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Sense of coherence and perception of self-influence on the disease course among patients with schizophrenia including quality of life – pilot studies

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Summary

Current research studies reveal many protective and risk factors for relapse among patients with schizophrenia. The main aim of this study was to make an attempt at identifying the relationship between sense of coherence, self-influence on the disease course and quality of life determined by the current state of health of patients suffering from schizophrenia.

The study involved 50 patients, diagnosed with schizophrenia by the ICD-10 criteria, who were/ were not suffering from relapse in 2-year period from last hospitalization. In order to measure sense of coherence, self-influence on the disease course and quality of life, patients were asked to complete: Sense of Coherence Scale (SOC-29), Brief Measure to Assess Perception of Self-Influence on the Disease Course – Version for Schizophrenia and Sense of the Quality of Life Questionnaire.

Statistical analysis revealed no differences in sense of coherence, perception of self-influence on the disease course and quality of life among patients with relapse or during remission. Nevertheless, the relation between sense of coherence and quality of life was observed in both groups. Patients who were suffering from relapse had their metaphysical (spiritual) quality of life also correlated with perception of self-influence on the disease course.

This pilot study leads to conclusion that sense of coherence – along with its manageability and meaningfulness components – may be closely related to psychophysical, psychosocial and subjective quality of life of patients suffering from schizophrenia, both in long remission and currently experiencing a relapse.

Key words: schizophrenia, quality of life, relapse

Schizophrenia is one of the most thoroughly examined and described psychiatric disorders, with especially diverse symptoms, changeability of course of illness and

prognosis. This disease is "mysterious, called by psychiatrists the delphic oracle of psychiatry, because it involves all the most important aspects of human psychology" [1, p. 5] and that is why it still is so fascinating and controversial for scientists and clinicians.

Current clinical studies indicate many factors that can influence both positively and negatively the further relapses of patients suffering from schizophrenia. According to the authors of this paper, subjective quality of life should be regarded as one of the crucial indicators in the healing process. In the holistic approach suggested by Straś-Romanowska and Frąckowiak [2], quality of life is determined mostly by a subjective evaluation of the way of living and the accompanying feelings. Quality of life is therefore understood as an individual's way of life, i.e., the kind of life problems and their solutions in every aspect of well-being: psychophysical, psychosocial, personal and metaphysical/existential. Hence, the results of studies of life quality among patients suffering from schizophrenia [3, 4] can provide vital information to improve the efficacy of treatment, therapy and rehabilitation from the perspective of the patient himself, who is the most important subject in psychiatry.

A factor that may have an equally significant impact on the health of patients diagnosed with schizophrenia is the sense of coherence derived from the salutogenesis theory [5], which is currently regarded as a major psychological factor not only improving the health of patients diagnosed with schizophrenia but also influencing their ability to cope with stress and overcome difficulties caused by the illness [6]. Sense of coherence is a universal personality feature, which is dynamically subjected to influences and affects one's surroundings in every stage of his life [7].

To better understand how patients diagnosed with schizophrenia regard their role in the healing process, their subjective sense of control over the disease course must also be taken into consideration. It can be a condition of the patient's compliance with therapy, because it is based on "shared decision making" [8]. This term means including the patient (psychotic as well) in the process of selecting treatment appropriate for him or her, where the decisions are made by two equal partners – the doctor and the patient – who regularly exchange information about treatment options. Research results have shown that the possibility to take part in decision-making and be involved in the treatment process increases the sense of responsibility for the patient's own health, which in turn improves long-term treatment effects, i.e., patient compliance and risk of relapse [9].

Aim of the study

The main objective of this study was to initially assess the importance of personal resources (i.e., sense of coherence and perception of self-influence on the disease course) for the quality of life of patients diagnosed with schizophrenia. An additional direction of the research was an attempt to identify the links between these areas and the risk of a subsequent psychotic episode.

Material and methods

From September to December 2018, research was conducted in round-the-clock psychiatric wards in the District Hospital in Sochaczew and the Regional Hospital for Neurotic and Psychiatric Patients in Bolesławiec and in three support centers for psychiatric patients in Wrocław: Community Self-Help Center "DolSAR ART", Community Self-Help Center "CURATUS" and Community Self-Help Center "W Naszym Domu". Three questionnaires were used: Sense of Coherence Questionnaire (SOC-29) [10], Brief Measure to Assess Perception of Self-Influence on the Disease Course – Version for Schizophrenia [11] and Sense of the Quality of Life Questionnaire [12] (total number of items was 94). In addition, general patients' functioning was evaluated using the GAF scale [13].

Positive approval of the Ethics Committee at the SWPS University was obtained before conducting the study.

The study included 50 patients of both sexes (22 women, i.e., 44% and 28 men, i.e., 56%) diagnosed with schizophrenia according to ICD-10 and after two or more hospitalizations caused by relapse. Patients were divided into two groups using the basic criterion of this study – the presence or absence of relapse of schizophrenia during the two years from the last hospitalization. As a result, two subgroups were identified: (1) patients who were currently hospitalized in the round-the-clock psychiatric ward due to relapse and (2) patients who had been free from relapse for at least two years and were under the care of the Community Self-Help Centers.

A socio-demographic comparison was made between the two subgroups of patients (currently experiencing relapse and remaining in remission). Analysis using the chi-square test showed that single persons comprised the majority of the group in remission (95.8%) and they constituted 61.5% of the group with a relapse. It was also noticeable that patients with a relapse lived more often with a secondary family (spouse, partner, children) – 38.5% – than people in remission (4.2%). Differences in sex, employment status, age and education were statistically insignificant (Table 1).

Table 1. **Differences in terms of socio-demographic variables between persons in remission and in relapse**

		Remission (n = 24)		Relapse (n = 26)		Test result	P
		N	%	N	%		
Sex	female	7	29.2%	15	57.7%	$\chi^2(1) = 3.05$	p = 0.081
	male	17	70.8%	11	42.3%		
Marital status	single	23	95.8%	16	61.5%	$\chi^2(3) = 12.20$	p = 0.007
	married	0	0.0%	9	34.6%		
	divorced (separated)	0	0.0%	1	3.9%		
	informal relationship	1	4.2%	0	0.0%		

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Family setting	living alone	6	25.0%	6	23.1%	$\chi^2(2) = 9.11$	p = 0.010
	living with parents/ sibling	17	70.8%	10	38.5%		
	living with spouse/ partner/children	1	4.2%	10	38.5%		
Employment status	working	2	8.3%	4	15.4%	$\chi^2(2) = 2.12$	p = 0.347
	retired	5	20.8%	2	7.7%		
	pensioner	17	70.8%	20	76.9%		
Age		M	SD	M	SD	t(48) = 1.47	p = 0.147
		47.83	12.95	42.62	12.10		
Education		Mdn		Mdn		Z = – 1.63	p = 0.104
		4.0		3.0			

n – number of observations; N – number of important observations; M – mean; SD – standard deviation; Mdn – median

When the examination was conducted, the mental state of respondents measured by the Global Assessment of Functioning (GAF) scale was between 31 to 40 among patients currently hospitalized in psychiatric wards and 51-60 among persons under the care of Community Self-Help Centers at the time. As the authors established, patients in remission had been ill significantly longer compared to those currently experiencing relapse. In addition, patients of psychiatric wards had significantly shorter time elapsed since the last hospitalization than those treated in Community Self-Help Centers. In contrast, there were no differences between the groups in terms of age at the time of first hospitalization and the number of hospitalizations (Table 2).

Table 2. **Differences in terms of disease-related variables between persons in remission and in relapse**

		Remission (n = 24)		Relapse (n = 26)		Test result	P
		M	SD	M	SD		
Age at first hospitalization		24.29	7.01	27.62	9.69	t(48) = 1.47	p = 0.169
Duration of illness (years)		23.96	12.37	15.00	9.13	t(48) = 2.93	p = 0.005
Number of hospitalizations		8.58	5.82	9.38	6.69	t(48) = – 0.45	p = 0.655
Time since last hospitalization (years)		7.68	8.74	2.15	3.85	t(31.32) = 2.98	p = 0.008

Results

Using the IBM SPSS Statistics 25 package, basic descriptive statistical data were analyzed with the Shapiro-Wilk test, independent samples Student's t-test and Pearson correlation (r). Statistical significance was set at $\alpha < 0.05$. *P*-values

between 0.05 and 0.1 were qualified as being close to statistically significant (statistical tendency level).

The first part of the analysis consisted in checking the distribution of quantitative variables. This step included calculating basic descriptive statistics with the Shapiro-Wilk test, used to assess the normality of distribution (Table 3). The result of the Shapiro-Wilk test was statistically significant for one of ten tested variables (quality of life – general score), which means that the distribution of this variable was far from normal. Nevertheless, it is worth to mention that the skewness of its distribution was relatively small – it did not exceed the assumptive absolute value equal to 1, which indicates that the distribution was slightly asymmetrical. Therefore, it was justified to conduct analyses based on the parametric tests for all variables.

Table 3. **Basic descriptive statistics of the examined variables including the Shapiro-Wilk test**

	M	Mdn	SD	Sk.	Kurt.	Min.	Max.	S-W	P
Perception of self-influence on the disease course	11.04	11.00	3.06	0.34	-0.25	5.00	19.00	0.97	0.294
Sense of the Quality of Life Questionnaire									
Quality of life – general score	177.97	177.00	21.57	0.44	-0.78	147.00	224.00	0.95	0.033
Psychophysical quality of life	40.72	40.50	7.42	0.04	-0.73	27.00	54.64	0.98	0.421
Psychosocial quality of life	43.84	44.00	7.65	-0.06	-0.57	28.00	59.00	0.98	0.537
Personal quality of life	44.99	44.00	6.27	0.15	-0.63	32.00	57.00	0.98	0.388
Metaphysical quality of life	48.62	48.11	5.96	-0.37	-0.34	35.00	60.00	0.97	0.244
SOC-29									
Sense of comprehensibility	40.47	40.50	8.83	0.21	-0.03	22.00	62.00	0.98	0.702
Sense of manageability	43.22	43.00	7.78	0.36	-0.03	29.00	62.00	0.98	0.376
Sense of meaningfulness	43.41	43.88	7.60	0.27	-0.33	29.25	63.00	0.98	0.667
Sense of coherence – general score	122.09	121.00	18.29	0.40	-0.01	82.00	165.00	0.98	0.572

M – mean; Mdn – median; SD – standard deviation; Sk. – skewness; Kurt. – kurtosis; Min. and Max. – minimal and maximal distribution value; S-W –the score of Shapiro-Wilk test; p – statistical significance of S-W test.

In the first part of correlation analysis it was assessed, among others, whether the examined groups differ from each other in terms of the basic variables – perception of self-influence on the disease course, quality of life and sense of coherence. For this purpose, the independent samples Student's t-test was conducted (Table 4).

The analysis showed no statistically significant differences between the compared groups. This means that the examined persons in remission and in relapse did not differ from one another in terms of perception of self-influence on the disease course, quality of life and sense of coherence.

Table 4. **Comparison of the group in remission and in relapse in terms of perception of self-influence on the disease course, quality of life and sense of coherence**

	Remission (n = 24)		Relapse (n = 26)				95% CI		
	M	SD	M	SD	T	P	LL	UL	Cohen's d
Perception of self-influence on the disease course	11.21	2.73	10.88	3.37	0.37	0.712	-1.43	2.08	0.10
Quality of life – general score	176.76	19.98	179.09	23.27	-0.38	0.707	-14.71	10.05	0.11
Psychophysical quality of life	40.38	7.05	41.03	7.87	-0.31	0.761	-4.91	3.61	0.09
Psychosocial quality of life	42.46	7.14	45.12	8.02	-1.24	0.223	-6.99	1.67	0.35
Personal quality of life	44.71	5.20	45.24	7.22	-0.30	0.767	-4.14	3.07	0.08
Metaphysical quality of life	48.97	6.21	48.30	5.83	0.39	0.699	-2.76	4.09	0.11
Sense of comprehensibility	38.50	7.87	42.29	9.41	-1.54	0.130	-8.75	1.16	0.44
Sense of manageability	42.79	7.58	43.62	8.08	-0.37	0.712	-5.29	3.64	0.10
Sense of meaningfulness	42.80	7.88	43.96	7.45	-0.54	0.594	-5.52	3.19	0.15
Sense of coherence – general score	119.33	17.20	124.64	19.22	-1.02	0.311	-15.71	5.10	0.29

n – number of observations; M – mean; SD – standard deviation; T – result of Student's t-test; p – statistical significance of Student's t-test; 95%CI – confidence interval for the difference between the means; LL and UL – lower and upper limit of the confidence interval; Cohen's d – effect size.

In the next part of the analysis, it was examined whether perception of self-influence on the disease course correlates with sense of coherence and quality of life. This calculation was performed using Pearson correlation (r). The analysis was conducted separately for each group – in remission and in relapse.

At first, sense of coherence was correlated with perception of self-influence on the disease course (Table 5). The analysis showed no statistically significant connections between these variables. This indicates that in the examined groups perception of self-influence on the disease course did not change in a statistically significant manner when the level of the sense of coherence changed.

Table 5. **Correlation of perception of self-influence on the disease course and sense of coherence**

		Perception of self-influence on the disease course	
		Remission	Relapse
Sense of comprehensibility	Pearson's r	-0.04	-0.01
	Significance	0.870	0.947
Sense of manageability	Pearson's r	0.17	-0.07
	Significance	0.415	0.721
Sense of meaningfulness	Pearson's r	0.12	-0.18
	Significance	0.562	0.392
Sense of coherence – general score	Pearson's r	0.11	-0.09
	Significance	0.605	0.652

In the next step an analogical analysis for the quality of life as a dependent variable was performed (Table 6). This analysis proved that among people with a relapse, metaphysical quality of life correlated at a level of statistical significance with the perception of self-influence on the disease course ($r = 0.36$). This signifies that in people with a relapse, when the level of perception of self-influence on the disease course increased, so did the metaphysical quality of life. This was a moderate correlation.

Table 6. **Correlation of perception of self-influence on the disease course and quality of life**

		Perception of self-influence on the disease course	
		Remission	Relapse
Quality of life – general score	Pearson's r	0.09	0.06
	Significance	0.672	0.788
Psychophysical quality of life	Pearson's r	0.11	-0.12
	Significance	0.615	0.558
Psychosocial quality of life	Pearson's r	0.05	-0.10
	Significance	0.814	0.632
Personal quality of life	Pearson's r	0.05	0.00
	Significance	0.835	1.000
Metaphysical quality of life	Pearson's r	0.00	0.36
	Significance	0.986	0.070

Subsequently, it was checked whether the level of sense of coherence is connected with the quality of life. To measure this association, Pearson correlation (r) was used, separately for each group – in remission and in relapse, as before (Table 7).

This analysis demonstrated that in the group of persons remaining in remission, three of four coherence indicators (all apart from sense of comprehensibility) statistically significantly (and in two cases at the level of statistical tendency) correlated with quality of life in every scale, except for the metaphysical quality of life. Sense of meaningfulness and quality of life were the most strongly correlated.

In the group of people in relapse, all correlations were statistically significant or at the level of statistical tendency, apart from the correlation between the sense of comprehensibility and metaphysical quality of life. The strongest connection, similarly to the group in remission, was noticed between quality of life and sense of meaningfulness.

Table 7. **Correlation of sense of coherence and quality of life**

		Sense of comprehensibility		Sense of manageability		Sense of meaningfulness		Sense of coherence – general score	
		Remission	Relapse	Remission	Relapse	Remission	Relapse	Remission	Relapse
Quality of life – general score	Pearson's r	0.07	0.44	0.48	0.59	0.74	0.72	0.54	0.69
	Significance	0.753	0.024	0.018	0.001	<0.001	<0.001	0.006	<0.001
Psychophysical quality of life	Pearson's r	0.16	0.56	0.41	0.46	0.75	0.53	0.56	0.62
	Significance	0.446	0.003	0.048	0.019	<0.001	0.006	0.005	0.001
Psychosocial quality of life	Pearson's r	-0.04	0.38	0.40	0.55	0.60	0.71	0.40	0.64
	Significance	0.865	0.056	0.051	0.003	0.002	<0.001	0.051	<0.001

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Personal quality of life	Pearson's r	0.27	0.39	0.46	0.58	0.66	0.62	0.60	0.62
	Significance	0.202	0.052	0.024	0.002	<0.001	0.001	0.002	0.001
Metaphysical quality of life	Pearson's r	-0.17	0.16	0.25	0.34	0.30	0.42	0.15	0.36
	Significance	0.430	0.425	0.248	0.089	0.150	0.033	0.472	0.071

Discussion

The current study was intended to be exploratory and its main purpose was to determine the direction of further in-depth research. The results do not confirm the link between the perception of self-influence on the disease course and the sense of coherence, but they indicate, to a limited extent, that there is a link between the perception of self-influence on the disease course and the quality of life among patients with schizophrenia. The conducted analyses allowed to establish a positive correlation between the patients' sense of coherence and their quality of life. However, there were no differences in the presented areas between the compared groups, which means that the groups did not differ in terms of sense of coherence, perception of self-influence on the disease course or quality of life. In the opinion of the authors, the obtained results are not conclusive and the analysis of the relationships between these areas and their reference to the risk of further psychotic episodes is worth consideration and in-depth research. This is important because the possibility of preventing subsequent episodes largely determines the long-term course of the disease and significantly affects the level of social functioning of patients [14].

The correlation between the perception of self-influence on the disease course and the quality of life of patients with schizophrenia is especially interesting, since only among those with relapse there was an increase in the perception of self-influence on the disease course along with an increase in the level of quality of life in the metaphysical sphere. According to Straś-Romanowska and Frąckowiak [2], the metaphysical/existential aspect of quality of life is crucial for one's spirituality. It is defined by the search for the sense of one's existence and for a deeper meaning of events in the face

of turns of fate, failures, experiencing chance events, relativity of values, transiency and life dramas – unpredictable situations, difficult to understand and control. Also in terms of disease, perception of one's own life situation through transcendental values enables the individual to exceed his or her limitations, because it gives a wider, more universal perspective of the proportions of own problems [15]. This can explain why for patients suffering from schizophrenia, existential quality of life is so crucial and connected with perception of self-influence on the disease course.

However, it cannot be excluded that in some of the examined cases, such a strong correlation between perception of self-influence on the disease course and metaphysical/existential sense of quality of life is caused by the specific character of schizophrenia. It includes, for example, paranoid delusions of influence (external influence, being overpowered), which means that the patient does not recognize his mental states as his own. Patients with such delusions do not recognize their own thoughts as their own, but they regard them as foreign contents implanted into their minds. Those imposed thoughts can be controlled by a "higher power" (e.g., the Creator) and patients' actions during this time are not volitional, but are forced by someone else [16].

The authors assume that the positive correlation between the sense of coherence of people with schizophrenia and their quality of life is also worth attention. Patients in remission experience a higher quality of life in all scopes, apart from metaphysical, as their sense of meaningfulness, sense of manageability and general sense of coherence grows. Among patients with a current relapse, correlations were observed in all connections, apart from sense of comprehensibility and metaphysical sense of life.

According to salutogenesis, a higher sense of coherence is some kind of a protection against disorders and if they occur, it fastens the healing process. Healing after a psychotic episode is a long process; a person with diagnosed schizophrenia often needs many years to gradually restore balance, recover their ability to function independently, return to their professional roles, rebuild family relationships and re-establish their place in society [17]. Present results of studies also confirm that people suffering from schizophrenia are able to recover their health and have a rewarding life despite the limitations caused by the disease [18, 19].

The assumption of the crucial nature of the recovery process after a psychotic crisis for the presented data may be based on the fact that within the sample group of people currently experiencing relapse, the majority of patients subjected to the study were at the end of hospitalization. As Witkowska-Łuć noted [17], along with gradually declining positive symptoms and a higher sense of comprehensibility, a significant number of patients gain at least partial insight into their illness in the last stage of hospitalization. At the same time, a more conscious perception of the current life situation resulting from the healing process may lead to the maintenance or escalation of negative symptoms (i.e., lack of energy, apathy, emotional withdrawal) and general psychiatric symptoms (i.e., tension, anxiety, depression, avoiding social contacts). According to the author, the subsidence of positive symptoms with the simultaneous escalation of negative and general psychiatric symptoms in the last stage of hospitalization may be a sign of gaining better insight into the illness by patients, which in turn is connected with higher sense of comprehensibility and general sense of coherence.

Although the results presented by the authors did not show any significant differences in terms of subjective evaluation of the quality of life between patients hospitalized due to a recent psychotic episode and the chronically ill, who require social rehabilitation under care of Community Self-Help Centers, the results are consistent with current research on this topic. Some scientists [20, 21] emphasize that the most significant differences in the quality of life of people diagnosed with schizophrenia are apparent right after discharge from the hospital and return to the community, after which they stabilize. This assumption can be proved by a seven-year prospective study by Tempier et al. [22], conducted among 60 patients diagnosed with schizophrenia. The study did not show any changes in general and any other specific aspects of subjective evaluation of quality of life. Participation in a community program offering various support services was considered a major factor in maintaining a constant quality of life.

All respondents of the group that was not in relapse at the time of the study were under the care of Community Self-Help Centers, whose aim is to support the healing process mainly by providing patients with direct support in everyday functioning, as well as prevent the occurrence of subsequent psychotic episodes and hospitalization [23]. According to the authors, it cannot therefore be excluded that patients with schizophrenia, who have been in remission for a long time and are under the constant care of Community Self-Help Centers, are more willing and ready to use their own resources to face the difficulties caused by the illness.

Furthermore, the quality of life levels of patients diagnosed with schizophrenia who experience different disease intensity are equalizing over the years, which may indicate that the activation of adaptive mechanisms is important [24]. These mechanisms enable patients to maintain their well-being, even in the face of a difficult life situation, which definitely is the occurrence of another psychotic crisis.

The results presented by the authors point to certain limitations of the study and suggest the need for further exploration in this regard. During the course of the study, an exclusive definition of an episode of schizophrenia as "re-hospitalization in a psychiatric ward" was adopted. Therefore, the main criterion for the occurrence/non-occurrence of relapse in the subjects – and the assignment to the relevant study groups – was to be decided by re-hospitalization in a psychiatric ward over the last two years preceding the study. Such a consideration of the criterion of the severity of disease symptoms and the degree of criticism toward them, irrespective of the facility in which the person was currently treated, may have in part influenced the obtained results.

An analysis of the results in terms of the risk of possible relapses also remains a separate issue. In order to explore the issue of the episodicity of schizophrenia, it may be more appropriate to refer the psychological factors to the dynamics of the course of the disease, i.e., the duration of the last remission, the number of relapses to date, the duration of the disease and age at the time of the first diagnosis.

In addition, given that the study groups were characterized by a small number and the significant variation in the clinical picture, the presented results should be carefully interpreted.

Conclusions

The aim of the presented pilot study was to elaborate on the meaning of selected personal resources and subjective quality of life for the healing process of patients diagnosed with schizophrenia. The results, which the authors obtained may suggest that regardless of current disease intensity, the sense of coherence as manageability and meaningfulness positively correlates with patients' psychophysical, psychosocial and personal quality of life. However, this issue requires further, preferably prospective, studies on a much larger group of respondents, which would allow for a long-term analysis of individual factors that may affect the possible occurrence of subsequent episodes of schizophrenia.

Nevertheless, it is still unclear how much of an impact the patients' participation in Community Support Programs for the mentally ill, such as Community Self-Help Centers, has on their health. It is worth remembering that patients suffering from more chronic diseases require more therapeutic, rehabilitative and community help for proper functioning in a reality outside the hospital. Therefore, help in various areas of life seems to be necessary along with social and community interventions (alone or in combination with pharmacotherapy) which may significantly improve the quality of life of people suffering from schizophrenia.

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