		
							0.635
Cognitrax®*							
Verbal memory							
≥ 90	9	56.3		2	40		
<90	7	43.8		3	60		
							0.635
Reaction time							
≥ 90	13	81.3		3	60		
<90	3	18.8		2	40		
							0.553
Cognitive flexibility							
≥ 90	16	100		3	60		
<90	0	0		2	40		
							0.0476*
Executive function							

≥ 90	16	100		3	60		
<90	0	0		2	40		
							0.0476*
Social cognition							
≥ 90	8	50		1	20		
<90	8	50		4	80		
							0.338
Working memory							
≥ 90	15	93.8		3	60		
<90	1	6.3		2	40		
							0.128
Continuous attention							
≥ 90	14	87.5		4	80		
<90	2	12.5		1	20		
							1
Speed of movement							
≥ 90	15	93.8		5	100		
<90	1	6.3		0	0		
PRRS			73.3 ± 9.60			76.0 ± 6.96	0.572
WHO-QOL-26 (mean)			3.56 ± 0.49			3.12 ± 0.68	0.129
BIS/BAS							
BIS			20.4 ± 3.65			22.2 ± 3.89	0.365
BAS			36.5 ± 4.81			37.8 ± 5.35	0.613
D (Drive)			10.7 ± 2.01			11.4 ± 2.40	0.554
RR (Reward Responsiveness)			15.2 ± 1.69			15.2 ± 1.48	0.953
FS (Fun seeking)			10.5 ± 2.06			11.2 ± 3.27	0.571
SASS**			34.6 ± 5.66			28.2 ± 6.49	0.0472*

MADRS, Montgomery-Asberg Depression Rating Scale; QIDS, the Quick Inventory of Depressive Symptomology (QIDS); WHO-QOL-26, 26-item version of the World Health Organization Quality of Life scale; BIS/BAS, Behavioural Inhibition System/Behavioral Activation System; SASS, Social Adaptation Self-Evaluation Scale.

Statistical significance (*i.e.*, p-value less than 0.05) is expressed as an asterisk.

[*]Standardised score (*i.e.*, average value as 100, standard deviation as 15) is expressed.

[**]Total score 0 to 63

Table 3. Odds Ratio (OR) and Confidence Interval (CI) for each factor and continued employment

	Univariate				Multivariate			
	OR	**95% CI**		**p**	**OR**	**95% CI**		**p**
SASS*	1.24	0.98	1.57	0.07	1.42	0.98	2.03	0.058
Executive function**	1.09	0.97	1.22	0.139	1.27	0.31	5.17	0.738
Cognitive flexibility**	1.08	0.97	1.2	0.147	0.92	0.25	3.38	0.895

Discussion

The follow-up assessments performed one year post-reinstatement showed that the continued employment group had higher social adaptation at the time of reinstatement than the repeat leave group. Multivariate analysis did not show significant intergroup differences in cognitive or executive functions. These findings indicate the need to conduct additional investigations with a larger sample size. Past research on depression and cognitive function has indicated that executive function, memory, and attention show mild-to-moderate declines, even during remission 13. One study on the effects of cognitive rehabilitation for depression reported significant improvements in attention and working memory but not in language or executive function 14. However, very few studies have investigated the cognitive functions associated with continued employment. Regaining cognitive function is considered vital for patients who wish to recover from depression and continue working. As such, it is important to explore which specific aspects of cognitive function are most important.

It is essential that depression symptoms be sufficiently reduced when an employee returns to their social role; however, if the goal is continued employment, it is also necessary to consider social adaptation, which is associated with temperament15. The SASS has come to be widely used to evaluate whether an employee has recovered sufficiently to return to work 6. In this study, we analysed the total SASS score, but it would be helpful to analyse its subscales in detail in the future. At present, support for returning to work is provided in many ways. Research has suggested that group therapy and cognitive behavioural therapy are effective when used as part of a rework programme and that exercise and relaxation techniques may also be helpful4. The format of support is expected to continue to change in response to the COVID-19 pandemic. Thus, it is necessary to explore forms of reinstatement support that are possible even during a pandemic, including what evaluations to perform and what factors are key to continuing employment.

Limitations

This study had some limitations. First, owing to the limited number of participants, the results cannot be reliably generalised. Second, there was a sampling bias because the sampling was not randomised. Specifically, our sample likely included many participants who wanted to continue working because we recruited patients participating in group therapy aimed at supporting reinstatement. Third, because we studied the continuation of employment and evaluations at the time of reinstatement, we cannot draw conclusions about the relationship between continued employment and development after reinstatement.

Conclusion

One year post-reinstatement follow-up showed that the continued employment group may have had higher social adaptation, cognitive flexibility, and executive function at the time of reinstatement than the repeat leave group. Owing to their association with continued employment, it may be possible to use these factors to guide decisions about returning to work. The results of this study cannot be reliably generalised due to limitations, including a small sample size and participant bias, and further studies are necessary.

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