Quality of life and depression in schizophrenic patients

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Abstract

Purpose: The aim of the study was to assess depressive symptoms, and to establish their influence on the subjective and objective quality of life (QOL) in schizophrenia patients.

Material and methods: Seventy four subjects: 46 male and 28 female, aged 24.7±6.7 years, were enrolled for the study. World Health Organization of Life Instrument – Bref (WHO-QOL-BREF), Social Functioning Scale (SFS) and Calgary Depression Scale for Schizophrenia (CDSS) were used.

Results: Severity of depressive symptoms showed moderate correlation with objective and strong correlation with subjective measures of QOL.

Conclusions: Detection and appropriate treatment of depressive symptoms in schizophrenic patients may affect their functioning and perception of own health.

Key words: schizophrenia, depression, quality of life.

Introduction

Depression rate among schizophrenic patients ranges from 6%-75% in the course of psychosis in general. In first psychotic episodes and psychotic relapses the prevalence of depression varies from 65-80% and in the psychosis-free intervals from 4-20% [1]. Several authors reported negative correlation between depression and quality of life QOL. However, these studies concerned mainly subjective QOL. Recently, Reine at al. [2] found a strong association between depressive symptoms and overall QOL in schizophrenic patients in a stabilized phase of the disease (mean duration of schizophrenia: 11.3 yrs). Also, the influence of depression on QOL appeared to be stronger than psychotic symptoms. Previous studies [2,3] have shown that the correlation between subjective and objective assessment of QOL is rather weak and that is why it should be examined simultaneously from subjective and objective perspective. The latter is usually subsumed under the categories of functioning (e.g. frequency of social contacts, occupational status, income, living conditions). In our earlier research we found that depressive symptoms were significantly correlated with subjective QOL but not with objective QOL, although these results concerned patients in the early stage of the disease (13 months after a first hospitalization) [3].

The present paper is a continuation of the above study, which is a longitudinal observation of the cohort of first – episode schizophrenia patients, started in 1998. The purpose of this analysis was to evaluate the relationships between depression and objective and subjective quality of life in the context of the psychopathological symptoms.

Material and methods

Ninety six patients were qualified for the study after their first hospitalization due to the episode of psychosis. At discharge, all study subjects met the diagnostic criteria for schizophrenia and signed the informed consent for the study. The patients were assessed three times: 1 month (T1), 13 months (T2) after hospitalization and 4-6 years after T1 (T3). During the first, second and third examination, respectively, 8, 2 and 12 patients refused to participate, resulting in final group of 74 subjects: 46 male and 28 female; aged 24.7±6.7 years (range 16-47). In this paper we present the results from T3 examination only.

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Table 1. **Comparison between non-depressed and depressed schizophrenic patients for QOL scores and PANSS scores (Mann-Whitney U-test)**

	Non-depressed (CDSS<6) *n*=40	**Depressed** (CDSS≥6) *n*=34	**Mann-Whitney U-test**
Objective QOL			
Social Functioning Scale global	113.6 ±8.6	99.3±11.7	<0.001
Social engagement (SE)	113.0±10.6	98.4±10.5	<0.001
Interpersonal communication (IC)	126.3±18.0	105.2±14.0	<0.001
Social activity (SA)	115.4±13.2	97.6±17.0	<0.001
Recreational activity (RA)	114.6±14.0	100.0±17.8	<0.001
Independence performance (IP)	106.0±12.7	93.8±17.0	<0.001
Independence competence (INC)	113.0±11.3	102.2±16.5	<0.01
Occupational activity (OA)	109.3±11.3	97.5±12.4	<0.001
Subjective QOL			
Overall quality of life (Q1)	3.8±0.9	2.6±1.0	<0.001
Self-evaluation health status (Q2)	3.8±0.9	2.4±1.0	<0.001
Physical domain (PH)	16.3±1.9	12.1±2.7	<0.001
Psychological domain (PS)	15.3±10.0	10.0±2.3	<0.001
Social relationships domain (SR)	14.1±3.1	11.3±3.0	<0.001
Environment (E)	14.6±1.8	12.1±2.2	<0.001
PANSS score			
Total	60.1±29.3	112.7±27.1	<0.001
Positive subscale	12.5±5.9	22.9±7.0	<0.001
Negative subscale	14.8±8.6	28.7±10.5	<0.001
General psychopathology subscale	32.8±16.2	60.3±15.0	<0.001

Values are given as mean ±SD

Abbreviations: Quality of Life (QOL), the Positive and Negative Syndrome Scale (PANSS)

Instruments

Objective QOL was assessed with Social Functioning Scale (SFS) [4]. The scale asks the patient about performance in seven areas: Social Engagement (SE), Interpersonal Communication (IC), Recreational Activities (RA), Social Activities (SA), Independence Competence (INC), Independence Performance (IP) and Occupational Activity (OA). Subjective QOL was measured using the Polish version of World Health Organization of Life Instrument – Bref (WHOQO-BREF). The WHOQOL-BREF [5] is an international quality of life instrument which produces a profile with four domains scores: Physical (PH), Psychological (PS), Social relationships (SR), Environment (E) and two separately scored items about the individual's perception of quality of life (Q1) and health (Q2). According to WHO quality of life is "'individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" [6]. Depression was evaluated with the Calgary Depression Scale for Schizophrenia (CDSS). CDSS is a 9-item questionnaire (depression, hopelessness, self-depreciation, pathological guilt, guilty ideas of reference, morning depression, early awakening, suicidal, observed depression). The range of the global score is 0-27 and according to Addington et al. [6], schizophrenic patients with a CDSS global score ≥6 were considered depressed. Psychpatological symptoms was assessed with the Positive and Negative Syndrome Scale (PANSS) which includes a structured interview to assess patients on 30 items covering positive, negative and general symptoms [7]. For each item, ratings are made on a 1-7 scale of symptom severity. Demographic and clinical variables were measured with a structured interview.

The protocol of the study was accepted by Bioethical Committee of Poznań University of Medical Sciences.

Statistical analysis

The relationships between QOL scores and clinical variables (CDSS, PANSS,) were studied using Spearman's correlation coefficient. QOL of depressed and non-depressed patients was compared with Mann-Whitney U test. ANOVA was performed to compare QOL in depressed and non-depressed patients with respect to PANSS total score, excluding the depression item (G 6). The significance level was set at $p<0.05$.

Results

Comparison of depressed and non-depressed patients

Thirty three patients (45.9%) were considered depressed (CDSS score ≥6). With regard to quality of life, the depressed group scored significantly lower than non-depressed subjects, both in objective and subjective QOL. PANSS total and all PANSS subscales scores were significantly higher for the depressed than non-depressed patients (*Tab. 1*).

Table 2. **Spearman correlation between objective quality of life (SFS scores) and clinical variables: PANSS, CDSS**

PANSS	SFS global	SFS subscales						
		SE	IC	SA	RA	IP	INC	OA
Total	-.74**	-,68**	-.56**	-.51**	-.50**	-.64**	-.49**	-.50**
Positive	-.67**	-.62**	-.50**	-.49**	-.45**	-.55**	-.47**	-.49**
Negative	-.72**	-.66**	-.59**	-.47**	-.42**	-.59**	-.55**	-.54**
General	-.72**	-.65**	-.52**	-.50**	-.51**	-.63**	-.48**	-.44**
CDSS	-.58**	-.60**	-.46**	-.49**	-.45*	-.43**	-.44*	-.42**

Significance: *P<0.05; ** P<0.001

abbreviations: Social Functioning Scale global (SFS), SFS subscales: Social engagement (SE), Interpersonal communication (IC), Social activity (SA), Recreational activity (RA), Independence performance (IP), Independence competence (INC), Occupational activity (OA), the Positive and Negative Syndrome Scale (PANSS), Calgary Depression Scale for Schizophrenia (CDSS)

Table 3. **Spearman correlation between subjective quality of life (WHOQOL scores) and clinical variables: PANSS, CDSS**

PANSS	WHOQOL-BREF					
	Q1	Q2	Domains			
			PH	PS	RS	E
Total	-.46**	-.56**	-.64**	-.65**	-.40**	-.48**
Positive	-.48**	-.51**	-.60**	-.60**	-.37*	-.45**
Negative	-.42**	-.56**	-.58**	-.58**	-.39**	-.47**
General	-.42**	-.54**	-.61**	-.62**	-.39**	-.49**
CDSS	-.60**	-.60**	-.75**	-.84**	-.48**	-.69**

Significance: ** P<0.01

abbreviations: Overall quality of life (Q1), Self-evaluation health status (Q2), domains: Physical (PH), Psychological (PS), Social relationships (SR), Environment (E), Calgary Depression Scale for Schizophrenia (CDSS)

Correlations between QOL, PANSS and CDSS

All domains of objective and subjective QOL were significantly negatively correlated with the total PANSS, and all its subscales *(Tab. 2* and *Tab. 3)*. The highest correlation between PANSS and SFS were found in the Social engagement, Interpersonal communication and Independence performance. Regarding subjective QOL, the highest correlations were noticed in Physical and Psychological domains. Severity of depressive symptoms correlated higher with subjective than with objective QOL scores.

When adjusted on the PANSS total score excluding the depression item (G 6) (ANOVA) the above results concerning differences between QOL of depressed and non-depressed patients, remained consistent for the Psychological domain of the subjective QOL (WHOQOL PS domain) ($p<0.02$) and overall QOL (WHOQOL – Q1) ($p<0.01$). The ANOVA indicated significant association between PANSS total score and all SFS and WHOQOL subscales ($p<0.05$), except for the WHO--QOL PS domain.

Discussion

Results of this study suggest, that both current symptoms of schizophrenia (measured with PANSS) and of depression (measured with CDSS) may influence subjective and objective quality of life in schizophrenic patients in 4-6 years after the first hospitalization.

The relationship between PANSS score and objective and subjective quality of life was previously observed in short-term follow-up [3], which indicates that influence of psychopathology on measurement of QOL remain constant feature of schizophrenia. This may indirectly confirm the usefulness of QOL questionnaires as outcome measures in this disorder.

The association between depressive symptoms measured with CDSS and subjective QOL was earlier described by Reine et al. [2] who found that, in patients with schizophrenia, depression was a stronger predictor of QOL than extrapyramidal symptoms. The major advantage of both studies is the use of Calgary Depression Scale for Schizophrenia, which was specifically designed for this clinical population. The higher correlation observed between depression severity and subjective quality of life than between depression and objective QOL may suggest, that the latter is less affected by personal perception of one's own situation.

We observed, that almost half of patients with schizophrenia, in 4-6 years of follow-up after the first hospitalization, suffer from significant depressive symptoms. They are associated with lower subjective and objective quality of life. After adjustment for the severity of schizophrenic symptoms (PANSS score) these results remained significant for Psychological domain of subjective QOL and overall QOL, which suggest that these two dimension are mostly influenced with depressive and not other symptoms.

The major limitation of this study is measurement of three constructs, which show partial overlap. Symptoms of depres-

sion, negative symptoms of schizophrenia and indicators of quality of life can be correlated, because they refer to the same behaviors and mental states [8]. Moreover, depression may cause distortion in individual's perception of own situation, which subsequently leads to lower score in QOL questionnaires. That's why the results of the subjective QOL evaluation should be interpreted not only on overall level but also on the subdomain level, as was done in the present study.

In conclusion, this study shows that symptoms of depression, which are present in about half of schizophrenic patients significantly affect their quality of life. This may be particularly relevant in subjective QOL, thus detection and appropriate treatment of depressive symptoms may improve outcome in patients with schizophrenia.

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