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## SENSE OF COHERENCE AND WORK ABILITY AMONG PSYCHIATRIC PATIENTS IN FINLAND

### ABSTRACT

*The aim of the study was to assess the association between sense of coherence and work ability among psychiatric patients with prolonged disability.*

*One hundred consecutive and consenting patients who were assessed for work ability at the Outpatient Psychiatric Unit of the Helsinki University Hospital in 2010-2011 were included. The sense of coherence was assessed at baseline, and the participants were contacted for a phone interview after one year of follow-up. Sense of coherence was measured by the 13-item Sense of Coherence scale (SOC). In addition, self-efficacy was measured by the Return-to-Work Self-Efficacy scale and functioning by the Social and Occupational Functioning Assessment Scale (SOFAS). Work ability was measured by self-reported ability to work at the one-year follow-up. Ten participants were lost at follow-up, thus, 90 participants were included in the analysis.*

*SOC was highest among psychotic patients (mean 64.2, SD 17.0) and lowest among patients with mood disorders (mean 46.8, SD 14.1). High SOC correlated with high self-efficacy ( $\rho$  0.62) and high SOFAS ( $\rho$  0.31). At follow-up, 62 patients (62%) had returned or were able to return to work. High sense of coherence was associated with ability to work at one year (OR=7.0, 95%CI 1.4-36.3).*

*Sense of coherence was associated with ability to work at one year despite mental illness. SOC seems to be a useful instrument in the assessment of work ability among psychiatric patients.*

**KEYWORDS: FUNCTIONAL CAPACITY, WORK ABILITY, MENTAL DISORDERS, ASSESSMENT OF WORK ABILITY, SENSE OF COHERENCE, RETURN-TO-WORK SELF-EFFICACY, SOFAS**

## INTRODUCTION

Psychiatric diagnoses are common among patients undergoing assessment of work ability. Over one third of all EU citizens suffer from mental disorders yearly (1), and mental ill-health is the leading cause for work disability benefit claims in the OECD countries (2). In Finland, mental disorders caused 39-42% of all, and 28% of new, disability pensions (3), and 17-21% of all sickness allowance periods initiated in 2011-17 (4). These numbers seem to be increasing: the sickness allowance periods initiated due to mental disorders was 22% in 2018.

In medical settings, psychiatric assessment of work ability tends to focus primarily on psychiatric diagnoses and symptom evaluation (5). In social settings, contextual factors are also accounted for, separate from diagnostic evaluation (6). The definition of recovery by Substance Abuse and Mental Health Services Administration (7) does not assume alleviation or withdrawal of symptoms, but stresses the ability to live a meaningful life in a community, to have free choice and to strive to achieve one's full potential. This definition approaches the concepts of happiness and well-being. Positive psychology can strengthen and broaden psychiatric rehabilitation practices and pathways to recovery (8). Pessimistic self-expectations regarding return to work (RTW) in patients with common mental disorders are associated with a lower RTW (9). Therefore, in order to be successful in mental recovery and rehabilitation planning, we should emphasize patients' strengths.

In population and organizational studies, sense of coherence is a personal resource associated with stress-coping, work outcomes, subjective perception of health and functional capacity. The central components of sense of coherence are comprehensibility, manageability and meaningfulness. According to Antonovsky's model (10), sense of coherence addresses salutogenesis, an approach focusing on factors that support human health and well-being, rather than on factors that cause disease.

Our aim was to examine the association between sense of coherence and work ability among psychiatric patients with prolonged disability.

## MATERIAL AND METHODS

One hundred and seven consecutive psychiatric patients, evaluated at Helsinki University Hospital outpatient unit for

work ability between September 20th 2011 and December 20th 2012, were eligible for this study. The final cohort consisted of 100 patients, due to lack of consent (3 patients) or missing values for SOC (4 patients). At baseline, the participants completed study questionnaires and were assessed clinically. At the end of one year, 90 participants (90%) were interviewed by phone; no contact could be established with 10 participants (10%). According to the outpatient clinic's criteria for referrals, the included patients had already been in contact with psychiatric services, had been treated for their acute symptoms, and their ability to work or to attend rehabilitation was still unclear. As for employed patients, the occupational health services had already tried to solve the problems of disability in cooperation with the consulting psychiatrist or psychiatrist responsible for psychiatric care.

All patients underwent thorough diagnostic procedures. Prior psychiatric diagnoses and illness severity were re-evaluated according to ICD-10 diagnostic criteria. The diagnoses were classified into eight categories: organic mental disorders (ICD-10 codes F00-09), mental and behavioural disorders due to psychoactive substance use (F10-19), schizophrenia, schizotypal and delusional disorders (F20-29), mood disorders (F30-39), neurotic, stress-related and somatoform disorders (F40-49), behavioural syndromes associated with physiological disturbances and physical factors (F50-59), disorders of personality and behaviour (F60-69), disorders of psychological development (F80-89) and non-psychiatric diagnosis (all other ICD-10 codes). There were no patients with the diagnostic categories of mental retardation (F70-79) or behavioural and emotional disorders with early onset (F90-98). For the analyses, the diagnoses were divided into three categories: mood disorders (F30-39), psychotic disorders (F20-29) and other diagnoses (F00-19, F40-69, F80-89 and all non-psychiatric diagnoses).

In addition, treatment and rehabilitation possibilities as well as work ability and function were assessed at baseline.

Sense of coherence was measured by the short version of the Sense of Coherence scale with 13 items (11) instead of the original version with 29 items. The short version of the SOC has been shown to provide similar results to the long version (12). Typical questions are "Do you have the feeling that you don't really care about what goes on around you?" (meaningfulness), "Has it happened that people whom you counted on disappointed you?" (manageability) and "Do you have very mixed-up feelings and ideas?" (comprehensibility). All items have a 7-point Likert scale, e.g. from "very seldom

or never” (1) to “very often” (7), or from “never” (1) to “all the time” (7). Thus, the total score ranges between 13-91. For the analyses, the scores were classified into three categories using clinical judgment in the absence of any commonly used categorization: good (66-91), moderate (39-65) and poor (13-38) sense of coherence.

Self-efficacy is based on the individual’s belief in his/her ability to successfully perform in a specific task (13). Lagerveld (14) has formulated the concept of self-efficacy into the 11 questions of the Return-to-work Self-Efficacy (RTW-SE) scale for the needs of return to work and vocational rehabilitation. The main question is whether the patient has the ability to meet the demands of their job if going back to full hours the next day. We used a modified scale with possible scores for each question ranging from 0–6. Higher scores reflect higher levels of self-efficacy. The RTW-SE score was calculated as a mean score (0-6) of all items of the scale, and further classified into three groups based on clinical judgment: high (>4.0), moderate (2.0-4.0) and low (<2.0). One patient did not have the RTW-SE score at baseline.

Functioning was measured by the Social and Occupational Functioning Assessment Scale (SOFAS) (15), which is not based on subjective reporting in contrast to the two other scales described above. A psychiatric healthcare provider fills in the scores based on the clinical interview on four separate domains: work or studies, leisure, family and self-care. A total score considering all the domains with adequate situational emphasis is given with a scale of 0-100. The total score was divided into three categories based on clinical judgment: good (58-100), moderate (46-57) and low (0-45). One patient lacked the SOFAS score at baseline.

Work ability was based on the return to working life or self-assessed ability to return to work. Participants were classified into two groups: those having returned to work (RTW group), and those being too disabled to work and therefore outside working life (disabled group). The RTW group included all employed, self-employed (including freelancers), other work (family work, voluntary work, studies), rehabilitative work trial as well as those able to work but currently unemployed. The disabled group included patients with temporary or permanent disability pensions or income support. In Finland, disability pension can be granted after 300 days of sick leave.

Correlations between SOC, RTW-SE and SOFAS scores were assessed with the Spearman’s rho correlation coefficient. Associations between SOC and ability to work were modelled by logistic regression. Multiple regression analyses were adjusted for age, gender and education. Statistical analyses were performed by SPSS-25 (IBM Corp, Armonk, NY, USA)

## RESULTS

There were 63 female and 37 male patients (*Table 1*). The mean age was 45 years (SD 9.7, range 24–61). Seventy-two patients (72%) had finished elementary school or a second-degree education, whereas 28 (28%) patients had university-level education. Sixty-five patients (65%) were diagnosed with a mood disorder, and 10 patients (10%) with psychotic disorders (F40-49), whereas the remaining 34 patients (34%) belonged to other categories.

The mean SOC score for the whole cohort was 50.7 (SD 15.5), the mean RTW-SE score 2.4 (SD 1.5) and mean SOFAS score 53.7 (SD 9.8) (*Table 2*). SOC scores were highest among patients with psychotic disorders (mean 64.2, SD 17.0.) and lowest among patients with mood disorders (mean 46.8, SD 14.1). The same pattern could be seen with the RTW-SE score: the lowest scores were among those with mood disorders (mean 2.1, SD 1.4) and highest one among those with psychotic disorders (3.9, SD 1.2). On the other hand, SOFAS score was lowest among those with psychotic disorders (mean 50.2, SD 10.5) and highest among those with other diagnosis (mean 56.9, SD 8.3). The mean baseline SOC score among those with ability to work was 54.8 (SD 14.8) whereas it was lower, 44.1 (SD 14.5) among those who were too disabled to work.

The SOC score correlated highly with the RTW-SE score ( $\rho$  0.62), and less with the SOFAS score ( $\rho$  0.31).

At the follow-up, 62 patients (62%) were able to work and 28 (28%) patients were disabled. High and moderate sense of coherence predicted work ability (OR 7.0, 95%CI 1.4-36.3, and OR 4.7, 95%CI 1.4-16.0, respectively) (*Table 3*). Also, high self-efficacy and high SOFAS (OR 9.1, 95%CI 1.0-80.7, and OR 22.0, 4.2-115.3, respectively) predicted work ability.

Table 1. The patient demographics for the cohort consisting of Finnish psychiatric patients undergoing work ability assessment.

<b>Gender</b>	<b>n=100 (%)</b>
Male	37 (37%)
Female	63 (63%)
<b>Age</b>	
mean	45
SD	9.7
<b>Employment at baseline</b>	
Employed	45 (45%)
Unemployed	55 (55%)
<b>Education</b>	
Primary, high and vocational school	72 (72%)
University or college	28 (28%)
<b>Diagnosis</b>	
Mood disorders	56 (56%)
Psychotic diseases	10 (10%)
Other	34 (34%)

Table 2: The characteristics of SOC, RTW-SE and SOFAS at baseline in a cohort of Finnish psychiatric patients undergoing evaluation for their work ability.

Characteristic	n (%)	mean	SD	Median	Min	max
<b>All</b>	100 (100)					
SOC	100 (100)	50.7	15.5	48.5	19	88
RTW-SE	99 (99)	2.4	1.5	2.0	0	6
SOFAS	99 (99)	53.7	9.8	55.0	35	87
<b>Mood disorders</b>	56 (56)					
SOC	56 (56)	46.8	14.1	45.5	19	81
RTW-SE	55 (55)	2.1	1.4	1.9	0	6
SOFAS	56 (56)	52.4	10.2	52.5	35	87
<b>Psychotic disorders</b>	10 (10)					
SOC	10 (10)	64.2	17.0	69.0	38	88
RTW-SE	10 (10)	3.9	1.2	4.0	1.7	6.0
SOFAS	10 (10)	50.2	10.5	47.5	38	65
<b>Other diagnoses</b>	34 (34)					
SOC	34 (34)	53.2	14.9	51.0	28	83
RTW-SE	34 (34)	2.4	1.4	1.8	0	5.6
SOFAS	33 (33)	56.9	8.3	58.0	35	75

n = number of subjects in cohort, SD = standard deviation

Table 3. Ability to work by SOC, RTW-SE and SOFAS at the end of follow-up in a cohort of Finnish psychiatric patients undergoing evaluation for their work ability

	Scale categories	Crude			Adjusted for age, gender and education	
		a /n	OR	95% CI	OR	95% CI
All		62/90				
SOC		62/90				
	poor (<38)	6/18	1.0		1.0	
	moderate (39-65)	43/56	6.6	2.1-21.1	4.7	1.4-16.0
	good (>66)	13/16	8.7	1.8-42.6	7.0	1.4-36.3
RTW-SE		62/89				
	poor (<2)	26/43	1.0		1.0	
	moderate (2-4)	22/31	1.6	0.6-4.3	1.7	0.6-4.9
	good (>4)	14/15	9.2	1.1-76.2	9.1	1.0-80.7
SOFAS		62/90				
	poor (<45)	6/18	1.0		1.0	
	moderate (46-57)	27/40	4.2	1.3-13.6	4.5	1.3-16.1
	good (>58)	29/32	19.3	4.1-90.2	22.0	4.2-115.3

n = whole sample size

a = number of patients with ability to work

## DISCUSSION

In our study, high and moderate sense of coherence in psychiatric assessment of work ability was associated with ability to work after one year. Demographic, diagnostic or employment factors did not explain this finding. To our knowledge, the SOC has not previously been used as a predictor for work ability and in planning return to work strategies. However, earlier studies have suggested that the SOC could prove a valuable screening test in occupational health services and public health (16). This scale reflects overall mental vulnerability to changes at work and for working environment adversities (17).

Additionally, self-efficacy and SOFAS predicted ability to work. Our findings are in accordance with studies that show the importance of high self-efficacy as a predictor for RTW (14,18,19). Furthermore, the subjective experience of good functional capacity has predicted return to work outcomes in patients with mental disorders (20-23), and SOFAS has predicted the return to work earlier in the same study population (24). The association between SOC and ability to work may thus be partially mediated by the subjectively formed conception of functional capabilities. With positive beliefs and assurance of one's capabilities and future chances of success in working life, the motivation to return to work is likely to be higher and the psychological threshold of returning lower.

Self-efficacy, meaning a person's perception of the capacity to do his or her regular work despite specific obstacles, is closely related to sense of coherence (16). This could also be seen in our study: the association between sense of coherence and self-efficacy was most robust. There is limited previous information on the intercorrelation of these tools, and thus, of their practical value among psychiatric outpatients. RTW-SE measurement is closely related to general self-efficacy and represents the work-related dimension of self-efficacy (14). Studies among patients with chronic somatic illness have shown a positive correlation between sense of coherence and general self-efficacy (25, 26). General self-efficacy contributes more to the variance in sense of coherence than sociodemographic and disease-related variables (26).

In our study, sense of coherence predicted functional and vocational outcomes. Similarly, a higher sense of coherence has been associated with better rehabilitation outcomes among patients with somatic and psychiatric symptoms (27), less disability and morbidity (28) and a lower intention to retire (29). Also among unemployed individuals, a higher sense

of coherence is associated with better subjective functional capacity and maintenance of self-esteem (30).

Sense of coherence has been associated with positive aspects of well-being at work and coping with stress (28, 31-35), mental health (17), health behaviour and life-control (28). In contrast, employees with lower sense of coherence scores need more social support from their working environment than those with higher scores (31). A good sense of coherence seems to have an important effect on occupational well-being, and also a possible moderating role in the relationship between work characteristics and well-being (31). A lower sense of coherence is associated with sick-leave and disability pensions (16). The concept of disability seems to include not only lack of functions, but also lack of positive resources such as self-confidence, psychological coping skills and motivation.

Low sense of coherence is associated with more maladaptive psychological defences and psychopathology (36,37), whereas high sense of coherence is associated with emotional stability (38). The association between low SOC and low life-control suggests that a low sense of coherence predicts marginalization. This was also found in our study, where four patients, all having a low SOC, became dependent on social welfare during the follow-up.

In our study, sense of coherence predicted the ability to work among patients with common mental disorders. Severity of psychopathology did not explain, however, the predictive value of sense of coherence for ability to work, because patients diagnosed with psychotic disorders had the highest SOC scores, whereas mood disorder patients had the lowest. Furthermore, RTW-SE scores were the highest among patients with psychotic disorders and lowest among those with mood disorders. In contrast, the SOFAS scores were lowest in those with the most severe disorders, i.e. the psychotic disorders. This reflects the fact that patients with more severe disorders overestimate their functional capacities, meanwhile patients with mood disorders underestimate their capacity when using subjective scales whereas SOFAS, in which a professional assesses the function, reflects more realistically the true status of their functional capacity.

Sense of coherence seems to be a health-promoting resource that strengthens resilience and develops a more positive subjective perception of health, especially of mental health (39). This manifests in study populations regardless of age, gender, ethnicity, nationality or study design (39).

## LIMITATIONS OF THE STUDY

We selected our cohort by picking patients already undergoing psychiatric assessment and a treatment trial. Their work ability had been assessed earlier, but there was a need for further investigation. Compared to the usual patients in occupational healthcare, our patients had more severe problems.

Ten patients were not reached for follow-up. These patients did not differ from the patients contacted regarding age, gender, period since last at work, employment status or education. Also, the baseline scores in both groups were similar, suggesting that the patients lost at follow-up did not have an important effect on the study results.

The SOC and RTW-SE questionnaires are subjective, and therefore motivations concerning social security benefits might have affected the results. On the other hand, the SOFAS scale is somewhat arbitrarily based on the judgment of the psychiatric professional evaluating the patient.

## CONCLUSION

Despite mental illness, good sense of coherence predicts ability to work after one year of follow-up. The individuals with low sense of coherence are likely to benefit from close attention and more effective rehabilitation planning to avoid estrangement from working life. The SOC seems to be a useful tool for assessment of work ability among psychiatric patients.



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