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## Translation and Validation of the Filipino Version of the University of Washington Quality of Life Questionnaire (UW-QOL) for Patients with Head and Neck Cancer

### ABSTRACT

**Objective:** To translate the University of Washington Quality of Life (UW-QOL) questionnaire into Filipino and to validate it among a sample of patients with head and neck cancer.

#### Methods:

**Design:** Cross-sectional study  
**Setting:** Tertiary Government Training Hospital  
**Participants:** 33 patients

**Results:** A total of 33 patients were recruited in this study. Eighteen (54.5%) were male, and 15 (45.5%) were female aged 24-79 years old (mean age  $52.85 \pm 11.81$  years old) completed the study. All items in the Filipino translation of the UW-QOL had a content validity index. The raters in face validation had 100% agreement in almost all items except for the appropriateness of font size and space of the questionnaire. The Cronbach's alpha of the Filipino version of the questionnaire was 0.8596. The alpha score when each of the items was deleted remained within the range of 0.83 – 0.86. The intraclass correlation coefficients of all items were greater than 0.9. For all items, there were no significant difference observed between the test and retest scores.

**Conclusion:** This study showed that the Filipino translation of the UW-QOL is culturally adapted, internally consistent and stable. It is as reliable as the original English version in assessing health related QOL, and valid for assessing HR-QOL among patients with head and neck cancers.

**Keywords:** *validation; UW-QOL; HR-QOL; test-retest reliability; head and neck cancer; quality of life.*

**Head and neck cancers (HNCs)** are the 9th most common malignancy in the world and are a public health concern in both developed and developing countries where mortality rates are high.<sup>1</sup> In the Philippines, about 7,344 new cases and 4,460 deaths due to HNCs were registered in 2020.<sup>2</sup> Nasopharyngeal cancer, with a five-year prevalence of 7.64 per 100,000, contributed

to the highest number of new cases and deaths due to HNCs.<sup>2</sup> With advances in the use of chemotherapy, radiation, and surgery in the treatment of HNCs, patient survival has substantially improved over the past decade.<sup>3</sup> However, HNCs and their treatment can affect the social life and activities of daily living of patients, who may experience chronic pain, sensory impairment, as well as dysfunctions in chewing, swallowing, speaking, and breathing that can greatly impact their quality of life.<sup>4</sup> Thus, quality of life (QOL) evaluation of patients with HNCs is important. Quality of life is a multidimensional and subjective concept that deals with the perspective of patients on how health events, such as the experience of a disease, impact their physical, functional, emotional and social well-being.<sup>5</sup>

Health-related quality of life (HRQOL) is a more specific concept that focuses on the clinical impact of the disease and its treatment to patients. It allows health care professionals to understand patients' experience of the disease and its management and address any resulting concern.<sup>6</sup> In the absence of objective parameters, evaluation of HRQOL is usually done by use of such instruments as the University of Washington Quality of Life Questionnaire (UW-QOL) developed by Hassan and Weymuller in 1993.<sup>7</sup> The UW-QOL is one of the most used instruments in assessing the HRQOL of patients with head and neck cancer due to its simplicity, brevity and ease of use.<sup>7</sup> It has undergone several modifications (up to a fourth version with 12-items) and has been translated into over 30 languages, including Chinese, Brazilian Portuguese, Hindi and Marathi, Turkish and Korean.<sup>8</sup> To best use it in the Philippine context, the UW-QOL needs to be translated and validated. However, to the best of our knowledge based on a search of HERDIN Plus, the ASEAN Citation Index, the WHO - Western Pacific Region Index Medicus (WPRIM), the Directory of Open Access Journals (DOAJ), National Library of Medicine (NIH) and Google Scholar, the UW-QOL has not been translated into a Filipino language or subsequently validated.

Recognizing the importance of using culture-specific measurement instruments contextualized in the language of respondents, this study aimed to translate the UW-QOL questionnaire into Filipino and to validate it among a sample of patients with head and neck cancer.

## METHODS

With Institutional Review Board approval from the San Juan de Dios Educational Foundation Institutional Review Board (SJIRB-2021-0006/E-SRG), patients with a diagnosis of head and neck cancer admitted to or seen as outpatients at the Ospital ng Maynila Medical Center Department of Otorhinolaryngology - Head and Neck Surgery were serially invited to participate in this study. A computed sample size of at least 29 participants was required to detect a problem manifesting with a probability of 10% at a confidence level of 95%.

The inclusion criteria were age of at least 18 years, with a confirmed diagnosis of head and neck cancer, with at least 1-year disease-free survival and able to read and write in Filipino. Excluded were patients with recurrent or subsequently diagnosed second primary head and neck cancers; primary head and neck cancer patients with distant metastasis; patients who received palliative treatment for head and neck cancer; non head and neck cancer that metastasized to the head and neck region; or had any known psychiatric disorder and non-psychiatric co morbidities that might affect QoL.

### *Instrument Translation, Content and Face Validation*

Prior permission from the developer of the original version of UW-QOL in English was obtained before translation. The translation and validation process comprised two phases.

First, the original version of the UW-QOL was translated from English to Filipino by two native Filipino speakers with bilingual proficiency in both English and Filipino. After forward translation, the draft of the Filipino version was reviewed by an Ear, Nose and Throat specialist who was equally fluent in English and Filipino to assess cultural adaptation. Following this review and further modifications, the revised draft of the Filipino version was back-translated into English by another two native Filipino speakers with bilingual proficiency in both English and Filipino. An expert from the *Sentro ng Wikang Filipino* of the University of the Philippines Diliman compared and analyzed the forward and back translations. Any discrepancy between the two versions were resolved by discussion involving those who participated in the translation process. The final Filipino version of the UW-QOL then underwent content and face validation. A panel of experts evaluated the questionnaire construction to assess whether the items were sufficient to measure the domains of interest. Two medical professionals participated in the content validation, while two other medical professionals and a lay person participated in face validation.

### *Instrument Administration and Data Collection*

Eligible patients were invited to participate in the study, and participants signed a consent form approved by Institutional Review Board. The translated, content- and face-validated questionnaires were administered to study participants at two distinct time points. The first was upon admission to hospital or on initial encounter at the outpatient clinic consultation. The second administration was performed after one week. The serial process of recruiting participants, obtaining consent, and test administration were facilitated by the first author (JMD) at the Department of Otorhinolaryngology Head and Neck Surgery- Ospital ng Maynila between March 2021 and June 2021, until a sample size of 29 (plus four to account for possible dropouts) was

attained. All participants were asked to complete the self-administered questionnaire using pen and paper.

**Data Analysis**

Data were collated and analyzed using STATA version 14 (STATA Corp LP, College Station, TX, USA). Descriptive statistics were used to describe clinicodemographic characteristics of participants. Means ± standard deviations (SD) were calculated for the continuous variable age. Frequency distributions were obtained for the rest of the (categorical) variables.

The Item-Content Validity Index was calculated by dividing the total number of experts who responded yes by the total number of experts in the panel. Interrater agreement among the three participants in the face validation was calculated by getting the sum of the participants who responded yes for each item divided by total number of participants.

Cronbach’s alpha (α) was determined to test for internal consistency. Test-retest reliability was determined using canonical correlation. The frequency distribution of the participants with respect to their responses in the domain and global questions was determined. The weighted mean and the proportion of participants with best scores, labelled as % best score, were also calculated. Mann-Whitney U test was applied to compare the participants’ response between the two time points. All tests were performed at a confidence level of 95%.

**RESULTS**

A total of 33 patients participated in the study. More than half (54.55%) were males. The mean age of the patients was 52.85 ± 11.81 years old, with the youngest being 24 years old and the oldest 79 years old. Twelve of the participants (36.36%) were post-operative patients.

The most frequent malignancies among the patients were thyroid cancer, nasopharyngeal cancer and laryngeal cancer. (Figure 1) A majority had late-stage cancers but more than half did not have any nodal metastasis. The histologic types were: squamous cell carcinoma (20; 60.61%), mucoepidermoid carcinoma (3; 9.09%), papillary thyroid carcinoma (6; 18.18%) and parathyroid carcinoma, adenoid cystic carcinoma, lymphoma, and malignant melanoma (1 each; 3.03%).

For face validation, the raters had 100% agreement on almost all items except for the appropriateness of font size and space of the questionnaire and all the items in the Filipino translation of the UW-QOL had an Item-CVI of 1. In general, the Cronbach’s alpha of the Filipino version of the questionnaire was 0.8596. The item test correlations were all >0.30 except for Saliva. The item-rest correlations were all >0.30 except for Pain and Saliva. The α score when each of the item was deleted remained within the range of 0.83 – 0.86. The intraclass correlation coefficients of all the items were greater than 0.9. (Table 1)

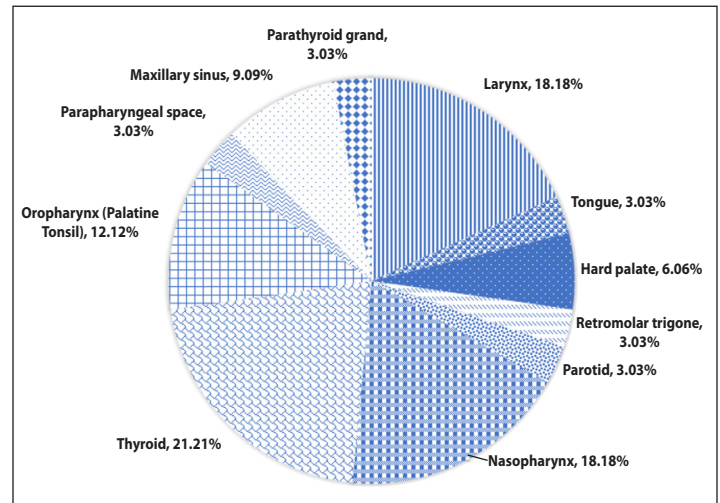


Figure 1. Distribution of Participants according to Tumor Site (N=33)

Table 1. Reliability test of the Filipino version of UW-QoL

Item	Inter-item Correlation	Item-rest Correlation	α	Intraclass Correlation Coefficient
1. Pain ( <i>Kirot</i> )	0.3504	0.2492	0.8634	0.9835
2. Appearance ( <i>Hitsura</i> )	0.5079	0.4387	0.8544	0.9729
3. Activity ( <i>Aktibidad</i> )	0.7755	0.6928	0.8384	0.9928
4. Recreation ( <i>Libangan</i> )	0.7402	0.6585	0.8407	1.0000
5. Swallowing ( <i>Paglunok</i> )	0.5562	0.4649	0.8528	1.0000
6. Chewing ( <i>Panguya</i> )	0.6700	0.6209	0.8476	1.0000
7. Speech ( <i>Pagsasalita</i> )	0.6678	0.5972	0.8457	1.0000
8. Shoulder ( <i>Balikat</i> )	0.4771	0.4025	0.8558	1.0000
9. Taste ( <i>Panlasa</i> )	0.5142	0.4250	0.8548	0.9836
10. Saliva ( <i>Laway</i> )	0.1271	0.0794	0.8650	0.9175
11. Mood ( <i>Mood o kondisy-on</i> )	0.8078	0.7340	0.8350	0.9929
12. Anxiety ( <i>Pagkabahala</i> )	0.7182	0.6581	0.8427	0.9836
13. Intimacy ( <i>Pakikipag-sex</i> )	0.5722	0.4761	0.8524	1.0000
14. Fears of recurrence ( <i>Ta-kot na manumbalik ang can-cer</i> )	0.6277	0.5415	0.8485	0.9750

**Table 2.** Weighted Mean Score, proportion of participants with best score (% Best Score) and result of Mann Whitney U test (p-value) during the test and re-test period (N=33)

Domain	Mean		% Best score		p-value
	Test	Retest	Test	Retest	
1. Pain ( <i>Kirot</i> )	68.18%	65.91%	90.91	87.88	.8985
2. Appearance ( <i>Hitsura</i> )	78.70%	78.3%	100.00	100.00	.8576
3. Activity ( <i>Aktibidad</i> )	64.39%	63.63%	78.79	78.79	.8887
4. Recreation ( <i>Libangan</i> )	67.40%	66.67%	66.67	66.67	1.0000
5. Swallowing ( <i>Paglunok</i> )	71.80%	71.80%	72.73	72.73	1.0000
6. Chewing ( <i>Pagnguya</i> )	62.12%	62.12%	84.85	84.85	1.0000
7. Speech ( <i>Pagsasalita</i> )	64.50%	63.64%	72.73	72.73	1.0000
8. Shoulder ( <i>Balikat</i> )	90.30%	90.30%	93.94	93.94	1.0000
9. Taste ( <i>Panlasa</i> )	79.39%	79.39%	84.85	84.85	1.0000
10. Saliva ( <i>Laway</i> )	96.06%	96.06%	96.97	96.97	1.0000
11. Mood ( <i>Mood o kondisyon</i> )	65.91%	65.15%	69.70	69.70	1.0000
12. Anxiety ( <i>Pagkabahala</i> )	60.91%	60.91%	63.64	63.64	1.0000

**Table 3.** Distribution of participants according to their responses to the global scores

UW-QOL	N	QUESTION SCORES									Mean	% Best score (of 100)
		0	20	25	40	50	60	75	80	100		
A. Health-related QOL compared to month before they were diagnosed to have cancer*	33	1		4		8		15		5	64.39	84.85
B. Health-related QOL during the past 7 days*	33	2	5		10		8		8	0	49.09	49.48
C. Overall QOL during the past 7 days	33	0	0		10		15		5	3	60.61	69.70

For all items, there were no significant differences observed between the test and retest scores. (Table 2)

Table 3 shows what patients felt before they developed cancer, their health related QOL and overall QOL. Majority of the participants had scores greater than 50 before they were diagnosed with cancer. Less than half had scores greater than 60 during the past seven days. During

the past seven days, majority of the participants had overall QOL scores that were greater than 60. Relatively, the overall quality of life of head and neck cancer patients was somewhat better before they were diagnosed to have cancer.

### DISCUSSION

The UW-QOL is a valid instrument that is recognized internally for routine evaluation of the HRQOL of patients with HNCs. It has already been translated into several languages already and were found to be valid and reliable in those languages.<sup>9</sup> In this study, the UW-QOL questionnaire was successfully translated into Filipino, the predominant language in most parts of the Philippines. To the best of the author's knowledge, the current study had the first Filipino translation of the UW-QOL questionnaire that has been validated for use among patients with HNCs.

Validity refers to accurately measuring what an instrument intends to measure, while reliability is related with reproducibility and consistency of a measurement or instrument.<sup>10</sup> In the current study, validity tests were delimited to face and content validation. On the other hand, reliability tests include determining the Cronbach's alpha for internal consistency and the estimation of intraclass correlation for test-retest reliability.

Cultural adaptation of instruments that were originally developed in foreign language should attain not only linguistic equivalence but also conceptual equivalence. That means, the questionnaire shall not only be translated for the sake of translating to the vernacular language per se but should be guided by the fact that concept may vary from place to place. Since validity is content specific, content validation of the Filipino translation of UW-QOL was done for content equivalence, thereby ensuring that the translated items are relevant in the local context and culture.<sup>11</sup> Item-CVI is a measure that is commonly used in reporting the content validity of a questionnaire. If the value of the item-CVI is <0.70, then the item is usually eliminated from the questionnaire.<sup>12</sup> In the current study, all of the items in the Filipino translated UW-QOL questionnaire yielded scores of 1.

To evaluate the appearance of the questionnaire in terms of factors related to the presentation, understandability, and clarity of the questionnaire, e.g., usage, clarity of statements, statement, sentence structure, font, legibly printed out, adequacy of instruction, face validation was done.<sup>13</sup> In the current study, almost all items had perfect interrater agreement.

The Filipino translated UW-QOL demonstrated good internal consistency which is within 0.7 and 0.9. While a Cronbach's alpha less than 0.7 indicates poor internal consistency, a value greater than 0.9 is indicative of redundancy.<sup>9</sup> The finding of this study is consistent with



the findings of several studies that translated the UW-QOL in different languages. The Spanish translation of UW-QOL developed by Nazar *et al.* showed good internal consistency at 0.84. The Brazilian-Portuguese translation of Vartanian *et al.*, had 0.74, which is also good. The Turkish UW-QOL of Senkal *et al.* had a Cronbach's  $\alpha$  of 0.76.

In the current study, canonical correlation was used to determine intraclass correlation coefficient as a measure of test-retest reliability of stability. Because the variables are ordinal and are not normally distributed and there are systematic variations, canonical correlation is more favorable to use than the Pearson correlation coefficient, which is more useful for variables with normal distribution. An intraclass correlation coefficient of 0.4 is acceptable.<sup>9</sup> In the current study, the intraclass correlation coefficient for all the items were very high at greater than 0.9. Such finding is consistent with the results of the evaluation of reliability done for other translation of UW-QOL.<sup>4,9,14</sup> Results of the comparison of the distribution of scores during the test and the distribution during the re-test indicates a weeklong stability of the measurement.

A previous study by Llanes *et al.* also dealt with quality of life among head and neck cancer patients, but utilized a different questionnaire developed by Terell from the University of Michigan instead of the University of Washington Quality of Life Questionnaire.<sup>15</sup> The UW-QOL questionnaire has 12 domains specific for head and neck cancer, while the Michigan instrument only has 4 domains. Moreover, the UW-QOL questionnaire has four advantages: 1) it is brief and self-administered; 2) it is multi-factorial, allowing sufficient detail to identify subtle change; 3) it provides questions specific to head and neck cancer; and 4) it allows no inputs from the health provider, thus reflecting the QOL as indicated by the patient.<sup>7</sup>

Our study has several limitations. First, although Filipino is the national language, it is legislatively based on a predominant language (Tagalog) and many Filipinos from different regions may preferentially use another one of 186 established languages such as Cebuano (Bisaya), Aklanon, Ayta, Bikol, Bontok, Chavakano, Hiligaynon (Ilonggo), Ifugao, Ilocano, Kalinga, Kapampangan, Manobo, Maranao, Pangasinan, Sorsoganon, Tausug, or Waray-Waray as their primary means of communication.<sup>16</sup> Hence, less than full understanding of the questionnaire may lead to inaccurate answers. Furthermore, this study was only done in one center, and multicenter studies are recommended to further establish the reliability and validity of this Filipino questionnaire. Moreover, construct and concurrent validation may also be done to establish the psychometric properties of this version of UW-QOL.

In conclusion, the Filipino translation of the UW-QOL that was developed in this study was found to be culturally adapted, internally

consistent and stable. It is as reliable as the original English version in assessing health related QOL, providing a valuable contribution to the assessment of HRQOL among Filipino patients with HNCs.

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