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# Brazilian validation of the Quality of Life Instrument related to spirituality, religion and personal beliefs

## ABSTRACT

**OBJECTIVE:** To analyze the psychometric properties of the World Health Organization's Quality of Life Instrument – Spirituality, Religion and Personal Beliefs module (WHOQOL-SRPB).

**METHODS:** The WHOQOL-SRPB, the Brief Spiritual/Religious Coping Scale (Brief-SRCOPE Scale), the WHOQOL-BREF and the Beck Depression Inventory (BDI) were consecutively applied in a convenience sample of 404 patients and workers of a university hospital and workers of a university, in the city of Porto Alegre, Southern Brazil, between 2006 and 2009. The sample was stratified by sex, age, health status and religion/belief. The retest of the two first instruments was conducted with 54 participants. Exploratory factorial analyses of the WHOQOL-SRPB with the method of main components were performed, without limiting the number of factors, and requiring eight factors concomitantly with the WHOQOL-BREF items.

**RESULTS:** The Brazilian Portuguese version of the WHOQOL-SRPB (General SRPB-Domain) showed construct validity, with a discriminatory validity between believers and non-believers ( $t = 7.40$ ;  $p = 0.0001$ ); concurrent criterion-related validity, distinguishing depressed individuals from non-depressed ones ( $t = 5.03$ ;  $p = 0.0001$ ); convergent validity with the WHOQOL-BREF (physical  $r = 0.18$ ; psychological  $r = 0.46$ ; social  $r = 0.35$ ; environmental  $r = 0.29$ ; global  $r = 0.23$ ;  $p = 0.0001$ ) and with the SRPB-Domain of the WHOQOL-100 ( $r = 0.78$ ;  $p = 0.0001$ ); and convergent/discriminatory validity with the brief SRCOPE Scale (with positive SRCOPE  $r = 0.64$ ;  $p = 0.0001$ /negative SRCOPE  $r = -0.03$ ;  $p = 0.554$ ). Excellent test-retest reliability ( $t = 0.74$ ;  $p = 0.463$ ) and internal consistency ( $\alpha = 0.96$ ; intrafactorial correlation  $0.87 \geq r \geq 0.60$ ;  $p = 0.0001$ ) were observed. The exploratory factorial analyses performed corroborated the eight-factor structure of the WHOQOL-SRPB multicenter study.

**CONCLUSIONS:** The Brazilian Portuguese version of the WHOQOL-SRPB showed good psychometric qualities and use valid and reliable in Brazil. It is suggested that new studies be conducted with specific populations, such as different religions, cultural groups and/or diseases.

**DESCRIPTORS:** Quality of Life. Religion. Spirituality. Questionnaires. Translations. World Health Organization. Validation Studies. WHOQOL.

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## INTRODUCTION

The patients' perspective has been increasingly valued to understand the health-disease phenomenon. Spirituality, religiosity, and personal beliefs are extremely valued dimensions in different cultures, particularly when it comes to patients. In Brazil, believers comprise 95.3% of the population.<sup>8</sup> However, due to prejudice, lack of interest or difficulties to measure such complex variables, the study of these dimensions is neglected, whether as outcome or variables predicting health outcomes.

Certain studies suggest a close relationship between spirituality/religiosity and quality of life (QoL). Whereas some show positive associations between the spiritual/religious dimension and the social and psychological dimensions of QoL (well-being, satisfaction in life, marital stability, pro-social values), others show negative associations (anxiety, depression, suicide and risky behaviors).<sup>10,12,13</sup> Spirituality and religiosity are frequently mentioned as protective factors for health,<sup>3,11,13</sup> and they represent adaptive characteristics of life according to Positive Psychology.<sup>17</sup> However, the majority of instruments that evaluate QoL do not include them as one of their domains, or only include them in other domains, such as the psychological and social ones. This prevents the investigation of the impact or contribution of spirituality to QoL.<sup>22</sup> The World Health Organization's Quality of Life Instrument (WHOQOL-100)<sup>5</sup> is one of the instruments that include the dimension of Spirituality, Religion and Personal Beliefs (SRPB) as a QoL domain. Although the importance of this dimension has been observed by focus groups in different centers and cultures,<sup>9,18,21</sup> its representation is given by only one facet,<sup>21</sup> associated with the meaning of life and personal beliefs.<sup>22</sup> Field tests with the WHOQOL-100 and subsequent studies<sup>5,16,18</sup> showed that four items were insufficient to measure this variable/dimension. Thus, the World Health Organization (WHO) developed the SRPB Module for the WHOQOL, in a cross-cultural perspective.<sup>22</sup>

According to the WHOQOL methodology, 18 centers in 15 countries (including Brazil), distributed in four regions (America, Middle East, Europe and Asia) conducted 92 focus groups to review the SRPB facets proposed by experts and their importance, and to suggest new items. A multicenter pilot-test was conducted with 15 facets and 105 items, resulting in an instrument with eight facets and 32 items. Unlike other instruments developed by the WHOQOL Group, a field test of this pilot-version was not performed.<sup>22</sup> A total of 15 focus groups were conducted with 142 individuals (patients, health professionals, religious individuals and

atheists), who made suggestions and considered the facets suggested by the WHO to be adequate. The pilot-instrument was administered with the WHOQOL-100, in two cities of Southern Brazil (Porto Alegre and Santa Maria, including 253 participants in each city) and the data were sent for multicenter analysis.<sup>8</sup>

Thus, the present study aimed to analyze the psychometric properties of the WHOQOL-SRPB.

## METHODS

The sample was obtained by convenience, between 2006 and 2009, according to the WHO criteria<sup>b</sup> for the WHOQOL-SRPB, and it was recruited to obtain 50% of male individuals, 50% aged less than 45 years and 50% of ill individuals. In addition, it should reproduce the different socioeconomic and educational levels and the spiritual/religious profile of each center, using the city of Porto Alegre, Southern Brazil, as point of reference.

The group of ill individuals was comprised of hospitalized patients or those in outpatient clinics of the university hospital of Porto Alegre. Individuals considered as "healthy" included hospital or university workers, who responded negatively to the following three questions: use of regular medications, health consultations made in the previous month, and presence of diagnosis of a clinically significant disease, except for use of self-prescribed vitamins, contraceptives or flower remedies, routine consultations, check-up or evaluation of labor health.

The proportionality of the type of spiritual or religious belief (e.g. Catholicism, Afro-Brazilian beliefs, Kardecist Spiritism and others) in the state population<sup>15</sup> and of the absence of beliefs was reproduced, with an adjustment to the statistical requirements of the minimum number of individuals per criterion-group (Table 2). Those who did not have a religion were conceptually classified into two distinct groups: spiritualized without a religion (believe in God, although not in a specific religion) and atheists and agnostics (do not believe in God or question Its existence, respectively). Those with more than one belief were classified according to their main spiritual/religious identity and/or frequency. A total of 56 criterion-groups of participants were formed (Table 2).

A general questionnaire about the following aspects was applied: demographic aspects (age, sex, level of education, socioeconomic level, marital status, place of origin and occupation); health status (quality, category, current problem, medication, consultations, diagnosis,

<sup>a</sup> Instituto Brasileiro de Geografia e Estatística. Censo demográfico 2000. Brasília; 2000[cited 2009 Jun 30]. Available from: <http://www.ibge.gov.br/censo/>

<sup>b</sup> World Health Organization. WHOQOL Analysis of the SRPB Domain. Geneva; 2002.

treatment); and religiosity (belief in God or not, religion or belief of participant, help to handle stressful situations provided by religion/spirituality, importance of religion, religious frequency and frequency of private religious activities,<sup>11</sup> such as prayer, meditation and readings).

The remaining instruments applied were as follows:

- Beck Depression Inventory (BDI<sup>4</sup>), comprised of 21 questions about depressive symptomatology, whose score is obtained by the sum of items (0 to 63), with a cut-off point for depression  $\geq 12$ . The internal consistency of the inventory varies between 0.70 and 0.92 for non-clinical, medical-clinical and psychiatric samples;
- Brief Spiritual/Religious Coping Scale (Brief-SRCOPE Scale),<sup>14</sup> includes 49 items divided into two dimensions (positive SRCOPE, 34 items, seven factors; and negative SRCOPE, 15 items, four factors), four general indices and 11 factorials by the mean of items, results from 1 to 5 for SRCOPE use [none or irrelevant (1.00 to 1.50); low (1.51 to 2.50); average (2.51 to 3.50); high (3.51 to 4.50); and very high (4.51 to 5.00)]. Internal consistency of  $\alpha=0.93$  (positive SRCOPE  $\alpha=0.95$ ; negative SRCOPE  $\alpha=0.79$ ) and between 0.60 and 0.89 for factors. This includes a descriptive question about the most stressful situation in the last three years, according to which the participant responds to the scale. A total of two questions were added: attribution of value to the level of stress perceived and classification of the stressful situation experienced.
- The short version of the WHO's Quality of Life Instrument – (WHOQOL-BREF<sup>7</sup>), with 26 items, four domains, one global index and four indices for the domains by the mean of items, results from 0 to 100. Internal consistency of  $\alpha=0.91$  and between 0.69 and 0.84 for the domains. The global index does not refer to the mean of all domains, but rather to the mean of two items not belonging to the four factors (global health and global quality of life).
- WHOQOL-SRPB instrument<sup>22</sup> (Table 1), with 32 items, eight facets, one general domain index and eight factorials by the mean of items, results from 4 to 20. Internal consistency of  $\alpha=0.91$  and between 0.77 and 0.95 for the facets (results of the multicenter pilot-test<sup>22</sup>). Results from 0 to 100 were used, facilitating the comparison with other WHOQOL instruments. In addition, at the end of this instrument, questions belonging to the SRPB-domain 6 of the WHOQOL-100 were included to make comparisons with the WHOQOL-SRPB.

The criteria of inclusion were as follows: explicitly voluntary participation; to be aged 18 years or more; to have completed the 2<sup>nd</sup> grade of primary school as

minimum level of education; to have conditions to respond to the self-administered instruments, whether alone or with the help of a qualified researcher (i.e. visual impairment, physical impairment to write).

Individuals were consecutively invited to participate, according to their availability, criteria of inclusion and the minimum number of participants in each criterion-group. Completed excess cases, simultaneously collected by different researchers, were included. Due to logistic reasons, hospitalized patients were given priority. Professionals responsible for collection were instructed to include patients with the greatest diagnostic diversity in the different specialties available in the hospital. With regard to “healthy” patients, researchers chose to obtain a diversified sample, including different hierarchies of functions originated from distinct hospital and university sectors. In general, patients had from one to three days to return the completed protocol; workers, from one to two weeks to complete it at home, due to the short time they have at work. Refusals totaled 7%. The retest of the WHOQOL-SRPB and Brief-SRCOPE Scale<sup>14</sup> was performed between two to four weeks after the initial test by mail or in person. Statistical analyses were conducted on an individual center level (Brazil), using the SPSS 16.0 software. In addition to frequencies, Pearson correlation, internal consistency (Cronbach's  $\alpha$  and correlation between factors) and t tests for independent and paired samples were used. Lost data were replaced by the participant's mean in the items of the factor or facet where they occurred. A significance level of  $p<0.05$  was adopted.

This study was approved by the Ethics Committee of the Postgraduate Research Group, of the Hospital de Clínicas de Porto Alegre (Process 05-180), on 08/08/2005. A signed informed consent form was requested from all participants.

## RESULTS

The sample was comprised of 404 individuals, the majority of whom was women, healthy, white, married, Catholic, from socioeconomic class B, with complete secondary education, employed, living in the capital and without depression (Table 2). Age varied between 18 and 84 years (mean=42.85 years, standard-deviation [SD]=13.91).

Of all participants, 95% believed in God, 3% reported not believing in It and 2% were in doubt. More than one belief was mentioned by 2.2% of participants. Regardless of their going to religious meetings regularly or not, 76% described religion as “very” or “extremely” important, the same response given to the role of religion/spirituality when facing stressful situations (70.8%). The majority of participants reported a high frequency of private religious activities (50.8%),

**Table 1.** World Health Organization's Quality of Life Instrument – Spirituality, Religion and Personal Beliefs Module (WHOQOL-SRPB): Facets (factors) and corresponding items.

Facet (factor) and items <sup>a</sup>
<b>Spiritual Connection</b>
To what extent does any connection to a spiritual being help you to get through hard times?
To what extent does any connection to a spiritual being help you to tolerate stress?
To what extent does any connection to a spiritual being help you to understand others?
To what extent does any connection to a spiritual being provide you with comfort / reassurance?
<b>Meaning in Life</b>
To what extent do you find meaning in life?
To what extent does taking care of other people provide meaning of life for you?
To what extent do you feel your life has a purpose?
To what extent do you feel you are here for a reason?
<b>Awe</b>
To what extent are you able to experience awe from your surroundings? (e.g. nature, art, music)
To what extent do you feel spiritually touched by beauty?
To what extent do you have feelings of inspiration / excitement in your life?
To what extent are you grateful for the things in nature that you can enjoy?
<b>Wholeness &amp; Integration</b>
To what extent do you feel any connection between your mind, body and soul?
How satisfied are you that you have a balance between mind, body and soul?
To what extent do you feel the way you live is consistent with what you feel and think?
How much do your beliefs help you to create coherence between what you do, think and feel?
<b>Spiritual Strength</b>
To what extent do you feel inner spiritual strength?
To what extent can you find spiritual strength in difficult times?
How much does spiritual strength help you to live better?
To what extent does your spiritual strength help you to feel happy in life?
<b>Inner Peace</b>
To what extent do you feel peaceful within yourself?
To what extent do you have inner peace?
How much are you able to feel peaceful when you need to?
To what extent do you feel a sense of harmony in your life?
To be continued

Table 1 continuation

Facet (factor) and items <sup>a</sup>
<b>Hope &amp; Optimism</b>
How hopeful do you feel?
To what extent are you hopeful about your life?
To what extent does being optimistic improve your quality of life?
How able are you to remain optimistic in times of uncertainty?
<b>Faith</b>
To what extent does faith contribute to your well-being?
To what extent does faith give you comfort in daily life?
To what extent does faith give you strength in daily life?
To what extent does faith help you to enjoy life?

<sup>a</sup> Answers in 5-point *likert* scale (1=not at all to 5=completely)

whereas 43.5% showed an average religious frequency and 42.1%, a low religious frequency. Of all ill individuals, 89.9% were hospitalized patients and 10.1% were in outpatient clinics.

Tests were performed to estimate the construct validity of the WHOQOL-SRPB, analyzing convergence and divergence patterns and criterion-related validity, according to what is recommended by the current perspective of validity.<sup>19,20,c</sup>

Explanatory factorial analysis (method of main components, varimax rotation, Kaiser normalization, excluded loads <0.30) of the Brazilian Portuguese version of the WHOQOL-SRPB resulted in four factors, which explained 63.5% of the variance. Considering the nomenclature of the pilot-instrument factors,<sup>16,22</sup> items were grouped as follows: Factor 1) Spiritual Connection, Faith, Spiritual Strength; Factor 2) Inner Peace, Wholeness & Integration; Factor 3) Meaning in Life, Hope & Optimism; and Factor 4) Awe.

Exploratory factorial analysis with eight factors in the same parameters explained 74.1% of the variance: Factor 1) Faith, Spiritual Strength; Factor 2) Inner Peace; Factor 3) Spiritual Connection; Factor 4) Hope & Optimism; Factor 5) Meaning in Life; Factor 6) (half of the items) Awe; Factor 7) (half of the items) Wholeness & Integration; (half of the items) Awe; and Factor 8 (half of the items) Wholeness & Integration.

Joint exploratory factorial analysis of the WHOQOL-SRPB and WHOQOL-BREF with the same parameters resulted in ten factors, which explained 63.6% of the

<sup>c</sup> American Educational Research Association, American Psychological Association and National Council on Measurement in Education. Standards for educational and psychological testing. Washington; 1999.

variance. The WHOQOL-SRPB was grouped into four factors (F1, F3, F4, F7), distinct from the six in which the WHOQOL-BREF items were gathered. When the SRPB Domain 6 of the WHOQOL-100 was added, it was grouped in the fourth factor, Meaning in Life.

Comparisons between groups were performed, according to sex, age, health status, belief, level of education (Tables 3 and 4) and socioeconomic class, to estimate the discriminatory validity of the WHOQOL-SRPB. These comparisons resulted in a significantly higher mean in the Spiritual Connection factor of spirituality related quality of life (SRQoL) in women, and in the Psychological and Social domains of QoL in men.

The means in the Wholeness & Integration and Inner Peace facets of the SRQoL and in the Environmental domain of QoL were significantly higher in older individuals ( $\geq 45$  years). Among those who were healthy, the Meaning in Life and Wholeness & Integration facets of SRQoL were significantly higher, in addition to the Physical, Psychological, Environmental and Global QoL domains of the WHOQOL-BREF. The SRPB Domain of the WHOQOL-100 obtained a bordering value ( $p = 0.06$ ) in this comparison between healthy and ill individuals. When individuals with a religious/spiritual belief were compared to those who were atheists or agnostics, both the SRPB domain of the WHOQOL-100 and the General-SRPB domain of the WHOQOL-SRPB and their facets of SRQoL (except for Inner Peace) showed significantly higher scores.

There were significant differences between the means of level of education in the Spiritual Connection, Spiritual Strength and Faith facets of the SRQoL and in the Physical, Environmental and Global domains of

QoL; post hoc tests revealed that the primary education level showed higher means than higher education – undergraduate studies + postgraduate studies in the SRQoL facets and lower means in the QoL domains mentioned, while secondary education showed a higher mean than that of higher education – undergraduate studies + postgraduate studies in the Faith facet and that of primary education in the physical domain.

Lower socioeconomic classes (C, D and E) had a significantly higher mean in the Faith factor of SRQoL, whereas higher classes (A and B) showed higher means in the Physical, Environmental, Psychological and Global domains of QoL.

The WHOQOL-SRPB and WHOQOL-100<sup>5</sup> (SRPB Domain) showed a significant correlation that varied from moderate to high ( $0.48 \leq r \leq 0.78$ ), with a convergent validity. Likewise, all facets and the WHOQOL-SRPB domain were significantly correlated with the WHOQOL-BREF<sup>7</sup> domains on a low to moderate level (0.13 to 0.54) (Table 5), except for Spiritual Connection, which was correlated with the Psychological domain only; Faith, which was correlated with the Psychological and Social domains only, with a bordering significance with the Environmental domain ( $p = 0.055$ ); and Spiritual Strength, which was not correlated with the Physical domain.

A convergent/discriminant validity of the WHOQOL-SRPB with the Brief-SRCOPE Scale<sup>14</sup> was observed (Table 5). The WHOQOL-SRPB was significantly correlated with Positive SRCOPE ( $0.32 \leq r \leq 0.68$ ); correlations were negative, weak or not significant with the Negative SRCOPE; they were positive with the Total SRCOPE (between 0.41 and 0.64); and they were negative (from -0.38 to -0.61) with the Negative

**Table 2.** Demographic and health data according to sex, age, health status and belief, and frequency of beliefs. Porto Alegre, Southern Brazil, 2006-2009.

Variable	Freq.	% Valid	Freq. HM $\leq$ 44	Freq. HM $\geq$ 45	Freq. IM $\leq$ 44	Freq. IM $\geq$ 45	Freq. HF $\leq$ 44	Freq. HF $\geq$ 45	Freq. IF $\leq$ 44	Freq. IF $\geq$ 45
BELIEF [NEP]										
Catholic [18]	157	38,9	18	18	19	18	21	20	24	19
Evangelical [7]	67	16,6	8	9	10	7	8	8	8	9
Spiritism (Kardecist) [5]	51	12,6	6	6	5	6	12	6	5	5
Afro-Brazilian <sup>a</sup> [4]	34	8,4	4	3	5	4	5	4	4	5
Other religions <sup>b</sup> [3]	25	6,2	3	3	3	3	3	3	2	5
Spiritualized, but without religion [4]	43	10,6	4	4	4	5	11	5	6	4
Atheist/Agnostic [3]	27	6,7	6	3	4	3	4	3	2	2
Total [44]	404	100	49	46	50	46	64	49	51	49

NEP: Number of expected participants, per belief, per criterion-group; Freq.: Frequency; M: Male; F: Female; H: Healthy; I: Ill;  $\leq 44$ : age between 18 and 44 years;  $\geq 45$ : age equal to 45 years or more.

<sup>a</sup> 19 Umbanda followers, 14 African-based religion followers and one Rastafari follower.

<sup>b</sup> Seven Jehovah's witnesses, five Mormons, three Taoists, two Seicho-no-iê followers, two Buddhists and two Jews, among others.

**Table 3.** Discriminatory validity of the WHOQOL-SRPB, according to health status, sex and age, for Quality of Life (QoL) domains and facets. Porto Alegre, Southern Brazil, 2006-2009.

Variable	n	%
Age (years)		
18 to 44	219	54.2
45 and more	185	45.8
Sex		
Female	214	53
Male	190	47
Health status		
Healthy	207	51.2
Ill	197	48.8
Educational level		
Primary education	110	27.2
Secondary education	175	43.3
Higher education – Undergraduate studies	96	23.8
Higher education – Postgraduate studies	24	5.7
Socioeconomic level <sup>a</sup>		
Class A (25 to 34 points)	26	6.4
Class B (17 to 24 points)	192	47.6
Class C (11 to 16 points)	156	38.6
Class D (6 to 10 points)	26	6.4
Class E (0 to 5 points)	4	1
Marital status		
Married/Cohabiting	214	53
Single	110	27.2
Separated/Divorced	63	15.6
Widowed	17	4.2
Ethnicity		
White	278	69.2
Black	66	16.4
Mixed	50	12.4
Indigenous	8	2
Occupation		
Employed	247	61.1
Self-employed	29	7.2
Retired	63	15.6
Housewife	19	4.5
Student	18	4
Paid sick leave	16	4.7
Unemployed	12	2.9
Place of origin		
Capital (Porto Alegre)	243	60.1
Metropolitan region	106	26.3
Rural areas	48	11.9
Other states (MS,MT,SP)	7	1.7

To be continued

Table 3 continuation

Variable	n	%
How do you qualify your health?		
Good; Very good	251	62.1
Fair; Poor; Very poor	153	37.9
Depressive symptoms		
Minimum (<cut-off point)	276	69.2
Mild depression	75	18.8
Moderate depression	42	10.5
Severe depression	6	1.5

<sup>a</sup> Associação Nacional de Empresas de Pesquisa (Brazilian Marketing Research Association) – *Critério de Classificação Econômica Brasil* (Brazilian Socioeconomic Criterion) (Base LSE 2000 IBOPE). ABEP; 2000. Available from URL: <http://www.anep.org.br> [2005 mar 25] Update available from URL: <http://www.abep.org> [2009 oct 30]. MS: Mato Grosso do Sul; MT: Mato Grosso; SP: São Paulo.

SRCOPE/Positive SRCOPE Ratio (the lower the index, the greater the proportional use of Positive SRCOPE in relation to Negative SRCOPE).

The depression concurrent criterion-related validity<sup>4</sup> of the WHOQOL-SRPB indicated that depressed individuals showed significantly lower means than non-depressed ones in all QoL domains and SRQoL domain and facets, except for Spiritual Connection (Table 4).

Internal consistency analyses revealed reliability and validity of the WHOQOL-SRPB construct. Chronbach's  $\alpha$  for all WHOQOL-SRPB facets varied from 0.72 to 0.95 (four items each); for the General-SRPB domain-index, it was  $r = 0.96$  (32 items); and for the SRPB-Domain of the WHOQOL-100,  $r = 0.84$  (four items). Correlations between facets of the WHOQOL-SRPB ( $0.24 \leq r \leq 0.90$ ) were calculated (Table 5).

Of all 54 participants who performed the retest, ten were excluded due to a significant fact (positive or negative) in their lives, in the interval. T test for paired samples did not show significant difference between the test-retest means of the WHOQOL-SRPB (General-SRPB  $t = 0.74$ ;  $p = 0.463$ ), thus confirming the accuracy of this instrument. The correlation between the facets of the test and retest were significant ( $p = 0.0001$ ), varying between 0.60 (Inner Peace) and 0.87 (Spiritual Strength). The SRPB-Domain of the WHOQOL-100 showed the same results and  $r = 0.77$ .

Of the 32 WHOQOL-SRPB questions, 14 showed missing data (from 0.2% to 1.7% of individuals; SRPB-Domain of the WHOQOL-100 = 0.5%).

## DISCUSSION

The WHOQOL-SRPB showed construct validity<sup>19,20,c</sup> with the use of exploratory factorial analyses;

**Table 4.** Validity of the WHOQOL-SRPB, according to health status, sex and age, for Quality of Life (QoL) domains and facets. Porto Alegre, Southern Brazil, 2006-2009.

Facets or domains	Health status						Sex						Age (years)		
	Ill		Healthy		Male		Female		18-44		≥ 45		μ	sd	t
	μ	Sd	μ	sd	μ	sd	μ	sd	μ	sd	μ	sd			
<b>WHOQOL-BREF</b>															
Physical	50.51	19.46	76	12.87	64.68	20.24	62.64	21.23	0.99	64.16	19.98	62.95	21.69	0.57	
Psychological	64.37	17.06	72.61	13	71.51	13.17	66	17.19	3.58***	68.08	16.37	69.21	14.78	-0.73	
Social	68.75	18.38	70.09	17.88	72.63	15.93	66.59	19.46	3.39**	69	19.38	69.96	16.53	-0.54	
Environmental	58.21	15.23	62.71	12.57	61.81	13.87	59.38	14.22	1.74	58.8	14.72	62.55	13.07	-2.68**	
Global	58.31	21.31	73.43	14.38	67.37	18.75	64.9	20.29	1.27	65.24	19.33	67.03	19.91	-0.91	
<b>WHOQOL-100</b>															
SRPB-Domain	72.72	17.08	75.82	15.88	74.93	15.06	73.74	17.74	0.72	73.4	17.15	75.37	15.74	-1.2	
<b>WHOQOL-SRPB</b>															
Spiritual connection	66.43	25.06	65.22	25.34	62.17	28.38	69.04	21.5	-2.76**	64.81	25.66	66.99	24.62	-0.87	
Meaning in life	73.57	16.98	78.02	15.94	74.67	17.73	76.9	15.46	-1.34	75.66	16.79	76.08	16.38	-0.26	
Awe	72.55	15.57	74.67	14.52	72.9	14.08	74.3	15.89	-0.94	72.55	15.43	74.93	14.56	-1.6	
Wholeness & integration	67.35	17.74	70.65	15.87	68.85	17.1	69.22	16.69	-0.22	67.41	16.97	70.98	16.58	-2.13*	
Spiritual strength	72.46	21.91	71.65	19.02	70.33	23.05	73.57	17.76	-1.59	71.12	20.08	73.14	20.9	-0.99	
Inner peace	66.72	17.46	69.17	17.15	69.57	15.68	66.56	18.58	1.75	66.21	18.01	70.07	16.27	-2.26*	
Hope & optimism	70.65	18.03	73.28	13.09	72.6	15.96	71.47	15.54	0.72	71.52	16.56	72.57	14.72	-0.67	
Faith	73.7	23.46	70.29	22.09	71.05	25.35	72.75	20.31	-0.75	71.15	23.01	72.91	22.59	-0.77	
General-SRPB	70.43	15.43	71.62	14.33	70.27	15.6	71.73	14.19	-0.98	70.05	15.08	72.21	14.57	-1.46	

\* p≤0.05 \*\* p≤0.01 \*\*\* p≤0.0001 μ=mean; sd=standard deviation; n=number of participants of the independent sample. WHOQOL: World Health Organization's Quality of Life Instrument; SRPB: Spirituality, Religion and Personal Beliefs

**Table 5.** Discriminatory validity and validity associated with the concurrent criterion of the WHOQOL-SRBP, according to Belief and Depressive Symptoms for QoL domains and facets. Porto Alegre, Southern Brazil, 2006-2009.

Facets or domains	Belief				Depression				Level of education								
	With belief R/S beliefs		Without belief Atheist/ Agnostic		Not-Depressed BDI 0 to 11		Depressed BDI 12 to 63		Primary education		Secondary education		Higher education – undergraduate studies+postgraduate studies				
	n = 377	n = 276	n = 27	n = 123	n = 276	n = 123	n = 276	n = 123	n = 110	n = 175	n = 120	n = 377	n = 276	n = 27			
WHOQOL-BREF																	
Physical	63.36	20.57	67.06	23.43	-0.8	71.3	16.48	46.57	19.25	13.12***	54.92	19.52	65.43	21.21	68.88	18.81	15.04***
Psychological	68.83	15.58	65.43	16.54	1.03	74.49	10.78	55.89	16.95	13.20***	67.85	16.56	67.6	16.95	70.76	12.36	1.63
Social	69.53	17.84	68.21	21.93	0.36	73.88	15.8	59.49	19.22	7.85***	71.41	17.58	68.86	19.04	68.49	17.19	0.9
Environmental	60.34	14.17	63.08	12.94	-1.06	64.8	11.86	51.37	14.12	9.83***	57.88	13.65	59.93	15.28	63.81	12.01	5.43**
Global	65.88	19.45	68.52	21.75	-0.61	72.06	16.2	52.95	19.74	10.15***	62.16	21.58	65.93	19.58	69.85	16.94	4.49**
WHOQOL-100																	
SRPB-Domain	74.88	16.03	66.2	21.11	2.66**	77.24	13.98	67.99	19.51	5.38***	75.06	15.76	74.75	16.73	72.95	16.97	0.58
WHOQOL-SRBP																	
Spiritual connection	68.8	22.44	24.07	24.62	9.17***	66.28	25.53	64.38	24.74	0.7	68.92	21.84	67	24.58	61.19	28.3	3.07*
Meaning in life	76.92	15.63	60.88	21.9	5.00***	78.69	15.12	69.87	17.89	5.08***	74.89	14.81	76.29	18.28	76.1	15.58	0.26
Awe	74.07	15.14	67.59	12.62	2.54*	75.82	13.07	68.85	17.84	4.37***	73.18	14.28	73.46	16.1	74.32	14.28	0.18
Wholeness & Integration	70.26	16.27	52.08	16.17	5.64***	72.6	15.02	61.33	18.03	6.50***	70.51	15.03	68.57	18.08	68.38	16.66	0.58
Spiritual Strength	74.11	18.02	43.29	29.52	8.15***	73.64	19.67	68.65	21.46	2.28*	76.08	18.58	72.61	19.65	67.49	22.46	5.27**
Inner peace	68.27	17.15	63.89	19.48	1.14	71.9	14.5	59.35	19.74	7.10***	69.15	15.89	67.46	19.31	67.65	15.5	0.35
Hope & optimism	72.48	15.32	65.28	19.79	2.31***	75.5	12.95	64.48	18.17	6.89***	72.73	16.28	71.54	16.68	72.01	13.76	0.19
Faith	74.9	19.2	30.79	29	11.08***	73.57	20.96	68.34	26.03	2.13*	78.52	17.46	73.07	21.62	64.23	26.52	12.24***
General-SRBP	72.48	13.83	50.98	14.63	7.40***	73.5	13.66	65.66	15.87	5.03***	73	13.15	71.25	15.6	68.92	15.11	2.19

\* p<0.05 \*\* p<0.01 \*\*\* p<0.0001  $\mu$ =Mean; sd=standard deviation; n=number of participants of the independent sample; Agn=Agnostics; R/S=Religious/Spiritualized; F=Factor or facet. WHOQOL: World Health Organization's Quality of Life Instrument; SRPB: Spirituality, Religion and Personal Beliefs



calculation of  $\alpha$  coefficients; and the presence of discriminatory validity from the belief variable, of convergent validity with the WHOQOL-BREF<sup>6</sup> and WHOQOL-100<sup>5</sup> (SRPB-Domain), of convergent/discriminant validity with the Brief-SRCOPE Scale<sup>14</sup> and of the depression concurrent criterion-related validity.<sup>4</sup> Reliability was confirmed using the test-retest and internal consistency methods ( $\alpha$  and correlation between factors).

The results of exploratory factorial analyses of the WHOQOL-SRPB supported the eight-factor structure of the multicenter pilot-test version,<sup>22</sup> because the four items comprising each original factor remained grouped in one factor, separately or joined with another facet, supporting the instrument's cross-cultural approach. The more consistent facets of the exploratory factorial analyses of the WHOQOL-SRPB were Faith and Spiritual Strength, because they were always grouped in the first factor, which explained a great part of the variance. In the joint exploratory factorial analysis of the WHOQOL-SRPB, WHOQOL-BREF<sup>7</sup> and WHOQOL-100<sup>8</sup> (SRPB-Domain) items, the WHOQOL-SRPB items basically maintained the same organization of the four factors, when they were analyzed individually, thus showing their structural consistency, and they were grouped into distinct factors, separately from the WHOQOL-BREF items. This confirms data from the Brazilian<sup>16</sup> and multicenter<sup>22</sup> pilot tests and empirically contributes with the understanding of the SRPB as an independent domain, distinct from other QoL domains, which should be measured separately for its effects to be analyzed. The SRPB-Domain items of the WHOQOL-100, by being grouped with the Meaning in Life facets, confirmed the correspondence between domain concepts and this facet of the WHOQOL-SRPB.

In agreement with its theoretical model, the WHOQOL-SRPB did not reveal differences in sex, age and health status, although such differences were observed in religious/spiritual beliefs, as shown by other studies. In the multicenter pilot-study,<sup>22</sup> the SRPB domain was found to be less sensitive to differences in sex and health status and different health status were not distinguished in the Brazilian pilot-test of the WHOQOL-SRPB.<sup>16</sup> In the validation of the WHOQOL-100,<sup>5</sup> as well as in the present study, the SRPB-Domain of the WHOQOL-100 did not emphasize differences between healthy and ill individuals, although showing the bordering p-value. Fleck et al<sup>5</sup> (1999) proposed the following hypotheses for this issue: the instrument's lack of power of discrimination or the spirituality/religion/personal beliefs dimension not being affected by the condition of illness. The power of discrimination of the WHOQOL-SRPB is higher than that of the SRPB-Domain of the WHOQOL-100,<sup>5</sup> thus it is believed that the first hypothesis is unlikely to be true. With regard to the second hypothesis, the literature shows that individuals

**Table 6.** Convergent validity and reliability of the WHOQOL-SRPB and WHOQOL-Brief. Porto Alegre, Southern Brazil, 2006-2009.

Facets or domains	WHOQOL-Brief								WHOQOL-SRPB								General SRPB	$\alpha$	
	Physical	Psychological	Social	Environmental	Global	S Con	M Life	Awe	Wh&Int	S Stren	I Peace	H&O	Faith						
WHOQOL-SRPB																			
Spiritual connection	-0.03	0.12*	0.06	0.03	0.01														0.93
Meaning in life	0.16**	0.40***	0.31***	0.22***	0.17**	0.48***													0.79
Awe	0.21***	0.46***	0.31***	0.29***	0.24***	0.40***	0.57***												0.72
Wholeness & integration	0.32***	0.52***	0.38***	0.39***	0.35***	0.48***	0.57***	0.64***											0.77
Spiritual strength	0.07	0.30***	0.25***	0.15**	0.13**	0.72***	0.64***	0.59***	0.71***										0.90
Inner peace	0.29***	0.57***	0.46***	0.45***	0.36***	0.24***	0.48***	0.54***	0.67***	0.47***									0.88
Hope & optimism	0.26***	0.51***	0.39***	0.36***	0.25***	0.35***	0.63**	0.59***	0.65***	0.57***	0.66***								0.82
Faith	0.02	0.25***	0.23***	0.10	0.08	0.74***	0.61***	0.55***	0.64***	0.88***	0.43***	0.53***							0.95
GENERAL-SRPB	0.18***	0.46***	0.35***	0.29***	0.23***	0.75***	0.78***	0.74***	0.83***	0.90***	0.68***	0.76***	0.88***						0.96
WHOQOL-100																			
SRPB-Domain	0.21***	0.54***	0.36***	0.37***	0.27***	0.48***	0.61***	0.63***	0.68***	0.66***	0.62***	0.69***	0.64***	0.78***					0.84

\*p≤0.05 \*\*p≤0.01 \*\*\*p≤0.0001.

WHOQOL: World Health Organization's Quality of Life Instrument; SRPB: Spirituality, Religion and Personal Beliefs

**Table 7.** Convergent/discriminant validity of the WHOQOL-SRPB and Brief-SRCOPE Scale. Porto Alegre, Southern Brazil, 2006-2009.

N=395	Brief-SRCOPE Scale														
	General indices				Positive factors					Negative factors					
	SRCOPE Positive	SRCOPE Negative	SRCOPE Total	RazãoCRE N/P	P1 Transf	P2 SHelp	P3 Aj Out	P4 Pos D	P5 O Inst	P6 Afast	P7 Conh	N1 Neg D	N2 Neg Sit	N3 I O Inst	N4 Neg Sig
<b>WHOQOL –SRPB</b>															
Spiritual Connection	0.65**	0.12*	0.55**	-0.50**	0.56**	0.47**	0.36**	0.63**	0.52**	0.50**	0.47**	-0.17**	0.25**	-0.04	0.32**
Meaning in Life	0.41**	-0.10	0.46**	-0.44**	0.28**	0.32**	0.40**	0.42**	0.34**	0.24**	0.25**	-0.27**	0.07	-0.14**	0.07
Awe	0.35**	-0.14**	0.43**	-0.42**	0.21**	0.25**	0.36**	0.38**	0.27**	0.26**	0.22**	-0.26**	-0.02	-0.09	-0.03
Wholeness & Integration	0.48**	-0.08	0.52**	-0.51**	0.32**	0.34**	0.45**	0.49**	0.42**	0.35**	0.34**	-0.27**	0.12*	-0.12*	0.06
Spiritual Strength	0.63**	0.07	0.56**	-0.53**	0.52**	0.43**	0.42**	0.64**	0.50**	0.48**	0.43**	0.21**	0.24**	-0.08	0.25**
Inner Peace	0.32**	-0.14**	0.41**	-0.38**	0.14**	0.27**	0.37**	0.34**	0.29**	0.22**	0.23**	-0.26**	0.05	-0.14**	-0.05
Hope & Optimism	0.35**	-0.15**	0.44**	-0.43**	0.23**	0.25**	0.35**	0.41**	0.25**	0.23**	0.21**	-0.35**	0.04	-0.14**	0.02
Faith	0.68**	0.09	0.60**	-0.57**	0.57**	0.45**	0.42**	0.74**	0.52**	0.53**	0.46**	-0.23**	0.29**	-0.06	0.26**
GENERAL -SRPB	0.64**	-0.03	0.64**	-0.61**	0.48**	0.46**	0.50**	0.67**	0.51**	0.47**	0.43**	-0.31**	0.18**	-0.12*	0.17**
<b>WHOQOL -100<sup>8</sup></b>															
SRPB-Domain	0.44**	-0.14**	0.53**	-0.49**	0.30**	0.30**	0.43**	0.47**	0.40**	0.27**	0.32**	-0.35**	0.06	-0.17**	0.06

\* p&lt;0.05 \*\* p&lt;0.01 F=Facet; D=Domain;

SRCOPE=Spiritual/Religious Coping;

N/P SRCOPE Ratio=Negative SRCOPE/Positive SRCOPE Ratio; P1= Transformation of oneself and/or one's life; P2=Search for spiritual help; P3=Offering of spiritual help to others; P4=Positive approach towards God; P5= Search for the Institutional Other; P6=Distancing oneself from God, religion and/or spirituality; P7=Search for spiritual knowledge; N1=Negative re-evaluation of God; N2=Negative approach towards God; N3= Dissatisfaction with the Institutional Other; N4=Negative re-evaluation of meaning. WHOQOL: World Health Organization's Quality of Life Instrument; SRPB: Spirituality, Religion and Personal Beliefs.

use more spiritual/religious coping when they are ill,<sup>12</sup> indicating a possible association. In this study, as well as in others,<sup>16,22</sup> it was observed that the SRPB domain is not homogeneous when it comes to health status. Differently from the QoL domains of the WHOQOL-BREF, where healthy individuals show higher means in all domains, there are facets in the WHOQOL-SRPB in which ill individuals show higher means, a result that can be clinically, although not statistically, significant. Other hypotheses could be made, such as the greater use of religion/spirituality to manage stress when one is ill, even if the condition of illness does not substantially change the SRQoL; the effect of a disease on certain WHOQOL-SRPB facets exclusively; and the influence of the type of disease on SRQoL.

A total of three WHOQOL-SRPB facets showed discriminatory validity for level of education, suggesting that the lower this level, the greater the Spiritual Connection, Spiritual Strength and Faith – which corroborates the results of the multicenter pilot-study on Spiritual Connection and Faith, the same facets in which atheists/agnostics scored less. The WHOQOL-SRPB did not distinguish socioeconomic class, because only one of the eight SRQoL facets (Faith) showed discriminatory validity, unlike the other QoL domains (four of the five WHOQOL-BREF domains).

The facets of the Brazilian Portuguese version of the WHOQOL-SRPB that revealed higher sensitivity to detect discriminatory validity in this study were Wholeness & Integration and Faith, followed by Spiritual Connection, Meaning in Life and Spiritual Strength.

The WHOQOL-SRPB showed convergent validity with the WHOQOL-100<sup>5</sup> (SRPB-Domain) and this correlation was observed on moderate to high levels, because they refer to the same SRQoL construct. Convergent validity was also found with the WHOQOL-BREF,<sup>6</sup> with a moderate level of correlation, once they evaluate different domains, despite their measuring QoL. The results show that the SRPB domain is associated with other QoL domains, as shown in the multicenter pilot-test.<sup>22</sup>

The WHOQOL-SRPB revealed convergent/discriminant validity with the Brief-SRCOPE Scale,<sup>14</sup> because instruments were correlated. In addition, the facets and General index of the WHOQOL-SRPB domain were positively correlated on moderate to high levels with the positive dimension of the Brief-SRCOPE Scale<sup>14</sup> and negative or low positive and/or not significant correlation with the negative dimension of the Brief-SRCOPE Scale<sup>14</sup> – as it was expected, once both instruments are measures of spirituality/religiosity, QoL and coping, respectively.

The WHOQOL-SRPB showed validity for the depression concurrent criterion. Studies point to

this condition negatively affecting QoL in several domains.<sup>1,2,7</sup> It was observed in the results that depression is associated with lower QoL and SRQoL scores. Although depressed individuals showed lower SRQoL than non-depressed ones, Spiritual Connection seems to be preserved. This suggests that different diseases or health conditions can be associated with specific WHOQOL-SRPB domains. Future investigations can establish the nature of such associations, their reproducibility and potential use in the clinical practice.

The WHOQOL-SRPB was found to be reliable. The internal consistency measured by the correlations between facets was very good, and that measured by Chronbach's  $\alpha$  was excellent, whether the eight facets or the General-SRPB domain are considered. A total of three factors were below the value usually considered as ideal (0.80), and none were below the expected minimum (0.70).<sup>20</sup> Comparatively to the SRPB-Domain of the WHOQOL-100, the General-SRPB showed a higher  $\alpha$ , indicating better internal consistency. This was expected, because instruments with a greater number of questions tend to have higher coefficients,<sup>20</sup> and the development of the WHOQOL-SRPB occurred due to the SRPB-Domain of the WHOQOL-100 having been considered insufficient to include the complexity of the spirituality/religiosity constructs.<sup>8,16,18</sup> In the evaluation of the test-retest reliability, there was a temporal stability of the instrument and the confirmation of homogeneity of items.

The convenience sample is the main limitation of the present study and, for this reason, the results cannot be extrapolated to the population of the city of Porto Alegre or that of Brazil. As this does not deal with a study of standardization of the WHOQOL-SRPB, means and standard-deviation cannot be used as Brazilian norms. However, the convenience sample enables one to observe whether the instrument can achieve a satisfactory performance under certain conditions and if it can be used and tested under different experimental conditions by other researchers. In addition, the analyses performed in this study are dependent on the number of individuals, rather than the sample type. Another limitation refers to the exclusion of illiterate individuals. Even if they represent a somewhat substantial part of the Brazilian population, especially in certain regions and micro-regions, the inclusion of illiterate individuals would pose the risk of inaccurate and unreliable responses, as this is a relatively large set of self-administered instruments.

The Brazilian Portuguese version of the WHOQOL-SRPB<sup>d</sup> showed satisfactory psychometric qualities, such as accuracy and construct validity, with discriminatory, convergent, convergent/discriminant and concurrent criterion-related validity, in a large sample of healthy and ill women and men, of different ages, beliefs, levels of education and socioeconomic classes.

New studies with specific populations from different religions, different cultural groups and/or diseases are necessary. Instruments require varied studies, performed by distinct researchers, so that their level of validity can be increased.<sup>19,20,c</sup>

The present study aimed to provide a cross-culturally-based instrument, developed from a WHO multicenter project, which can contribute to the development of research on spirituality, religiosity and personal beliefs.

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<sup>d</sup> Os instrumentos WHOQOL em português-brasileiro podem ser encontrados com sua sintaxe para o SPSS no site da Universidade Federal do Rio Grande do Sul (<http://www.ufrgs.br/psiq/escalas.html>).

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