

# **AFRICAN JOURNAL OF MEDICINE** and medical sciences

**VOLUME 35 NUMBER 4**

**DECEMBER 2006**



**Editor-in-Chief**

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**ISSN 1116—4077**



## Validation of a Yoruba translation of the World Health Organization's quality of life scale-short form among stroke survivors in Southwest Nigeria

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### Summary

The World Health Organization's quality of life scale - short form (WHOQOL-BREF) is a well-validated, cross-cultural tool for measuring quality of life (QOL) of patients with chronic diseases. It has been translated into over 20 languages, none of which is an indigenous Nigerian language. The aim of this study was to investigate the validity of a Yoruba translated version of the WHOQOL-BREF. Yoruba is the indigenous language of southwestern Nigeria. The English version of the WHOQOL-BREF was translated into Yoruba and it went through two rounds of back-translation. The English and Yoruba versions of WHOQOL-BREF were completed by 41 stroke survivors, literate in both languages. Participants were recruited through purposive sampling method from physiotherapy clinics of all tertiary health institutions in southwestern Nigeria between April and August, 2004. Data was analyzed using Spearman rank order correlation and paired t-test with the alpha level set at 0.05. Participants (24 males, 14 females) were aged  $55 \pm 10.7$  years and have had stroke for  $28.4 \pm 6.7$  months. Participants' domain scores on the Yoruba translated version of WHOQOL-BREF correlated significantly with those on its English version ( $r = 0.695 - 0.859$ ;  $p = 0.000$ ). This Yoruba version is a valid translation of the English WHOQOL-BREF and may be used for assessing QOL of stroke survivors in southwestern Nigeria.

**Keywords:** *Quality of life, stroke survivors, Yoruba translation, validation*

### Résumé

Le formulaire de la qualité de vie de l'organisation mondiale de la santé (WHOQOL-BREF) a été validé comme outil de mesure de la qualité de vie (QOL) des patients avec les maladies chroniques. Ce formulaire a été traduit en plus de 20 langues sans aucune langue indigène nigériane. Le but de cette étude était d'investiguer la validité de la version Yoruba (langue indigène au sud ouest du Nigeria) traduite du WHOQOL-BREF. La version anglaise était traduite en version Yoruba et suivait une suite de retraduction. Les 2 formulaires des 2 langues étaient complétés par chacun des quatorze survivants d'arrêt cardiaque, éduqués, et recrutés dans les cliniques de physiothérapie dans les cen-

tres universitaires hospitalière au sud ouest du Nigeria d'Avril à Août 2004. Les données analysées étaient analysées par la corrélation de Spearman et le t-test. Ils y avaient 24 males et 14 femmes, âgés de  $55 \pm 10.7$  ans et ayant un arrêt cardiaque de  $28.4 \pm 6.7$  mois. Les résultats de la version Yoruba corrélait significativement à ceux de la version anglaise ( $r = 0.69 - 0.85$ ;  $P = 0.000$ ). En conclusion, la version Yoruba est une traduction valable de la version anglaise du formulaire WHOQOL-BREF et pourrait être utilisée pour évaluer le QOL des survivants d'arrêt cardiaque aux patients du sud du Nigeria.

### Introduction

Quality of life (QOL) is defined as individuals' perception of their position in life in the context of cultures and value systems in which they live and in relation to their goals, expectations, standards and concerns [1]. It refers to a person's subjective well being and life satisfaction and it incorporates in a complex way the person's mental and physical health, material well-being, interpersonal relationships, personal development and fulfillment and salient features of the environment [1, 2]. Medical interest in quality of life has been stimulated by success in prolonging life and the realisation that patients want to live, not merely existing [3].

In the early 1990s, the World Health Organization (WHO) developed a generic, cross-cultural, 100-item quality of life scale (WHOQOL-100) out of the need for an easily administered, genuinely international measure of quality of life and a commitment to the continued promotion of a holistic approach to health [1]. Its development followed a long process of concept definition, item identification, selection and field trials in various cultural settings [1]. An abbreviated version, the WHOQOL-BREF (Appendix 1) was later derived from the WHOQOL-100, for use in instances when the WHOQOL-100 might be too lengthy for practical use [4]. It was intended to be used in epidemiological studies and clinical trials in which a brief assessment of QOL is of interest [5].

The WHOQOL-BREF has been translated into over 20 languages and adapted for use in many cultural settings [1, 6, 7, 8, 9]. We observed that the WHOQOL-BREF was not available in any local Nigerian language and this may limit its use in southwestern Nigeria because quite a number of patients attending hospitals are not literate in English, the original language of the WHOQOL-BREF. The aim of the present study was to assess the criterion-related validity of a Yoruba translated version of



WHOQOL-BREF, using its English (original) version as the "criterion measure". Yoruba is an indigenous Nigerian language spoken in the southwestern part of the country. We hypothesized that the Yoruba translated version of WHOQOL-BREF would correlate significantly with its English version.

### Materials and methods

#### *The World Health Organization's Quality of Life Scale – Short Form (WHOQOL-BREF)*

The WHOQOL-BREF was derived from the 100 item World Health Organization's scale (WHOQOL-100). Domain scores produced by WHOQOL-BREF were reported to correlate highly ( $r=0.89$ ) with WHOQOL-100 domain scores [5]. WHOQOL-BREF has been reported to demonstrate good discriminant validity, construct validity, internal consistency and test-retest reliability in many studies [5, 6, 7, 8, 10]. It has been used for measuring quality of life in chronic conditions, such stroke, rheumatoid arthritis, and psychiatric conditions [2, 8, 9, 10].

The WHOQOL-BREF comprises 26 items, two from overall quality of life and general health facets and 24 from each of the 24 facets contained in WHOQOL-100. It covers four domains, which are the physical health, psychological health and social relationship and environment domains. Each of the 26 items of WHOQOL-BREF is rated on a 5-point scale, which is in the positive direction (i.e. higher score denotes higher quality of life). The items on overall quality of life and general health perception are scored separately. The mean score of items within each domain is calculated and converted to 4-20 range by multiplying it by 4 and then dividing by the number of items in the domain [(mean domain score  $\times$  4)  $\div$  no. of items]. The second transformation involves multiplying the value obtained in the 4 - 20 range by 100 and then dividing it by 16. This second transformation converts domain scores to a 0-100 scale [1].

#### *Translation of WHOQOL into Yoruba*

The WHOQOL-BREF (appendix 1) was translated from English into Yoruba by a Yoruba language expert who was knowledgeable in the concept of quality of life from the Department of Linguistics of University of Ibadan, Nigeria. Copies of the initial draft of the Yoruba translation were given to 3 nurses and 3 school teachers who were not associated with the translation process [11]. They were asked to back-translate the draft into English. Copies of the back-translation were reviewed by a committee (including the language expert and the researchers) and it was discovered that the meanings of items 7, 15 and 26 were altered. The three items were then corrected by the committee. Copies of the new draft were sent to another set of 3 nurses and 3 school teachers for back translation. All the translators were university graduates, fluent in both English and Yoruba languages and were provided with information on the concept of quality of life [11]. The

second set of back-translation indicated that all items carried the same meanings contained in the English version. The final draft of the Yoruba translation of WHOQOL-BREF is shown in appendix 2.

#### *Validation of the Yoruba Translated Version of WHOQOL-BREF*

Forty-one patients with hemiparesis secondary to stroke, who could read and understand both English and Yoruba languages, participated in this correlational survey. They were recruited using the purposive sampling method from a total of 75 stroke survivors attending physiotherapy outpatient clinics of all tertiary health institutions (6 university teaching hospitals and one specialist hospital) in southwestern Nigeria between April and August 2004. They were all well oriented in time, place and space. Four participants each were recruited from four of the teaching hospitals, 6 participants from one other teaching hospital, 12 participants from the sixth teaching hospital and 7 participants from the specialist hospital. Both English and Yoruba translated versions of WHOQOL-BREF were completed by the participants. Participants who could not write because of weakness of their dominant hands were assisted by one of the authors. All even-numbered participants completed the English version first and all odd-numbered participants completed the Yoruba version first. An interval of about two hours separated the administration of the two versions.

#### *Data Analysis*

Correlation between quality of life (QOL) scores (domain and single item) on the English and the Yoruba versions of the WHOQOL-BREF was analyzed using Spearman Rank Order Correlation. QOL scores on the original (English) and Yoruba versions of WHOQOL-BREF were compared using the Wilcoxon Signed Ranks Test. Level of significance was set at 0.05.

### Results

The participants (27 males and 14 females) were aged  $55.0 \pm 10.7$  years and they have had stroke for  $28.4 \pm 6.7$  months. Quality of life (QOL) scores of participants on the two single items (overall quality of life and overall health) and the four domains of WHOQOL-BREF on both the English and Yoruba versions are shown on table 1.

The order of participants' domain QOL scores was similar in both the English and the Yoruba translated versions of the WHOQOL-BREF. Participants scored lowest in the physical health domain and highest in the environment domain (table 1). Although, participants' scores on the Yoruba translated version tended to be lower than those from the English version on the single items, overall quality of life and overall health and in all the domains of WHOQOL-BREF, there were no significant differences between them, except in the physical health domain ( $p = 0.040$ ) (table 1).



**Table 1:** The Wilcoxon signed ranks test for comparison of scores obtained on the English version and Yoruba translated version of WHOQOL-BREF

Item/domain	English version		Yoruba version		Z	p-value
	X	S.D.	X	S.D.		
Overall quality of life* (5)	3.80	0.98	3.80	0.87	0.000	1.000
Overall health* (5)	3.29	1.03	3.02	1.19	-1.280	0.201
Physical health** (100)	49.51	21.53	46.10	21.66	-2.051	0.040†
Psychological health** (100)	52.98	18.86	50.20	17.69	-1.585	0.113
Social relationship** (100)	55.83	26.81	52.95	25.16	-1.124	0.261
Environment** (100)	58.07	16.83	59.29	15.84	-0.472	0.637

\* = Single item

\*\* = Domain

† = Significant

**Table 2:** Spearman Rank order correlation between Domain scores on the English version and Yoruba translated version of WHOQOL-BREF

English	Physical health	Psychological health	Yoruba social relationship	Environment
Physical health	0.820 (0.000)	0.745 (0.000)	0.455 (0.003)	0.368 (0.018)
Psychological health	0.588 (0.000)	0.716 (0.000)	0.530 (0.000)	0.489 (0.001)
Social relationship	0.558 (0.000)	0.570 (0.000)	0.859 (0.000)	0.695 (0.000)
Environment	0.508 (0.001)	0.650 (0.000)	0.562 (0.000)	0.697 (0.000)

*P values in brackets*

There were positive significant correlations between QOL scores on the English and the Yoruba translated versions of WHOQOL-BREF in the four domains. The correlation was highest for the social relationship domain ( $r = 0.859$ ;  $p < 0.000$ ) and lowest for the environment domain to ( $r = 0.697$ ;  $p < 0.000$ ) (Table 2). Participants' QOL scores on the overall quality of life and overall health (the two single items) on the English and Yoruba translated versions of WHOQOL-BREF correlated significantly; although, the correlation coefficients were much lower than those for domain scores. For the item, overall quality of life,  $r = 0.45$  ( $p < 0.003$ ) and for the item, overall health,  $r = 0.35$  ( $p < 0.025$ ).

## Discussion

Only about 55% of all stroke survivors attending the physiotherapy out-patient clinics from where participants were recruited during the study period could participate in this study. The reason for this is that many of these patients do not understand English. This supports our observation that many patients attending hospitals in southwestern Nigeria do not understand English and it buttresses the need for translating the WHOQOL-BREF into Yoruba.

The WHOQOL-BREF was found amenable to translation into Yoruba language. This supports the fact that WHOQOL-BREF is a genuinely international measuring instrument, easily applicable to any cultural setting. Our experience during the process of translation, especially while reviewing the back-translation of the WHOQOL-BREF indicated that translation of clinical measuring instruments or questionnaires from one language to another is not as simple as it is often assumed. Therefore, there is the need for researchers to ensure proper translation of questionnaires and scales into their local/indigenous languages before embarking on studies involving participants who may not be literate in the original languages of the questionnaires and scales.

Participants scored lowest in the physical health domain of quality of life (QOL). This can be explained by the fact that hemiparesis or hemiplegia, a common residual consequence of stroke is associated with limitations in physical functioning. The finding that the order of domain scores generated by both the English and the Yoruba translated versions of WHOQOL-BREF was similar and the significant correlations between domain QOL scores from both versions indicate that the Yoruba translated version measures the same construct the English version measures.



The hypothesis that there would be significant correlation between the Yoruba translation of WHOQOL-BREF and its English (original) version was therefore accepted. This implies that the Yoruba translated version of WHOQOL-BREF is a valid translation of the English version. The participants' scores on each of overall quality of life and overall health in English and Yoruba also correlated significantly, further supporting the validity of the Yoruba translation of WHOQOL-BREF.

Conclusion and recommendation

The Yoruba version of WHOQOL-BREF herewith presented is a valid translation of its original English version. It may be used in the southwestern Nigeria, the Yoruba-speaking part of the country for quality of life assessment among stroke survivors.

References

1.

WHO Group. WHOQOL: Introduction, administration, scoring and generic version of the assessment. Programme on Mental Health 1996; [www.who.int/mentalhealth/media](http://www.who.int/mentalhealth/media)

2.

Niemi ML, Laaksonen R, Kotilla M, and Waltimo O. Quality of life 4 years after stroke. *Stroke* 1988; 19:1101-1107.

3.

McDowell I and Newell C. *Measuring Health - A Guide to Rating Scales and Questionnaires*. New York: Oxford University Press. 1996, 380.

4.

Skevington SM, Lofty M, O'Connell KA. The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of international field trials. A report of the WHOQOL Group. *Quality of Life Research* 2004; 13:299-310.

5.

WHO Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological Medicine* 1998; 28 :551-558.

6.

Yao G, Chung CW, Yu CF, and Wang JD. Development and verification of validity and reliability of WHOQOL-BREF Taiwan version. *Journal of Formosan Medical Association* 2002; 101:342-351.

7.

Min SK, Kim KI, Lee CI, Jung SY, and Kim DK. Development of the Korean versions of WHOQOL-BREF. *Quality of Life Research* 2002; 11:593-600.

8.

Trompenaars FJ, Masthoff ED, Van Heck GL, Hodiament PP and De Vries J. Content Validity, construct validity, and reliability of the WHOQOL-BREF in a population of Dutch adult psychiatric outpatients. *Quality of Life Research* 2005; 14: 151-160.

9.

Berlim MT, Pavanello DP, Caldieraro MA and Fleck MP. Reliability and validity of WHOQOL BREF in a sample of Brazilian outpatients with major depression. *Quality of Life Research* 2005; 14:561-564.

10.

Taylor WJ, Myers J, Simpson RT, McPherson KM and Weatherall M. Quality of life of people with rheumatoid arthritis as measured by the World Health Organization Quality of Life Instrument, short form (WHOQOL-BREF): score distributions and psychometric properties. *Journal of Arthritis and Rheumatology*,

11.

Streiner DL and Norman GR. *Health Measurement Scales – a practical guide. To their development and scales – a practical guide to their development and use*. New York: Oxford University Press, 1999; 17-18.



## Appendix 1: WHOQOL-BREF (English version)

Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
1(G1)	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2(G4)	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last two weeks.

	Physical	Not at all	A little	A moderate amount	Very much	An extreme amount
3(F14)	To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4(F1.3)	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5(F4.2)	How much do you enjoy life?	1	2	3	4	5
6(F24.2)	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	An extreme amount
7(F5.3)	How well are you able to concentrate?	1	2	3	4	5
8(F16.7)	How safe do you feel in your daily life?	1	2	3	4	5
9(F22.1)	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last two weeks.

		Not at all	A little	Moderately	Mostly	Completely
10(F2.1)	Do you have enough energy for everyday life?	1	2	3	4	5
11(F7.1)	Are you able to accept your bodily appearance?	1	2	3	4	5
12(F18.1)	Have you enough money to meet your needs?	1	2	3	4	5
13(F20.1)	How available to you is information that you need in your day-today life?	1	2	3	4	5
14(F21.1)	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5



		Very poor	Poor	Neither poor nor good	Good	Very good
15(F21.1)	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16(F3.3)	How satisfied are you with your sleep?	1	2	3	4	5
17(F10.4)	How satisfied are you with your ability to perform your daily activities?	1	2	3	4	5
18(F12.4)	How satisfied are you with your capacity for work?	1	2	3	4	5
19(F6.3)	How satisfied are you with yourself?	1	2	3	4	5
20(F13.3)	How satisfied are you with your personal relationships?	1	2	3	4	5
21(F15.3)	How satisfied are you with your sex life?	1	2	3	4	5
22(F14.4)	How satisfied are you with the support you get from friends?	1	2	3	4	5
23(F17.3)	How satisfied are you with the condition of your living place?	1	2	3	4	5
24(F19.3)	How satisfied are you with your access to health services?	1	2	3	4	5
25(F23.3)	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain thing in the last two weeks.

		Never	seldom	Quite often	Very often	Always
26(F8.1)	How often do you have negative feelings such as blue moods, despair, anxiety and depression?	1	2	3	4	5

Do you have any comments about this assessment?

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THANK YOU. YOU FOR YOUR HELP



## APPENDIX 2: Yoruba Translation of WHOQOL-BREF

Jòwọ ka ibèèrè kòòkan, ẹ òdínwòn ìmọlára ẹ, kí ó sì fààlà sí ìwòn tí o bá ọ mu fún ibèèrè kòòkan

		Burù púpọ	Burú	Kò burú kò dára	Dára	Dára púpọ
1(G1)	Báwo ni o ẹ má a ẹ òdínwòn ìgbé ayé ẹ?	1	2	3	4	5

		Kò tẹ mi lórùn rára	Kò tẹ mi lórùn	Kò tẹ mi lórùn sùgbọ̀n kò burú rára	Ó tẹ mi lórùn	Ó tẹ mi lórùn púpọ
2(G4)	Báwo ni ìlera ẹ ẹ tẹ ọ lórùn sí?	1	2	3	4	5

Àwọn ibèèrè wònyí n bí ọ iye ìgbà tí o ti ní ìrírí àwọn nńkan kan ní ọsẹ méjì sẹyìn

	Ti Ara	Rára	Díẹ	Níwòn	Ọpọ	Ó pọ gan an
3(F14)	Ó tó báwo to ẹ rò pé ìrora ara n dí ọ lówọ láti ẹ ohun tí o ní láti ẹ?	1	2	3	4	5
4(F1.3)	Báwo ni o ẹ nílò ìtójú ìgbàlódé sí láti lẹ ẹsẹ òdòjọ ẹ?	1	2	3	4	5
5(F4.2)	Báwo ní o ẹ n gbádùn ayé sí?	1	2	3	4	5
6(F24.2)	Báwo ni o ẹ rò pé ayé ẹ ní ìtumọ sí?	1	2	3	4	5

		Rára	Díẹ	Ó mọ níwòn	Ọpọ	Ó pọ púpọ
7(F5.3)	Báwo ni o ẹ lẹ fọkàn sínńkan sí?	1	2	3	4	5
8(F16.7)	Báwo ni o ẹ rò pé o ní ààbò sí lójoojúmọ?	1	2	3	4	5
9(F22.1)	Báwo ni ìlera agbègbè ẹ ẹ rí?	1	2	3	4	5

Àwọn ibèèrè wònyí n bí ọ nípa bí o ẹ ní ìrírí tàbí bí o ẹ lẹ ẹ àwọn nńkan kan ní ọsẹ méjì sẹyìn

		Rára	Díẹ	Ó mọ níwòn	Lópọ ìgbà	Ní gbo gbo ìgbà
10(F2.1)	Njẹ o ní okun tí ó tó fún ojoojúmọ?	1	2	3	4	5
11(F7.1)	Ẹ o lẹ fara mọ bí àgọ ara ẹ ẹ rí?	1	2	3	4	5
12(F18.1)	Njẹ o ní owó tí ó tó fún iní ẹ?	1	2	3	4	5
13(F20.1)	Báwo ni ìròyìn tí o nílò fún ayé ẹ ní ojoojúmọ ẹ wà ní àrọwótó ẹ sí?	1	2	3	4	5
14(F21.1)	Báwo ni o ẹ ní ànfàaní àwọn erè idárayá sí?	1	2	3	4	5

		Burù púpọ	Burú	Kò burú kò dára	Dára	Dára púpọ
15(F21.1)	Báwo ni o ẹ lẹ rìn káàkiri sí?	1	2	3	4	5

		Kò tẹmi lórùn rára	Kò tẹmi lórùn	Kò tẹmi lórùn sùgbọ̀n kò burú	Ó tẹmi lórùn	Ó tẹmi lórùn dáadáa
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16(F3.3)	Báwo ni orun re se te o lorun si?	1	2	3	4	5
17(F10.4)	Báwo ni bi o se n se ise re lojoojumó se te o lorun si?	1	2	3	4	5
18(F12.4)	Báwo ni agbára tí o ní láti se ise se te o lorun si?	1	2	3	4	5
19(F6.3)	Báwo ni ara re se te o lorun si?	1	2	3	4	5
20(F13.3)	Báwo ni bi o se n bá ẹlòmíràn se pò se te o lorun si?	1	2	3	4	5
21(F15.3)	Báwo ni igbé ayé ibálòpò re (pẹlú obìnrin tàbí ọkúnrin) se te o lorun si?	1	2	3	4	5
22(F14.4)	Báwo ni àwọn àtílẹ̀yìn tí o ní rí gbà láti ọdò àwọn ọrẹ re se te o lorun si?	1	2	3	4	5
23(F17.3)	Báwo ni bi ibi tí o ní gbé se te o lorun si?	1	2	3	4	5
24(F19.3)	Báwo ni bi ètò ìlera tí ò n gbà se te o lorun si?	1	2	3	4	5
25(F23.3)	Báwo ni ètò ọkò re se te o lorun si?	1	2	3	4	5

Ìbèèrè yìí n bí ọ ìrírí re nípa nnkan kan ní ọsẹ méjì sẹyìn

		Kò rí bèè rí	Ó rí bèè díèdíè	Ó rí bèè lẹ̀ẹ̀kòòkan	Ó rí bèè lòòrèkòòrè	Ó rí bèè ní gbogbo ìgbà
26(F8.1)	Ótó bii ìgbà mééló tí èròkèrò bii ìbànújé, ìgbókànsókè àti ipòrúru ọkàn máa n wá sí ọ lókàn?	1	2	3	4	5

Njé o ní ọròkọrò lórí àgbéyèwò yìí?

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O SÉÉ FÚN ÌRÀNLOWÓÒ RE

Received: 17/05/05

Accepted: 09/10.06