



Comparison of Correlations between Symptom Dimensions and Subjective Quality Of Life in Mexican Outpatients with Psychosis

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ABSTRACT

Objective: Research in psychosis has supported a close association between symptoms and QoL (Quality of Life), but a direct comparison between the associations of symptom dimensions with QoL is needed. The present study expanded upon previous studies by 1) analyzing the association between clinical symptomatology and quality of life in a sample of Mexican patients with psychosis and 2) exploring whether one particular symptom dimension (positive, negative, general) is significantly more strongly correlated with quality of life than the others by comparing correlations from the same sample.

Method: Psychopathology and quality of life of 61 outpatients with a diagnosis of schizophrenia or related psychosis were assessed with the PANSS (Positive and Negative Syndrome Scale) and the CSCV (Seville Questionnaire) scales, respectively. The strength of the resulting PANSS-CSCV Spearman correlations was compared with the cocor statistical package.

Results: The three symptom dimensions (positive, negative and general psychopathology) were significantly related to quality of life. Correlation comparisons confirmed that general psychopathology had not only results that are more significant but also stronger correlations with quality of life in comparison to both, positive and negative symptoms.

Conclusions: In outpatients whose overall symptoms have ameliorated, general psychopathology symptoms play a more significant role in the self-perceived QoL. A comprehensive treatment must include psychosocial interventions focused on general psychopathology to enhance the prospect of patients' recovery.

Keywords

Psychotic disorders, Psychopathology, Quality of life, Outpatients

Introduction

The concept of health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [1] has long permeated patient care as well as research. Recovery goes beyond symptom remission embracing also social and functional outcomes,

such as quality of life (QoL). Therefore, QoL, defined as the individual's 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 [2], has become not only a desirable but a certain goal for every comprehensive intervention. Treatment of mental disorders has also adopted

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this integrative approach meeting patient's physical and psychological recovery in unison. Recovery and rehabilitation in the current psychiatric context demands interventions targeting both clinical and functional outcomes [3]; a challenging goal when treating patients with psychosis.

Schizophrenia and related psychoses [4] have been considered as the most severe and disabling of mental disorders. An admixture of positive, negative, disorganization, cognitive, psychomotor, and mood symptoms [5] characterize them. Advances in pharmacological treatment have proved to be effective not only in reducing symptoms but also in preventing side effects [6]. As treatments for patients with psychosis have improved, their objectives have broadened, aiming not only at reducing the mortality and morbidity of the disorder by decreasing the frequency and severity of psychotic episodes but also at improving the functional capacity and QoL of the individuals afflicted with the illness [6,7]. Due to the severity of clinical symptoms, people with schizophrenia are likely to have a diminished QoL [8]; yet, with the adequate provision of treatment good QoL can be preserved [9-12].

Research in the QoL of patients with psychosis has identified various related factors such as premorbid adjustment, selected treatment, insight, lifestyle, unmet needs, social support, self-esteem, autonomy, and culture, among others [8,10,13-15]. Psychiatric symptoms, undoubtedly, have been the primary focus of research [10, 16-20]. Given that psychotic disorders do not present in "pure" forms and symptom groups very often overlap, a dimensional, rather than a categorical approach has proved useful for clinical research and practice [21]. Although still debated [22], three are the symptom dimensions usually identified in psychotic illness [23,24]. Among other symptoms, the positive dimension includes hallucinatory behavior, delusions, and conceptual disorganization; the negative dimension includes blunted affect, social and emotional withdrawal, and lack of spontaneity; and the general psychopathology dimension includes mannerisms and posturing, unusual thought content, and lack of insight.

A meta-analysis of studies on the relationship between psychiatric symptoms and QoL in schizophrenia [16] found small relationships between psychiatric symptoms and QoL; yet,

general psychopathology showed the strongest negative associations across all QoL indicators. Furthermore, in outpatients positive and negative symptoms were more strongly related to poor QoL, whereas general psychopathology showed a consistent negative relationship with QoL across different study samples and treatment settings.

Research in populations less often studied might serve to a better understanding of patients with psychosis, should previous findings be replicated or refuted. Research in psychosis has supported a close association between symptoms and QoL; yet, to the best knowledge of the authors, the levels of associations between different symptom dimensions and QoL have not been directly contrasted. That is, it is known that a more severe symptom profile relates with a decremented QoL. Nevertheless, it is still to be tested whether positive, negative or general symptoms stand out above the other two regarding their impact on patients' QoL. The present study aimed at expanding upon previous studies by 1) analyzing the association between clinical symptomatology and QoL in a sample of Mexican patients with psychosis and 2) exploring whether one particular symptom dimension (positive, negative, general) is significantly more strongly correlated with QoL than the others by comparing correlations from the same sample. Considering previous studies a significant association between more severe clinical status and a disfavorable QoL was expected; yet, no precise prediction about the second objective could be made.

Methods

■ Design and participants

The study was performed in 2009 in Merida, Mexico, at the Yucatan Psychiatric Hospital (Hospital Psiquiátrico Yucatán). This public institution provides mental health services to anyone in need regardless of place of residence and medical insurance conditions. The protocol for this cross-sectional study adhered to international [25] and national [26] ethical standards for studies with minimal risk and received formal authorization and ethical approval from the Research and Ethics Committee of the hosting hospital.

Inclusion criteria were: i) age at onset 16-45 years old, ii) a primary current DSM-IV-TR [4] diagnosis of schizophrenia or other schizophrenia-spectrum psychotic disorder, iii) at least three years after the occurrence of the

first episode of psychosis (time when psychosis is expected to have plateaued after its critical period, when deterioration and/or recurrences are more likely to occur) [5], and iv) inhabitant of the city of Merida, where the hospital is located. Exclusion criteria were: i) a DSM-IV-TR diagnosis of psychosis of affective, organic, or toxic type [4], ii) evident intellectual disorder, and iii) inadequate contact information. The review of clinical files considering the above-mentioned criteria resulted in 161 potential cases. Only 103 could be contacted (3 had passed away, 55 no longer lived in the area or could not be located) and 66 (64%) agreed to collaborate. Informed consents were signed with no economic compensation involved.

■ Instruments

Patients were interviewed following the module B (psychotic symptoms) of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) [27], Spanish version [28], to verify and/or update clinical diagnosis. Current clinical status was rated with the Positive and Negative Syndrome Scale (PANSS), Spanish adaptation [29]. This instrument lists 30 symptoms to be scored by interviewer from 1 (absent) to 7 (extreme). Positive dimension rates 7 symptoms: delusions, conceptual disorganization, hallucinatory behavior, excitement, grandiosity, suspiciousness/persecution and hostility. Negative dimension rates 7 symptoms: blunted affect, emotional withdrawal, poor rapport, passive/apathetic social withdrawal, difficulty in abstract thinking, lack of spontaneity and flow of conversation and stereotyped thinking. The general dimension rates 16 symptoms: somatic concern, anxiety, guilt feelings, tension, mannerisms and posturing, depression, motor retardation, uncooperativeness, unusual thought content, disorientation, poor attention, lack of judgment and insight, disturbance of volition, poor impulsive control, preoccupation and active social avoidance [24, 30]. The PANSS was particularly designed for patients with psychosis and it has become a widely known and used instrument with reported satisfactory psychometric properties for both, the original and the Spanish versions [24, 29, 30].

Subjective QoL was assessed with the Seville Questionnaire [31], a 59-item self-rated Likert questionnaire developed for patients with schizophrenia originally developed in Spanish. The first 13 items, grouped in three factors, correspond to the Favorable (CSCV-F) scale, and

reflect pleasant, positive and satisfactory aspects (e.g. “I like myself”, “I feel comfortable with my thoughts”, “I am capable of organizing my daily life”). The last 46 items correspond to the Disfavorable (CSCV-D) scale and are grouped into nine factors; they refer to unpleasant, negative or unsatisfactory aspects (e.g. “I’m bored all the time”, “I’m afraid of myself”, “Everything overwhelms me”). Mean scores can be obtained for the 12 factors and the 2 subscales by averaging their corresponding items. High scores on the CSCV-F and low scores on the CSCV-D reflect a significantly high QoL, with eventual psychopathological problems having no or only minimal impact. Conversely, low scores on the CSCV-F and high scores on the CSCV-D represent a patient who estimates his/her QoL as extremely unfavorable or negative, and considers aspects prototypical of good QoL to be absent. The psychometric properties of the CSCV on this sample have been previously published, reporting significant and adequate internal consistency; yet, recommending the use of scale scores rather than of factor scores [32].

Statistical analyses

First, descriptive statistics for patients’ symptom profile (PANSS) and self-rated QoL (CSCV) were obtained. Next, data normal distribution (Shapiro-Wilk test, skewness and kurtosis) for the three symptom dimensions (positive, negative, general) and the QoL dimensions (CSCV-F, CSCV-D) was tested. Following, correlations between PANSS and CSCV scores were examined. All these analyses were run with the SPSS v.20 statistical package. Lastly, comparisons of correlations based on dependent groups were performed following the procedure proposed by Hittner and colleagues [33] and run with the *co* package [34] with an alpha level of 0.05 and a confidence interval of 0.95.

Results

Five subjects were excluded due to symptom severity, which prevented them from providing reliable answers on their subjective QoL. Thus, final sample included 61 patients: 34 (55.7%) female and 27 (44.3%) male. Mean age at the time of assessment was 35.9 (SD=10.0) years and mean age at onset was 29.1 (SD=9.8) years; there were no significant differences by sex. In terms of DSM-IV-TR [4] diagnoses, 41 patients had schizophrenia (14 paranoid, 2 disorganized, and 25 residual) and 20 patients

had other types of schizophrenia-spectrum psychoses (8 schizoaffective, 7 delusional, 2 schizophreniform, 2 brief, and 1 not otherwise specified). At the time of the assessment, no participants were hospitalized; however, 50.8% of them had been hospitalized at least once, and 34.4% had been hospitalized when their first psychosis episode occurred. Mean illness course was 6.7 years (SD=1.9, range 3.8–11.2). Thirty (49.2%) participants were single, 26 (42.6%) were married or had a partner, and 5 (8.2%) were divorced/separated. Most of them lived with their parents (54.1%). Thirty-four (55.7%) participants had secondary or lower educational level (up to 9th grade) and the remaining 27 (44.3%) had partial/complete high school or above educational level.

As for occupation, 34.4% reported that they were responsible for the household tasks, 44.3% were self-employed and 21.3% lacked any official occupation.

Regarding clinical symptoms, mean scores were 1.44 (SD=0.52) for the positive dimension, 1.67 (SD=0.75) for the negative dimension and 1.55 (SD=0.42) for the general psychopathology dimension. Participants showed mild symptoms in all three dimensions and reported a largely favorable QoL (agreeing mostly with CSCV-F statements and largely disagreeing with CSCV-D statements). The mean score for the CSCV-F was 3.05 (SD=0.68) and for the CSCV-D was 1.71 (SD=0.60). Alpha values were 0.90 and 0.96 for CSCV-F and CSCV-D, respectively.

The Shapiro-Wilk test showed that PANSS and CSCV scores were not normally distributed: positive symptoms ($W_{(61)}=0.82$, $p \leq .001$), negative symptoms ($W_{(61)}=0.83$, $p \leq .001$), general psychopathology ($W_{(61)}=0.93$, $p \leq .01$), CSCV-F ($W_{(61)}=0.92$, $p \leq .001$), CSCV-D ($W_{(61)}=0.91$, $p \leq .001$). Kurtosis levels were not significant: positive symptoms ($z=0.73$), negative symptoms ($z=0.75$), general psychopathology ($z=0.27$), CSCV-F ($z=0.82$), CSCV-D ($z=0.0331$). Skewness was significant for all measures: positive symptoms ($z=3.89$, $p \leq .001$), negative symptoms ($z=3.84$, $p \leq .001$), general psychopathology ($z=2.74$, $p \leq .01$), CSCV-F ($z=2.28$, $p \leq .05$), CSCV-D ($z=2.91$, $p \leq .01$). Given that data were not normally distributed, correlational analyses were run with the Spearman non-parametric test.

Correlations (r) between PANSS dimensions were, moderate/strong and significant ($p \leq .001$): positive-negative (+0.48), positive-general (+0.66), negative-general (+0.66). CSCV-F and

CSCV-D scores were also significantly correlated ($r_s=-0.57$, $p \leq .001$). **Table 1** summarizes the resulting Spearman correlations between the three PANSS dimensions and the CSCV (sub)scales. Overall, it can be observed that the three symptom dimensions were significantly related to QoL as the more severe symptoms were, the less favorably QoL was perceived (lower CSCV-F scores, higher CSCV-D scores). It can be observed that general psychopathology displays not only more significant results but also stronger correlations with QoL in comparison to both, positive and negative symptoms.

In order to corroborate that general psychopathology is significantly more strongly associated to QoL than positive and negative symptoms, correlations comparisons were performed; results are presented in **Table 2**. Although negative symptoms produced more significant correlations than positive symptoms, except from the Harmony subscale, no significant differences were found. On the other hand, the association of general psychopathology with QoL, in comparison to that of positive and negative symptoms, produced various significant results, particularly when measuring disfavorable QoL. Regarding favorable QoL, its correlations with general psychopathology did not differ significantly from its correlations with negative symptoms.

Discussion

Although schizophrenia and related psychoses are serious mental conditions, with adequate treatment, the prognosis in most cases can be favorable, and a satisfactory QoL as well as symptom amelioration becomes a feasible target [3].

Significant negative associations between symptoms and QoL in patients with psychosis have been reported in a first-episode [35] and through the short [36] and long [37, 38] course of illness. Research has been performed in samples from diverse countries as United Kingdom [39], Italy [38], Greece [18], Austria [11], India [35], Japan [20], Chile [40] and Brazil [41], reflecting a world growing scientific interest to study the link between psychiatric symptoms and QoL. Yet, the reported findings concerning the patterns of these associations are quite diverse and thus, further analyses are required.

The present study, performed in a sample of Mexican patients with psychosis, replicated the association between a more severe clinical status and a reduced QoL [8,13,16,19]. Positive, neg-

ative and general psychopathology dimensions were all significantly associated with QoL; yet, the latter showed stronger correlations. Finer analyses were performed to determine whether these differences between the strength of correlations were significant. Overall, the association of the general psychopathology symptom dimension with QoL was significantly stronger in comparison of those of the positive and the negative symptom dimensions with QoL, particularly concerning a disfavorable QoL.

Positive symptoms contribute to QoL, though the association seems less strong in comparison to that of negative and general psychopathology. The negative effect of positive symptoms on QoL might be explained by awareness of symptoms [42], a condition measured by the insight item from the PANSS general psychopathology scale. It is must be brought to notice the fact that in the presence of severe positive symptoms (e.g. delusions, hallucinations, conceptual disorganization) the self-perceived QoL cannot be reliably measured; thus, samples exclude these patients and that might well explain the weak, though significant, positive symptom – QoL association. Negative symptoms influence QoL [17,39,41,43-45], even more than positive symptoms [35,43]. It has been observed that the association between negative symptoms and QoL is related primarily to experiential deficits (i.e. asociality, anhedonia, amotivation), highlighting the importance of differentiate subdomains in the negative dimension [39]. Also, cognitive deficits and insight (usually included in the general psychopathology dimension) seem to have an important role in this association; yet, only for those with severe negative symptoms [41,44]. Therefore, it seems that negative symptoms, at a high level, relates to QoL but it does through the indirect effect of other related symptoms from the general psychopathology dimension. Regarding general psychopathology, it has been repeatedly reported as strongly related to poor QoL in individuals with psychosis [16,17,35]. Depression has come forward as the symptom of most influence [18,19,46-48]. Although not exclusive of psychotic disorders, depression is quite commonly and persistently experienced by patients. Having overcome an intense episode of psychosis the individual might initiate a process of acknowledgment and acceptance of his/her mental vulnerability, facing stigmatizing beliefs, hopelessness, and frustration, and eventually depression and unsatisfactory QoL. Therapeutic efforts must then enhance objective insight into illness,

Table 1: Spearman correlations between symptom dimensions (PANSS) and quality of life (CSCV) (n=61).

	PANSS positive	PANSS negative	PANSS general
CSCV-F	-0.25*	-0.11***	-0.49***
Vital satisfaction	-0.24	-0.37**	-0.43***
Self-esteem	-0.30*	-0.41***	-0.45***
Harmony	-0.12	-0.38**	-0.38**
CSCV-D	+0.34**	+0.30*	+0.57***
Lack of cognitive apprehension	+0.16	+0.16	+0.31*
Loss of energy	+0.40***	+0.22	+0.52***
Lack of inner control	+0.24	+0.28*	+0.54***
Difficulty with emotional expression	+0.36**	+0.29*	+0.58***
Difficulty with cognitive expression	+0.32*	+0.45***	+0.53***
Oddness	+0.22	+0.23	+0.42***
Fear of losing control	+0.23	+0.21	+0.47***
Restrained hostility	+0.32*	+0.21	+0.39**
Automatisms	+0.07	+0.13	+0.39**

Level of significance: *p ≤ .05, **p ≤ .01, ***p ≤ .001.

Table 2: Z scores obtained by the comparison of correlations of symptom dimensions with quality of life.

	Positive vs. Negative	Positive vs. General	Negative vs. General
CSCV-F	1.55	2.35*	0.45
Vital satisfaction	1.06	1.86	0.55
Self-esteem	0.90	1.54	0.43
Harmony	2.03*	2.47*	-0.03
CSCV-D	0.38	-2.44*	-2.91**
Lack of cognitive apprehension	0.08	-1.41	-1.50
Loss of energy	1.45	-1.23	-3.02**
Lack of inner control	-0.31	-3.10**	-2.71**
Difficulty with emotional expression	0.60	-2.37*	-3.11**
Difficulty with cognitive expression	-1.10	-2.22*	-0.87
Oddness	-0.07	-2.01*	-1.92
Fear of losing control	0.12	-2.42*	-2.56**
Restrained hostility	0.84	-0.73	-1.77
Automatisms	-0.42	-3.00**	-2.48*

Level of significance: *p ≤ .05, **p ≤ .01, ***p ≤ .001.

while nourishing hope for recovery, neutralizing stigmatizing beliefs and overcoming emotional discomfort [18].

Results cannot account for elucidations of why general psychopathology relates more strongly than positive and negative symptom dimensions to QoL, and particularly to a disfavorable QoL; yet, some possible interpretations might be proposed for future theory-generating research into QoL. The CSCV and the PANSS are both instruments particularly designed to reflect the perspective of patients with schizophrenia, considering the characteristic and commonly experienced symptoms of this disorder. This sample of patients scored higher in the general psychopathology dimension, which seems,

at some degree, overlapping in content with the CSCV-D. For instance, Mannerisms and posturing with Automatisms, and Poor impulse control with Fear of losing control. It would be worth to test whether the pattern of results of this study are replicated using other symptom and QoL scales non-specific for patients with psychosis and/or with patients with predominant positive or negative symptoms. Moreover, general psychopathology includes symptoms such as depression and anxiety that have been strongly related to QoL [49,50]. Some authors have proposed factor models for the PANSS with a depression [51] or depression/anxiety dimension [52,53]. Analyzing the particular load of depression and anxiety on QoL relying on different factor models of the PANSS comes forward as a necessary step to elucidate this point. It is also worth to mention the theoretical proposal of a general factor underlying all mental disorders, challenging current nosologies while better explaining comorbidities. It might be the case that the PANSS general psychopathology dimension resembles this called “g factor” and has a stronger connection with the individual’s general perception of well-being. The g factor is believed to reflect etiologies and mechanisms shared to varying degrees by all forms of psychopathology and individual propensities to develop any and all forms of common mental disorders [54]. This factor has been found strongly related to several psychiatric diagnosis, including schizophrenia [55]. Yet, it is still to be determine if this is because mental disorders share elements of their etiology and neurobiological mechanisms [56]. If so, the existence of common features across diverse forms of prevalent psychopathology could have important implications for prevention, diagnosis, treatment and outcomes (including QoL) in schizophrenia and other mental disorders.

When discussing the association of symptoms with QoL it must always be considered the instruments selected for their measurement, as they may well influence the findings. For instance, Savill and colleagues [39] have questioned the adequacy of the PANSS to assess negative symptoms in psychosis. In their study they found a significant negative association between QoL and negative symptoms as measured by the Clinical Assessment Interview for Negative Symptoms, but no association with negative symptoms measured using the PANSS. Although the symptoms listed in the PANSS might quite well reflect the psychopathology of psychosis

some authors have proposed that alternative dimensions for a finer symptom classification should be used: positive factor, negative factor, cognitive factor, emotional discomfort, and hostility [20], while others suggest the separate subdomains of negative symptoms should be measured as distinct constructs [39]. In regard to QoL, the subtle difference between subjective and objective measures is also worth to be considered. In a sample of patients with schizophrenia, emotional discomfort, negative, cognitive and extrapyramidal symptoms correlated significantly with both subjective and objective QoL, whereas positive symptoms correlated significantly only with subjective QoL [20]. Furthermore, a review of measurements of QoL in schizophrenia concluded that depression was the symptom most associated with subjective QoL, whereas negative symptoms were the most associated with objective QoL [19].

Some limitations of the study must be acknowledged, primarily in terms of the control of variables that could have influenced QoL, including the course of psychosis, treatment provision and adherence, physical/mental comorbidities, personality traits, spiritual beliefs, social support, and satisfaction of needs, among others. Also, the recruitment restriction to inhabitants of a urban area leaves open the question of whether the pattern of results would be the same having included patients from small rural communities where, given the scarce availability of health services and limited economic resources to initiate and continue treatment, patients might display a different profile of clinical symptoms. Moreover, being the study cross-sectional and correlational no direct causality can be inferred from its findings. Further research, particularly in a longitudinal fashion considering assessment at onset and followup at various time points, shall improve results by allowing the observation of fluctuations on clinical status, QoL, and some possible underlying factors.

The use of antipsychotics has improved the prognosis of patients with psychosis ameliorating primary positive and negative symptoms. With adequate medication most cases can achieve remission of the characteristic psychopathology of psychosis; yet, treatment must go beyond and aim at achieving also a satisfactory QoL. Literature provides vast evidence of the association between psychopathology and QoL, which was corroborated by the present study performed in Mexico. In addition, through the direct comparison between the associations of symptom

dimensions with QoL the general psychopathology dimension was found to be more strongly associated with a disfavorable QoL than the positive and negative dimensions. These results invite mental health professionals to consider the patients' need of attention beyond positive/negative symptom remission and to be aware of the persistitive negative effect that general symptoms, although not considered as severe, can have on QoL.

Conclusions

Undeniably, in the occurrence of a frank episode of psychosis, positive and negative symptoms are the immediate target of treatment. However, as the present findings suggest, in outpatients whose overall symptoms have ameliorated, gen-

eral psychopathology symptoms play a more significant role in the self-perceived QoL. In order to enhance the prospect of patients' recovery, a comprehensive treatment must entail not only medication but also psychosocial interventions to promote their reintegration and satisfactory QoL.

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Competing Interests

Authors declare to have no competing interests.

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