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## RETURN TO WORK AND FUNCTIONAL CAPACITY OF PSYCHIATRIC PATIENTS: CLINICAL ASSESSMENT TOOLS AS PREDICTORS OF RETURNING TO WORK

### ABSTRACT

*Subjective functional capacity is of prognostic value regarding work outcomes. The Sheehan Disability Scale (SDS) and the Return-to-Work Self-Efficacy (RTW-SE) questionnaire are validated tools to measure dimensions of subjective functional capacity and they can be used in rehabilitation planning. The aim of our study was to assess the SDS and RTW-SE measures in predicting the working status after one year of follow-up among psychiatric patients undergoing assessment of work ability.*

*This cohort study involved 104 consenting patients with multifactorial disabilities referred for a thorough psychiatric examination concerning work ability. At the one-year follow-up, 93 patients were reached for a telephone interview.*

*SDS and RTW-SE measures both independently predicted better work outcomes after one year. Having employment at baseline and being off from work for less than 6 months were associated with better work outcomes. Higher education and being off from work for less than 6 months were associated with more positive estimations of one's work capacity.*

*Considering the predictive value for work status, both the SDS and the RTW-SE questionnaires are usable tools for the evaluation of working capacity, opening dialogue regarding the subjective and psychosocial aspects affecting psychiatric rehabilitation and recovery.*

**KEY WORDS: FUNCTIONAL ABILITY, PSYCHIATRIC PATIENTS, RETURN TO WORK, SELF-EFFICACY, SDS, SELF ASSESSMENT, WORK ABILITY**

## INTRODUCTION

Up to 38.2% of the total population in the European Union suffer from a mental disorder and two-thirds of them do not receive any treatment (1). There is little doubt that mental disorders rank together as the most disabling group of all medical disorders because of the combination of high prevalence and associated diagnosis-specific impairments and disabilities. The disability burden manifests in indicators such as years lived with disability, lost work days, disability pensions, work productivity and quality of life. Depression is the single most important contributor to the total disease burden, but surprisingly, less serious mental disorders also result in a substantial degree of disability [1]. A mental health problem, as opposed to a physical health problem, is related to a longer duration of time off work among employees on sick leave (2).

Fossey and Harvey (3) concluded that suitable work improves the mental health of people with serious psychiatric conditions by providing structure, social contact and a sense of purpose. The same has been concluded regarding those with common mental disorders (4, 5). Thus, keeping patients suffering from psychiatric morbidity in an active workforce is important. For those outside an active workforce, tailor-made forms of multidisciplinary interventions are needed to promote return to work (RTW) in order to prevent permanent disability (6). Such forms of intervention improve quality of life by establishing circadian rhythms, increasing functional capacity and improving low levels of self-esteem.

Some patients suffering from psychiatric morbidity have been found to be scared of returning to work, and they then develop stress and anxiety (7, 8). Relevant authorities and occupational healthcare professionals both assess fitness for work and plan interventions for RTW, thereby leaving no control to the individual. This may further increase the sense of insecurity related to RTW (8, 9). Andersen et al. (10) concluded in their meta-synthesis that employees with common mental disorders were able to identify several obstacles and facilitators of RTW related to their own personalities, social support at the workplace and social and rehabilitation systems. However, these employees found it difficult to determine the right time for RTW and experienced difficulties in implementing RTW solutions at the workplace.

Millward et al. (11) suggested that the mental healthcare system could have a negative effect on the RTW process, as interventions and healthcare professionals may reinforce the illness and non-work identity of the affected individuals by focusing too narrowly on the symptoms and illness instead

of their own resources. On the other hand, focusing on the remaining work capacity and giving less emphasis to the symptoms may prevent adoption of an incapacitating illness role identity. However, individual work capacity is difficult to measure objectively in cases of mental health problems, unless a proper work trial in a real work environment is organized (12). In addition to the limited availability of objective methods, we need to explore the value of subjective measures of work capacity for individuals with mental health problems and how they relate to RTW. Self-reported 'readiness for RTW' measures have been shown to be robust predictors of actual RTW (13). In addition, the assessment process helps the patient to focus on his/her remaining functional capacity, thereby decreasing the importance of remaining symptoms.

In addition to precise diagnoses and treatment, there is a need for easy office-based tools to assess subjective functional capacity in order to plan the rehabilitation process and assess the optimal time for RTW. The Sheehan Disability Scale (SDS), which gives separate scores for work/school activities, social activities and family life, has been widely used to provide a self-reported disability score (14, 15), but it has not been used in relation to RTW. In contrast, the Return-to-Work Self-Efficacy (RTW-SE) measure has proved to be a robust predictor of RTW among employees with common mental disorders (16, 17) and among employees on sick leave for any cause (18). However, it has not been used in a diverse and severe psychiatric patient group. The SDS describes the subjective experience of current functional capacity, whereas the RTW-SE questionnaire describes individuals' future expectations.

The aim of our study was to determine if SDS and RTW-SE scores predict working status after one year of follow-up in a sample of Finnish psychiatric patients referred for assessment of occupational capacity and rehabilitation in connection with long-term and unclear problems of function at work. The study hypothesis was that both test results predict RTW.

## MATERIALS AND METHODS

This study was conducted among patients referred for a thorough psychiatric examination of work ability at the Helsinki University Central Hospital Psychiatric outpatient unit for assessment of function and capacity. The referrals were made by occupational practitioners, the psychiatrist in charge of treatment or insurance companies, in cases of prolonged or severe disability with a probable mental

health origin and/or a functional status in disagreement with clinical diagnosis. A psychiatrist had previously evaluated all patients, but further assessments of work ability were judged to be necessary. All patients were unable to perform their designated work at the time of evaluation.

A multidisciplinary team, consisting of a psychiatric nurse, a social worker, an occupational therapist, a psychologist and a psychiatrist, conducted the evaluation. The process also typically included a meeting with the employer, the provider of occupational healthcare and a close informant, for example a family member. With unemployed patients, we contacted officials of public employment services. The duration of the evaluation was 1–2 months.

The examination by the team included the assessment of work ability and function, as well as a re-evaluation of differential diagnoses, illness severity, subtyping and comorbidity. Based on this examination, the team designed a new treatment and rehabilitation plan with realistic goals, including vocational rehabilitation whenever possible.

A total of 107 patients were assessed between 20 Sept 2011 and 20 Dec 2012 (a 15-month period). Of these, 104 patients gave their consent to participate in follow-up. One year after their baseline examination 93 patients were reached for a telephone interview. An analysis was performed on the dropout group consisting of 11 patients.

#### MEASURES

The main outcome measure was returning to work by the end of the follow-up time of one year (yes or no). The criteria for working included full-time work, part-time work (50%), work trials and freelance work (when sufficient for making a living). The main predictive questionnaires used were the SDS and RTW-SE. Both were used at the time of evaluation (baseline measurement) with the SDS also used at the one-year follow-up interview.

The SDS includes values from 0 to 10, where 0 stands for the best functional capacity with no deficit (14, 15). The SDS gives separate scores for work/school activities, social activities and family life. In addition, we calculated a mean SDS score based on all three subscales. The reliability coefficient Cronbach's alpha for SDS Mean was 0.83.

The RTW-SE measure is based on an individual's belief in his/her ability to successfully meet the demands of the workplace and return to work (19). Lagerveld et al. (16) formulated the concept of the RTW-SE into 11 questions concerning RTW and vocational rehabilitation. The questionnaire explores whether an individual has the

ability to meet the demands of his/her job if going back to full contract hours the next day. We used this RTW-SE 11-item questionnaire at baseline. The participants were asked to respond to statements about their jobs, imagining that they would start working full hours the next day in their present emotional state/state of mind. We used a modified scale with possible scores for each question ranging from 0–6. Higher scores reflect higher self-efficacy levels. The RTW-SE measure was calculated as a mean score of all items in the scale.

In addition to the above, we examined how different background factors affected the outcome. The background factors assessed were age, gender, level of education, employment status, diagnosis and time off work for any reason at the time of baseline evaluation.

In this study the level of education was divided into four groups: primary school, high school, college or university. In the analysis we also used a dichotomous variable (university or non-university). Age was investigated as a linear factor, as well as a dichotomous variable with a cut-off point at 50 years of age ( $\leq 50$  years versus  $> 50$  years). The primary diagnoses were categorized as psychotic disorders, mood disorders, anxiety and all other diagnoses. The source of income at baseline was categorized into six groups: compensation for sick leave, temporary pension benefits, unemployment benefits, insurance company-provided compensation for vocational rehabilitation, salary or no compensation because of refused disability compensation claims.

#### STATISTICAL ANALYSIS

SDS Mean was the mean value of the three SDS subscales. To check the reliability, the Cronbach's alpha for SDS Mean was computed.

Since all of our measurements were not normally distributed, we used Wilcoxon's paired sample test (instead of the paired t-test) to compare baseline and follow-up measurements. Wilcoxon's two sample test was applied when comparing the measurements of two study groups (i.e. those who have returned to work and those who have not). When examining the relationship between SDS and RTW-SE scores, we applied Spearman's correlation coefficient ( $\rho$ ). A p-value of  $< 0.05$  was considered statistically significant. The Bonferroni corrected critical values have also been presented.

We applied logistic regression analyses when predicting return to work via SDS and RTW-SE scores. We then calculated the odds ratios (ORs) and their 95% confidence intervals (CIs). Our model building strategy was as follows:

first, estimate the crude models, then add background variables one by one into the models.

A receiver operating characteristic (ROC) curve was also analysed for SDS and RTW-SE. An ROC curve demonstrates the true positive rate against the false positive rate for different cut-points of a scale. The cut-point was calculated with the Youden index. The accuracy of the test depends on how well it divides the sample into two groups (i.e., how well it predicts RTW in this case). The area under the curve (AUC) tells the accuracy of the test: an excellent test has an AUC of 1.0 and a worthless test an AUC of 0.5.

All analyses were carried out using IBM SPSS Statistics software version 22.

## RESULTS

### *PATIENT CHARACTERISTICS*

The mean age was 45 (SD 9.6). The most frequent main diagnosis was a mood disorder (51%), followed by anxiety (17%) and psychotic disorders (7%). At baseline, 33 patients (32%) were on sick leave, 22 patients (21%) received a temporary pension benefit, 24 patients (23%) received unemployment benefits, two patients (2%) were in vocational rehabilitation and three patients (3%) were partly at work but unable to perform. The remaining 20 patients (19%) had had their claims for disability compensations refused.

Eleven patients were not reached for follow-up. These patients do not differ from the reached patients except for gender. A summary of the background factors is included in [Table 1](#).

### *RETURN TO WORK OUTCOME*

Return to competitive work was reported by 25 (27%) of the 93 subjects reached by telephone at the one-year follow-up. Of these, 17 patients had a permanent employment status, while three patients had work trials (insurance company-supported vocational rehabilitation) and five patients had freelance work combined with community or insurance company income support. The remaining 68 patients were not working. A permanent disability pension had been granted to 17 patients, 23 patients had a temporary disability benefit and 28 patients were outside of working life because of unemployment or their own decision.

### *PREDICTIVE VALUE OF BACKGROUND FACTORS*

The association between background factors and RTW is presented in [Table 1](#). Having a workplace to return to at baseline was associated with successful RTW ( $p=0.007$ ). A short time off work (less than six months) was also associated with RTW ( $p<0.0005$ ). Educational level, gender, age or diagnosis were not associated with the return to work outcome.

### *VALUES OF SDS AND RTW-SE SCORES*

SDS and RTW-SE scores for baseline and SDS scores for follow-up are shown in [Table 2](#). The mean SDS score at baseline was 6.7, improving to 4.7 at follow-up, and the range for both was 0–10. Improvement in the SDS score after one year correlated with return to work. The mean RTW-SE score at baseline was 2.4 (range 0–6). RTW-SE and SDS scores were significantly better among patients with psychotic disorders than among those with mood and anxiety disorders.

Both RTW-SE and SDS scores showed significantly better functional capacity when the patient had been off work for less than six months and also when the patient had an academic education. Subjective occupational function, as assessed by the SDS Work subscale, was significantly worse in male patients, but the other SDS subscales of function and the RTW-SE score did not show any difference between genders.

The RTW-SE score correlated strongly with the SDS score in two-tailed Spearman correlation analysis ( $\rho=0.63$ ,  $p<0.0005$ ).

### *PREDICTIVE VALUES OF SDS AND RTW-SE SCORES IN RELATION TO RTW*

The mean values and predictive values (ORs) of the SDS and RTW-SE scores in relation to return to work are presented in [Table 3](#). The sample was divided into two groups based on the return to work outcome.

The SDS has a reversed scale, with higher points meaning lower functional capacity, and therefore the OR for SDS in predicting RTW is less than 1.0. The baseline SDS predicted RTW by the one-year follow-up (OR 0.67, 95% CI 0.54-0.83), as did all three SDS subdomains: work activity (OR 0.71, 95% CI 0.59-0.89), social activity (OR 0.75, 95% CI 0.64-0.89) and family life (OR 0.78, 95% CI 0.67-0.92). The mean SDS score at follow-up was also associated with RTW (OR 0.72, 95% CI 0.59- 0.87). The RTW-SE score independently predicted successful return to work (OR 1.76,

95% CI 1.25-2.49). In the adjusted logistic regression model, the significance of both tools predictive value remained strong.

#### *DISCRIMINATIVE ANALYSIS*

In the ROC analysis, the mean SDS sensitivity was 71% and specificity 72% with a cut-point of 6.83 for RTW. There were 39 patients with an SDS less than 6.83; of these, 18 patients (46%) were working at follow-up. The AUC for SDS was 0.77 (95% CI 0.66-0.88).

The RTW-SE sensitivity was 60% and specificity 68% with a cut-point of 2.55 for RTW. There were 36 patients with an RTW-SE score more than 2.55; of these, 15 patients (42%) were working at follow-up. The AUC for RTW-SE was 0.72 (95% CI 0.61-0.84).

	At baseline n=104	Return to work No n=68 (65%)	Return to work Yes n=25 (24%)	p-value o)	Dropouts n=11 (11%)
<b>Gender</b>				0.9277	
Male	40	28 (70%)	10 (25%)		2 (5%)
Female	64	40 (63%)	15 (23%)		9 (14%)
<b>Age</b>				0.6146	
under 50	64	42 (66%)	14 (22%)		8 (12%)
50 and over	40	26 (65%)	11 (27%)		3 (8%)
<b>Employment</b>				0.0073	
No	57	43 (75%)	8 (14%)		6 (11%)
Yes	47	25 (53%)	17 (36%)		5 (11%)
<b>Education</b>				0.1414	
Non-university	85	58 (68%)	18 (21%)		9 (11%)
University	19	10 (52%)	7 (37%)		2 (11%)
<b>Time off work</b>				<.0001	
Less than 6 months	31	12 (39%)	16 (51%)		3 (10%)
More than 6 months	73	56 (77%)	9 (12%)		8 (11%)
<b>Diagnosis (primary)</b>					
F20-F29 Schizophrenia, schizotypal and delusional disorders	10	6 (60%)	1 (10%)		3 (30%)
F30-F39 Mood disorders	60	39 (65%)	16 (27%)		5 (8%)
F40-F49 Neurotic, stress-related and somatoform disorders	19	15 (79%)	3 (16%)		1 (5%)
All other diagnoses	15	8(54%)	5(33%)		2 (13%)

o) The Bonferroni corrected critical value is  $p < 0.01$ . The Wilcoxon two sample test was used to compare RTW vs. non-RTW groups.

Table 1. Background variables at baseline and their association with working life activities after one year of follow-up for psychiatric patients referred for assessment of work ability and rehabilitation evaluation.

	Baseline				Follow-up		Change		95% CI
	All		Follow-up completed		n	mean (SD)	Δ	p-value o)	
	n	mean (SD)	n	mean (SD)					
<b>SDS Mean</b>	102	6.7 (2.4)	90	6.7 (2.5)	90	4.7 (2.8)	2.0	<.0001	1.5–2.5
<b>SDS Work</b>	102	7.7 (2.6)	90	7.6 (2.7)	90	6.0 (3.5)	1.7	<.0005	1.1–2.4
<b>SDS Social</b>	102	6.5 (2.8)	90	6.6 (2.9)	90	4.4 (3.1)	2.3	<.0005	1.7–2.9
<b>SDS Family</b>	102	5.8 (2.9)	90	5.8 (3.0)	90	3.8 (2.7)	2.1	<.0005	1.5–2.7
<b>RTW-SE</b>	102	2.4 (1.5)	91	2.4 (1.5)					

o) The Bonferroni corrected critical value is  $p < 0.0125$ . Statistical significance for the change was assessed with Wilcoxon's paired sample test.

Table 2. Subjectively reported functional capacity (SDS and RTW-SE scores) at baseline for the whole study group, and for those with complete follow-up data.

	RETURN TO WORK		OR (95% CI)
	No n=68 Mean (SD)	Yes n=25 Mean (SD)	
SDS Mean	7.3 (2.1)	4.9 (2.6)	0.67 (0.54-0.83)
SDS Work	8.3 (2.1)	5.7 (3.3)	0.71 (0.59-0.89)
SDS Social	7.2 (2.6)	4.9 (2.9)	0.75 (0.64-0.89)
SDS Family	6.4 (2.6)	4.3 (3.3)	0.78 (0.67-0.92)
RTW-SE	2.0 (1.4)	3.2 (1.6)	1.76 (1.25–2.49)

Table 3. Functional capacity (SDS and RTW-SE) at baseline for the two groups (return to work vs. no return to work at follow-up) among psychiatric patients referred for assessment of work ability and rehabilitation evaluation.

## DISCUSSION

In psychiatric assessment of working ability, SDS and RTW-SE scores both predicted return to work within one year. Return to work was reported in 27% of the sample. Less than 6 months off work and having employment at baseline were the strongest associated background factors regarding being at work at the time of the one-year follow-up.

Increased self-reported function (lower mean SDS scores) predicted successful return to work, as expected. The association with better return to work outcomes was found with each SDS subscale: work, home and social life. According to our hypothesis, higher return to work self-efficacy (higher RTW-SE scores) also predicted return to work. SDS and RTW-SE scores both seem to be equally good predictors of RTW. In the adjusted logistic regression model, the statistical significance of these predictive values remained clear. A new finding in our study is that the RTW-SE score is not only a good predictor in patients on sick leave due to common mental disorders, but is also a good predictor in a more severely affected population and an unemployed population. In the ROC analysis of SDS and RTW-SE, the accuracy of both tests was fair (AUC between 0.7 and 0.8). The higher AUC for SDS indicates that SDS is more accurate than RTW-SE in predicting RTW, but the difference is not significant.

Surprisingly, the diagnostic severity did not predict return to work. Despite more severe psychiatric morbidity and lower objective functioning among psychosis patients, their RTW prognosis was not significantly worse than that of patients with mood disorders. This is probably explained by the more negative self-expectations among depressive patients, according to Beck's cognitive triad (20).

In the most common forms of mental illness, such as depressive and anxiety disorders, patients typically underestimate themselves. These attitudes may persist despite alleviation of other symptoms. Therefore, placing an emphasis on positive questionnaire responses, which highlight the remaining functional capacity or self-efficacy instead of listing symptoms, may help patients in believing in their ability to work. A key finding of the present study is that positive personal psychological resources and work itself are important for returning to or staying at work. A positive psychological framework – including concepts of well-being, positive emotions, self-determination and resilience – is essential to strengthen and broaden psychiatric rehabilitation and recovery in thought and practice (21).

New clinical research evidence shows that psychological interventions should be focused on the specific needs of people in employment and on vocational coping (22, 23). Our previous recent findings among a severe and comorbid psychiatric sample of the same clientele (24) highlight similar earlier findings derived from more general populations: active and early return to work strategies are needed.

For employed first-episode depressive patients, early, vocationally oriented varied psychological intervention seems to be more effective in reducing depressive symptoms than conventional treatment programmes (23). Functional recovery can be substantially accelerated within a regular psychotherapeutic setting through focusing more and earlier on work-related aspects and return to work. In one study, return to work occurred 65 days earlier if cognitive behavioural intervention offered to employees with common mental disorders included a module oriented to work (23).

For return to work in cases of severe mental illness, involvement in vocational support and productive activities may be advantageous early on in the recovery process (25). Being regularly engaged in meaningful and purposeful activity (occupational or vocational) is a key aspect of recovery from mental health and other conditions, and has long been recognized as a central goal of rehabilitation services (26). In one of our previous studies (24), we concluded that RTW intervention is most successful when started before sick leave has extended to six months and coordinated by occupational care providers with consultative aid from a psychiatrist.

Several studies have concluded that the possible predictors of a longer time until return to work are: age more than 50 years, female gender, supervision support, expectation of time off work for longer than three months, higher educational level, long duration of a depressive episode, presence of comorbid mental or physical disorders, a history of previous sick leave and work disability, severity of mental disorders, unemployment, threat of unemployment, severe work load, long absence from work, lower socioeconomic status and the absence of continuous occupational healthcare services (27-31). Intervention measures should be focused on those predictive factors for return to work that can be influenced.

Improving the employment outcomes of those with common mental disorders is a complex issue. There is no single "one size fits all" solution (32) and a variety of forms of intervention is likely to be needed. In addition, some studies have shown that the effectiveness of intervention is dependent on patient characteristics. For example, Rebergen (33) showed that their intervention worked for those with stress, but not for those with more severe problems such as depression.

Subjective assessment tools concerning functional capacity give valuable information regarding planning the timing and focus of RTW interventions. The ideas and experiences behind a fear of returning to work can be managed when they are recognized, and the psychological resources that contribute to RTW can be better utilized and reinforced when they are identified. Subjective assessment tools can reveal the psychological factors that can be influenced by way of tailored psychosocial interventions.

## WEAKNESSES OF THE STUDY

The SDS and RTW-SE questionnaires are subjective and therefore may have been affected by motivations regarding receiving social security benefits at the baseline assessment. The patients in our cohort were selected. They had already undergone psychiatric assessment and a treatment trial, and their work ability had been assessed before, but further investigations were needed. The patients had more severe problems than the usual patients in occupational healthcare. We used a modified scale on the RTW-SE questionnaire with a 7-point Likert scale from 0 to 6 instead of the validated 1 to 6. The 7-point scale gives the patient the possibility to choose a neutral answer (3 on the scale). This does not affect the predictive value of the scale, but our mean values were lower than the corresponding ones in other studies..

## CONCLUSIONS

In psychiatric assessment of working ability, subjective evaluation of function and work-related self-efficacy are key elements that predict return to work. They deserve attention in rehabilitation planning. The SDS is suitable for the assessment of subjective functional capacity in three central subdomains, even in a psychiatric population with multiple psychiatric and prolonged or complicated disability aspects. The RTW-SE questionnaire is also a useful tool to use in the same population to assess the ideas, attitudes, experiences and feelings about returning to work. Both tools predict return to work. These two instruments are fast and easy to integrate into the clinical examination assessing work ability. However, further research is needed in validating the SDS and RTW-SE questionnaires with actual work performance tests that are not self-reported. Rehabilitation intervention measures, psychotherapeutic and occupational included, should all aim to improve self-efficacy and function, including the subjective sense of capability.

## CONFLICT OF INTEREST:

*The authors declare that they have no conflict of interest.*

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