

## Schizophrenia and sense of coherence

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### Summary

**Aim.** The purpose of the study was to investigate the dependence between the sense of coherence (SOC) and symptomatic improvement as it is the determinant of recovery process of patients with schizophrenia spectrum disorders.

**Methods.** The group of 134 patients was surveyed. 118 of them suffered from paranoid schizophrenia and 16 suffered from schizoaffective disorders, all were hospitalized in psychiatric clinics. Mean age was 36.22 years ( $SD = 8.51$ ). Research was based on the Orientation to Life Questionnaire by A. Antonovsky. The level of psychopathological symptoms intensity was investigated twice, at the start and at the end of hospitalization with the Positive and Negative Syndrome Scale (PANSS). The rate of recovery was the margin between psychopathological symptoms intensification at the beginning and at the end of hospitalization.

**Results.** The analysis show that higher sense of comprehensibility (SOCCOM) favors lesser intensity of negative symptoms and overall psychiatric symptomatology in PANSS while starting the hospitalization. Also patients with higher level of sense of coherence (SOC) show less negative symptoms escalation during hospital admission. Results show that higher level of sense of coherence (SOC) and higher level of sense of comprehensibility (SOCCOM) coexist with lesser difference in the intensification of psychopathological symptoms.

**Conclusions.** This article tries to show the role of sense of coherence in the recovery process among people with schizophrenic disorders. Coexistence of higher sense of coherence with greater negative symptoms and psychopathological symptoms can be perceived as an insight to the illness, which can be recognized as an expression of recovery.

**Key words:** sense of coherence, schizophrenia, recovery

## Introduction

Despite new developments in research of schizophrenia it is still impossible to precisely determine the factors influencing the recovery of an individual patient. Identifying variables that determine the recovery of patients diagnosed with schizophrenia spectrum disorders is one of the most important challenges of modern psychiatry.

Antonovsky [1] in the proposed salutogenetic approach to the problem of health and disease has concentrated on the recovery process. His attention was focused on the search for factors that contribute to health of an individual, unlike the biomedical model, in which prevention is based on elimination of factors deemed as pathogenic. The salutogenesis theory recognizes health in a broader context than the pathogenic approach. Health is understood not as a dichotomous variable, but as a continuum. Thus, it becomes possible to search for the factors that make a person move towards a healthier condition. Antonovsky [1, 2] pointed to a sense of coherence (SOC) as a key component of health. Strengthening the sense of coherence and coping is conducive to recovery.

Antonovsky [2] defined SOC as a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic, feeling of confidence that: (1) stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to offset the demands posed by these stimuli; (3) these demands are challenges worthy of investment and engagement. The author identified three components of the sense of coherence (SOC): (1) a sense of comprehensibility with most cognitive nature; (2) a sense of manageability with a dominant aspect of taking action and a conviction of being able to cope with difficulties; and (3) a sense of meaningfulness associated with making sense of experiences and undertaking challenges. Sense of coherence is considered as a health-promoting factor that plays a beneficial role in coping with stress in various diseases.

Undoubtedly, a person suffering from schizophrenia spectrum disorders may experience high levels of stress associated with relapse of illness, the build-up of psychopathological symptoms, and the need of further hospitalization. Higher sense of coherence, according to the author of salutogenesis, protects people from the onset of disorders and, if they emerge, aids in accelerating the recovery of health. As a certain kind of a continuation phase of the illness, the recovery process in schizophrenia is a concept that is currently of interest in the salutogenetic research. Recovery after the experience of a mental illness is a long-term process. It often takes several years for a person diagnosed with schizophrenia to slowly regain the ability to function independently, rebuild family relations, return to fulfilling their professional roles and function in a society. People who have suffered from schizophrenia can regain health and live a satisfying life despite the limitations caused by the illness [3, 4].

Antonovsky's concept based on sense of coherence has been verified in several studies [e.g., 5–10]. In reviewing the literature, Feigin and Sapir [11] found that the concept of SOC has a broad theoretical base and pointed to the growing number of empirical evidence justifying the usefulness of this concept.

Sense of coherence was also evaluated in the population of persons with mental disorders. Research results indicate SOC as a good predictor of quality of life in patients treated for schizophrenia [12, 13]. A trend toward a relationship of higher performance in the SOC with lower results in the PANSS was also noted [13]. Previously conducted studies on a population of Swedish patients diagnosed with schizophrenia or schizoaffective disorder similarly indicated a negative relationship of SOC with severity of psychopathological symptoms [14]. There were no differences in SOC between patients who differed in duration of illness, level of psychosocial functioning, age, monthly income, employment and marital status. The sense of coherence has been verified in many empirical studies as a variable conducive to better health [15–18].

Researchers from Norway [19] reiterate the importance of therapy based on the theory of salutogenesis in the recovery process of people with all kinds of mental disorders. Emphasis was placed on the strengthening of resources in dealing with mental health crises. Griffiths et al. [20] conducted interesting research using a qualitative approach (without using the Orientation to Life Questionnaire) to the theory of salutogenesis. It turned out that in the group of persons with mental disorders the strength of sense of coherence may indicate a general adaptability of a person, but it is not always an effective measure with regard to coping with specific problems of everyday life.

It is also worth noting the findings of research on the relationship between the sense of coherence and different styles of coping with stress in a group of parents of adult children diagnosed with schizophrenia [21]. The results indicated that the sense of coherence in these parents correlates positively with task-oriented coping. Parents characterized by a lower sense of coherence used emotion-oriented and avoidance coping styles more often. Interesting studies also analyzed the relationship between the components of the sense of coherence and strategies of coping with stress among siblings of people suffering from schizophrenia [22]. Statistically significant and positive correlations were observed between the sense of comprehensibility of one's own actions and such stress-coping strategies as self-control and mobilization to take action. On the other hand, a negative correlation was found for the strategy of disorganization and self-aggression, self-guilt, disengagement and passivity. A study of Taiwanese families revealed that a lower sense of coherence was related with a higher sense of burden in women taking care of patients with schizophrenia who stayed in outpatient psychiatric clinics. Siblings reported a lower sense of burden in taking care of a sick brother or sister in comparison with their parents. The results revealed a significant correlation between the sense of coherence and hardiness. The authors stressed the importance of the sense of coherence and family hardiness in families with a person diagnosed with schizophrenia [23].

The aim of this study was to investigate the relationship between the level of the sense of coherence and the symptomatic improvement in patients with schizophrenia spectrum disorders. The reduction of psychopathological symptoms on the PANSS was an important indicator of the recovery of individuals hospitalized due to schizophrenia spectrum disorders.

## Methods

### Study group

The study involved 134 patients hospitalized due to paranoid schizophrenia (118 persons) or schizoaffective disorder (16 persons). Groups of women and men were equinumerous (each group consisted of 67 people).

The selection criteria for the groups were as follows: 1) diagnosis of schizophrenia or schizoaffective psychosis according to the ICD-10 criteria; 2) at least third hospitalization (greater diagnostic confidence in confirming schizophrenic disorders than, for example, during the first stay in hospital) but not more than tenth hospitalization (to exclude patients with residual schizophrenia); 3) logical verbal contact during the filling of psychological tests; 4) lack of dependence on alcohol or drugs; 5) lack of clear damage to the central nervous system.

The research has been carried out among Polish patients in several hospitals and psychiatric clinics. All patients included in the study were treated with antipsychotic medication (typical [ $N = 28$ ; 20.9%], atypical [ $N = 57$ ; 42.54%], typical and atypical [ $N = 49$ ; 36.57%]). Patients completed the SOC-29 scale once during a significant symptomatic improvement: in the final stage of hospitalization, in the last three days prior to the discharge. Clinical psychologists evaluated the mental state of a patient using the PANSS twice: in the first 2 days after admission and on the day of discharge from the hospital. The scheme of an individual examination by a clinical psychologist for each patient was the same. Patients who were included in the project were asked to consent to participate in the study after being previously informed about the procedure, the scientific aim and its anonymous character, as well as the possibility to withdraw consent at any stage. This study is a part of a larger project.

This research project has obtained the approval of the Bioethics Committee of the Faculty of Health Sciences at Jan Kochanowski University in Kielce. Sociodemographic data of the sample group is presented in Table 1.

Table 1. Sociodemographic data of the sample

Variables	N = 134
Age	
M (SD)	36.22 (8.51)
Sex	
Male	67 (50%)
Female	67 (50%)
Marital status	
Single	113 (84.23%)
Married	21 (15.67%)

*table continued on the next page*

Level of education	
Primary school	38 (28.36%)
Secondary school	71 (52.99%)
Higher education	25 (18.66%)
Source of income	
Employed	21 (15.67%)
Disability benefits (pension)	82 (61.19%)
Benefits (from Urban Social Assistance Center)	8 (5.97%)
Other	23 (17.16%)
Diagnosis	
Paranoid Schizophrenia	118 (88.06%)
Schizoaffective Psychosis	16 (11.94%)
Living conditions	
Single	24 (17.91%)
Together with one's own family	21 (15.67%)
Together with parents	76 (56.72%)
Together with cohabitant	2 (1.49%)
Other	11 (8.21%)
Length of illness	
in years M (SD)	11.65 (7.38)
Number of hospitalization	
days M (SD)	53.83 (33.67)

*M* = mean; *SD* = standard deviation

### Instruments

1. The Sense of Coherence Scale (SOC-29), developed by Antonovsky, was used to assess the level of the sense of coherence. The Polish adaptation of the scale was applied in the research, which was done in the Department of Work Psychology at the Institute of Occupational Medicine in Lodz and subject to psychometric assessment, where it obtained satisfactory indicators of reliability and stability [24]. The questionnaire consists of 29 items (total score ranging from 29 to 201). It shows the scoring of the level of coherence and of its constituent dimensions: comprehensibility, manageability, and meaningfulness. A high score on the SOC indicates a strong sense of coherence.
2. The Positive and Negative Syndrome Scale (PANSS), developed by S.R. Kay, L.A. Opler and A. Fiszbein [25], was used to assess the mental state of patients. The PANSS contains 30 items (total score ranging from 30 to 210). This tool enables the clinician to evaluate the positive and negative symptoms as well as general

psychiatric symptomatology and allows an overall score to be calculated. High scores are an indicator of the level of severity of psychopathological symptoms. The PANSS results below 60 points indicate symptomatic improvement. Scores over 60 points indicate an aggravation of schizophrenia spectrum disorders [26].

### Statistical Analyses

The results were calculated and analyzed using the statistical package IBM SPSS 21 (IBM Corp. Released 2012. *IBM SPSS Statistics for Windows, Version 21.0*. Armonk, NY: IBM Corp). Pearson's  $r$  correlation was applied.

### Results

In this study, a group of 134 patients was assessed with the SOC and the PANSS. Table 2 shows the correlation between the three dimensions of coherence (a sense of comprehensibility, a sense of manageability, a sense of meaningfulness), a general sense of coherence and the dimensions of the PANSS in the initial and final period of hospitalization of the studied patients.

Table 2. Correlations between psychopathological symptoms (PANSS) and the sense of coherence (SOC-29)

	1PANSS P	1PANSS N	1PANSS G	1PANSS T	2PANSS P	2PANSS N	2PANSS G	2PANSS T	Diff 1-2 P	Diff 1-2 N	Diff 1-2 G	Diff 1-2 T
SOCCOM	-0.03	-0.17*	-0.19*	-0.17	0.14	0.09	0.10	0.12	-0.15	-0.23**	-0.28**	-0.24**
SOCMAN	0.02	-0.14	-0.05	-0.07	0.11	0.00	0.09	0.08	-0.08	-0.13	-0.13	-0.12
SOCMEA	0.01	-0.17	-0.06	-0.09	0.12	-0.01	0.10	0.08	-0.09	-0.16	-0.14	-0.14
SOC	0.00	-0.18*	-0.11	-0.12	0.14	0.03	0.11	0.10	-0.12	-0.19*	-0.21*	-0.19*

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; PANSS P – positive symptoms; PANSS N – negative symptoms; PANSS G – general psychopathological symptoms; PANSS T – total score; SOCCOM – sense of comprehensibility; SOCMAN – sense of manageability; SOCMEA – sense of meaningfulness; SOC – total SOC score; Diff 1-2 – difference between the first and second result on the PANSS.

The statistical analysis shows that a higher sense of comprehensibility (dimension of coherence) is fostered by less severe negative symptoms ( $r = -0.17$ ;  $p < 0.05$ ) and general psychiatric symptomatology ( $r = -0.19$ ,  $p < 0.05$ ) at the start of hospitalization of patients. Also, people having a significantly higher overall sense of coherence display less severe negative symptoms in the PANSS ( $r = -0.18$ ;  $p < 0.05$ ) at the time of admission to the hospital. No significant relationship was found between the level of sense of coherence and the results of the second measurement of the severity level of psychopathological symptoms (end of hospitalization).

It appears that it is possible to perform a more precise inference by analyzing differences in severity of psychopathological symptoms, which constitute the indicator of the symptomatic improvement. This allows taking into account the initial and final severity level of psychopathology in an individual patient. Analysis of the relationship of the level of reduction of psychopathological symptoms as measured by the differences in the PANSS sub-scales and an overall result with three dimensions in the sense of coherence and the general result demonstrated all correlations to be negative. A significant level of dependence became apparent in terms of sense of comprehensibility and general coherence. A statistically significant correlation between the reduction in the severity of psychopathology in terms of negative symptoms ( $r = -0.23$ ;  $p < 0.01$ ), general psychiatric symptomatology ( $r = -0.28$ ;  $p < 0.01$ ), general symptoms ( $r = -0.24$ ;  $p < 0.01$ ) and sense of comprehensibility was established. The above relationship means that the higher the score of a sense of comprehensibility, the lesser is symptomatic improvement in hospitalized patients in terms of negative symptoms, general psychiatric symptomatology and general symptoms. Two dimensions of sense of coherence – a sense of manageability and a sense of meaningfulness – showed no significant correlation with the results obtained in the PANSS.

One should pay attention to the lack of relationship between sense of coherence and the increase of positive symptoms both at the time of admission to hospital and at the time of discharge. This result confirms the biological determinants of positive symptoms; hence, the lack of association between positive symptoms and the level of coherence.

## Discussion

The performed analyses have demonstrated the existence of the relationship between sense of coherence and severity of psychopathological symptoms in hospitalized patients at the beginning of hospitalization. The obtained results are consistent with the results obtained by Bengtsson-Tops, Brunt and Rask [7]. In Swedish studies on patients with schizophrenia and schizoaffective disorder, it was found that a higher level of psychopathology (measured using the Brief Psychiatric Rating Scale) has been linked to the lower SOC. Similar results were observed in a group of patients with schizophrenia studied by Gassmann et al. [13]. They found that people with schizophrenia with a high SOC were experiencing less severe psychopathological symptoms and a higher overall level of functioning while obtaining better results in treatment.

Research analyzed in this article shows that statistically significant relationships pertain to the connection between the overall level of coherence and one of the dimensions of coherence – the sense of comprehensibility. People with a strong sense of comprehensibility accurately assess reality and are not surprised by the course of events in the outside world. The other two dimensions of coherence, sense of manageability and a sense of meaningfulness, showed no relation to the increase in severity of psychopathological symptoms. A person with a strong sense of manageability can effectively take control of his or her life. In turn, a person with a strong sense of meaningfulness treats difficult life experiences as challenges to be met, as well as op-

portunities in the process of self-realization. In the studied group, a greater difference between the initial and final results, indicating an improvement in terms of negative symptoms, general psychiatric symptomatology and general symptoms, coexisted with a lower sense of coherence. The obtained results seem paradoxical, but it would be a superficial conclusion regarding patients with schizophrenia spectrum disorders.

It is worth taking notice of the dynamics of the recovery process of people with psychoses. The loss of genuine contact with reality and with oneself occurs in the period of increased severity of symptoms (acute phase of psychosis). Along with the disappearance of positive psychopathological symptoms and higher levels of the sense of comprehensibility, many patients obtain insight (often only partial) in the essence of their illness. Recovery manifested in a more conscious understanding of their situation at the completion of another psychiatric hospitalization can increase (or maintain) negative symptoms (e.g., apathy, lack of energy, reduced fluency and productivity of interactive verbal process, emotional withdrawal, social withdrawal) and general psychiatric symptomatology (e.g., depression, anxiety, tension, active avoidance of social contact). Thus, a higher level of negative symptoms and general psychiatric symptomatology and, at the same time, low levels of positive symptoms at the end of hospitalization can be interpreted as an indication of obtaining insight into the illness which, in turn, is associated with increased comprehensibility and overall sense of coherence.

Antonovsky [2] believed that the level of sense of coherence determines the ability to return to health. It seems, however, that in patients diagnosed with schizophrenia, along with the deepening of the psychopathological symptoms, sense of coherence ceases to protect against disorganization. It no longer fulfills the function of orienting a person in his/her own experiences. This problem appears to be very interesting to analyze in further studies. The presented results confirm the importance of the sense of coherence in the recovery process of people with schizophrenia spectrum disorders. In designing therapeutic treatment programs, it is important to take into account the strengthening of sense of coherence of an individual patient in the process of his/her treatment.

## Conclusions

The article raised an important point focused on finding non-pharmacological factors demonstrating a significant role in the recovery process of patients hospitalized due to schizophrenia spectrum disorders. Sense of coherence, which is one of the internal resources of a human being, has demonstrated the relationship with the level of psychopathology present in schizophrenia spectrum disorders. On the basis of the study, the author tried to answer the important question concerning the role of the sense of coherence in the recovery process of patients with schizophrenia spectrum disorders. It is suggested that the co-existence of a higher sense of coherence with greater negative symptoms and general psychopathological symptoms in patients completing the psychiatric hospitalization may be a sign of achieved insight into the illness which can be regarded as a manifestation of recovery.

This research also has limitations. Including into the research people at the final stage of hospitalization (the majority of patients in symptomatic remission), as well as those experiencing a number of readmissions, may cause difficulties in referring the obtained results to the entire population of patients suffering from schizophrenia spectrum disorders. Due to the relatively low rates of correlation, caution should be taken in generalizing the results to the entire population of people with schizophrenic disorders.

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