

## ORIGINAL PAPER

A. Karow · F.-G. Pajonk · J. Reimer · F. Hirdes · C. Osterwald · D. Naber · S. Moritz

# The dilemma of insight into illness in schizophrenia: self- and expert-rated insight and quality of life

Received: 28 August 2006 / Accepted: 20 September 2007 / Published online: 13 November 2007

**Abstract** *Introduction* A major subgroup of patients with acute schizophrenia lacks awareness of having a mental disorder. The aim of this study was to investigate the association of self- and expert-rated insight into illness with subjective quality of life (QOL). It was hypothesised that patients with greater self- and expert-rated insight into illness report lower QOL compared to patients with poor insight. *Method* For the present study, patients with schizophrenia or schizoaffective disorders were investigated during in-patient treatment. Insight into illness was measured by the scale to assess unawareness of a mental disorder (SUMD), the insight scale and the PANSS. QOL was assessed with the modular system of quality of life (MSQoL). *Results* Fifty-nine patients entered the study. Self- and expert-rated illness insight were associated with poor QOL. Patients with good insight into illness reported significantly lower physical health ( $p < 0.05$ ), vitality ( $p < 0.01$ ), psychosocial ( $p < 0.01$ ), affective ( $p < 0.01$ ) and general QOL ( $p < 0.001$ ) compared to patients with poor insight. Good insight was significantly associated with other parameters of clinical and social functioning and depressive symptoms. *Discussion* The results indicate that patients with acute schizophrenia and greater insight realise their restrictions more clearly, which contribute to poor QOL, but were stronger integrated in social networks. The inclusion of modules focussing on QOL related aspects of treatment from the beginning as well as a greater awareness of the physician for these questions and a strengthening of the therapeutic

alliance might help improving insight without the risk of deteriorating mood and QOL.

**Key words** schizophrenia · quality of life · insight · PANSS

## Introduction

A major subgroup of patients with schizophrenia lacks awareness of having a mental disorder or symptoms of a mental disorder [1, 2, 31]. The concept of insight into illness has long been considered important for engagement in treatment, the psychotherapeutic progress, and a good prognosis. Different studies found insight related with important clinical outcome variables [14, 29, 38, 39, 42, 45]. Poor insight was associated with more positive symptoms, especially persecutory delusions, deficits in different cognitive domains and comorbid substance abuse [17]. Greater insight was associated with compliance and satisfaction with antipsychotic treatment [15–17, 27, 32, 34, 43]. Consequently improved insight is one of the major goals in the treatment of schizophrenia [11]. On the other hand better insight may lower self-esteem and increase hopelessness [18]. Different studies showed that greater awareness of illness was associated with an increase in depression, an enhanced risk to develop a postpsychotic depression and suicidality [20, 26, 32, 40].

This association between better insight into illness with depression implies a similar association of insight with quality of life (QOL). Patients with better insight into illness possibly realise their restrictions more clearly, which might decrease their QOL. Nevertheless, findings regarding the relationship between insight and QOL are less clear at first sight. Previous studies found good insight into having a mental illness significantly related with better social functioning and expert-rated QOL [12, 39]. For example, an appropriate awareness of

A. Karow, MD (✉) · F.-G. Pajonk · J. Reimer · F. Hirdes  
C. Osterwald · D. Naber · S. Moritz  
Department for Psychiatry und Psychotherapy  
University Hospital Hamburg-Eppendorf  
Martinistr. 52  
20246 Hamburg, Germany  
Tel.: +49-40/42803-2201  
E-Mail: karow@uke.uni-hamburg.de

illness was associated with better understanding of social causality and QOL interpersonal relations [44]. Other studies found no association between insight and QOL [8, 19, 46]. In contrast, recently published studies found negative associations between insight and subjective QOL [18, 37, 41]. In a study in first episode schizophrenia subjects with awareness of illness, of social consequences and treatment efficacy was associated with lower self-reported QOL [41]. Another study found better insight into having a psychotic disorder related with reduced emotional well-being, lower vocational status, and less economic satisfaction [18]. Furthermore, persons who were seen by their interviewer as being more aware of their positive and negative symptoms expressed higher levels of emotional distress [18]. A positive relation between insight into need for medication and treatment with QOL was the only exception to this general trend of insight related negatively with subjective QOL [17, 18, 37].

There are some possible explanations for the discrepancies between these findings [25]. First, all studies, which found no or a positive association between insight and QOL, assessed outpatients in symptomatic remission, while some of the newer studies with a negative association between insight and QOL included subjects in more acute stages of psychosis [37, 41]. Secondly, two of the studies, which found no relation between QOL and insight, included diagnoses other than schizophrenia spectrum disorders as well [17, 46]. Thirdly, some older studies estimated insight using the single item from the PANSS only instead of multidimensional measures of insight [12, 17]. In addition, there were methodological differences in the assessment of QOL. The majority of studies, which found no or a positive association, measured QOL by expert-ratings. This is surprising, as several authors agree that health-related QOL is to be measured subjectively, and various studies confirmed in psychiatric and non-psychiatric populations that expert-ratings explain only small parts of variance and may reflect the level of functioning rather than an individual's experience of QOL [9, 24].

The results of previous studies and experiences in daily clinical practise, however, confirm that insight into illness is crucial for a better adherence with treatment and the process of rehabilitation in patients with schizophrenia. Greater insight into illness may not necessarily increase depressive symptoms and reduce subjective QOL in all patients. Depending on which dimensions or which measures of insight and QOL are looked at, better insight may have costs as well as benefits [18]. The aim of this study was to investigate the association between different measures of insight into illness with QOL, aspects of social and daily function and psychopathology in patients with acute schizophrenia. In order to consider the complexity of the insight concept, three different established and evaluated measures of insight (self-rated: insight scale; expert-rated: SUMD, PANSS-Item G12)

were taken. The main hypothesis was that patients with high levels of self- and expert rated illness insight report lower subjective QOL compared to patients with poor insight. We expected insight differences depending on affective and social domains of self-rated QOL and indicators of social and daily function.

## Method

### Subjects

Subjects for this study were recruited during in-patient treatment in two psychiatric hospitals in Hamburg, Germany (University Hospital Hamburg-Eppendorf and General Hospital Rissen). During 12 months patients who met the following inclusion criteria were asked to participate in this study (1) Diagnosis of schizophrenia or schizoaffective disorder (ICD-10: F20 or F25) [13], (2) at least one item of the PANSS positive subscale scoring >3. All diagnoses were determined according to ICD-10 criteria [13]. The stability of the diagnoses were confirmed using chart information and reports from the clinicians, who were responsible for the treatment. All subjects gave their informed written consent prior to their inclusion into the study.

### Assessments

Insight into illness was measured by self- and expert-rating [6]. The insight scale (IS) assesses insight into psychosis gradually during the recovery process. It is an eight-item self-report inventory, which can be summarised in three subscales: awareness of symptoms, awareness of illness, need for treatment and a total score (0 = no insight to 12 = full insight). Responses have been classified in yes, no or unsure. The scale was successfully tested, with satisfactory validity, reliability and sensitivity in patients with schizophrenia [6].

The scale to assess unawareness of a mental disorder (SUMD) is a standardised expert-rating scale on which ratings are made based on a patient interview [2]. The SUMD has six general items (three items each regarding present and past insight). According to the authors the scale was designed in a way that any general item can be used independently of the others, depending on the specific research question. For the present analyses the three general items: global awareness of mental disorder, awareness of the achieved effects of medication and awareness of having social consequences of a mental disorder were taken. In addition, awareness of symptoms of psychosis and the total score for measuring present insight were included in the analyses. The original scale was converted and ranges now from 1 (poor insight) to 5 (full insight). The insight item (G12) of the PANSS was taken as second expert-rating of insight.

The modular system for quality of life (MSQoL; [35]) is a recently developed QOL instrument for patients with severe mental disorders. The MSQoL was derived from a validation study that compared eight established QOL instruments. Items from seven of the questionnaires were extracted, modified, and completed to fit into a new integrative assessment tool. The MSQoL consists of a demographic module and four subjective QoL modules with 55 items, a core module consisting of 47 items, a partnership module composed of four items, a family module containing three items, an occupation module consisting of one item and general QOL. The core module measures six areas of QOL: physical health, vitality, psychosocial QOL, affective QOL, material satisfaction, spare time QOL. All items have seven response categories (from e.g. 1="very bad" to 7="very good"). Psychometric properties were successfully tested [35, 36].

Psychopathology was evaluated using the positive and negative syndrome scale (PANSS). The PANSS was originally designed as a rating scale that represents positive (P), negative (N) and global symptom elements (G) [5]. Evidence from recent factor analysis studies suggested that a five dimensional structure appears to be a

**Table 1** Sociodemographics, social and daily function and clinical characteristics ( $n = 59$ )

Descriptives		Mean (SD)	Corr with insight $R$ (Sig)
Age		34.7 ( $\pm 13.0$ )	−0.17 to 0.08 ns
Number of previous hospitalisations		6.6 ( $\pm 10.1$ )	−0.07 to 0.24 ns
Duration psychosis		7.6 ( $\pm 7.4$ )	−0.04 to 0.1 ns
Insight differences regarding	$N$	Mean insight <sup>a</sup>	$T$ (58)Sig
Sex%		IS total/SUMD total	
Female	24	8.68/11.95	ns/ns
Male	38	8.17/11.32	
Suicide attempt in medical history		IS-illness/IS total/SUMD total	
Yes	24	3.10/9.05/12.0	2.37*/ns/ns
No	35	2.35/7.96/10.63	
Family member with schizophrenia		IS-illness/IS total/SUMD total	
Yes	12	3.60/9.65/12.75	−3.19**/ns/−2.15*
No	47	2.41/8.08/10.81	
Current partnership		SUMD-illness/IS total/SUMD total	
Yes	18	4.27/9.26/13.0	−2.42*/ns/−2.9**
No	41	3.46/8.1/10.46	
Living independently		IS total/SUMD total	
Yes	38	7.85/11.7	2.12*/ns
No	21	9.38/11.0	
Living alone		IS-symptoms/SUMD-psychosis/IS total/SUMD total	
Yes	27	2.27/2.92/7.68/11.14	−2.24*/2.55**/ns/ns
No	32	3.0/4.0/8.98/11.93	
Currently employed		IS total/SUMD total	
Yes	22	8.55/9.86	ns/ns
No	37	8.32/11.89	
Antipsychotics compared with rec. dosage		IS-symptoms/IS total/SUMD total	
High	28	3.25/9.41/11.68	−2.6**/ns/ns
Low	19	2.25/7.81/10.22	
Concomitant benzodiazepines		IS-symptoms/IS total/SUMD total	
Yes	15	3.5/9.79/11.53	−4.25***/−2.16*/ns
No	42	2.38/8.0/10.97	

<sup>a</sup>IS/SUMD subscales with significant  $t$ -test differences and total scores are displayed; if no significant subscale differences were observed, total scores are displayed only

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

better representation of the psychopathological data. Analysis for this study is based on the five orthogonal dimensions: positive (P1, P3, P5, P6, G9, G12), negative (N1, N2, N3, N4, N6, G7, G16) and cognitive syndrome (P2, N5, G5, G10, G11, G13), hostile excitement (P4, P7, N7, G4, G8, G14) and depression (G1, G2, G3, G6, G15), each item scoring from 1 (=no symptom) to 7 (=extremely severe symptom) [5]. In addition, the insight (G12) and depression items (G1, G2, G3, G6, G15) of the PANSS were taken for separate analyses.

## Statistics

Single items missing at random were replaced using multiple imputation procedures. Unpaired  $t$ -tests were executed to test differences in psychopathology and QOL between patients with higher and lower levels of insight. In order to perform unpaired  $t$ -tests the IS subscales and total score were dichotomised in good and poor insight according to the pre-defined cut off of nine for the total score and two for the subscores [6]. The SUMD scores were dichotomised by the median in poor insight (1–3) and good insight (4–5). The PANSS insight item was dichotomised in good and poor insight according to the PANSS remission criterion  $G12 \leq 3$ . Unpaired  $t$ -tests and Pearson's  $r$  correlational analyses were used to investigate the association of the insight measures (IS, SUMD, G12) with different sociodemographic, clinical, social and daily functioning variables. The alpha-level was set at  $p < 0.05$ .

## Sample description

In the present analysis 59 subjects were included and assessed during the first week of in-patient treatment on specialised units for the treatment of psychosis. Eighty-five percent were diagnosed with

paranoid schizophrenia and 15% were diagnosed with a schizoaffective disorder. Thirty-four percent had comorbid substance misuse (8% alcohol, 15% cannabis, 11% more than one substance) and three subjects had a comorbid diagnosis of a personality disorder. Nineteen were admitted to hospital for treatment of psychosis for the first time. All subjects received at time of the interview antipsychotic treatment. Sociodemographic, clinical and daily functioning variables are presented in Table 1, means of PANSS and MSQoL are presented in Table 2. Two patients refused the interview, two other patients were excluded from the analyses due to implausible self-ratings (Inversely encoded items were contradictory assessed).

## Results

### Illness insight scores

Self-rated insight was slightly higher than expert-rated insight. According to the pre-defined categorisations of the IS, 59% of the subjects reported insight in having symptoms of psychosis, 53% reported insight that they suffer from a mental illness and 78% reported insight in the need for treatment. Sixty-seven percent showed good insight as measured by the IS total score. The SUMD showed in 49% of the patient's full awareness of having a mental illness, in 51% full awareness of achieved effects of medication and in

**Table 2** Means (SD) of PANSS and MSQoL scores ( $n = 59$ )

PANSS scores, mean $\pm$ SD	
Total score	79.0 ( $\pm 13.4$ )
Hostile excitement (/six items)	2.0 ( $\pm 0.6$ )
Negative syndrome (/seven items)	2.5 ( $\pm 0.9$ )
Cognition (/six items)	2.3 ( $\pm 0.8$ )
Positive syndrome (/six items)	3.2 ( $\pm 0.8$ )
Depression (/five items)	3.0 ( $\pm 0.7$ )
MSQoL scores, mean $\pm$ SD (0–100)	
Physical health	44.51 ( $\pm 19.16$ )
Vitality	37.20 ( $\pm 15.28$ )
Psychosocial QOL	40.87 ( $\pm 18.30$ )
Material satisfaction	45.13 ( $\pm 23.28$ )
Spare time QOL	42.19 ( $\pm 21.92$ )
Affective QOL	29.29 ( $\pm 18.41$ )
General QOL	42.17 ( $\pm 19.79$ )
MSQoL core module	53.96 ( $\pm 14.62$ )

61% full awareness for the need for treatment and in 57% good insight according to the SUMD total score. Fifty-five percent showed good insight according to the PANSS insight item. Correlation coefficients between the self-rating (IS) and both expert-ratings (SUMD, PANSS G12) were significant for insight in symptoms and mental illness, as well as for the need of treatment and having social consequences by the mental disorder. No significant correlation was found between the IS and the SUMD awareness of the achieved effects of medication. Both multidimensional insight scales were significantly correlated with the PANSS item G12 (IS total score:  $r = -0.44$ ;  $p < 0.001$ ; SUMD total score:  $r = -0.51$ ;  $p < 0.001$  (correlation results are presented in Table 3).

### ■ Illness insight and quality of life

Unpaired  $t$ -tests revealed significant QOL differences between patients categorised in “good” versus “poor” insight for the IS and SUMD subscales, total scores and the PANSS insight item. Subjects with higher levels of self- and expert-rated insight reported poorer QOL in all MSQoL subscales. The differences were statistical significant for poorer physical QOL, vitality, psychosocial QOL, affective QOL, the MSQoL core module and general QOL. Results showed significant QOL differences in self-rated insight into illness (IS), need for treatment (IS), expert-rated awareness of

mental disorder (SUMD), awareness of the achieved effects of medication (SUMD), awareness of having social consequences (SUMD), awareness of having symptoms of psychosis (SUMD), the IS and SUMD total scores and the PANSS insight item (means and results of unpaired  $t$ -tests of the IS and SUMD total scores and PANSS G12 are presented in Table 4).

### ■ Illness insight and sociodemographics, level of daily function and clinical variables

Results showed significant insight differences depending on suicide attempts, treatment with benzodiazepines, antipsychotic dosage, partnership situation, social living network and history of schizophrenia in the family. Subjects with suicide attempts in their medical history self-reported significantly better insight into illness ( $t = 2.37(58)$ ;  $p < 0.02$ ). The number of suicide attempts was not significantly correlated with any insight measure. Subjects who currently received benzodiazepines and higher neuroleptic dosages self-reported significantly greater insight into symptoms ( $t = -4.25(58)$ ;  $p < 0.001$ ;  $t = -2.6(58)$ ;  $p = 0.01$ ). Subjects with a partnership showed a tendency for greater insight in all measures, but it was only significant for expert-rated awareness of psychosis ( $t = -2.42(58)$ ;  $p = 0.02$ ). Subjects who lived with company showed better insight into illness ( $t = -2.24(58)$ ;  $p = 0.03$ ) and awareness of psychosis (SUMD:  $t = -2.55(58)$ ;  $p = 0.01$ ). Significant greater insight into illness ( $t = -3.19(58)$ ;  $p = 0.002$ ) was also observed in subjects with another family member diagnosed with schizophrenia (insight differences and results of unpaired  $t$ -tests are presented in Table 1).

Other clinical and non-clinical variables showed no association with self- and expert-rated insight into illness. Pearson's correlation revealed no significant association with age, number of previous hospitalisations and duration of illness. Unpaired  $t$ -tests showed no significant gender differences, differences between subjects with and without the comorbid diagnosis of substance misuse, depression, personality disorder, concomitant antidepressive or anticonvulsive treatment, between schizophrenia or a schizoaffective disorder or regarding other psychiat-

**Table 3** Correlation coefficients of expert-rated (SUMD, PANSS G12) with self-rated insight (insight scale)

$N = 59$	SUMD					
	Awareness mental disorder	Awareness effects medication	Awareness social consequence	Awareness psychosis	SUMD total score	Insight PANSS (G12)
Insight scale						
Insight symptoms	0.17	0.15	0.30*	0.35*	0.33*	-0.33**
Insight illness	0.54***	0.21	0.44***	0.41**	0.56***	-0.36**
Need for treatment	0.31*	0.15	0.38***	0.32*	0.40**	-0.33**
Insight total score	0.44***	0.22	0.48***	0.47***	0.56***	-0.44***

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



**Table 4** Quality of life (MSQoL) differences (unpaired *t*-tests) between patients categorised in “good” and “poor” insight self-rated (insight scale) and expert-rated (SUMD, PANSS items “insight”)

MSQoL	Insight scale total			SUMD total			Insight PANSS (G12)		
	Poor insight ( <i>N</i> = 14)	Good insight ( <i>N</i> = 33)	<i>T</i> (Sig)	Poor insight	Good insight	<i>T</i> (Sig)	Poor insight ( <i>N</i> = 26)	Good insight ( <i>N</i> = 31)	<i>T</i> (Sig)
Physical health	52.08	41.28	2.0*	44.61	44.14	0.09	48.55	41.12	1.47
Vitality	46.13	34.09	2.55**	40.79	35.41	1.34	42.30	32.93	2.40*
Psycho-social	50.95	37.77	2.31*	49.02	35.41	2.94**	48.33	34.62	3.01**
Material satisfaction	50.00	43.09	0.91	48.14	42.88	0.83	47.77	43.01	0.75
Spare time	45.55	42.50	0.35	43.05	42.77	0.03	47.61	38.88	1.18
Affective QOL	37.85	26.36	2.0*	36.11	23.75	2.60**	33.84	25.48	1.73
General QOL	51.19	39.01	2.0*	46.70	38.67	1.50	51.44	34.40	3.55***
Core module QOL	62.68	51.52	2.03*	59.41	49.61	2.09*	61.03	49.07	2.31*

\**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001

ric problems than schizophrenia in the family (depression, suicide, addiction, unspecified). ANOVA showed no significant insight differences regarding the level of school or vocational education and the living situation, and no significant insight differences were observed between subjects, who were currently employed or not.

### ■ Illness insight and PANSS syndromes

Results revealed no significant correlation between self- or expert-rated insight into illness and PANSS hostile excitement, negative syndrome, cognition, depression and the total score. The correlation coefficients ranged from  $r = -0.29$  to  $r = 0.22$ . Significant correlations were found between IS and SUMD total scores and the PANSS positive syndrome ( $r = -0.30$ ,  $p = 0.02$ ;  $r = -0.27$ ,  $p = 0.03$ ). Correlation coefficients for IS and SUMD with the PANSS single items generating the depression syndrome (G1 somatic concern, G2 anxiety, G3 guilt feelings, G6 depression, G15 preoccupation) were performed in order to investigate the association between the insight measures and depression thoroughly. Results showed a significant correlation between the PANSS item G6 (depression) with insight in having a mental illness ( $r = 0.43$ ,  $p = 0.002$ ), insight into the need for treatment ( $r = 0.42$ ,  $p = 0.002$ ), the IS total score ( $r = 0.42$ ,  $p = 0.002$ ) and the SUMD total score ( $r = .36$ ,  $p = 0.005$ ). A significant association was also found between the PANSS item G15 (preoccupation) and the IS total score ( $r = 0.42$ ,  $p = 0.002$ ).

## Discussion

In this study, patients diagnosed with schizophrenia were investigated during their first week of in-patient treatment. Patients with greater self- and expert-rated insight into illness reported significantly lower QOL compared to patients with poor insight. The differences reached the level of statistical significance in five out of seven QOL domains, namely physical

health, vitality, psychosocial, affective and general QOL, as well as the QOL core module. The level of subjective QOL was low in the present sample. Even patients with poor insight rated their QOL between “neither good nor bad” and “rather good”. Only very few patients reported “good” QOL in single subscales. The present results maintain the hypothesis that poor insight is a defence strategy against low self-esteem due to the realisation of having a mental illness [11, 43]. Patients with greater insight may be better reporters of their reality, while patients with poor insight may be more likely to “over-rate” their QOL. Negative effects of insight on QOL may have an additional negative impact on treatment cooperation from the beginning on with further consequences for the therapeutic alliance and engagement in treatment.

Self-rated insight was slightly higher than expert-rated insight. Previous studies found self-rated insight lower than expert-rated insight, which was partly explained by the order of administration of the instruments [21, 47]. In the present study the order of administration was randomly assigned. However, results showed that all three insight measures were significantly correlated. Correlation coefficients between the self-rating and both expert-ratings were significant for awareness of mental illness and symptoms, as well as for the need of treatment and having social consequences by the mental disorder. No significant correlation was found between self-rated insight and expert-rated awareness of achieved effects of medication, which may be explained by conceptual differences between IS and SUMD. Both results, the significant QOL differences in patients with poor versus good insight and the level of correlation between self- and expert-rated insight, are in accordance with a recent study reporting that self-reports of patients with schizophrenia even with diminished insight into their illness are valid, but that individuals with poor insight may wish to present themselves more self-competent [4].

In addition, the association between insight into illness and different clinical, social and daily functioning variables was investigated. Individuals, who had suicide attempts in their medical history, showed

higher levels of insight, which has been reported previously [40]. Subjects with a partnership and subjects who lived with company showed greater insight into illness, compared with subjects without a partner and/or living alone. Significantly greater insight was also observed in subjects with a close relative diagnosed with schizophrenia. These results may correspond with studies, which found greater insight positively related with different parameters of social functioning, interpersonal relations and understanding of social causalities [12, 39, 44]. The importance of theory of mind for the development of insight has been recently discussed. The authors concluded that insight may require the ability to evaluate the self from the perspective of others and that an understanding of others' belief about another person may be conceptually very similar to understanding the others' belief about self [7]. In this context, an association of better insight with social relations and a positive family history of schizophrenia seem comprehensible.

Patients, who were augmented with benzodiazepines and received higher antipsychotic dosages, reported significantly better insight. Patients with greater insight into symptoms may be more willing to comply with different types of medication and higher dosages, while patients with poor insight may be more likely to question their dosage and refuse to take more than one type of medication at beginning of their treatment. Several other clinical factors, sociodemographics and variables of daily functioning showed no association with self- and expert-rated insight into illness. Age, gender, level of school or vocational education, current work and living situation were not significantly associated with insight. The number of previous hospitalisations and duration of illness demonstrated no significant association as well, though previous studies reported that first episode patients showed poorer levels of insight [33]. This might be explained by the fact that only 19% of the patients in this sample were admitted for the first time to hospital for the treatment of psychosis, and all patients had a duration of symptoms of psychosis of more than 6 months according to their files.

### ■ Limitations

As this was a naturalistic study in daily clinical practice, different methodological limitations were unavoidable. The most important limitation may be that no specific scale designed to gradually measure depressive symptoms was used in this study. Depression is known as clinical factor which is substantially associated with subjective QOL [24]. In addition it had been reported, that depressive symptoms were correlated with greater insight into illness. The depression syndrome of the PANSS, the single PANSS items generating the depression syndrome and augmentation treatment with antidepressants

were taken to elucidate the association of depression with insight. Results showed that the insight scales were significantly associated with the single PANSS depression item only. A reason for this result might be that few indicators for actual depression were found in this sample. Depressive symptoms may be "masked" by the presence of positive symptoms, especially at the beginning of in-patient treatment, but may be developed later on in the course of disease [3]. Both factors may contribute to higher correlation coefficients between insight and depression after stabilisation, which were reported by other studies [41]. Furthermore, there was no significant correlation between both insight scales and the other PANSS syndromes, except some low correlations with the positive syndrome, which includes the insight item of the PANSS. Generalisability of the results to epidemiological samples may be limited due to the selection of an inpatient population. The association between symptoms and insight might change in different phases of the illness and might depend on the types of measurement. The actual state of illness should be controlled for in investigations of insight and QOL, and the association between both variables might change in long-term treatment. Therefore, future studies should investigate the association of insight with subjective QOL longitudinally.

---

### Conclusion

In summary, patients with acute schizophrenia who had greater self- and expert-rated insight into illness reported lower subjective QOL, but were stronger integrated in social networks. Consequently better insight may be associated with better social functioning and decreased subjective QOL, which corresponds with contradictory results of previous studies. Patients with good insight might realise consequences of their mental illness with restrictions in daily living and conflicts in social relationships more clearly, while patients with poor insight might partially overrate their QOL and wish to present themselves as more competent. Obviously the stigma of being mentally ill and being hospitalised are serious psychological strains. The results are in concordance with the notion that delusions might serve as a defence strategy against low self-esteem and that particular symptoms might create alternative meanings of life [34]. On the other hand the development and intrapsychic integration of insight require social competence to improve the ability to evaluate the self from the perspective of others. The increase of depression, suicidal ideation and decrease in subjective QOL in patients with better insight underline the importance of insight for the clinical course in schizophrenia. Moreover, recent studies reported that early non-response in subjective well-being and QOL predict later clinical non-response and a less favour-

able long-term outcome [23, 25, 29]. In consequence, the investigation of insight and subjective QOL in acute schizophrenia add clinically relevant information regarding short- and long-term outcome, and a differentiated integration of modules focussing on QOL related aspects and social network abilities into treatment from the beginning on is needed. A greater awareness of the physician for these questions and a strengthening of the therapeutic alliance might help improving insight and social competence without the risk of deteriorating mood and QOL.

## References

- Amador XF, Flaum M, Andreasen NC, Strauss DH, Yale SA, Clark SC, Gorman JM (1994) Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Arch Gen Psychiatry* 51:826–836
- Amador XF, Strauss DH, Yale SA, Flaum MM, Endicott J, Gorman JM (1993) Assessment of insight in psychosis. *Am J Psychiatry* 150:873–879
- an der Heiden W, Konnecke R, Maurer K, Ropeter D, Hafner H (2005) Depression in the long-term course of schizophrenia. *Eur Arch Psychiatry Clin Neurosci* 255:174–184
- Bell M, Fiszdon J, Richardson R, Lysaker P, Bryson G (2007) Are self-reports valid for schizophrenia patients with poor insight? Relationship of unawareness of illness to psychological self-report instruments. *Psychiatry Res* 151:37–46
- Bell MD, Lysaker PH, Beam-Goulet JL, Milstein RM, Lindenmayer JP (1994) Five-component model of schizophrenia: assessing the factorial invariance of the positive and negative syndrome scale. *Psychiatry Res* 52:295–303
- Birchwood M, Smith J, Drury V, Healy J, Macmillan F, Slade M (1994) A self-report insight scale for psychosis: reliability, validity and sensitivity to change. *Acta Psychiatr Scand* 89:62–67
- Bora E, Sehitoğlu G, Aslier M, Atabay I, Veznedaroglu B (2007) Theory of mind and unawareness of illness in schizophrenia: is poor insight a mentalizing deficit? *Eur Arch Psychiatry Clin Neurosci* 257:104–111
- Browne S, Garavan J, Gervin M, Roe M, Larkin C, O'Callaghan E (1998) Quality of life in schizophrenia: insight and subjective response to neuroleptics. *J Nerv Ment Dis* 186:74–78
- Bullinger M (2003) Measuring health related quality of life. An international perspective. *Adv Exp Med Biol* 528:113–122
- Carroll A, Fattah S, Clyde Z, Coffey I, Owens DG, Johnstone EC (1999) Correlates of insight and insight change in schizophrenia. *Schizophr Res* 35:247–253
- Cooke MA, Peters ER, Kuipers E, Kumari V (2005) Disease, deficit or denial? Models of poor insight in psychosis. *Acta Psychiatr Scand* 112:4–17
- Dickerson FB, Boronow JJ, Ringel N, Parente F (1997) Lack of insight among outpatients with schizophrenia. *Psychiatric Serv* 48:195–199
- Dilling H, Dittmann V (1990) Psychiatric diagnosis following the 10th revision of the international classification of diseases (ICD-10). *Nervenarzt* 61:259–270
- Drake RJ, Lewis SW (2003) Insight and neurocognition in schizophrenia. *Schizophr Res* 62:165–173
- Drake RJ, Pickles A, Bentall RP, Kinderman P, Haddock G, Tarrier N, Lewis SW (2004) The evolution of insight, paranoia and depression during early schizophrenia. *Psychol Med* 34:285–292
- Gilleen J, David AS (2005) The cognitive neuropsychiatry of delusions: from psychopathology to neuropsychology and back again. *Psychol Med* 35:5–12
- Goldberg RW, Green-Paden LD, Lehman AF, Gold JM (2001) Correlates of insight in serious mental illness. *J Nerv Ment Dis* 189:137–145
- Hasson-Ohayon I, Kravetz S, Roe D, David AS, Weiser M (2006) Insight into psychosis and quality of life. *Compr Psychiatry* 47:265–269
- Hofer A, Rettenbacher MA, Widschwendter CG, Kemmler G, Hummer M, Fleischhacker WW (2005) Correlates of subjective and functional outcomes in outpatient clinic attendees with schizophrenia and schizoaffective disorder. *Eur Arch Psychiatry Clin Neurosci*
- Iqbal Z, Birchwood M, Chadwick P, Trower P (2000) Cognitive approach to depression and suicidal thinking in psychosis. 2. Testing the validity of a social ranking model. *Br J Psychiatry* 177:522–528
- Jovanovski D, Zakzanis KK, Atia M, Campbell Z, Young DA (2007) A comparison between a researcher-rated and a self-report method of insight assessment in chronic schizophrenia revisited: a replication study using the SUMD and SAIQ. *J Nerv Ment Dis* 195:165–169
- Karow A, Czekalla J, Dittmann RW, Schacht A, Wagner T, Lambert M, Schimmelmann BG, Naber D (2007) Association of subjective well-being, symptoms, and side effects with compliance after 12 months of treatment in schizophrenia. *J Clin Psych* 68:75–80
- Karow A, Moritz S, Lambert M, Schoder S, Krausz M (2005) PANSS syndromes and quality of life in schizophrenia. *Psychopathology* 38:320–326
- Karow A, Naber D (2002) Subjective well-being and quality of life under atypical antipsychotic treatment. *Psychopharmacology* 162:3–10
- Karow A, Pajonk FG (2006) Insight and quality of life in schizophrenia: recent findings and treatment implications. *Curr Opin Psych* 19:637–641
- Kim CH, Jayatilake K, Meltzer HY (2003) Hopelessness, neurocognitive function, and insight in schizophrenia: relationship to suicidal behavior. *Schizophr Res* 60:71–80
- Koren D, Seidman LJ, Poyurovsky M, Goldsmith M, Viksman P, Zichel S, Klein E (2004) The neuropsychological basis of insight in first-episode schizophrenia: a pilot metacognitive study. *Schizophr Res* 70:195–202
- Lambert M, Naber D, Eich FX, Schacht M, Linden M, Schimmelmann BG (2007) Remission of severely impaired subjective wellbeing in 727 patients with schizophrenia treated with amisulpride. *Acta Psychiatr Scand* 115:106–113
- Liraud F, Droulout T, Parrot M, Verdoux H (2004) Agreement between self-rated and clinically assessed symptoms in subjects with psychosis. *J Nerv Ment Dis* 192:352–356
- Lysaker PH, Bell MD, Bryson GJ, Kaplan E (1998) Insight and interpersonal function in schizophrenia. *J Nerv Ment Dis* 186:432–436
- McEvoy JP, Apperson LJ, Appelbaum PS, Ortliip P, Brecosky J, Hammill K, Geller JL, Roth L (1989) Insight in schizophrenia. Its relationship to acute psychopathology. *J Nerv Ment Dis* 177:43–47
- Mintz AR, Addington J, Addington D (2004) Insight in early psychosis: a 1-year follow-up. *Schizophr Res* 67:213–217
- Moritz S, Werner R, Collani Gv. The inferiority complex in paranoia re-addressed. A study with the implicit association test. (in press)
- Pedrelli P, McQuaid JR, Granholm E, Patterson TL, McClure F, Beck AT, Jeste DV (2004) Measuring cognitive insight in middle-aged and older patients with psychotic disorders. *Schizophr Res* 71:297–305
- Pukrop R, Moller HJ, Steinmeyer EM (2000) Quality of life in psychiatry: a systematic contribution to construct validation and the development of the integrative assessment tool “modular system for quality of life”. *Eur Arch Psychiatry Clin Neurosci* 250:120–132
- Pukrop R, Schlaak V, Moller-Leimkuhler AM, Albus M, Czernik A, Klosterkötter J, Moller HJ (2003) Reliability and validity of quality of life assessed by the short-form 36 and the modular system for quality of life in patients with schizophrenia and patients with depression. *Psychiatry Res* 119:63–79
- Ritsner M (2003) Predicting changes in domain-specific quality of life of schizophrenia patients. *J Nerv Ment Dis* 191:287–294

38. Sanz M, Constable G, Lopez-Ibor I, Kemp R, David AS (1998) A comparative study of insight scales and their relationship to psychopathological and clinical variables. *Psychol Med* 28:437–446
39. Schwartz RC (1998) Insight and illness in chronic schizophrenia. *Comp Psychiatry* 39:249–254
40. Schwartz RC, Smith SD (2004) Suicidality and psychosis: the predictive potential of symptomatology and insight into illness. *J Psychiatr Res* 38:185–191
41. Sim K, Mahendran R, Siris SG, Heckers S, Chong SA (2004) Subjective quality of life in first episode schizophrenia spectrum disorders with comorbid depression. *Psychiatry Res* 129:141–147
42. Smith TE, Hull JW, Huppert JD, Silverstein SM, Anthony DT, McClough JF (2004) Insight and recovery from psychosis in chronic schizophrenia and schizoaffective disorder patients. *J Psychiatr Res* 38:169–176
43. Subotnik KL, Nuechterlein KH, Irzhevsky V, Kitchen CM, Woo SM, Mintz J (2005) Is unawareness of psychotic disorder a neurocognitive or psychological defensiveness problem? *Schiz Res* 75:147–157
44. Vaz FJ, Bejar A, Casado M (2002) Insight, psychopathology, and interpersonal relationships in schizophrenia. *Schizophr Bull* 28:311–317
45. Whitty P, Browne S, Clarke M, McTigue O, Waddington J, Kinsella T, Larkin C, O'Callaghan E (2004) Systematic comparison of subjective and objective measures of quality of life at 4-year follow-up subsequent to a first episode of psychosis. *J Nerv Ment Dis* 192:805–809
46. Williams CC, Collins A (2002) Factors associated with insight among outpatients with serious mental illness. *Psychiatr Serv* 53:96–98
47. Young DA, Campbell Z, Zakzanis KK, Weinstein E (2003) A comparison between an interview and a self-report method of insight assessment in chronic schizophrenia. *Schiz Res* 63:103–109