Agreement Between the WHOQOL-BREF Chinese and Taiwanese Versions in the Elderly

*Chi-Wen Chien,[1] Jung-Der Wang,[2,3] Grace Yao,[4] I-Ping Hsueh,[5,6] Ching-Lin Hsieh[5,6]**

The brief version of the World Health Organization Quality of Life instrument (WHOQOL-BREF), including four domains, has been culturally adapted into Taiwan Chinese and Taiwanese versions for different targeted populations of elderly people. However, there is no evidence to suggest whether the results obtained from these two language versions can be directly compared or combined. This prevents the use of both versions together, which leads to missing data and a gap in the interpretation of results. The present study therefore examined agreement between the Taiwan Chinese and Taiwanese version of the WHOQOL-BREF in a group of 53 Taiwanese-speaking elderly people who can read Chinese. Each participant was evaluated using both versions in a random order within a 2-week period. There was acceptable agreement in 17 of the 28 items between both versions. Three of the four domain scores demonstrated moderate to high levels of agreement ($0.65 \leq$ intraclass correlation coefficient ≤ 0.81), with the exception being the social relationships domain. The results indicate that these three domain scores in the Taiwan Chinese and Taiwanese versions of the WHOQOL-BREF appear to be substantially equivalent, which allows direct comparison/combination of the results. [*J Formos Med Assoc* 2009;108(2):164–169]

Key Words: interviews, quality of life, reproducibility of results, Taiwan

The brief version of the World Health Organization Quality of Life instrument (WHOQOL-BREF) is a self-administered questionnaire that assesses quality of life (QOL).[1] It has been culturally adapted into the Taiwan Chinese version,[2–4] which is used extensively in Taiwan.[5–9] However, the Taiwan Chinese version cannot be applied to more than half of the elderly Taiwanese aged > 65 years, who use only a spoken language, Taiwanese,[10] because of significant differences between Taiwan Chinese and Taiwanese, mainly the pronunciation and characters used. Moreover, because these elderly Taiwanese have received only a rudimentary education in the early part of the last century, they do not understand written/spoken Taiwan Chinese. To meet the needs of these elderly individuals, an alternative Taiwanese version of the WHOQOL-BREF has been developed to assess the QOL of Taiwanese-speaking elderly people by using an interview technique,[11] and its validity and reliability have been reported.[12]

The WHOQOL-BREF Taiwanese and Taiwan Chinese versions have been developed in compliance with the WHOQOL guidelines,[13] including

[1]Department of Occupational Therapy, School of Primary Health Care, Faculty of Medicine, Nursing and Health Sciences, Monash University-Peninsula Campus, Frankston, Victoria, Australia; [2]Institute of Occupational Medicine and Industrial Hygiene, College of Public Health, [4]Department of Psychology, and [5]School of Occupational Therapy, College of Medicine, National Taiwan University; Departments of [3]Internal Medicine, and [6]Physical Medicine and Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan.

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***Correspondence to:** Dr Ching-Lin Hsieh, School of Occupational Therapy, College of Medicine, National Taiwan University, 4F, 17 Xu Zhou Road, Taipei 100, Taiwan.
E-mail: clhsieh@ntu.edu.tw

forward and backward translation, as well as expert review, to minimize translation discrepancies and ensure the quality of mutual data comparison.[2,11] However, no empirical evidence has been presented to establish that the QOL results obtained from the Taiwanese version can be directly compared or combined with those obtained from the Taiwan Chinese version. It is thus unlikely that researchers, clinicians or health policy makers will be able to make informative interpretations and decisions across Taiwanese- and Taiwan-Chinese-speaking elderly people. The present study aimed to examine the level of agreement between the Taiwanese and Taiwan Chinese versions of WHOQOL-BREF in a group of Taiwanese-speaking elderly people who can read written Chinese, to provide evidence to support comparison/combination between the QOL results obtained from each version.

Methods

Participants

Participants were recruited from 15 long-term care institutions throughout eastern, southern, central and northern Taiwan by convenience sampling. Participants who met the following criteria were included: (1) spoke Taiwanese as their everyday language; (2) could read written Chinese independently, i.e. those with an educational level of junior high school or higher; (3) scored > 20 on the Mini-Mental State Examination,[14] which was administered using colloquial Taiwanese, to indicate no cognitive impairment; and (4) gave oral consent to participation.

Procedures

The Taiwan Chinese or Taiwanese version of the WHOQOL-BREF was randomly chosen to be administered to each participant at the first evaluation. After 2 weeks, the participants, whose QOL was determined to have remained stable, based on two additional questions about their self-reported QOL/health status, were assessed again with the other version. On each evaluation, the participants completed the Taiwan Chinese version independently or received face-to-face interviews using the Taiwanese version administered by three trained interviewers. To ensure the quality of the interviewers, each interviewer received 2 hours of training from the first author, as well as a minimum of three interview practice sessions under supervision.

Instruments

The Taiwan Chinese and Taiwanese versions of the WHOQOL-BREF included 28 items, consisting of 26 standard items from the original WHOQOL-BREF and two Taiwanese national items.[2,3] The 26-item standard WHOQOL-BREF contained two generic items (overall QOL and general health), and the remaining 24 items were further classified into four domains: physical (7 items), psychological (6 items), social relationships (3 items), and environment (8 items). The two Taiwanese national items were "Do you feel respected by others?", which was included in the social relationships domain, and "Are you usually able to get the things you like to eat?" in the environment domain.[2,3] Responses from the two generic items (overall QOL and general health) were calculated as a single score with a range of 1–5. Domain scores were calculated by multiplying the mean of all item scores included in each domain by a factor of 4, and accordingly, potential scores for each domain ranged from 4 to 20. Higher scores indicate better QOL as reflected by the items/domains.

In terms of administration, the Taiwan Chinese version was a self-administered questionnaire. However, the Taiwanese version was administered face-to-face to each participant by interviewers with the assistance of an audio player. The contents of the Taiwanese version were prerecorded with a female voice to reduce variability in interviewers' administration of the questionnaire. During the interview with the Taiwanese version, interviewers played/stopped the audio player as appropriate and recorded participants' responses to each item. Replaying of the questions and their scale descriptors was allowed to ensure that participants understood the questions and descriptors. Standardized administration procedures of the

Taiwanese and Taiwan Chinese versions can be found in their respective manuals.[2,11]

Data analysis

Agreement between each individual item of the Taiwan Chinese and Taiwanese versions was examined using weighted κ values. A weighted κ value > 0.4 indicated acceptable agreement.[15] At the domain level, the agreement between the two versions was conducted using a random effects model intraclass correlation coefficient (ICC). ICC values ≥ 0.8 indicated strong agreement, values of 0.6–0.8 represented moderate agreement, and values ≤ 0.6 indicated weak agreement.[16] In addition, the Bland and Altman method,[17] which involved plotting the scores of the difference between the two versions against those of the average between the two versions, was used to examine the limits of agreement between the domain scores of the two versions.

Results

At the first evaluation, 61 participants completed either the Taiwan Chinese or Taiwanese version of the WHOQOL-BREF. Eight participants were not eligible for the second evaluation, as their self-reported QOL/health status had been altered by physical or emotional disorders. For the remaining 53 participants, mean age was 76.9 ± 6.2 years. Thirty-four participants (64%) were male. Seven (13%) lived together with their spouses, while the remainder were single (25%), divorced (13%) or widowed (45%). More than half of the participants (55%) lived in northern Taiwan.

The Table shows the agreement of each individual item between the two versions of the WHOQOL-BREF. Seventeen of 28 (61%) items were acceptable (weighted κ values > 0.4). The remaining 11 items exhibited poor agreement, and in particular, all four items in the social relationships domain fell in this set of 11 items.

Three of the four domains exhibited moderate to high levels of agreement (0.65 ≤ ICC ≤ 0.81) between the two versions (Table), with the exception of the social relationships domain. Agreement of the social relationships domain was poor (ICC = 0.48). The poor agreement of the social relationships domain was further confirmed by the Bland–Altman plot, for which the limit of agreement was relatively larger than those of the other domains (Figure).

Discussion

To the best of our knowledge, the Taiwanese version of WHOQOL-BREF is the first QOL instrument specifically designed for elderly people who speak only Taiwanese. Taiwanese-speaking elderly people can benefit from this version, which assesses their QOL as well as addresses the limitations of the Taiwan Chinese version of WHOQOL-BREF. To facilitate direct comparison/combination between the two versions, it is essential to examine the data equivalence between the Taiwanese and Taiwan Chinese versions for a group of participants. The present study found that more than half of the individual item scores obtained from the Taiwanese and Taiwan Chinese versions could be compared. Moreover, only the social relationships domain was found to have unacceptable agreement between the two versions. It is thus indicated that, except for the social relationships domain, the QOL of Taiwanese-speaking elderly can be compared or combined directly with that of Taiwan-Chinese-speaking elderly people, through use of the Taiwanese and Taiwan Chinese versions of the WHOQOL-BREF. Direct comparison/combination between the results obtained from both language versions can further enable researchers, clinicians or health policy makers to investigate QOL in elderly people speaking either Taiwanese or Taiwan Chinese.

There are two possible reasons why a few items and, in particular, the social relationships domain did not exhibit acceptable levels of agreement between the Taiwanese and Taiwan Chinese versions of the WHOQOL-BREF. First, the translations of both versions from the original were undertaken carefully.[2,3,11,12] Additional cognitive debriefing

Table. Agreement between the Taiwanese and Taiwan Chinese versions of the WHOQOL-BREF ($n = 53$)

Domain	Item		Statistics*
Generic	1	Overall QOL	0.48
	2	General health	0.61
Physical	3	Pain and discomfort	0.12†
	4	Dependence on medical substances and medical aids	0.28†
	10	Energy and fatigue	0.45
	15	Mobility	0.73
	16	Sleep and rest	0.53
	17	Activities of daily living	0.51
	18	Work capacity	0.58
Psychological	5	Positive feelings	0.45
	6	Spirituality/religion/personal beliefs	0.35†
	7	Thinking, learning, memory and concentration	0.26†
	11	Body image and appearance	0.54
	19	Self-esteem	0.72
	26	Negative feelings	0.49
Social relationships	20	Personal relationships	0.37†
	21	Sexual activity	0.12†
	22	Practical social support	0.35†
	27‡	Being respected/accepted	0.18†
Environment	8	Freedom, physical safety and security	0.36†
	9	Physical environment (pollution/noise/traffic/climate)	0.40
	12	Financial resources	0.34†
	13	Opportunities for acquiring new information and skills	0.09†
	14	Participation in and opportunities for recreation/leisure activities	0.40
	23	Home environment	0.68
	24	Health and social care: accessibility and quality	0.49
	25	Transport	0.50
	28‡	Eating/food	0.49
Physical domain			0.81 (0.69 to 0.89)
Psychological domain			0.65 (0.47 to 0.79)
Social relationships domain			0.48 (0.24 to 0.66)
Environment domain			0.71 (0.54 to 0.82)

**Weighted κ for the item level and intraclass correlation coefficient with 95% confidence interval for the domain level; †items demonstrating poor agreement; ‡Taiwanese national items.*

for the Taiwanese version was implemented for a group of elderly Taiwanese, to reduce the conceptual inequivalence and misleading wording.[11,12] However, there are some inevitable discrepancies between spoken Taiwanese and written Chinese, such as idioms, thus leading to the possibility of the items showing poor agreement between versions. Second, the effect of different administration modes between the two versions might have resulted in a bias in the participants' responses. Previous studies have found that patients in an interviewer-administrated group report higher QOL scores than do those in a self-administered group.[18–20] The results of our study (not reported) were similar to these reports. The most likely cause is the interviewer effect, which may lead to positive answers to potentially embarrassing questions, as a result of participants' desires to present themselves in a positive manner.[18] In particular, the social relationships domain, which is related to

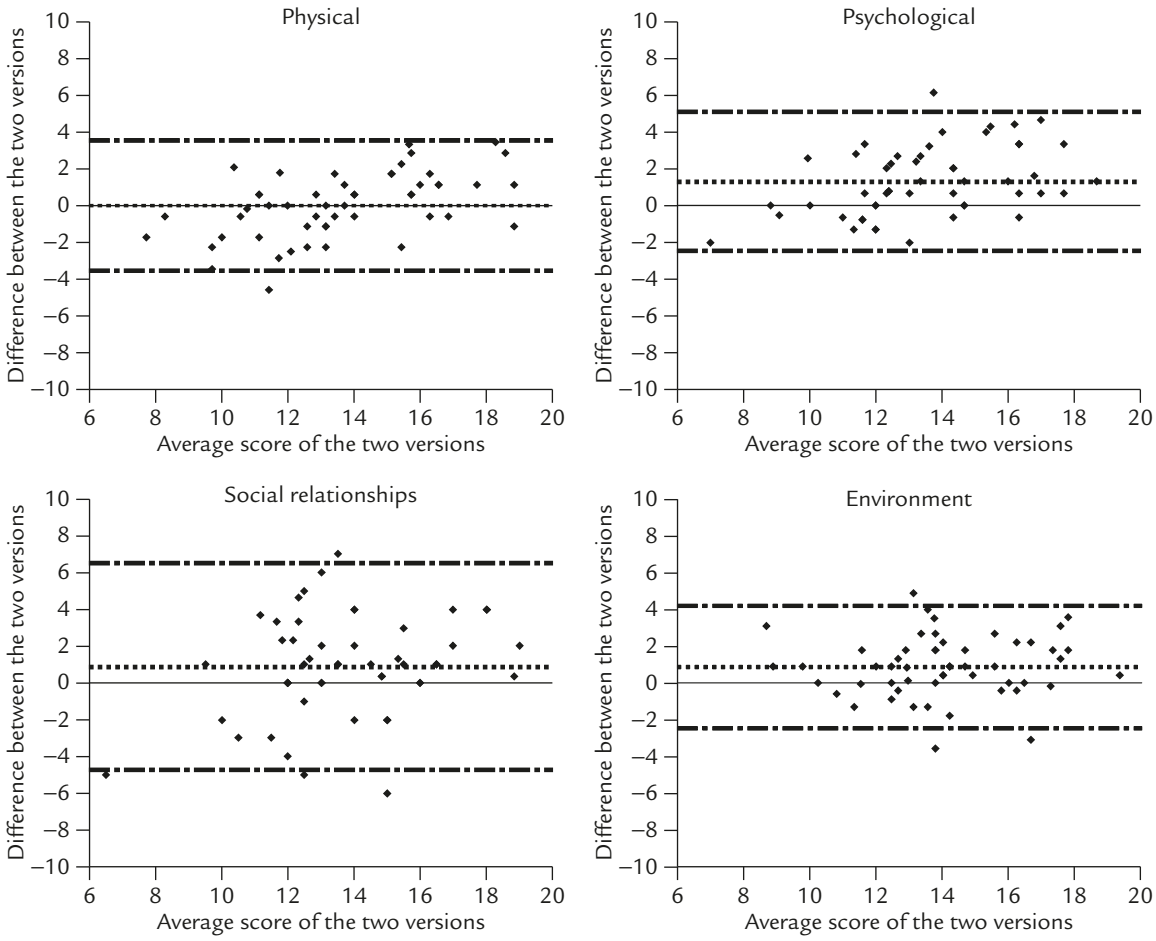

Figure. Bland-Altman method for plotting difference of scores against mean scores of the Taiwanese and Taiwan Chinese versions in four domains. The two bold dashed lines define the limits of agreement (mean difference ± 2 standard deviations).

participants' perceived social support or sexual activity, might be more vulnerable to the interviewer effect. We thus speculate that the social relationships domain scores exhibited poor agreement between the two versions of the WHOQOL-BREF because of the different administration modes. However, future studies are needed to determine the interviewer effects on reporting QOL, especially on the social relationships domain items.

The limitation of this study is that only institutional elderly were recruited, which may limit the generalizability of the results. Furthermore, the sample size of this study was somewhat limited, and the participants were distributed mainly in 15 long-term care institutions. The reason for this was that few of the elderly people who use Taiwanese as their everyday language and can also read Chinese live in long-term care institutions. Future studies that recruit more participants from the community or elsewhere are warranted to confirm our findings. In addition, elderly people who spoke exclusively Taiwanese or Chinese were excluded from this study. The reason for this exclusion was that recruiting elderly people who spoke both Taiwanese and Chinese appeared to be the only way to examine agreement between the two versions of the WHOQOL-BREF. However, because elderly people who speak both Taiwanese and Chinese may not represent the elderly who speak only Taiwanese, the results of this study need to be interpreted with caution.

In conclusion, our findings suggested that elderly people who could speak Taiwanese and Taiwan Chinese reported similarly on all but the

social relationships domains of the WHOQOL-BREF Taiwanese and Taiwan Chinese versions. The social relationships domain of both WHOQOL-BREF versions may be individually used and analyzed for the targeted population only.

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