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Religion involvement and quality of life in patients with schizophrenia in Latin America

Alejandra Caqueo-Urízar[1,2] · Alfonso Urzúa[4] · Laurent Boyer[3] · David R. Williams[2]

Abstract

Objective The aim of the study was to explore the relationship between religion involvement (RI) and quality of life (QoL) in patients with schizophrenia from three countries in Latin America, while considering key confounding factors such as socio-demographic and clinical characteristics.

Methods This cross-sectional study was conducted in the public mental health services in La Paz, Bolivia; Arica, Chile; and Tacna, Peru. The data collected included RI, socio-demographic information, clinical characteristics, type of treatment and QoL using the S-QoL 18 questionnaire. A multivariate analysis using multiple linear regressions was performed to determine variables associated with QoL levels.

Results Two hundred and fifty-three patients with schizophrenia were enrolled in our study. Significant positive associations were found between RI and QoL (the S-QoL 18 index: $\beta = 0.13$; $p = 0.048$; autonomy dimension: $\beta = 0.15$; $p = 0.027$). Other socio-cultural and economic factors were also associated with low QoL level: being a woman, older patient, low education level and being Aymara. Severity of the psychotic symptoms was associated to a lower QoL for all the dimension (β from 0.15 to 0.31), except for the resilience.

Conclusion Our study found that socio-cultural and economic factors including RI were associated with QoL in patients with schizophrenia in Latin America, suggesting that these factors may influence positively health outcome. However, these relationships were moderate in strength, especially in comparison to symptoms severity which remained the most important features associated with QoL.

Keywords Quality of life · Schizophrenia · Religion · Spirituality

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Introduction

There has been increasing attention to the association between religion/spirituality and mental health. Religion and spiritually have been defined in different ways, with some authors even regarding the terms as synonyms [1–4]. Thus, distinguishing between them is a challenge. This article follows Koenig's definition of the two related broad constructs: *Religiosity* refers to a "shared beliefs system and communal ritual practice" and it is often organized and practiced within a group of people in a community, however it can be practiced alone and in private or semi-private contexts [3, 4]. *Spirituality* refers to "one's search for

meaning and belonging and the core value that influence one's behavior". Concepts such as purpose, peacefulness, harmony and satisfaction in life have also been associated with this construct [5, 6].

In the last decade, there has been a shift within the studies on religion and schizophrenia. The prior studies linking religion and psychopathology had an emphasis on delusions and hallucinations [7, 8]. These studies found that patients with religious delusions have worse clinical outcomes and poorer functionality [9–11]. They also delayed the onset of treatment in psychiatric services [12] and had less adherence to treatment [13].

More recent studies have focused on patients' own religious involvement, and have found that religion can improve quality of life (QoL) and play a significant role in the treatment of patients with schizophrenia [1, 14–18]. Also religious involvement has been associated with a reduced risk of suicide attempts and substance abuse and with better social integration and psychological well-being [18–22].

Despite these important findings in developed countries, there is a lack of research on the relationship between religion and QoL in Latin America—a region that is characterized by different social, economic and cultural conditions (e.g., a high percentage claim a religious affiliation and more than half of the population are Catholic) [23].

The aim of the study is to explore the relationship between religious involvement (RI) (including both spirituality and religiosity) and QoL in patients with schizophrenia from three countries in Latin America (Bolivia, Peru and Chile). We hypothesize that patients with higher religious involvement will have a better QoL.

These three Latin American countries share several cultural characteristics; however, there are also some important differences between them. For example, in terms of income, in Bolivia, 13.6 % of the population lives on less than US$1 per day compared to 5.9 % in Peru and <2.0 % in Chile [24].

There are also striking differences in access to mental health services [25, 26]. In terms of psychiatric care facilities (per 100,000 inhabitants), Bolivia has 0.1 psychiatric hospitals, while Peru has 0.01 and Chile 0.003. Chile also has a greater number of outpatient institutions compared to the other two countries. With regard to mental health staff, the number of psychiatrists (per 100,000 inhabitants) in Bolivia is 0.1; Peru: 0.1 and Chile: 0.6; lack of Day hospitals (per 100,000 inhabitants) are Bolivia: 0.1; Peru: 0 and Chile: 0.5 and residential care (per 100,000 inhabitants) is Bolivia: 0; Peru: without data and Chile: 103.

In relation to each specific institution in this study, the three clinics shared similar characteristics in terms of size, type of treatment given to patients, professionals and free access of care.

Method

Study participants

This cross-sectional study analyzed data collected through a survey of patients with schizophrenia conducted from May 2012 to February 2013 through the Public Mental Health Services program in three Latin American cities: La Paz, Bolivia (32.8 %); Arica, Chile (33.6 %), and Tacna, Peru (33.6 %). We selected the largest public health clinic in each region. The first author reviewed the list of patients who were attending each center and the research team made assessments over a 3-month period in each country. We invited all of the patients in each center, trying to address the maximum possible in a three-month evaluation. Patients were invited to participate as they came for their monthly follow-up visits. We applied a small set of exclusion criteria to the selection of patients (being in a state of psychotic crisis or having a sensory or cognitive type of disorder that prevents being evaluated) to ensure their ability to participate fully in the interviews. As most of the patients were stable, in relation to their psychotic symptomatology, the number of patients excluded was low and also the overwhelming majority of the people agreed to participate. The final sample included 253 patients with an ICD-10 diagnosis of schizophrenia [27].

Procedures

The study was approved by the Ethics Committee of the University of Tarapacá and the National Health Service of Chile. Two psychologists, who were part of the research team and supervised by the principal researcher, conducted the survey of the patients under the auspices of the mental health services of each country. The length of time of the evaluation was between 20 and 30 min.

Before the start of the survey, written informed consent was requested and received from the patient. The objectives of the study were explained as well as the voluntary nature of participation. No compensation was offered for participating in the study. At each center, during a three-month window, all patients were invited to participate as they came for their monthly follow-up visits. The overwhelming majority of the patients agreed to participate.

Measures

The following data were collected.

Religious involvement (RI) was assessed with a semistructured interview administered by a trained interviewer. For patients with psychosis, for whom religion can be intertwined with their psychopathology, the most

appropriate evaluation is the clinical interview [8]. The interview was designed to explore the patients' spirituality and religiosity, including four main open-ended questions about (1) the existence of a religious affiliation (1 = affiliation to Catholic, Christian, Evangelical, Jehovah Witness or other and 0 = no affiliation), (2) the level of importance of religion in their lives, (1 = religion is important and 0 = Religion is not important), (3) their participation in private and community religious practices, private prayers (1 = regularly and 0 = never or not often), and (4) the importance of religion in their coping with illness and its consequences (1 = religion is important and 0 = Religion is not important). After transcription, the interviews were independently read by two psychologists who answered yes (1)/no (0) for each question. Any discrepancies were resolved by consensus with a third reviewer. The level of disagreement was low (i.e., Cohen's kappa >0.8). For each patient, the sum of each item yielded a score ranging from 0 to 4. Patients were classified into two groups: low involvement (0–2) and high involvement (3–4).

Schizophrenia Quality of Life Questionnaire (SQoL18) [28]: the S-QoL 18 is a self-administered QoL questionnaire designed for people with schizophrenia and has been used extensively in Europe [29–31] and it has been adapted to the Spanish in Latin American countries [32].

It is a multidimensional instrument that assesses the patient's view of his or her current QoL. It is comprised of 18 items describing eight dimensions: psychological well-being (PsW), self-esteem (SE), family relationships (RFa), relationships with friends (RFr), resilience (RE), physical well-being (PhW), autonomy (AU), and sentimental life (SL), as well as a total score (index). Dimensions and index scores range from 0, indicating the lowest QoL, to 100, the highest QoL.

Demographic and clinical data: we collected sex, age, marital status (with a partner or without a partner), educational level (</≥12 years) and ethnicity (Aymara/Non-Aymara). The Aymara is the largest ethnic group in the region, with a population of 2 million people, and has lived in the Andes Mountains for centuries. Recent generations of Aymara have undertaken a massive migration from rural towns to large cities, and thus receive health care services from the same clinics as non-Aymara individuals [33–37]. Clinical data were: duration of disorder, type of treatment (whether the patient received only pharmacological treatment by the mental health services or integrated treatment, meaning pharmacological plus psychotherapy, family psychoeducation, day care hospital), and severity of psychotic symptoms using the Positive and Negative Syndrome Scale for Schizophrenia (PANSS) [38]: this 30-item, 7-point (1–7) rating scale assesses psychotic symptoms in individuals with schizophrenia and comprises three different subscales: positive, negative, and general psychopathology. For the purposes of this study, we only considered the total score.

Statistical analysis

Data were expressed as proportions or means and standard deviations. Associations between QoL scores and the continuous variables (age, disease duration and PANSS total) were analyzed using Spearman's correlation tests. Means-based comparisons of the S-QoL 18 dimensions between various sub-groups (RI, type of religion, gender, ethnicity, marital status, educational level and type of treatment) were calculated using Mann–Whitney tests.

Multiple linear regression analyses were then performed to identify variables potentially associated with QoL levels. The S-QoL 18 index and each of its dimensions were considered as separate dependent variables. The variables relevant to the models were selected from the univariate S-QoL18 index analysis based on a threshold p value ≤0.20. A set of additional variables was included in the models owing to their clinical and socio-demographic interest (i.e., gender, age). The final models incorporated the standardized β coefficients, which represent a change in the standard deviation of the dependent variable (QoL) resulting from a change of one standard deviation in the various independent variables. The independent variables with the higher standardized beta coefficients are those with a greater relative effect on QoL.

All the tests were two-sided. Statistical significance was defined as $p < 0.05$. The statistical analyses were performed using the SPSS version 18.0 software package (SPSS Inc., Chicago, IL, USA).

Results

Two hundred and fifty-three patients with the diagnosis of schizophrenia were enrolled in the present study. Most of the patients were male, young adult, unmarried and with moderate severity of symptoms on PANSS scale. All the details are presented in Table 1.

Bivariate and multivariate analysis results are reported in Table 2. In the bivariate analysis, the S-QoL 18 index was positively associated with RI ($p = 0.002$), ethnicity (Aymaria, $p = 0.042$), educational level (≥12 years, $p < 0.001$) and lower severity of psychotic symptoms ($r = -0.38$, $p < 0.001$).

In the multivariate analysis, RI was significantly associated with the S-QoL 18 index ($\beta = 0.13$; $p = 0.048$) and with the autonomy dimension of the S-QoL ($\beta = 0.15$; $p = 0.027$). Severity of the psychotic symptoms measured by PANSS showed a significant relationship with QoL total
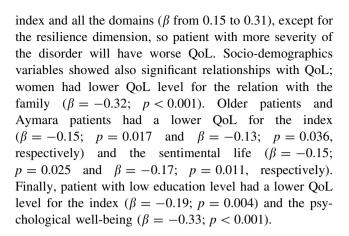
Table 1 Sample characteristics ($N = 253$)

Patients	M (SD)
Gender (men) (%)	66.4
Age in years	35.6 (15.5)
Aymara (%)	
Yes	46.2
No	53.8
Marital status (%)	
Married	6.3
No-married	93.7
Educational level (≥12 years) (%)	15.8
Religion (%)	
Catholic	56.7
Christian	12.5
Evangelical	12.5
Jehovah witness	4.0
Other	14.3
Religion involvement (%)	
High	46.8
Low	53.2
Religious affiliation (%)	88.5
Importance of religion in life (%)	62.5
Participation in private and community religious practice (%)	66.4
Importance of religion in coping with illness and consequences (%)	30.0
Duration of disorder in years	14.6 (11.8)
Type of mental health treatment (%)	
Only pharmacological	87.7
Integrated	12.3
Severity—PANSS	
PANSS total	71.3 (28.2)
S-QoL18	
PsW	47.6 (24.7)
SE	57.3 (22.3)
RFa	63.2 (23.3)
RFr	37.3 (38.3)
RE	68.4 (17.5)
PhW	58.2 (21.5)
AU	57.0 (22.6)
SL	45.2 (27.6)
Index	54.3 (14.4)

Positive and Negative Syndrome scale for Schizophrenia (PANSS) severity: PANSS total score of 58 = "Mildly ill"; PANSS total score of 75 = "Moderately ill"; PANSS total score of 95 = "Markedly ill" and PANSS total score of 116 = "Severely ill"

M (SD) mean (standard deviation), (%) effective (percentage)

S-QoL18: *PsW* psychological well-being, *SE* self-esteem, *RFa* family relationships, *RFr* relationships with friends, *RE* resilience, *PhW* physical well-being, *AU* autonomy, *SL* sentimental life

index and all the domains (β from 0.15 to 0.31), except for the resilience dimension, so patient with more severity of the disorder will have worse QoL. Socio-demographics variables showed also significant relationships with QoL; women had lower QoL level for the relation with the family ($\beta = -0.32$; $p < 0.001$). Older patients and Aymara patients had a lower QoL for the index ($\beta = -0.15$; $p = 0.017$ and $\beta = -0.13$; $p = 0.036$, respectively) and the sentimental life ($\beta = -0.15$; $p = 0.025$ and $\beta = -0.17$; $p = 0.011$, respectively). Finally, patient with low education level had a lower QoL level for the index ($\beta = -0.19$; $p = 0.004$) and the psychological well-being ($\beta = -0.33$; $p < 0.001$).

Discussion

Our study found that RI is positively related to QoL, consistent with studies performed in developed countries, such as United States, Netherlands, Denmark, Italy, Spain and Switzerland [1, 8, 14]. Previous studies have shown similar results supporting the idea that higher RI may have a favorable impact on QoL [1, 8, 16–18, 39]. The relationship between RI and QoL in these Latin American countries may be due to the same reasons suggested for other social contexts. For Pargament and Brandt, spirituality and religiosity may address and even resolve the problems of "human insufficiency" [40]. High RI may constitute for these patients a "source of hope and comfort" in a situation where they perceive that they have little control [41], helping patients for dealing with the disorder [42] and improving their feeling of autonomy. According to Fallot [43], spirituality and religiosity may play a key role in the psychological recovery in schizophrenia.

In addition to RI, other socio-cultural and economic factors were associated with QoL. As in previous studies, women, older patients, those with a lower educational level and belonging to an ethnic minority (i.e., Aymara) reported lower QoL [44, 45]. The finding concerning ethnic minority is of importance. Whilst many Aymara children and young people still live in isolated communities in the Chilean Andes, others have emigrated with their families to cities in the coast searching for a brighter future [33, 34, 46]. However, the latter are slowly adjusting to the life of non-Aymara Chilean and many encounter discrimination based on their Andes phenotype [47].

However, the impact of these socio-cultural and economic factors (including RI) taken separately on QoL were moderate in strength, especially in comparison to symptom severity which remained the most important features associated with QoL. This may have two implications.

Table 2 Factors associated with S-QoL 18 index and dimensions

	Univariate analysis		Multivariate analysis								
	S-QoL 18 index M (SD)[a] or R[b]	p	S-QoL 18 index β[c]	PsW β	SE β	RFa β	RFr β	RE	PhW	AU	SL
Religion involvement		0.002									
High	57.2 (13.5)		0.13*	0.07	0.07	0.05	0.10	0.02	0.04	0.15*	0.08
Low (ref)	51.6 (14.8)										
Type of religion		0.992									
Other religions[d]	54.6 (12.1)		–	–	–	–	–	–	–	–	–
Catholic	54.6 (15.5)										
Gender		0.208									
Women	52.7 (15.7)		–0.09	0.07	0.00	–0.32**	–0.05	–0.08	–0.07	–0.08	0.08
Men (ref)	55.1 (13.8)										
Age	–0.06	0.375	–0.15*	–0.07	–0.04	–0.12	–0.11	–0.14	–0.06	–0.03	–0.15*
Ethnicity		0.042									
Aymara	52.3 (14.2)		–0.13*	0.00	–0.03	–0.11	–0.12	–0.01	–0.06	–0.07	–0.17*
Non-Aymara (ref)	56.0 (14.5)										
Marital status		0.768									
Without a partner	54.3 (14.5)		–	–	–	–	–	–	–	–	–
With a partner (ref)	53.2 (13.4)										
Educational level		<0.001									
<12 years	52.7 (14.4)		–0.19**	–0.33**	–0.12	0.02	–0.12	–0.05	0.00	–0.12	–0.12
≥12 years (ref)	62.5 (11.5)										
Disorder duration	–0.04	0.491	–	–	–	–	–	–	–	–	–
Type of treatment		0.076									
Only pharmacological	53.7 (14.7)		–0.07	–0.07	–0.11	–0.03	0.00	–0.12	–0.08	–0.02	0.04
Integrated (ref)	58.6 (11.8)										
PANSS total	–0.38	<0.001	–0.31**	–0.30**	–0.18**	–0.16*	–0.15*	–0.04	–0.17*	–0.21**	–0.28**
R-squared			0.22	0.23	0.08	0.17	0.08	0.05	0.06	0.11	0.16

S-QoL18: *PsW* psychological well-being, *SE* self-esteem, *RFa* family relationships, *RFr* relationships with friends, *RE* resilience, *PhW* physical well-being, *AU* autonomy, *SL* sentimental life

* $p \leq 0.05$; ** $p \leq 0.01$

[a] M(SD) mean (standard deviation)
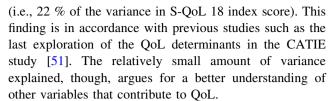
[b] R Spearman's correlation coefficient

[c] β standardized beta coefficient (β represents the change of the standard deviation in QoL score resulting from a change of one standard deviation in the independent variable)

[d] Other religions: Christian, Evangelical, Jehovah Witness and other. Positive and Negative Syndrome scale for Schizophrenia (PANSS)

First, the control of symptoms remains an important need in patients with schizophrenia living in Latin America. This finding may be not surprising in Latin America where the WHO Report on mental health systems identified the absence of universal social security coverage for mental disorders, the lack of capacity for some patients to purchase antipsychotic medications and the limited role of primary care in the mental health area [48]. Second, considering the moderate association between RI and QoL, our findings provide equivocal support for the consideration of religion alongside other therapeutically important strategies [1, 8, 18, 49]. Our study rather suggests that a comprehensive approach of all the socio-cultural and economic factors should be promoted, and taken together, their impact on QoL could be substantial. If spirituality and religion is probably one way for patients to cope with their illness, other ways of coping should be also considered by clinicians.

There were some limitations that should be considered in interpreting the results of this research. First, it is cross-sectional design, so no causal inference between RI and QoL can be formally advanced and our findings should be interpreted from an associational point of view. Second, our approach for measuring RI which was not based on a validated questionnaire but rather on four open-ended questions. Despite the lack of accepted criteria for RI measurement, we have chosen the most consensual method in the recent scientific literature, i.e., the clinical interview for patients with psychosis [8]. It can be assumed that the choice of the four questions was both reasonable and pragmatic. Moreover, the evaluation of each item was performed by two independent psychologists, and in case of disagreement, consensus was obtained with a third reviewer. Third, it would be interesting in future studies to obtain a more comprehensive view of religious coping strategies and in particular distinguish helpful and harmful spiritual religious coping [8]. Fourth, as we do not have the exact number of patients receiving treatment in Public Mental Health Services from each country, the sample maybe is not representative of the entire Latin American population of patients with schizophrenia. Larger studies of more diverse and larger groups of patients are needed to confirm our findings. In particular, other studies should be performed in patients who cannot easily access these large public health clinics and who may have particular characteristics that may be barriers to care (e.g., poverty). Indeed, geographic access is an important part of accessing health care in developing countries. An inverse relationship between distance or travel time to health facilities and use of health services, especially for the chronically poor and socially excluded patients, has been demonstrated as an important barrier to access [50]. Last, the variables included in our models explained a modest amount of variance

(i.e., 22 % of the variance in S-QoL 18 index score). This finding is in accordance with previous studies such as the last exploration of the QoL determinants in the CATIE study [51]. The relatively small amount of variance explained, though, argues for a better understanding of other variables that contribute to QoL.

In conclusion, our study found that socio-cultural and economic factors including RI were associated with QoL in patients with schizophrenia in Latin America, suggesting that these factors may influence positively health outcome. However, these relationships were moderate in strength, especially in comparison to symptoms severity which remained the most important features associated with QoL.

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