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# Quality of Life Assessment in People Living with HIV/AIDS: Clarifying the WHOQOL-HIV and WHOQOL-HIV-Bref Instruments

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## 1. Introduction

Assessing the quality of life (QoL) of people living with HIV/AIDS has become increasing. From 1995 to 2003, more than 300 papers on the subject were published. This fact encourages researchers to question the existence of suitable assessment instruments. Virtually all existing instruments until 2003 had been developed in the USA (Skevington & O'Connell, 2003).

To apply these instruments in countries in which English is not the vernacular language, the instruments were subjected to literal translations, without the worry of a cultural adaptation. In this wise, came the proposal to develop an instrument from sundry centers, located in different countries (Skevington & O'Connell, 2003).

The fact that there is no consensus on the QoL concept is a major problem in developing instruments to assess the QoL, while it is not possible to state clearly what elements these instruments are assessing (Fleck, 2008).

From this premise, the starting point to build the instrument for QoL assessment of the World Health Organization (WHO) was to conceptualize QoL. In the concept adopted, QoL is understood as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (The WHOQOL Group, 1998a, p. 25).

In face of this concept, WHO embarked on building the World Health Organization Quality of Life (WHOQOL) instruments, which assess QoL globally, e.g. WHOQOL-100 and WHOQOL-bref, and due to specific aspects, e.g. WHOQOL-HIV, WHOQOL-OLD, and WHOQOL-SRPB. One of these instruments, the WHOQOL-HIV, used to assess the QoL of HIV carriers, is the object of this study.

Starting from the fact that 95% of people infected with HIV did not live in the USA but in developing countries of Asia, Latin America, and sub-Saharan Africa, WHO has developed a tool to assess the QoL directed to such audience. The instrument was designed based on the premise that a multidisciplinary approach, involving centers in several countries, would allow for greater dissemination of the developed instrument (O'Connell, 2003).

The WHOQOL-HIV is a complementary module for WHOQOL-100 instrument, and was also translated into other languages and validated in sundry studies, among which are a part of Starace et al. (2002), Zimpel & Fleck (2007), Saddki et al. (2009), Canavarro et al. (2011) and Mweemba et al. (2011).

Notwithstanding the significant diffusion of the WHOQOL, questions concerning the calculation and analysis of the results of those instruments constitute a limitation for its use. In this context, we aimed here at clarifying the mechanism predetermined by the WHOQOL-HIV Group to calculate the WHOQOL-HIV and WHOQOL-HIV-bref instrument scores. Additionally, we proposed an alternative way to perform such calculations.

## 2. WHOQOL-100

The development of an instrument for evaluation of quality of life purposed by WHO was conducted in 15 centers simultaneously, based in 14 countries. After developing the project WHOQOL, new centers were built. Currently WHOQOL instruments are available in over 50 languages (WHO Field Center for Quality of Life of Bath, 2008).

The development methodology of WHOQOL was sectioned into four major stages: clarifying the concept of quality of life, qualitative pilot study, development of a pilot and finally, field implementation. For the integrated centers, after the completion of the instrument, a protocol was established which consisted in its translation, preparation of the test pilot, development of the response scales and administration of the pilot (The WHOQOL Group, 1998a).

All questions of WHOQOL-100 are closed. It was used a five-point Likert scale, ranging from 1 to 5. These extremes represent 0% and 100%, respectively. There are four different types of response scales, as can be seen in Table 1:

SCALE	0%	25%	50%	75%	100%
INTENSITY	Not at all	A little	A moderate amount	Very much	An extreme amount
	Not at all	Slightly	Moderately	Very	Extremely
EVALUATION	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
	Very poor	Poor	Neither poor nor good	Good	Very good
	Very unhappy	Unhappy	Neither happy nor unhappy	Happy	Very happy
CAPACITY	Not at all	A little	Moderately	Mostly	Completely
FREQUENCY	Never	Seldom	Quite often	Very often	Always

Source: Adapted from The WHOQOL Group (1998b)

Table 1. Response scale of WHOQOL-100

WHOQOL-100 aims at measuring the quality of life globally through six domains: Physical, Psychological, Level of independence, Social relationships, Environment e Spiritual/Religion/Personal beliefs. To obtain the results of WHOQOL instruments applications, the WHOQOL Group recommends the software Statistical Package for the Social Sciences (SPSS).

## 2.1 WHOQOL-100 scores calculation

The results of the WHOQOL-100 implementation are expressed through the scores of each facet and domain. The WHOQOL-100 scoring procedure presents the following logic:

- Verification of all those 100 questions completed with values between 1 and 5;
- Reversal of the 18 questions whose answer scale is inverted;
- Scores of facets calculation from the simple arithmetic average of questions that compose each facet, followed by a multiplication by four. The multiplication by four is used so that, in case of a question has not been answered, the score of a facet compensates the invalidation of the question through the product by the number of valid questions that the facet should have. It will be computed only those aspects that have at least three valid items;
- Scores of each domain are calculated through the simple arithmetic average of the facets scores that compose each area. In domains composed of up to five facets, this will be calculated only if the number of facets not calculated is not equal to or greater than two. In domains consisting of more than five facets, the domain will be calculated only if the number of facets not calculated is not equal to or greater than three. In the case of facets in reversed scale (all questions within the facet have reversed response scale), there will be an inversion of that facet to proceed the calculation;
- Scores of domains and facets are converted to a scale from 0 to 100;
- Total number of items answered by each respondent is counted. In the calculation are computed only those respondents who completed at least 80 items correctly (80% of the instrument items).

The WHOQOL-100 results are expressed in two scales, a variant scale between 4 and 20 points, due to the fact that the facets scores calculation is achieved by multiplying the average of questions that constitute each facet by four. Once each domain is calculated by the simple arithmetic average of facets that composes it. The results are expressed on the same scale of facets. The results are also expressed on a scale from 0 to 100.

## 2.2 Questions and facets response scale conversion

The conversion of questions is used in order to standardize all the answers of the instrument, so that the most positive response is 5. Therefore, the most negative response must be 1. Thus, all questions of each facet are converted to the same scale, where the gradual increase in response is equivalent in the same proportion to the increase in the result of the facet.

In cases where all four questions that constitute a facet are arranged in inverted scale, that same logic is used, but only in the domain calculation. That is, the result of these facets is expressed in the original scale: without inversion (the closer to 1, the more positive the result; the closer to 5, the more negative the result). However, when calculating the scores of areas where such facets are found, the score of the latter is converted.

For the conversion of the response scale of questions, the minimum value of the inverted scale question should be replaced by the maximum value of the normal scale question, and the maximum value of the inverted scale question should be replaced by a minimum value of the normal scale question. The same should occur with intermediate values, following this same logic. Thus, the only value that remains unchanged is the central value, which will remain the same in both normal and inverted scales.

It is necessary to be attentive to this fact, because when comparing the results between the facets, the score of a facet with inverted scale cannot be directly compared to the score of a

facet with normal scale. The answers 1, 2, 3, 4 and 5 are to take the values 5, 4, 3, 2 and 1, respectively. The same procedure is used in the conversion of inverted facets, where the scores 4, 8, 12, 16 and 20 are to take the values 20, 16, 12, 8 and 4, respectively.

### 2.3 WHOQOL-100 questions, domains and facets

Composed by 100 questions, the WHOQOL-100 is sectioned into 24 groups of four questions each, receiving the name of "facets". The group of facets constitutes a "domain". Unlike the composition of facets, the six WHOQOL-100 domains are not constituted by the same number of facets, and may vary from one to eight.

The questions that compose WHOQOL-100 are not arranged in the questionnaire in a logical sequence by domain or facet. They are grouped by type of answer scale. The distribution of WHOQOL-100 facets and areas are listed in Table 2:

DOMAINS	FACETS
Domain I - Physical	1. Pain and discomfort
	2. Energy e fatigue
	3. Sleep and rest
Domain II - Psychological	4. Positive feelings
	5. Thinking, learning, memory and concentration
	6. Self-esteem
	7. Bodily image and appearance
Domain III - Level of Independence	8. Negative feelings
	9. Mobility
	10. Activities of daily living
	11. Dependence on medication or treatments
Domain IV - Social Relationships	12. Work capacity
	13. Personal relationships
	14. Social support
Domain V - Environment	15. Sexual activity
	16. Physical safety and security
	17. Home environment
	18. Financial resources
	19. Health and social care: accessibility and quality
	20. Opportunities for acquiring new information and skills
	21. Participation in and opportunities for recreation/leisure activities
	22. Physical environment (pollution/noise/traffic/climate)
	23. Transport
Domain VI - Spiritual/Religion/Personal Beliefs	24. Spiritual/Religion/Personal Beliefs

Source: The WHOQOL Group (1998a)

Table 2. Domains and facets of WHOQOL-100

WHOQOL-100 has a facet that is not included in any domain, the facet Overall Quality of Life and General Health Perceptions (The WHOQOL Group, 1998b). This aspect deals with a self-assessment of quality of life, where the respondents express their point of view concerning their satisfaction with their lives, health and quality of life.

**2.4 Short version of WHOQOL-100 (WHOQOL-bref)**

Aiming at providing a tool that demand less time to its filling out, and with satisfactory psychometric characteristics, the WHOQOL Group developed the short version of WHOQOL-100, the WHOQOL-bref (The WHOQOL Group, 1996).

The WHOQOL-bref is composed of 26 questions - two questions on self-assessment of quality of life and 24 issues representing each facet of WHOQOL-100. To compound the questions of WHOQOL-bref, it was selected the question of each facet that present the highest correlation with the average score of all facets (The WHOQOL Group, 1998c).

After the selection of issues, an analysis was conducted to see if they, factually, represented the corresponding facets. In six facets, the question selected was replaced by another question of the corresponding facet, for, under the bias of experts, there was another question that could best define these six facets (The WHOQOL Group, 1998c). The facets belonging to the domain Level of Independence were incorporated into the Physical domain and the facet belonging to the domain Spiritual / Religion / Personal Beliefs was incorporated into the Psychological domain. Thus, the WHOQOL-bref is composed by four domains: Physical, Psychological, Social Relationships and Environment, completing the configuration expressed in Table 3:

DOMAINS	FACETS
Domain I - Physical	1. Pain and discomfort
	2. Energy e fatigue
	3. Sleep and rest
	4. Mobility
	5. Activities of daily living
	6. Dependence on medication or treatments
	7. Work capacity
Domain II - Psychological	8. Positive feelings
	9. Thinking, learning, memory and concentration
	10. Self-esteem
	11. Bodily image and appearance
	12. Negative feelings
	13. Spiritual/Religion/Personal Beliefs
Domain III - Social Relationships	14. Personal relationships
	15. Social support
	16. Sexual activity
Domain IV - Environment	17. Physical safety and security
	18. Home environment
	19. Financial resources
	20. Health and social care: accessibility and quality
	21. Opportunities for acquiring new information and skills
	22. Participation in and opportunities for recreation/ leisure activities
	23. Physical environment (pollution/noise/traffic/climate)
	24. Transport

Source: The WHOQOL Group (1998c)

Table 3. Domains and facets of WHOQOL-bref

The calculation of scores of WHOQOL-bref follows the same logic of WHOQOL-100, except for the calculation of scores of facets. In WHOQOL-bref each facet is represented by a single question, and therefore the scores of facets are not calculated (The WHOQOL Group, 1996).

### 3. WHOQOL-HIV

Aiming at creating a tool for assessing the quality of life directed to people living with HIV, researchers from the Joint United Nations Program on HIV / AIDS (UNAIDS) and WHO carried out studies in people with HIV in nine different countries. The result of this study was the instrument WHOQOL-HIV, an additional module specifically designed for people with HIV or AIDS (WHO Field Center for the Study of Quality of Life of Bath, 2008).

WHOQOL-HIV evaluates the quality of life from six domains and 29 facets. The domains and facets are the same as in WHOQOL-100, with the addition of five specific facets for people living with HIV/AIDS. The facet of WHOQOL-100 that evaluates the quality of life from the perspective of the assessed person, not included in any domain, remains in WHOQOL-HIV. The specific facets for people with HIV, as well as the facets from WHOQOL-100, are composed of four questions (O'Connell et al., 2004). The additional facets of WHOQOL-HIV are:

- Symptoms of PLWHA: physical problems that people living with HIV/AIDS (PLWHA) could present;
- Social Inclusion: individual's acceptance in society that he/she lives;
- Forgiveness and blame: feeling of blame that the individual has about his/her HIV infection;
- Concerns about the future: fear and worries concerning changes in individual's lifestyle after HIV infection;
- Death and dying: worries about dead, such as place, reason and suffering before dying.

The additional facets of WHOQOL-HIV are included in the domains already existent in WHOQOL-100, featuring the following configuration (Table 4):

DOMAINS	FACETS
Domain I - Physical	50. Symptoms of PLWHA
Domain IV - Social Relationships	51. Social Inclusion
Domain VI - Spiritual/Religion/Personal Beliefs	52. Forgiveness and Blame
	53. Concerns about the Future
	54. Death and Dying

Source: Adapted from O'Connell et al. (2004)

Table 4. Domains and facets exclusive of WHOQOL-HIV

Based on the previously mentioned configuration, questions which constitute additional facets of WHOQOL-HIV, with inverted questions written in italics, are:

FACETS	QUESTIONS
Symptoms of PLWHA	<i>How much are you bothered by any unpleasant physical problems related to your HIV infection?</i>
	<i>To what extent do you fear possible future (physical) pain?</i>
	<i>To what extent do you feel any unpleasant physical problems prevent you from doing things that are important to you?</i>
	<i>To what extent are you bothered by fears of developing any physical problem?</i>
Social Inclusion	<i>To what extent do you feel accepted by the people you know?</i>
	<i>How often do you feel you are discriminated against because of your health condition?</i>
	<i>To what extent do you feel accepted by your community?</i>
	<i>How much do you feel alienated from those around you?</i>
Forgiveness and Blame	<i>How much do you blame yourself for your HIV infection?</i>
	<i>To what extent are you bothered by people blaming you for your HIV status?</i>
	<i>How guilty do you feel about being HIV positive?</i>
	<i>To what extent do you feel guilty when you need the help and care of others?</i>
Concerns about the Future	<i>To what extent are you concerned about your HIV status breaking your family line and your future generations?</i>
	<i>To what extent are you concerned about how people will remember you when you are dead?</i>
	<i>To what extent do any feelings that you are suffering from fate or destiny bother you?</i>
	<i>How much do you fear the future?</i>
Death and Dying	<i>How much do you worry about death?</i>
	<i>How bothered are you by the thought of not being able to die the way you would want to?</i>
	<i>How concerned are you about how and where you will die?</i>
	<i>How preoccupied are you about suffering before dying?</i>

Source: Adapted from Zimpel & Fleck (2008)

Table 5. Additional questions of WHOQOL-HIV



The syntax for calculation of WHOQOL-HIV domain and facets' score, correcting the error reported by Pedroso et al. (2010), is the following:

STEPS	WHOQOL-HIV SYNTAX
Check all 120 items from assessment have a range of 1-5	RECODE F11 F12 F13 F14 F21 F22 F23 F24 F31 F32 F33 F34 F501 F502 F503 F504 F41 F42 F43 F44 F51 F52 F53 F54 F61 F62 F63 F64 F71 F72 F73 F74 F81 F82 F83 F84 F91 F92 F93 F94 F101 F102 F103 F104 F111 F112 F113 F114 F121 F122 F123 F124 F131 F132 F133 F134 F141 F142 F143 F144 F151 F152 F153 F154 F511 F512 F513 F514 F161 F162 F163 F164 F171 F172 F173 F174 F181 F182 F183 F184 F191 F192 F193 F194 F201 F202 F203 F204 F211 F212 F213 F214 F221 F222 F223 F224 F231 F232 F233 F234 F241 F242 F243 F244 F521 F522 F523 F524 F531 F532 F533 F534 F541 F542 F543 F544 G1 G2 G3 G4 (1=1) (2=2) (3=3) (4=4) (5=5) (ELSE=SYSMIS).
Reverse negatively phrased items	RECODE F11 F12 F13 F14 F22 F24 F32 F34 F72 F73 F81 F82 F83 F84 F93 F94 F102 F104 F111 F112 F113 F114 F131 F154 F163 F182 F184 F222 F232 F234 F501 F502 F503 F504 F514 F512 F521 F522 F523 F524 F531 F532 F533 F534 F541 F542 F544 F543 (1=5) (2=4) (3=3) (4=2) (5=1) (1=5) (2=4) (3=3) (4=2) (5=1).
Compute facet and domain scores	<p>COMPUTE PAIN=(F11+F12+F13+F14)/4.</p> <p>COMPUTE ENERGY=(F21+F22+F23+F24)/4.</p> <p>COMPUTE SLEEP=(F31+F32+F33+F34)/4.</p> <p>COMPUTE SYMPTOM=(F501+F502+F503+F504)/4.</p> <p>COMPUTE PFEEL=(F41+F42+F43+F44)/4.</p> <p>COMPUTE COG=(F51+F52+F53+F54)/4.</p> <p>COMPUTE ESTEEM=(F61+F62+F63+F64)/4.</p> <p>COMPUTE BODY=(F71+F72+F73+F74)/4.</p> <p>COMPUTE NFEEL=(F81+F82+F83+F84)/4.</p> <p>COMPUTE MOBIL=(F91+F92+F93+F94)/4.</p> <p>COMPUTE ADL=(F101+F102+F103+F104)/4.</p> <p>COMPUTE DEPEND=(F111+F112+F113+F114)/4.</p> <p>COMPUTE WORK=(F121+F122+F123+F124)/4.</p> <p>COMPUTE RELATIO=(F131+F132+F133+F134)/4.</p> <p>COMPUTE SUPPORT=(F141+F142+F143+F144)/4.</p> <p>COMPUTE SEX=(F151+F152+F153+F154)/4.</p> <p>COMPUTE INCLUSI=(F511+F512+F513+F514)/4.</p> <p>COMPUTE SAFE=(F161+F162+F163+F164)/4.</p> <p>COMPUTE HOME=(F171+F172+F173+F174)/4.</p> <p>COMPUTE FINANCE=(F181+F182+F183+F184)/4.</p> <p>COMPUTE CARE=(F191+F192+F193+F194)/4.</p> <p>COMPUTE INFO=(F201+F202+F203+F204)/4.</p> <p>COMPUTE LEISURE=(F211+F212+F213+F214)/4.</p> <p>COMPUTE ENVIRO=(F221+F222+F223+F224)/4.</p> <p>COMPUTE TRANS=(F231+F232+F233+F234)/4.</p> <p>COMPUTE SRPB=(F241+F242+F243+F244)/4.</p> <p>COMPUTE FORGIVE=(F521+F522+F523+F524)/4.</p> <p>COMPUTE FUTURE=(F531+F532+F533+F534)/4.</p>

STEPS	WHOQOL-HIV SYNTAX
	COMPUTE DEATH=(F541+F542+F543+F544)/4. COMPUTE GENERAL=(G1+G2+G3+G4)/4. COMPUTE DOMAIN1=(PAIN+ENERGY+SLEEP+SYMPTOM)/4*4. COMPUTE DOMAIN2=(PFEEL+COG+ESTEEM+BODY+NFEEL)/5*4. COMPUTE DOMAIN3=(MOBIL+ADL+DEPEND+WORK)/4*4. COMPUTE DOMAIN4=(RELATIO+SUPPORT+SEX+INCLUSI)/4*4. COMPUTE DOMAIN5=(SAFE+HOME+FINANCE+CARE+INFO+LEISURE+ ENVIRO+TRANS)/8*4. COMPUTE DOMAIN6=(FORGIVE+FUTURE+DEATH+SRPB)/4*4.

Source: Adapted from The WHOQOL-HIV Group (2002)

Table 6. WHOQOL-HIV syntax

The calculation of WHOQOL-HIV results is similar to the method used in WHOQOL-100. However, some criteria used in WHOQOL-100 were not inherited by WHOQOL-HIV. The results of the WHOQOL-HIV are presented as follows:

- Verification of all those 120 questions completed with values between 1 and 5;
- Reversal of all the questions whose answers scale is inverted. Concerning the facets in inverted scale, all the questions pertaining to these facets are individually inverted;
- Scores of facets are calculated from the sum of the four questions of each facet, followed by a division by four, being represented in a scale of 1 to 5;
- Scores of domains are calculated by the sum of the scores of "n" facets that compound each area, divided by the number of the domain facets. The result is multiplied by four, being represented in a scale of 4 to 20;

Contrarily to WHOQOL-100, the scores of domains and facets represent the mean of these variables only when all the belonging items to these are correctly punctuated. The score of facets is calculated since these presents one or more answered question, while the score of domains is calculated since these owns at least one facet that has been scored. The scores are not converted to a 0-100 scale. The exclusion criterion for individuals who answered incorrectly or doesn't answer more than 20% of total items from instrument does not exist on WHOQOL-HIV syntax.

#### 4. WHOQOL-HIV-bref

Under the same reason for the development of WHOQOL-bref, the WHOQOL Group developed an abbreviated version of WHOQOL-HIV. The WHOQOL-HIV-bref is based on WHOQOL-bref, in a way each facet is represented by one single question.

The 26 questions of WHOQOL-bref are repeated in WHOQOL-HIV-bref, being added to these five questions that represent the additional facets of WHOQOL-HIV (The WHOQOL-HIV Group, 2002). Contrary to what occurs in WHOQOL-bref, the facets belonging to the domains Level of Independence and Spiritual/Religion/Personal Beliefs are not incorporated to the Physical and Psychological domains, having, therefore, the same configuration of the domains of WHOQOL-HIV, presenting the following configuration:

DOMAINS	QUESTIONS
Domain I - Physical	<i>To what extent do you feel that physical pain prevents you from doing what you need to do?</i>
	Do you have enough energy for everyday life?
	How satisfied are you with your sleep?
	<i>How much are you bothered by any physical problems related to your HIV infection?</i>
Domain II - Psychological	How much do you enjoy life?
	How well are you able to concentrate?
	Are you able to accept your bodily appearance?
	How satisfied are you with yourself?
	<i>How often do you have negative feelings such as blue mood, despair, anxiety, depression?</i>
Domain III - Level of Independence	<i>How much do you need any medical treatment to function in your daily life?</i>
	How well are you able to get around?
	How satisfied are you with your ability to perform your daily living activities?
	How satisfied are you with your capacity for work?
Domain IV - Social Relations	To what extent do you feel accepted by the people you know?
	How satisfied are you with your personal relationships?
	How satisfied are you with your sex life?
	How satisfied are you with the support you get from your friends?
Domain V - Environment	How safe do you feel in your daily life?
	How healthy is your physical environment?
	Have you enough money to meet your needs?
	How available to you is the information that you need in your day-to-day life?
	To what extent do you have the opportunity for leisure activities?
	How satisfied are you with the conditions of your living place?
	How satisfied are you with your access to health services?
	How satisfied are you with your transport?
Domain VI - Spiritual / Religion / Personal Beliefs	To what extent do you feel your life to be meaningful?
	<i>To what extent are you bothered by people blaming you for your HIV status?</i>
	<i>How much do you fear the future?</i>
	<i>How much do you worry about death?</i>
Overall Quality of Life and General Health Perceptions	How would you rate your quality of life?
	How satisfied are you with your health?

Source: Adapted from The WHOQOL-HIV Group (2002)

Table 7. Questions of WHOQOL-HIV-bref

The calculation of WHOQOL-HIV-bref's score then follows a different logic regarding WHOQOL-bref instrument, consisting of the following command lines:

STEPS	WHOQOL-HIV-BREF SYNTAX
Check all 31 items from assessment have a range of 1-5	RECODE Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30 Q31 (1=1) (2=2) (3=3) (4=4) (5=5) (ELSE=SYSMIS).
Reverse negatively phrased items	RECODE Q3 Q4 Q5 Q8 Q9 Q10 Q31 (1=5) (2=4) (3=3) (4=2) (5=1).
Compute domain scores	COMPUTE Domain 1 = (Q3 + Q4 + Q14 + Q21)/4 * 4 COMPUTE Domain 2 = (Q6 + Q11 + Q15 + Q24 + Q31)/5 *4 COMPUTE Domain 3 = (Q5 + Q22 + Q23 + Q20)/4 * 4 COMPUTE Domain 4 = (Q27 +Q26 + Q25 + Q17)/4*4 COMPUTE Domain 5 = (Q12 + Q13 + Q16 + Q18 + Q19 + Q28 + Q29 + Q30)/8 *4 COMPUTE Domain6 = (Q7 + Q8 + Q9+ Q10)/4 *4

Source: The WHOQOL-HIV Group (2002)

Table 8. WHOQOL-HIV-bref syntax

The WHOQOL-HIV-bref syntax's textual transcription presents the following configuration:

- Verification of all those 31 questions completed with values between 1 and 5;
- Reversal of all the questions whose answers scale is inverted;
- Scores of domains are calculated by the sum of the scores of "n" questions that compound each area, divided by the number of the domain questions. The result is multiplied by four, being represented in a scale of 4 to 20;

As can be realized, just as WHOQOL-HIV, the WHOQOL-HIV-bref's Syntax presents the same present fragility found in WHOQOL-HIV regarding the domains and facets score calculation, because it's not accomplished the arithmetic mean of domain items. There is not also the conversion of domains and facets score for a 0-100 scale. Lastly, and is not existing the criteria of exclusion of individuals who doesn't answer or answered incorrectly a number of questions higher than 20% from the total instrument items.

### 5. Tools for the calculation of scores and descriptive statistics of WHOQOL-HIV and WHOQOL-HIV-bref instruments

To obtain the results to apply the WHOQOL instruments, WHOQOL Group recommends the use of SPSS software, a statistical software program that requires specific expertise for its use and is not for free distribution.

Looking for the removal of such limitations, tools were built from the software Microsoft Excel, a software program for broad accessibility, to calculate scores and descriptive statistics for WHOQOL-HIV and for WHOQOL-HIV-bref. Such tools were made in the same manner as the tool developed by Pedroso et al. (2009) to calculate scores and descriptive statistics of WHOQOL-100.

The tools proposed on this study automatically perform all calculations in the incipient syntaxes provided by the WHOQOL-HIV Group. The researchers who use it need only to fill in the specified cells the answers given by respondents.

After data insertion, to use the results of their research, researcher may copy the individual scores for each respondent, results of descriptive statistics, and graphics; however, without changing such results. Is allowed to insert and edit values just in the area to tabulate the answers of respondents.

To validate such tools, simulations were performed with real data applications of each of the WHOQOL-HIV and WHOQOL-HIV-bref instrument, comparing the results by using the proposed tools with those from SPSS. The results from both software programs were exactly the same, thus ensuring the reliability of tools, which are object of this study.

The tools were tested on different versions of the Microsoft Office: 2000, XP, 2003, 2007 and 2010. It was found that they are compatible with all versions tested, without differences in the results. The tools are available for download in the website: [http://www.brunopedroso.com.br/whoqol-hiv\(en\).html](http://www.brunopedroso.com.br/whoqol-hiv(en).html).

## 6. Conclusions

Although the WHOQOL-HIV and WHOQOL-HIV-bref instruments are respectively additional modules for WHOQOL-100 and WHOQOL-bref instruments, the syntax of these instruments are not entirely derivative from its precursor syntax. Despite the widespread distribution and use of the WHOQOL-HIV and WHOQOL-HIV-bref, the difficulty to interpret the instrument syntax limits in choosing to use such tools.

Additionally, the WHOQOL Group interposition in making the syntax to calculate the WHOQOL scores with SPSS (a relatively high cost software program and which requires specific expertise for use) encourages another imbroglio, restricting the use of WHOQOL instruments.

Facing this struggle, we here investigate the instruments in question to facilitate their interpretation and use. Looking for the removal of the previously described limitations, the syntaxes are transcribed textually, detailing all the steps used to obtain the results from WHOQOL-HIV and WHOQOL-HIV-bref instrument. Were also built tools from Microsoft Excel 2003 software to calculate the scores and descriptive statistics of such instruments, in which the researcher is responsible only for data tabulation. The calculation is carried out automatically.

The developed tools were tested and proved compatible in the versions 2000, XP, 2007 and 2010 of Microsoft Excel. The results returned by the tools were compared by using real application data of WHOQOL-HIV and WHOQOL-HIV-bref instruments, with the results returned by SPSS, following the parameters established by the WHOQOL-HIV Group. The results were identical to both instruments.

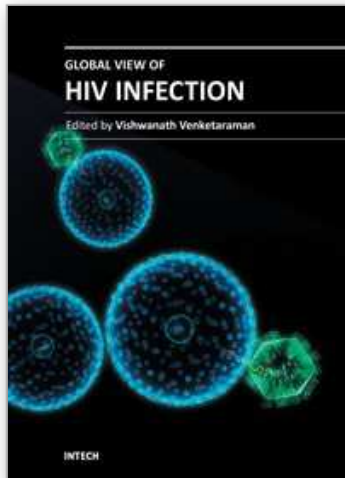
We conclude that, despite being globally disseminated instruments, developed under a rigorous methodology, the instruments produced by the WHOQOL-HIV Group show limitations. Expecting to facilitate its use, was made an approach with a focus on clarifying these instruments. In this wise, we aimed to enable greater accessibility of the results promoted by the instruments, object of study here, thus expanding the investigation involving QoL empirical reality of people living with HIV/AIDS.

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