

The WHO quality of life assessment instrument (WHOQOL-Bref): The importance of its items for cross-cultural research

Shekhar Saxena, Dawn Carlson, Rex Billington & John Orley on behalf of the WHOQOL Group*
Department of Mental health and Substance Dependence, World Health Organisation, Geneva, Switzerland
(E-mail: saxenas@who.ch)

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Abstract

One of the fundamental issues in the area of assessment of quality of life is to determine what is important to the individuals' quality of life. This is even more crucial when the instrument is for use in diverse cultural settings. This paper reports on the importance ratings on WHOQOL-Bref items obtained as a part of WHOQOL pilot field trial on 4804 respondents from 15 centres from 14 developed and developing countries using 12 languages. All items were rated as moderately or more important, but this was expected because the items were selected by extensive qualitative research for their salience across the centres. Significant differences on mean importance ratings were found between centres, but rank orders of item for their importance showed highly significant correlations between centres. This was especially true for items in the top and the bottom thirds of the item list arranged by overall importance. Most items were rated as more important by women compared to men and by younger compared to older persons. The results are discussed for their relevance in cross-cultural research on quality of life assessment.

Key words: Age, Cross-cultural validation, Gender, Measurement, Quality of life, WHOQOL

Introduction

Quality of life ('QOL') measurements are being used increasingly in clinical research to measure improvement in perceived well-being and a growing number of generic as well as disease-specific 'QOL' assessment instruments are becoming available [1–5]. However, serious questions have been raised about the way 'QOL' is conceptualised and measured [6]. Gill and Feinstein [7], for instance, presented evidence that suggests that the basic assumptions underlying 'QOL' measurement are inadequately understood and wrongly targeted in the reported research, although such criticisms have been refuted by Guyatt and Cook [8]. However, there seems to be general agreement on the urgent need for research into the best ways of

measuring and assessing 'QOL', giving particular attention to patients' subjective viewpoints [9, 10].

One of the fundamental issues in this area is to determine what is important to the individuals' 'QOL'. Since we are measuring a subjective concept, the best way is to derive ratings of importance by asking respondents directly what is important for their 'QOL', or to ask them to rate various aspects of life on a scale of importance to 'QOL'.

Where a 'QOL' assessment instrument is used in a variety of cultural settings, it is important to establish whether the same aspects of life are equally important for the young or old, rich or poor, male or female, etc. People or groups of people, particularly in different cultures, are likely to assign different importance to the various aspects of their life, but how significant these differences are and whether a reasonably valid

* See Appendix for details.

instrument can be developed in spite of these differences, are questions that need to be answered.

The World Health Organisation (WHO) has been co-ordinating a multi-centred collaborative project on the development of an assessment instrument for 'QOL' in health care settings (the WHOQOL) since the early 1990s. The initial work under this project involved developing the concept and definition of 'QOL'. This was followed by systematic qualitative and quantitative research in the 15 WHOQOL centres spread across diverse cultures of the world to derive a list of facets of 'QOL' and the questions that best asked about these facets. The questions were generated based on information collected from patients, their families and the health care professionals using focus group method at the centres. These questions were then tested in a large pilot field study to derive the core instrument containing 100 items. The detailed methodology followed in this project is given elsewhere [11–17]. The focus group methodology had established that in all centres the core 24 facets were common to all, indicating that it is likely that the same factors significantly affect the 'QOL' of the people in the study. Although preparatory work (qualitative and quantitative) had ensured that all the facets included in the field trial questionnaire were considered important at all the centres, a set of items were included in the questionnaire specifically asking about the importance of the facets to 'QOL', in order to answer some further questions in this area [18, 19]. This paper presents results of the analyses conducted on the importance ratings from the WHOQOL pilot field study. The aim is to determine the relative subjective importance of various aspects of life in contributing to its quality and to check whether these are reasonably stable across gender, age and diverse cultures.

Methods

The field trial was conducted at 15 centres using the questionnaire developed in 12 languages. The centres were located in Bangkok, Thailand; Bath, United Kingdom; Barcelona, Spain; Beer Shiva, Israel; Harare, Zimbabwe; Madras, India; Melbourne, Australia; New Delhi, India; Panama City, Panama; Paris, France; Seattle, United

States; St Petersburg, Russia; Tilburg, Netherlands; Tokyo, Japan; and Zagreb, Croatia.

Besides the core and some centre-specific 'national' questions, the questionnaire contained 41 questions to elicit information on the importance of individual facets or subfacets as judged by the respondent. The general instruction for the importance section asked the respondents to report about how important each aspect of life was to them and how much it affected their 'QOL'. No specific reference period was suggested to answer these questions. The questions were then listed along with the response scale. For example the question on energy asked 'How important to you is having energy?' and the one on financial resources 'How important to you are your financial resources?'. The response scale had five descriptors: not important (1), a little important (2), moderately important (3), very important (4) and extremely important (5).

A number of the 41 original items in the importance rating questionnaire were not analysed since the corresponding core items (e.g., work satisfaction) were dropped from the questionnaire for reasons of frequency problems or lack of correlation with other significant 'QOL' measures [20].

Further analysis of the pilot data led to a reduction of items and development of the WHOQOL-Bref containing 26 items. Bref items are represented by the most suitable one item for each of 24 WHOQOL-100 facets [16, 20]. In addition, two overall items, 'QOL' and 'health', are also retained. For the study of importance ratings, the general item 'QOL' was dropped from the questionnaire because its contribution as an item of importance to the 'QOL' would have been meaningless. This paper reports on the analysis of 25 importance items (Table 1) that correspond to the WHOQOL-Bref core items.

Each centre aimed to administer the WHOQOL pilot questionnaire including the importance items to 300 adult subjects consisting of 250 patients attending a variety of health care services and 50 'well' subjects included largely from among the family members accompanying the patients. The samples were designed to consist of about equal numbers of women and men as well as of young adults (<45 years) and older adults (≥45 years). The large majority of questionnaires were self ad-

Table 1. Domains and items of the WHOQOL-Bref

WHOQOL reference code	Description
	Domain I: Physical health and well-being
G2	Overall health*
1.1	To be free of any pain
2.1	Having energy
3.1	Restful sleep
9.1	To move around
10.1	Daily living activities
11.1	To be free of dependence on medicines and treatment
12.1	To be able to work
	Domain II: Psychological health and well-being
4.1	Happiness and enjoyment of life
5.3	To be able to concentrate
6.1	Feeling positive about yourself
7.1	Bodily image and appearance
8.1	To be free of negative feelings
24.1	Personal beliefs
	Domain III: Social relations
13.1	Relationship with other people
14.1	Support from others
15.1	Sexual life
	Domain IV: Environment
16.1	Feeling physically safe and secure
17.1	Home environment
18.1	Financial resources
19.1	To be able to get adequate health care
20.1	Chances of getting new information and knowledge
21.1	Relaxation and leisure
22.1	Environment
23.1	Adequate transport in everyday life

* Note that 'overall health' is a general item that has been put into domain I for purposes of this report.

ministered by the respondents, but a minority were administered by trained interviewers to respondents who could not read or write. Care was taken however to ensure that the ratings were made by the respondent and not by interviewers, who merely recorded the ratings.

For subsequent data analysis respondents were grouped by sex, age (below age 43 vs. age 43 and above as both mean age and median age were close to 43), and research centre type A vs. B. These two types account for socio-economic levels of development of the geographical region where the health centre is located and is based on the World

Bank's classification [21]. Accordingly, Harare, Bangkok, Madras, New Dehli, Panama City, Beer Shiva, Zagreb and St Petersburg represent Type A centres. Melbourne, Bath, Seattle, Paris, Tokyo, Tilburg, and Barcelona represent Type B centres. All analyses and the computation of results were performed by using SPSS [22] (for routines such as ANOVA, *F*-tests, bivariate correlations, and hierarchical cluster analysis).

Results

The total sample included 4804 respondents. The number of respondents in the 15 centres varied between 296 and 413. The mean age for the total sample was 43.6 years, with a standard deviation of 16.0 years and a range of 15–90 years. The mean age per centre spanned an interval of 37.7–48.2 years. Women constituted 53.2% of the sample (centre range 44.0–62.9%). A large majority of subjects (80.9%) reported suffering from a variety of disorders, and the rest were well.

Respondents completed the importance ratings of the WHOQOL-Bref to a nearly perfect extent. For the complete sample of 4802 cases, only three out of the 25 items had missing values of about 4% of the cases: restful sleep, support from others, and environment. The remaining 22 items had missing values of 1.2% or less. The distribution of responses concentrated around a 'very important' rating in 24 out of the 25 items. Only one item, 'How important is your sex life?', had the mode at 'important'. The skewness of responses was relatively mild; 11 items were negatively skewed, and 14 items were positively skewed. Although not meant to serve as an importance rating scale *per se*, the 25 items were tested for internal consistency and reliability for each of the 15 centres. Two-way mixed effect models were used to compute the intraclass correlation coefficients (ICCs). The ICCs or α ranged from 0.87 to 0.94. The split half sample method was used to compute Guttman's reliability coefficient (also for each of the 15 centres). With the exception of one centre, Panama City, which had a Guttman coefficient of 0.75, Guttman coefficients for the remaining 14 centres ranged from 0.80 to 0.90. These measures indicate a very good consistency and reliability for this rather diverse group of centers.

Table 2. Importance of WHO QOL-Bref items ranked by mean ratings, followed by tests of statistically significant mean differences by age, gender, and centre type

WHOQOL reference code	Domain	Description	Mean	Rank	Means and difference by age		Means and difference by gender		Means and difference by center type	
					Under 43	43+	Male	Female	A	B
10.1	1	Daily living activities	4.29	1	4.27	4.31	4.21 ^b	4.37 ^b	4.28	4.30
2.1	1	Having energy	4.29	2	4.30	4.28	4.25 ^b	4.32 ^b	4.29	4.28
G2	1	Overall health	4.28	3	4.30 ^a	4.26 ^a	4.27	4.29	4.28	4.28
4.1	2	Happiness and enjoyment of life	4.23	4	4.30 ^b	4.15 ^b	4.17 ^b	4.28 ^b	4.16 ^b	4.31 ^b
9.1	1	To move around	4.19	5	4.18	4.20	4.15 ^b	4.22 ^b	4.21 ^a	4.16 ^a
19.1	4	To be able to get adequate health care	4.15	6	4.10 ^b	4.21 ^b	4.10 ^b	4.20 ^b	4.15	4.16
1.1	1	To be free of any pain	4.14	7	4.13	4.15	4.11 ^a	4.17 ^a	4.26 ^b	4.00 ^b
12.1	1	To be able to work	4.14	8	4.20 ^b	4.07 ^b	4.12	4.15	4.20 ^b	4.07 ^b
3.1	1	Restful sleep	4.10	9	4.12 ^a	4.08 ^a	4.05 ^b	4.14 ^b	4.12	4.08
5.3	2	To be able to concentrate	4.09	10	4.12 ^b	4.06 ^b	4.07	4.11	4.05 ^b	4.14 ^b
17.1	4	Home environment	4.09	11	4.06 ^a	4.11 ^a	4.02 ^b	4.15 ^b	4.05 ^b	4.13 ^b
6.1	2	Feeling positive about yourself	4.06	12	4.12 ^b	3.99 ^b	3.98 ^b	4.12 ^b	4.08 ^a	4.03 ^a
16.1	4	Feeling physically safe and secure	4.04	13	4.02 ^a	4.06 ^a	3.96 ^b	4.11 ^b	4.09 ^b	3.98 ^b
18.1	4	Financial resources	4.01	14	4.03	4.00	4.02	4.02	4.07 ^b	3.95 ^b
13.1	3	Relationship with other people	3.99	15	4.03 ^b	3.96 ^b	3.93 ^b	4.05 ^b	3.91 ^b	4.09 ^b
8.1	2	To be free of negative feelings	3.96	16	3.96	3.97	3.88 ^b	4.03 ^b	4.01 ^b	3.91 ^b
23.1	4	Adequate transport in everyday life	3.91	17	3.88 ^a	3.94 ^a	3.89	3.93	3.87 ^b	3.95 ^b
11.1	1	To be free of dependence on medicines and treatment	3.88	18	3.89	3.87	3.84 ^b	3.92 ^b	3.84 ^a	3.92 ^a
21.1	4	Relaxation and leisure	3.86	19	3.92 ^b	3.79 ^b	3.83	3.88	3.75 ^b	3.97 ^b
24.1	2	Personal beliefs	3.85	20	3.87	3.87	3.78 ^b	3.90 ^b	3.86	3.84
20.1	4	Chances of getting new information and knowledge	3.81	21	3.90 ^b	3.71 ^b	3.82	3.80	3.78 ^a	3.84 ^a
22.1	4	Environment	3.79	22	3.75 ^b	3.84 ^b	3.74 ^b	3.84 ^b	3.66 ^b	3.95 ^b
14.1	3	Support from others	3.71	23	3.74 ^a	3.69 ^a	3.61 ^b	3.81 ^b	3.71	3.73
7.1	2	Bodily image and appearance	3.52	24	3.64 ^b	3.39 ^b	3.42 ^b	3.61 ^b	3.58 ^b	3.45 ^b
15.1	3	Sexual life	3.29	25	3.56 ^b	3.00 ^b	3.50 ^b	3.11 ^b	3.40 ^b	3.17 ^b

^aSignificant at $p < 0.05$.^bSignificant at $p < 0.01$.

Table 2 presents all the 25 WHOQOL-Bref importance items arranged by their mean score in the global sample in descending order. It also names the domain to which the item belongs, the mean score, and the overall item rank based on the mean. The range of means falls between 3.29 and 4.29 which suggests that a large number of items

were judged to be at least moderately important. The twofold columns on the right side of Table 2 indicate if the item was rated significantly higher by younger adults (<43 years) compared to older adults (≥ 43 years), women compared to men, and visiting a health care facility in a developing country (Type A) compared to a developed

country (Type B) in the total sample. Statistically significant differences in means are indicated by an ^a if $p < 0.05$, and a ^b if $p < 0.01$.

Women rated 17 items as significantly more important than men while the opposite was true only for one item (sexual life). Younger adults rated 12 items as significantly more important than the older adults, while the opposite was true for five items. The inclusion of a dummy variable indicating centre differences shows an almost equal split between the two types: a total of 10 statistically significantly different items were ranked more important in Type A facilities compared to nine items in Type B centres. Respondents in Type A centres tended to attach generally higher importance ratings to a broader range of ranks compared to respondents in Type B centres. Items grouped into the physical and psychological domain were endorsed more frequently by respondents in Type A centres.

Mean ratings for individual items across the 15 centres were analysed using ANOVA. This analysis showed statistically significant differences for mean item importance ratings across the centres. Tables 3 and 4 contain all item rating means for each of the 15 centres. For comparison, item rating means and respective rank for each of the 15 centres are presented in the order of the overall item rank order. For further illustration of previously discussed centre differences, the ratings and rankings for centres of Type A are presented in Table 3, and the ratings and rankings for centres of Type B are presented in Table 4.

The rating means and rankings in Table 3 show that, with few exceptions, items ranked first through 10th consistently occupy a position in the upper half of the table, and items ranked 20th or lower consistently fall into the bottom third of the overall ranking range. Rating and ranking variation is greatest in the middle range. Noteworthy examples of exceptions to expected ranking patterns are 'to be able to get adequate health care' (overall rank 6) ranks relatively low (rank 11–13) in five of the eight centres, whereas 'dependence on medicines and treatment' (overall rank 19) are ranked highly in Beer Shiva (8) and Zagreb (9). 'Personal beliefs' ranked low in Beer Shiva (23rd) and high in Madras (8th).

The generally low overall rank of 23 for 'environment' in Type A centres is at substantially

higher levels in the majority of Type B centres. 'Relaxation' (overall rank 20) is very important in Tokyo (rank 6), 'personal beliefs' (overall rank 21) is ranked 9th in Seattle, or 'to be free of any pain' (overall rank 7) is ranked 23rd in Tilburg. The information contained in Tables 3 and 4 suggest rating and ranking differences of 'QOL' items. Questions emerge as to whether these differences arise from personal, socio-cultural or other factors specific to each research location. Apparently, gaps in perception about the importance of items for the cross-cultural measurement of 'QOL' exist, and the reasons for their existence need exploration above and beyond this pilot study.

With regard to available data, another way of showing the degree to which individual items rank similarly is to correlate items' rank orderings for the different centres. The results of this analysis are given in Table 5 using Kendall's correlation. The individual correlation coefficients contained in the table identify pairs of centres that have similar rank orderings such as Bath and Melbourne (Kendall's $\tau = 0.75$), and centres that have dissimilar rank orderings such as Tilburg and Harare (Kendall's $\tau = 0.25$). These measures provide an additional indication of rating behaviour similarities and differences between study participants at the various research centres.

To show by simple means which centres form distinct groups based on their respondents' item importance rating behaviour, the mean ratings for individual items were subjected to hierarchical cluster analyses for intercentre proximities. The dendrogram represents rescaled squared Euclidean distances resulting from a cluster analysis of centres using the Kendall's τ_b correlation coefficient matrix. The dendrograms are shown in Figure 1.

To provide an intuitive understanding of the dendrograms the horizontal lines indicate the relative distance between centres in a cluster, measured on a standardised scale ranging from 0 to 25. The shortest distance of one unit between centres, for instance, groups Melbourne, Zagreb, Seattle, and Bath into a cluster in Figure 1. At a distance of two units two more centres, Paris and Beer Shiva join this group. On the other side, Barcelona and Panama City (both Spanish speaking) are also close to each other. Note that these distances are based on mean ratings, i.e. mean ratings closest to

Table 3. Importance of WHOQOL-Bref items ranked by mean ratings, centre type A

WHOQOL reference code	Description	Bangkok		Beer Shiva		Madras		New Delhi		Panama City		Zagreb		St Petersburg		Harare	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
10.1	Daily living activities	4.14	4	4.46	1	4.11	6	4.44	2	4.03	3	4.41	1	4.07	5	4.66	2
2.1	Having energy	4.33	1	4.31	3	4.32	1	4.32	3	4.09	1	4.25	8	4.22	1	4.50	9
G2	Overall health	4.16	3	4.33	2	4.29	2	4.32	4	4.08	2	4.35	3	4.02	8	4.63	6
4.1	Happiness and enjoyment of life	4.06	8	4.24	9	4.04	10	4.31	5	3.99	6	4.28	5	4.07	7	4.29	15
9.1	To move around	4.01	10	4.16	11	4.21	4	4.46	1	3.79	17	4.26	7	4.19	2	4.59	7
19.1	To be able to get adequate health care	4.13	5	4.15	12	4.03	12	4.14	11	4.02	4	4.18	12	3.88	13	4.69	1
1.1	To be free of any pain	4.23	2	4.30	4	4.27	3	4.28	6	3.98	7	4.28	6	4.10	4	4.64	5
12.1	To be able to work	4.10	7	4.23	10	4.04	11	4.27	8	3.96	9	4.30	4	4.07	6	4.66	3
3.1	Restful sleep	4.05	9	4.06	16	4.00	15	4.28	7	3.92	12	4.19	11	4.00	9	4.49	11
5.3	To be able to concentrate	3.89	13	4.28	5	3.99	16	3.98	16	3.89	14	4.21	10	3.91	12	4.25	16
17.1	Home environment	3.88	14	4.26	7	4.10	7	4.26	9	3.93	11	4.41	2	3.97	10	3.48	22
6.1	Feeling positive about yourself	3.96	11	4.28	6	4.05	9	4.22	10	4.01	5	4.00	19	3.60	22	4.50	10
16.1	Feeling physically safe and secure	4.11	6	4.10	14	3.97	17	4.08	12	3.96	10	4.06	15	3.84	14	4.65	4
18.1	Financial resources	3.91	12	4.06	17	4.13	5	4.00	15	3.97	8	3.97	20	4.17	3	4.34	13
13.1	Relationship with other people	3.70	18	4.09	15	3.70	23	3.88	18	3.73	22	4.12	14	3.93	11	4.20	17
8.1	To be free of negative feelings	3.82	15	4.14	13	4.00	14	4.02	14	3.77	19	4.01	18	3.70	20	4.59	8
23.1	Adequate transport in everyday life	3.54	21	3.90	19	3.88	18	3.78	20	3.81	15	3.92	21	3.63	21	4.48	12
11.1	Dependence on medicines and treatment	3.77	16	4.25	8	3.78	22	3.97	17	3.77	20	4.22	9	3.80	15	3.15	24
21.1	Relaxation and leisure	3.75	17	3.80	22	3.82	20	3.40	22	3.78	18	4.04	16	3.79	17	3.63	21
24.1	Personal beliefs	3.65	19	3.75	23	4.06	8	4.05	13	3.92	13	4.16	13	3.79	16	3.46	23
20.1	Getting new information and knowledge	3.51	22	3.92	18	3.85	19	3.79	19	3.80	16	3.79	23	3.55	23	4.00	19
22.1	Environment	3.43	23	3.85	21	4.01	13	3.30	24	3.75	21	4.04	17	3.75	18	3.00	25
14.1	Support from others	3.54	20	3.70	25	3.68	24	3.27	25	3.55	24	3.87	22	3.71	19	4.33	14
7.1	Bodily image and appearance	3.24	24	3.87	20	3.79	21	3.70	21	3.56	23	3.56	24	3.11	25	3.75	20
15.1	Sexual life	2.64	25	3.73	24	3.44	25	3.37	23	3.35	25	3.42	25	3.22	24	4.16	18
	Number of cases	300		339		412		304		298		300		300		300	
	Mean age	37.7		47.3		38.0		40.7		39.7		44.6		45.2		42.9	
	Percentage of female participants	61.0		43.7		49.3		49.3		58.0		50.0		49.3		53.8	

Table 4. Importance of WHO QOL-Bref items ranked by mean ratings, centre type B

WHOQOL reference code	Description	Melbourne		Seattle		Tilburg		Tokyo		Barcelona		Paris		Bath	
		Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
10.1	Daily living activities	4.45	1	4.48	1	4.22	1	4.04	17	3.95	7	4.45	1	4.51	1
2.1	Having energy	4.35	5	4.31	5	4.18	3	4.44	3	4.08	3	4.35	3	4.30	4
G2	Overall health	4.38	3	4.35	2	4.15	4	4.50	1	4.21	1	4.18	8	4.30	5
4.1	Happiness and enjoyment of life	4.43	2	4.26	7	4.21	2	4.36	4	4.21	2	4.42	2	4.30	3
9.1	To move around	4.38	4	4.35	3	3.80	13	4.28	7	3.71	19	4.31	4	4.43	2
19.1	To be able to get adequate health care	4.22	11	4.33	4	4.09	5	4.05	16	3.94	10	4.28	6	4.23	7
1.1	To be free of any pain	4.19	12	4.00	18	3.63	22	4.19	11	4.01	6	4.03	15	4.11	10
12.1	To be able to work	4.22	10	4.12	12	3.84	11	4.21	9	3.94	9	4.29	5	3.98	17
3.1	Restful sleep	4.14	13	4.04	17	3.98	7	4.49	2	3.74	17	4.20	7	4.03	14
5.3	To be able to concentrate	4.35	6	4.28	6	4.00	6	4.25	8	3.76	15	4.17	9	4.21	8
17.1	Home environment	4.27	8	4.26	8	3.85	10	4.14	12	4.06	4	4.11	11	4.30	6
6.1	Feeling positive about yourself	4.26	9	4.18	10	3.75	17	4.00	18	4.05	5	4.00	19	4.08	12
16.1	Feeling physically safe and secure	4.10	18	4.06	15	3.82	12	3.86	22	3.95	8	4.01	18	4.10	11
18.1	Financial resources	4.11	17	4.11	13	3.64	21	4.34	5	3.73	18	3.81	22	4.07	13
13.1	Relationship with other people	4.28	7	4.16	11	3.92	8	4.20	10	3.80	12	4.09	12	4.21	9
8.1	To be free of negative feelings	4.11	16	3.91	21	3.66	19	4.07	14	3.76	16	4.00	20	3.95	20
23.1	Adequate transport in everyday life	4.07	19	4.05	16	3.88	9	4.07	15	3.54	23	4.06	13	4.03	15
11.1	Dependence on medicines and treatment	4.05	20	3.76	23	3.79	14	3.88	20	3.92	11	4.13	10	3.97	18
21.1	Relaxation and leisure	4.13	15	3.94	20	3.77	15	4.33	6	3.70	20	4.02	16	4.02	16
24.1	Personal beliefs	4.14	14	4.22	9	3.75	18	3.91	19	3.69	21	3.41	25	3.78	23
20.1	Getting new information and knowledge	4.00	22	4.07	14	3.63	23	3.88	21	3.57	22	4.02	17	3.78	22
22.1	Environment	4.02	21	3.98	19	3.77	16	4.14	13	3.78	13	4.05	14	3.97	19
14.1	Support from others	3.98	23	3.77	22	3.64	20	3.11	23	3.77	14	3.85	21	3.94	21
7.1	Bodily image and appearance	3.68	24	3.60	24	3.30	24	2.87	24	3.46	24	3.63	23	3.61	24
15.1	Sexual life	3.49	25	3.08	25	3.09	25	2.62	25	3.32	25	3.48	24	3.07	25
	Number of cases	290		300		409		281		301		308		319	
	Mean age	41.3		47.3		48.1		46.1		44.6		42.3		45.0	
	Percentage of female participants	61.4		55.3		62.8		53.8		49.2		52.4		50.9	

pearance were at the bottom. The items belonging to different domains are mixed in their ranks, rather than segregated into the top or bottom ranks, indicating that no domain is clearly perceived as more important than another. These ratings have relevance for the possible weighting of the individual items, facets and domains in a 'QOL' instrument, based on the assumption that more important aspects should be given more weight. However, given the narrow range of importance ratings observed in this study it is debatable as to how much any weighting would add to the validity of an overall 'QOL' measure.

Although the 15 centres differed from each other significantly for mean ratings of individual items, this seems to be at least partially due to the large number of centres being examined together. Correlations between the rank orders of the items for individual centres and the global pool are high. Together these results indicate that although the absolute values of ratings for items differ significantly between the centres, they view the relative importance of the items similarly. This is relevant to the issue of whether specific weightings should be given to items when used in a particular cultural group. If however, as seems the case, the relative importance of different aspects of life in different countries are similar, national weightings may not be needed.

The identification of centre-specific rating and ranking patterns by means of cluster analysis is a way of exploring possible similarities (or differences) to be explored in further analyses; by itself this method does not allow specific conclusions about why centres cluster. For that, hypotheses need to be formulated and tested for their merit. In absence of well defined socio-economic and cultural measures the explanations given here must remain in the realm of plausibility. In terms of their usefulness for further research, however, they are of great value as they raise important questions about the cross-cultural validity and applicability of the core items of one of the most international 'QOL' assessment instruments. In this regard, the findings presented in this paper support the concept validity of the WHOQOL in cross-cultural research. A final look at Figure 1 confirms that, with the exception of Tokyo and Harare, the item importance rating patterns are remarkably similar. In cultural terms Tokyo and Harare are not only

different from all other centres, but they are also very different from each other.

Because of the exploratory nature of this study, explanations for these and other possible rating and ranking similarities and differences of WHOQOL items are yet to mature. Each one of the items can be selected and analysed depending on specific research interest or level of detail; to do so now, however, would go beyond the scope of this paper. Nevertheless, rating and ranking differences or similarities observed across centres remains an intriguing research topic.

Comparisons of mean ratings across genders showed that majority of items are rated as more important by women. We do not know whether this indicates a gender-specific response pattern or an actual difference in the importance of items perceived by women. It is interesting that the only item rated as significantly more important by men is 'sexual life', although this may result from women being more inhibited about reporting the importance of sex for their 'QOL'.

Younger adults rated more items as significantly more important to them than the older adults. These items included psychological aspects (e.g. to think clearly, to feel hopeful) and social/work aspects (e.g. relationship with other people, to be able to work). However, older adults rated some items as more important, including environment, adequate social help, transport, feeling physically safe and secure, adequate health care and daily living activities. On the face of it, these items seem to match the concerns of older individuals, but more systematic research is needed to clearly demonstrate the effect of age on importance of these aspects of life for its quality. The information on the gender- and age-specific items for 'QOL' is likely to be useful not only in clarifying the concept of 'QOL' but also in paying attention to these aspects in interpreting the results obtained using generic 'QOL' measures.

The subject of culture discussed at the end of the findings section pointed at the still preliminary state of knowledge about social, economic, geographic and cultural similarities and differences in importance rating behaviour. As this part of the research came closest to the study of social preferences, or preference orders among respondents in cultures represented by the various research centres, some conclusions could be drawn

about the significance of items for specific groups of respondents. Preferences clearly varied with sex and age, and had income or education variables been included, their impact and significance on item importance rating behaviour would have revealed further important clues for 'QOL' research. However, for present purposes this analysis of WHOQOL pilot data was meant to confirm the work of the focus groups. It was to show that the best possible and cross-culturally valid and applicable items were selected for a diversity of populations. 'QOL' is experienced individually and with others, and it binds together people with a purpose, be it if not to make life better, to improve at least parts of it. These parts become more transparent if looked at as aspects, items or facets, and the insights gained from the study of their importance for people will help policy makers decide what possible interventions will enhance the 'QOL' where it is needed most.

Appendix

The WHOQOL Group comprises of a co-ordinating group, collaborating investigators in each of the field trial centres and a panel of consultants. At WHO, John Orley, Rex Billington, Shekhar Saxena and Dawn Carlson were involved with the project during the time this work was done. The work reported here was carried out at 15 original field centres, in which the collaborating investigators were: Prof H. Herrman, Dr H. Schofield and Ms B. Murphy, University of Melbourne, Australia; Prof Z. Metelko, Prof S. Szabo and Mrs M. Pibernik-Okanovic, Institute of Diabetes, Endocrinology and Metabolic Diseases and Department of Psychology, University of Zagreb, Croatia; Dr N. Quemada and Dr A. Caria, INSERM, Paris, France; Dr S. Rajkumar and Ms S. Kumar, Madras Medical College, Chennai, India; Dr S. Saxena, Dr K. Chandiramani and Dr R. Bhargava, AIIMS, New Delhi, India; Dr M. Amir and Dr D. Bar-On, Ben-Gurion University fo Negev, Beer-Shiva, Israel; Dr M. Tazaki, Science University, Tokyo and Dr A. Noji St Luke's College of Nursing, Japan; Dr G. van Heck and Dr J. De Vries, Tilburg University, The Netherlands; Prof J. Arroyo Sucre and Prof L. Picard-Ami, University of Panama, Panama; Prof M. Kabanov, Dr A. Lomachenkov and Dr G. Burkovsky, Bekhterev Psychoneurological Research Institute, St Petersburg, Russia; Dr R. Lucas Carrasco, Barcelona, Spain; Dr Y. Bodharamik and Mr K. Meesapya, Institute of Mental Health, Bangkok, Thailand; Dr S. Skevington, University of Bath, United Kingdom; Dr D. Patrick, Ms M. Martin and Ms D. Wild, University of Seattle, USA; and Prof W. Acuda and Dr J. Mutambirwa, University of Zimbabwe, Harare, Zimbabwe. The project has benefited from expertise and assistance from Dr M. Bullinger, Dr A. Harper, Dr W. Kuyken, Ms M. Lotfy, Dr M. Power and Dr N. Sartorius.

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Address for correspondence: Shekhar Saxena, Department of Mental Health and Substance Dependence, World Health Organisation, CH-1211, Geneva, Switzerland
Phone: +41-22-7913625; Fax: +41-22-7910746
E-mail: saxenas@who.ch