Assessing quality of life among older persons using WHOQOL-BREF tool – a pilot study in Chandragiri, Municipality

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ABSTRACT

Introduction: The population of older persons is increasing globally, and Nepal is also showing a similar trend. WHOQOL-BREF is a widely used tool for assessing the Quality of Life (QoL), whose Nepali version is also available but is not validated in the local context. Thus, a pilot study was conducted among older people using WHOQOL-BREF to assess its internal consistency and establish its reliability and validity in the local context.

Method: It was a cross-sectional quantitative study done among 30 older persons of Chandragiri Municipality-04, Kathmandu. The interviews were done in the Nepali language using a semi-structured questionnaire with a WHOQOL-BREF Nepali version after finalizing it through pretesting done among 7 older persons in Patan Hospital, Lalitpur.

Result: Pre-testing revealed comprehension issues with WHO-BREF questionnaire items (1, 4, 11, 21). Modifications were made based on participant feedback. The overall alpha reliability in this pilot study was 0.75, compared to 0.84 in the field study by WHO. The alpha reliability for the domains was also comparable and slightly lower than the WHO field study. The cut-off scores based on Q1 and Q2 were determined as 80 and 66 respectively.

Conclusion: The Nepali version of WHOQOL–BREF displayed sufficient alpha reliability, signaling it as a dependable instrument to use in the local context. Thus, the main study planned among older persons in Bheemdatta municipality seems to be feasible using the WHOQOL-BREF Nepali version.

Keywords: Nepal, older people, quality of life, validation study, WHOQOL – BREF

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INTRODUCTION

Globally, the older population is projected to increase by 21 to 28 % by the year 2050 AD[1] with the most significant growth expected in the South Eastern Asian Regions.[2] In Nepal, their proportion was 8.13% in 2068 BS[3] and has increased to 10.21% in 2078 BS,[4] and consequently, the aged society is predicted to occur by 2054 AD.[5] Aging increases the risk of chronic diseases[6] leading to an impact on Quality of Life (QoL) among older persons.[7] QoL is measured to distribute health care resources and aid in the decision-making of sick people.[8]

Measuring the QoL of older persons and identifying factors associated with it will help stakeholders form the appropriate policy.[9] Most of the studies on QoL among older persons in Nepal are in institutional settings, with very few in community-based settings,[9-11] and very scanty in the western part of Nepal. So, a study was designed to assess QoL among older persons in the Bheemdatta municipality of the Kanchanpur district. WHOQOL-BREF is one of the widely used tools, whose Nepali translation version is also available,[12] however, it has not been validated in the local context.

Thus, a pilot study was planned and conducted among older persons of Chandragiri-4 municipality using WHOQOL-BREF to assess its internal consistency and establish its reliability and validity in the local context. It was also used to obtain the cut-off value of the WHOQOL-BREF tool based on 24 QoL items using subjective overall quality of life and overall health quality of life items.

METHOD

This pilot study was a cross-sectional quantitative study done among 30 older persons[13] of Chandragiri Municipality ward 4 of Kathmandu district. The sampling frame was obtained from the ward office and from among the list, the required number of older persons was selected randomly using computer-generated random numbers. Older persons with co-morbidities limiting the study participation (requiring bed care), and those not consenting were excluded.

The data collection tool was developed by the researchers and pre-testing of the tool was done among seven older people in the geriatric ward of Patan Hospital. These interviews were done in Nepali language using a semi-structured questionnaire consisting of the WHOQOL-BREF Nepali version tool.[12] The participants of the pre-testing were asked to narrate their thoughts/understanding of the items as the researcher asked them, and were compared to the intent of the question and noted. The researcher also noted if there were any confusions, or difficulties in answering certain questions. The total time to complete the interview was also noted, and the feedback regarding the questionnaire was collected from the participants at the end. All these findings and feedback noted were discussed with the supervisors, and tools were modified accordingly to finalize it. The data were collected via Google Forms, cleaned and coded in Microsoft Excel, and analyzed using EZR 1.54.

RESULT

This pilot study was done among 30 older people of Chandragiri-4 Municipality, Kathmandu, Nepal, and all of them consented to the study.

In table 1b, the majority of the participants were aged between 60- 69 years (60%), males (76.67%), married (73.33%), belonging to a joint family (66.67%), and having completed a lower secondary education (43.33%). The major religion and ethnic categories were Hindu and Janajatis comprising 86.67% and 76.7% respectively. Most of the participants (60%) were unskilled workers and the maximum of participants (40%) possessed income within the category NRs 4851 - 14550.

Process documentation of Pre-test

Pre-testing was done among 7 older persons attending the Geriatric ward of Patan Hospital through face-to-face interviews for face validity of the tool. It revealed the issues in comprehension of the items in the Nepali version. There was a need to modify 4 items (1, 4,11, 21) of the questionnaire in the Nepali version, which else provided a different meaning. The changes in the questionnaire were made after feedback from the participants and a discussion with the supervisors.

Correlation analysis

Non-significant positive correlations were found between how the participants rated their overall QOL (Q1) and the three domains in the WHOQOL-BREF instrument physical health: $r_s = 0.172$, p-value 0.373; psychological health: $r_s = 0.0362$, p-value 0.849; social relations: $r_s = 0.125$, p-value 0.511. However, there was a statistically non-significant negative correlation between Q1 and the environment domain: $r_s = -0.106$ p-value 0.578.

Similarly, non-statistically significant positive correlations were also found between how the

participants rated their overall satisfaction with their health (Q2) and the three WHOQOL-BREF domains: psychological health: rs = 0.356, p-value 0.0537; social relations: rs = 0.353, p-value 0.0555; environment: rs = 0.3, p-value 0.107). And, Q2 and physical health (rs = -0.135, p-value 0.484) showed a non-significant negative correlation.

In table 3, the physical domain had a mean score of 46.05 with a standard deviation of 11.70, and the alpha reliability being 0.691, and when compared with the field study,[14] it was found that the physical domain had a mean of 62.6 with a standard deviation of 18.2 and, bearing alpha reliability 0.76. Similarly, this pilot study displayed a psychological domain with a mean, standard deviation, and alpha reliability being 50.83, 8.84, and 0.604 respectively. At the same time, field study[14] showed the mean, standard deviation along with alpha reliability for the psychological domain as 62.5, 14.8, and, 0.81 respectively.

Similarly, this pilot study depicted a social domain with a mean, standard deviation, and alpha reliability being 40.55, 16.33, and 0.473 respectively. While the WHO's field study[14] showed the mean, standard deviation along with alpha reliability for the social domain as 63.6, 15.8, and, 0.71 respectively.

Again, for the environmental domain, this pilot study showed mean, standard deviation, and alpha reliability as 41.35, 8.71, and 0.419 respectively. Along with this, the WHO's field study[14] showed the mean, standard deviation, and alpha reliability for the environmental domain as 60.4, 14.6, and 0.86 respectively. The total alpha reliability for WHOQOL BREF during the pilot study was calculated as 0.75, whereas, the field study[14] showed the value of alpha reliability as 0.84.

QOL Cut-off score based on the current study

The cut-off score for the current study was based on Q1 (perceived quality of life) and Q2 (perceived healthy life). The Q1 and Q2 scores with 4 (good) and 5 (very good) ratings were treated as good quality of life and good healthy life respectively and they were used to find the cut-off score. This process is identical to the one used by Silva et. al. in Brazil.[15]

The cut-off score determined using perceived quality of life (Q1; good vs poor) is 80 as per the receiver operating characteristics (ROC) analysis. It had 33.3% sensitivity and 96.3% specificity.

Table 1a. Sociodemographic characteristics of the participants (N=30)

Characteristics	*f* (%)	Characteristics	*f* (%)
Age groups		**Caste**	
60 to 69 years	18(60)	Brahman / Chhetri	2(6.67)
70 years and above	12(40)	Madhesi	1(3.33)
The median age in years (Median ± IQR) = 66 ± 17		Janajati	23(76.67)
Sex of the participants		Dalit	4(13.33)
Male	23(76.67)	**Marital status**	
Female	7(23.33)	Married	22(73.33)
Type of family		Unmarried	4(13.33)
Single	10(33.33)	Widower / widowed/ Divorced	4(13.33)
Joint	20(66.67)	**Religion**	
		Hindu	26(86.67)
		Buddhist	3(10)
		Christian	1(3.33)

Table 1b. Socioeconomic characteristics of the participants (N=30)

Characteristics	*f* (%)	Characteristics	*f* (%)
Education		**Monthly Family Income (in NRs)**	
Bachelor's Degree	3(10)	Less than or equal to 4850	0(0)
10+2 or equivalent	2(6.67)	4851 - 14550	12(40)
Lower secondary level (8 and 9 complete)	13(43.33)	14551-24350	6(20)
Literate, less than lower secondary level	3(10)	24351 -36550	5(16.7)
Illiterate	9(30)	36551-48750	3(10)
Occupation		48751 - 97450	1(3.3)
Semi-professional	2(6.67)	Greater than or equal to 97451	3(10)
Authentic skill jobs	2(6.67)		
Skilled worker	1(3.33)		
Semi-Skilled worker	2(6.67)		
Unskilled worker	18(60)		
Unemployed	5(16.67)		

Table 2a. Change in the WHOQOL-BREF questionnaire

Items	Item versions:[12] Nepali and English	Change	Remarks (why)
1.	Nepali version: तपाई आफ्नो जीवन स्तरलाई कसरी मूल्यांकन गर्नु हुन्छ? १.साहै गरिब २.गरिब ३.ठीक छ ४.राम्रो ५.साहै राम्रो English Version: How do you rate your quality of life? 1. Very poor 2. Poor 3. Neither poor nor good 4. Good 5. Very good	तपाई आफ्नो जीवन स्तरलाई कसरी मूल्यांकन गर्नु हुन्छ? १. साह्रै नराम्रो २. नराम्रो छ ३. ठीक छ ४. राम्रो छ ५. साह्रै राम्रो छ	The word "गरिब" "garib" was understood in an economic sense as poor by the participant, which is not the intent of the question. So, it was replaced by "नराम्रो"/ "naramro" which means something not of good quality.
4.	Nepali version: तपाईलाई आफ्नो दैनिक जीवन संचालन गर्न कत्तिको स्वास्थ्य उपचार चाहिन्छ ? १. पटक्कै छैन २. अलिकति छ ३. ठिक्कै छ ४. धेरै छ ५. हदै छ Englih version: How much do you need any medical treatment to function in your daily life? 1. Not at all 2. A little 3. A moderate amount 4. Very much 5. An extreme amount	तपाईलाई आफ्नो दैनिक जीवन संचालन गर्न कत्तिको स्वास्थ्य उपचार चाहिन्छ ? १. पटक्कै चाहिदैन २.अलिकति चाहिन्छ ३. ठिक्कै चाहिन्छ ४. धेरै चाहिन्छ ५. निकै चाहिन्छ	"पटक्कै छैन / not at all" is converted into "पटक्कै चाहिदैन", "अलिकति छ / a little" into "अलिकति चाहिन्छ", "ठिक्कै छ / A moderate amount" into "ठिक्कै चाहिन्छ", "धेरै छ / Very much" into धेरै चाहिन्छ and finally "हदै छ / An extreme amount" is converted into निकै चाहिन्छ.

Table 2b: Change in the WHOQOL-BREF questionnaire

Items	Item versions: Nepali and English	Change	Remarks (why)
11.	Nepali version: तपाई आफ्नो शरीरको बनावटलाई कत्तिको स्विकार्नु हुन्छ? १. पटक्कै छैन २. अलिकति ३. ठिक्क ४. धेरै जसो ५. पुरै English version: Are you able to accept your bodily appearance? Options: 1. Not at all 2. A little 3. A moderate amount 4. Very much 5. An extreme amount	तपाई आफ्नो शरीरको बनावटलाई कत्तिको स्वीकार गर्नु हुन्छ? १. पटक्कै गर्दिन २. अलिकति गर्छु ३. ठिकै गर्छु ४. धेरै जसो गर्छु ५. पुरै गर्छु	The options are reframed to gain simplicity and easy comprehension in Nepali context. In the provided options, like "Not at all / पटक्कै छैन" was changed into "पटक्कै गर्दिन", "अलिकति / A little" into अलिकति गर्छु, "ठिक्क / a moderate amount" into "ठिकै गर्छु", "धेरै जसो / Very much" into धेरै जसो गर्छु, "पुरै / extreme amount" into पुरै गर्छु
21.	तपाई आफ्नो यौन जीवन संग कत्तिको सन्तुष्ट हुन्नुहुन्छ? १. साह्रै असन्तुष्ट २. असन्तुष्ट ३. ठीक ४. सन्तुष्ट ५. साहै सन्तुष्ट English Version: How satisfied are you with your sex life? 1. not at all 2. A little 3. Moderate amount 4. Very much 5. Extremely	तपाई आफ्नो सारीरिक यौन सम्बन्ध प्रति कत्तिको सन्तुष्ट हुनुहुन्छ? १. साह्रै असन्तुष्ट २. असन्तुष्ट छु ३. ठीक छ ४. सन्तुष्ट छु ५. साहै सन्तुष्ट छु	Instead of directly asking about the physical/sexual relations, this change was suggested for getting the information from the participants in a comfortable way. The establishment of a good rapport was much helpful to explore this question.

Table 3. Comparison of mean domain scores and Cronbach's alpha between this pilot study and WHO's field study[#]

WHO QoL Domains	A pilot study using WHOQOL-BREF			Field study[14] using WHOQOL-100		
	Mean score (mean ± SD)	Alpha reliability	Total Alpha reliability	Mean score (mean ± SD)	Alpha reliability	Total Alpha reliability
Physical domain	46.05±11.70	0.691	0.75	62.6 ± 18.2	0.76	0.84
Psychological domain	50.83±8.84	0.604		62.5 ± 14.8	0.81	
Social Domain	40.55±16.33	0.473		63.6 ± 15.8	0.71	
Environmental domain	41.35±8.71	0.419		60.4 ± 14.6	0.86	

[#]Comparison has been done between WHOQOL-BREF & WHOQOL-100 due to the similarity of their scores assured during computing domain scores. [12]

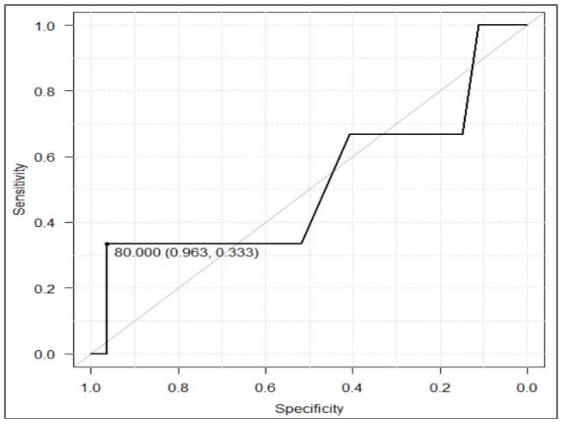

Figure 1. ROC curve showing the overall quality of life (Q1) and total QOL

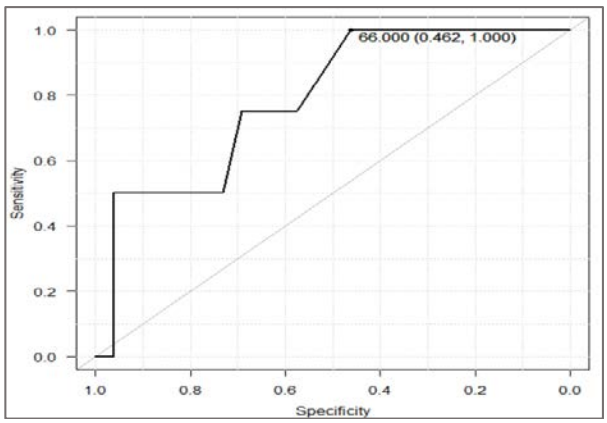

Figure 2. ROC curve showing the perceived health condition (Q2) and total QoL

DISCUSSION

This is a pilot study including 30 older participants from Chandragiri-4 municipality. The study has assessed the validity of the WHOQOL-BREF Nepali version tool and the feasibility of the study.

The alpha reliability of the WHOQOL-BREF scale was compared between this pilot study conducted in Chandragiri-04 and WHO's validation study.[14] In this study, the alpha reliability for the physical, psychological, social, and environmental domains were 0.691, 0.604, 0.473, and 0.419 respectively. And, in the WHO's validation study,[14] the alpha reliability values were higher, with 0.76, 0.81, 0.71, and 0.86 for the physical, psychological, social, and environmental domains, respectively. Similarly, the total alpha reliability in this study was found to be 0.749 and that of WHO's validation study[14] was 0.84. This shows the alpha reliability values were similar in a pilot study, though slightly lower compared to the WHO's validation study,[14] indicating higher internal consistency in the larger validation study than in the smaller pilot study conducted.

The cut-off score of Q1 and QOL was obtained at the score level of 80 while the cut-off score of Q2 and QoL was 66. The ROC curve was identically determined in one of the studies in Brazil.[15] Hence, by considering a larger sample and employing the ROC curve, more reliable and robust results can be obtained.

The WHOQoL BREF Nepali version tool seems to be a valid and reliable tool in measuring the quality of life among older persons with a sufficient alpha reliability value.

The main study has been planned in Bheemdatta municipality of Kanchanpur. However, the tool was pretested among older persons in the geriatric ward of Patan Academy of Health Sciences (PAHS), and pilot-tested among older persons in Chandragiri Municipality due to logistics and feasibility issues. The findings of this pilot study might differ from the main study due to differences in comprehension of Nepali words and sentences among these populations.

CONCLUSION

The WHOQOL–BREF displayed sufficient alpha reliability, signaling it as a dependable and accurate tool for assessing the QoL of older persons in the local context too. Along with this, the cut-off score for WHOQOL- BREF is an important and less studied issue, and thus this study suggested two different cutoffs, which will be further studied in the main study with a larger sample size. Thus, the main study planned among older persons in Bheemdatta municipality seems to be feasible using this WHOQOL-BREF Nepali version tool.

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