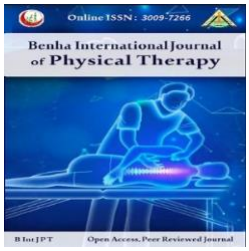
Benha International Journal of Physical Therapy

Online ISSN: 3009-7266 Home page: https://bijpt.journals.ekb.eg/



Original research

Validity and Reliability of Arabic Version of Quality of Life Questionnaire in Patient with Chronic Wound

Mariam Harown Boshra Eskandar[1*], Walaa abdelaziem Abdelaziz Elashwah[2],Hossam Zaghloul Mohammed[3],Karim Ibrahim Abo Khalil Safaan [4]

1.Bachelor of physical therapy, Beni Suef University, Beni Suef, Egypt.
2.Assistant professor in the Department of Surgery and Burn Physical Therapy , Cairo University , Egypt's Faculty of Physical Therapy.
3.Associate Professor at Vascular surgery department, Medical School of El-Kasr El-Ainy, Cairo University, Egypt.
4.Lecturer professor in the Department of Surgery and Burn Physical Therapy , Cairo University , Egypt's Faculty of Physical Therapy.

***Correspondence to**
Dr.Mariam HB Eskandar, Bachelor of physical therapy,University of Beni Suef, Beni Suef, Egypt.
E-mail: mariamharown7@gmail.com

Article history:
Submitted: 1-4-2025
Revised: 19-4-2025
Accepted: 24-4-2025

Abstract

Background: Chronic wounds are frequent, long-lasting, and impose substantial socioeconomic burdens, significantly affecting patients' quality of life (QoL). Regular QoL assessment using questionnaires helps guide interventions and optimize wound management. The Arabic version of the QoL questionnaire is a 17-item scale designed to assess QoL in patients with chronic wounds. However, its validity and reliability have not been assessed for Egyptians. **Objective**: To assess the validity and reliability of the newly translated Arabic version of the QoL questionnaire among Egyptians with chronic wounds. **Methods**: The questionnaire was translated into Arabic (forward and backward) and culturally adapted. Ninety-seven patients with chronic wounds were recruited from El-Kasr El-Ainy Hospital, Cairo University's Faculty of Physical Therapy outpatient clinic, and 23 July Hospital in El Marg. Test-retest reliability, internal consistency (Cronbach's alpha), and face and content validity were examined. **Results**: The Arabic QoL questionnaire demonstrated excellent internal consistency with a Cronbach's alpha of 0.9. Test-retest reliability for all items was excellent, with intraclass correlation coefficients (ICC) ranging from 0.84 to 0.98, and 0.81 for the total score. The questionnaire also showed excellent face validity (clarity index 95.3% and expert clarity proportion 95.9%) and strong content validity (content validity index 98% and expert relevance proportion 97.6%). **Conclusion**: The Arabic version of the QoL questionnaire is valid and reliable for assessing the quality of life of Egyptians with chronic wounds. It is recommended for use in both clinical practice and scientific research.

Keywords: Chronic wound, Quality of Life, validity, Arabic, reliability, Egyptians.

Introduction

Chronic wound refers to the wound that delayed to repair or repaired abnormally regarding its function and structure after 8 weeks period[1] Chronic wounds differ in their etiology, pathogenesis, size, anatomical location, morbidity, risk of limb loss, host factors, and more[2] .They have high prevalence, and high morbidity and socio–economic impact[2] .They affect 16.4% of the population especially who are aged <65 years, with arterial ulcers and skin disorders.[3] Arterial/venous ulcers, pressure ulcers, diabetic ulcers and nonhealing surgical wounds are the most prevalent forms of chronic wounds[4].

Chronic wounds frequently hinder the functioning and well–being of individuals, because they have restrictions in every area of their HRQoL (health-related quality of life). Discomfort ,involuntary physical inactivity, pain, itching, and worsening of preexisting health conditions are common physical limits. Along with worries about wound infection, patients also have to deal with a lowered social and emotional HRQoL. Feelings of irritation, anxiety, social isolation, despair, and low self-esteem as a result of a negative self-perception are among the often reported impairments[5,6] .The appearance and smell of the wound can lead to feelings of shame[7] .Moreover, impairments may stem from various factors, such as disillusionment with treatment progress, lack of trust in healthcare providers, and frustration with the healthcare system[8] .Managing chronic wounds can pose a significant challenge to both the patient, healthcare provider, and the healthcare system as a whole[9].

Quality of life (QOL) questionnaire had been translated to many languages but not present in form of Arabic version.

This study aims to evaluate the reliability and the validity of translated Arabic version of the quality of life (QOL) questionnaire in Egyptian patients with chronic wound to provide an effective evaluation tool for clinical and scientific research.

Methods

1.Sample and recruitment:

This diagnostic accuracy study included 97 patients of both sexes with chronic wound between the ages of 40 and 60. They were recruited from El-Kasr El-Ainy hospital , Cairo University's Faculty of Physical Therapy outpatient clinic and 23 July hospital at El Marg, from the period between September 2024 and December 2024.

The research ethical committee of faculty of physical therapy, Cairo University approved This study (REC/012/005404).

Patient was included if he/she ; 1) aged between 40-60 years, 2) had a chronic wound at least one month before enrolling in the study , 3) Capable of reading and writing Arabic, 4) giving written informed consent, and 5) able to understand items of the questionnaire. Patients were excluded if they; 1) had mental illnesses, 2) lacking the ability to complete the questionnaire on their own or provide an oral response, 3) had communication, vision, hearing disorders, 4) don't fill the questionnaire till the end, and 5) were isolated due to infection.

We recruited the patients who satisfied the inclusion criteria. Prior to enrollment, written informed permission was acquired after they were briefed on the study's importance, goals, and methods. Data about the wounds were gathered when changing dressings. The participants signed a consent form and were then asked to complete the surveys either alone or with the researcher's assistance.

To evaluate the Arabic version's content validity ten expert physicians working with Egyptian population were chosen with experience not less than 7 years, Master and PhD degrees holders.

2.Development of the QoL questionnaire:

The Wound-QoL is a wound-specific questionnaire with 17 items that can be divided into three subscales. Items 1–5, 6–10, and 11–16 are associated with the subscales of ordinary life, psychology, and body, respectively. Likert scales of five points, ranging from 0 (not at all) to 4 (very much), are used to score each item. After receiving a minimum of 75% of the responses, we computed a second-order global score and scores for each dimension based on the average of the individual responses.Higher scores denoted more degradation in life quality [10].

2.1. Adaptation process:

The American Association of Orthopedic Surgeons (AAOS) and the Institute for Work and Health supported international recommendations for the cross-sectional adaption process of health status scales[11].

Step 1: Forward translation (Initial translation):

Bilingual translators with Arabic as their native language would translate the English edition of the Qol questionnaire into Arabic (the forward translation procedure). They would provide the researcher with an understandable summary of each item. The backgrounds and profiles of the two translators were dissimilar. One of two translators, known as researcher version A1, knew about the principles being explored in the scale being translated, whereas the other translator, known as version A2, was unaware of the concepts and lacked clinical or medical expertise .

Step 2: Synthesis of translation:

The researcher would produce one common translation A12 from the original questionnaire as well as A1 version and A2 version

Step 3: Backward translation:

Two further bilingual translators, whom English was their native tongue and who did not know the English edition ,would translate this Arabic version A12 back to English (a process known as backward translation). Both had no medical background and were bilingual in Arabic and English. They would generate two back translations, B1 and B2.

Step 4: Expert review:

In order to achieve conceptual equivalency—that is, to ensure conceptual meaning for the Egyptian people—The researcher would create the pre-final questionnaire for field testing, gather all translated versions of the questionnaire, and check for any changes.

Step 5: Test of pre final testing:

Five participants—all physiotherapists with a focus on chronic wounds who were born and raised in Egypt—were given the pre-final version of the 17-item quality of life questionnaire individually, and their responses were noted. An item was updated with the help of linguistic specialists if two or more people expressed difficulties understanding it (test for understanding and clarity of the questionnaire).

Step 6: Authentication:

The completed Arabic quality of life (QOL) questionnaire for patients who suffering from chronic wounds was administrated to an authentic office for translation .

2.2. Psychometric properties:

The final edition Arabic (QOL) questionnaire in the patients who suffering from chronic wound was assessed with regard to the validity and reliability using psychometric tests.

2.3.Validity:

Validity (the degree to which an instrument accurately or presicely assesses the things it is intended to assess)[12] was measured here in terms of face and content validity.Face validity was evaluated using index clarity and the expert proportion of clearance, which is the ratio of the agreement number to the total rates number for each rater. Content validity (The degree of measurement of the content that the instrument is designed to measure)[13] It is evaluated by consulting the study's participants, health professionals, and experts[14] .Next, the CVI (content validity index) was computed. There are two types of CVI: I-CVI (Item-level Content Validity Index) and S-CVI ((Scale-level Content Validity Index). Excellent content validity is indicated by an I-CVI of 0.78 or higher and an S-CVI/UA (Scale-level Content Validity Index based on Universal Agreement) and S-CVI/Ave ((Scale-level Content Validity Index based on Average) of 0.8 and 0.9 or higher.[15] Additionally, the content validity was assessed using the expert proportion of relevance, which is a ratio of the agreement number to the entire number of rates for each rater.

Ten experts (BSc=6, MSc=2, PhD=2) had engaged in this study to examine the face and content validity. Their experience was 13.8±4.6 years.

2.2.2. Reliability:

Reliability is the accuracy of measurements. Internal consistency and test/retest reliability were the two primary types of reliability that were examined.

Internal consistency is the extent to which an instrument's items measure the same construct and was measured using Cronbach's α that varies between 0 and 1.0 and should be between 0.70 and 0.90; alpha <0.70 suggests that the items of a domain assess different constructs; alpha >0.90 suggests item redundancy.

Test/retest reliability is the degree to which test scores remain stable over time. To prevent changes in wounds and to help with memory recall, the questionnaire was given twice, separated by three to seven days. Using the Intraclass Correlation Coefficient (ICC), which ranges from 0 to 1.0, the correlation between the two independent measurements was calculated. The more closely the coefficient approaches 1.0, the more reliable the instrument is. In general, a correlation coefficient greater than 0.70 is regarded as adequate. A correlation coefficient of 0.80 or above is regarded as exceptional[16].

Sample size

Sample size for ICCs is calculated using the formula given by Donner (1998).17 With the acceptable ICC of 0.75 as the minimum, the predicted ICC of 0.85, significance level 0.05, statistical power 80% and number of repetitions 2, the required sample size is about 97 subjects.

Statistical analysis:

The content validity was tested using the expert proportion of relevance and the Index of Content Validity (CVI). Internal consistency reliability was measured using Cronbach's alpha. Utilizing the intraclass correlation coefficient (ICC), test-retest reliability was assessed. For every statistical test, the significance level was set at $p < 0.05$. The statistical package for social studies (SPSS) version 25 for Windows was used to conduct all statistical analyses.

Results

Clinical and demographic traits:

Table 1 displays the clinical and demographic information for the 97 individuals who were enrolled. A mean age of 51 ± 7.9 years was observed.

Table (1): Demographic and clinical characteristics of the subjects:

Variables	Categories	
Age (Years)		51 ±7.9
Sex	Male	65.8
	Female	34.2
Marital status	Live with spouse	78.5
	Live without spouse	21.5
Educational level	Primary school or below	60.8
	Junior middle schoo	10.1
	Senior high school	16.5
	junior college.	3.8
	Undergraduate or above	8.9
Annual income	Sufficient	15.2
	Insufficient	84.8
Living alone	Yes	6.3
	No	93.7
Job	Employeed	34.2
	Unemployed	51.9
	Retired	13.9
Payment	Medical insurance	25.3
	Own expense	35.4
	Free medical care	39.2
Wound aetiology	Diabetic foot	11.8
	Trauma	8.2
	Pressure Injury	23.5

	Post-operation wound healing defect	22.4
	Burn	14.1
	Others	20
location of the wound	Face, Head and neck	6.4
	Chest and abdomen	20.9
	waist ,sacrococcygeal and Back	17.3
	Arms and hands	13.6
	Legs and feet	41.8
Wound exudate	Dry	40.5
	Moist	20.3
	Wet	6.4
	Saturate	17.7
	Leakage	15.1
Wound odour	Strong	62.1
	Moderate	20.3
	Slight	10
	No	7.6
Wound change	Serious deteriorated	0
	Worse	55.7
	No change	26.6
	Better	17.7
	Significantly improved	0
Wound pain		2.2±0.8

SD: Standard deviation. Data expressed as % except age and pain (mean±SD).

Validity of Wound-QoL:

- The index of clarity ranged from 70%-100% with average of 95.3% which means that the Arabic QoL questionnaire has excellent face validity (clarity). While, expert proportion of clearance ranged from 88.2% to 100% with average of 95.9% which means that the scale has excellent clearance as shown in Table (2).

The Arabic QoL questionnaire's universal agreement (UA) was 0.77 and its content validity index (S-CVI) was 0.98. Nevertheless, the expert fraction of relevance was 97.6% on average, with a range of 88.2% to 100%, indicating that the scale has good content validity (relevance) as shown in table (3).

Table (2): Item index of clarity of The Arabic QoL questionnaire:

Items	No. of experts that agree (Clear responses)	Item index of clarity (%)
1st item	10	100
2sec item	10	100
3rd item	10	100
4th item	10	100
5th item	7	70
6 th item	9	90
7th item	9	90
8th item	9	90
9th item	8	80
10th item	10	100
11th item	10	100
12th item	10	100
13th item	10	100
14th item	10	100
15th item	10	100
16th item	10	100
17th item	10	100
Mean	9.53	95.3

Table (3): Item index of content validity of the final version of Arabic QoL questionnaire:

Items	No. of experts that agree(relevant responses)	I–CVI	UA
1st item	10	1	1
2sec item	10	1	1
3rd item	10	1	1
4th item	10	1	1
5th item	9	0.9	0
6 th item	10	1	1
7th item	9	0.9	0
8th item	10	1	1
9th item	10	1	1
10th item	10	1	1
11th item	10	1	1
12th item	10	1	1
13th item	9	0.9	0
14th item	10	1	1
15th item	9	0.9	0
16th item	10	1	1
17th item	10	1	1
S–CVI	S–CVI	0.98	0.77

Please cite this article as follows:Eskandar M,Elashwah W,Mohammed H,Safaan K,Validity and Reliability of Arabic Version of Quality of Life Questionnaire in Patient with Chronic Wound.B Int J PT. 2025;3(1):211-219. DOI:10.21608/BIJPT.2025.372642.1079

Reliability of the Arabic QoL:

Arabic version of QoL questionnaire's Cronbach's alpha was 0.9 that means it has excellent internal consistency table (4) . Intraclass correlation coefficient (ICC) ranged from 0.84 to 0.98 table(5); Test-retest reliability in all items of Arabic QoL questionnaire was excellent;. ICC for the total score was 0.81 with 95% CI between 0.70 and 0.89.

Table (4): Cronbach's alpha for the Arabic version of QoL questionnaire:

	Number of items	Cronbach's alpha
QOL questionnaire	**17**	**0,9**

Table (5): Item Intraclass correlation coefficient (ICC) of the final version of QoL questionnaire:

Arabic QoL questionnaire	ICC	95% CI		P-value
		Lower	Upper	
1st item	0.93	0.88	0.95	<0.001
2sec item	0.96	0.94	0.98	<0.001
3rd item	0.97	0.95	0.98	<0.001
4th item	0.95	0.92	0.97	<0.001
5th item	0.90	0.94	0.80	<0.001
6 th item	0.92	0.88	0.95	<0.001
7th item	0.92	0.87	0.95	<0.001
8th item	0.84	0.75	0.90	<0.001
9th item	0.84	0.75	0.90	<0.001
10th item	0.93	0.89	0.96	<0.001
11th item	0.89	0.83	0.93	<0.001
12th item	0.98	0.96	0.99	<0.001
13th item	0.94	0.91	0.96	<0.001
14th item	0.96	0.93	0.97	<0.001
15th item	0.95	0.91	0.96	<0.001
16th item	0.96	0.94	0.98	<0.001
17th item	0.93	0.89	0.96	<0.001
Total score	0.81	0.70	0.88	<0.001

CI: Confidence interval, ICC: Intraclass correlation coefficient, P: Probability.

The patients took 10 minutes on average to complete the questionnaire.

DISCUSSION:

This study evaluated the QoL questionnaire's psychometric qualities (reliability and validity) among Egyptians after translating it from English into Arabic. This study followed the standards during translation and adaptation. The study revealed that the QoL questionnaire has excellent face validity (clarity index 95.3% and expert proportion of clearance 95.9%, on average). Moreover, it has excellent content validity (content validity index 98% and expert proportion of relevance 97.6%, on average). Furthermore, Cronbach's alpha was 0,9 and test-retest reliability (ICC) of the questionnaire was 0.81.

The current study's results showed acceptable values of Test-retest reliability and Cronbach's alpha compared with the original version which ranged between 0.85 and 0.92.

Moreover, Liu et al (2022)[18] found that the Chinese version of QoL questionnaire has Cronbach's alpha between 0.779 and 0.906, while

the test–retest reliability was between 0.532 and 0.802.

Another study by Janke et al (2023)[19] assessed the validity and reliability of QoL questionnaire in 8 different European countries with different languages, found that Wound-QoL-17 has high internal consistency, as indicated by Cronbach's α values of 0.820-1.933), intraclass correlation coefficient: 0.618–0.808 indicate moderate to excellent Test re_test reliability and high convergent validity.

In consistency with other reliability studies on the original Version of QoL questionnaire, the present study indicated that the Arabic version of the QoL questionnaire has excellent internal consistency and test–retest reliability. In addition, it has excellent face and content validity.

The QoL questionnaire was studied in patients who were able to read and write with no consciousness disorders, which may limit the applicability to them and necessitate further studies. Additionally, as the number of cases with various wound kinds varied in this study, we recommend confirming it across a larger population and geographic area to get more trustworthy results.

CONCLUSION:

Arabic QoL questionnaire among Egyptians with chronic wound showed excellent reliability and validity. Therefore, it can be used as a tool to evaluate patients' quality of life who have chronic wounds in clinical practice as well as scientific researches. More studies are needed on larger sample with different wound types, to reach more trustworthy conclusions.

AUTHOR CONTRIBUTIONS:

MH, KI, HZ, and WA designed the study. MH recruited the patients and collected, cleaned, analysed the data, and wrote the manuscript. KI, HZ, and WA monitored the quality of the manuscript and offered feedback on its modification. The final manuscript was authorized by all of the authors.

CONFLICT OF INTEREST:

No conflicts of interest are disclosed by the authors.

DATA AVAILABILITY STATEMENT:

Data available on request from the authors.

REFERENCES

1. Salvo J., and Sandoval C. (2022): "Role of copper nanoparticles in wound healing for chronic wounds: Literature review". Burns Trauma; 10: tkab047.
2. Vincent Falanga, Roslyn Rivkah Isseroff, Athena M. Soulika, Marco Romanelli, David Margolis, Suzanne Kapp, Mark Granick and Keith Harding (2022): " Chronic Wounds". Nature Reviews Disease Primers; 8 (1): 50.
3. Carter M. J., DaVanzo J., Haught R., Nusgart M., Cartwright D. and Fife C. E. (2023): "Chronic wound prevalence and the associated cost of treatment in Medicare beneficiaries: changes between 2014 and 2019)". J Med Econ.; 26(1): 894-901.
4. Ge Y., and Wang Q. (2023): "Current research on fungi in chronic wounds". Frontiers in molecular biosciences; 9: 1057766.
5. Cole–King A. and Harding K.G. (2001): "Psychological factors and delayed healing in chronic wounds". Psychosom Med.; 63(2): 216–220.
6. Flett R., Harcourt B., and Alpass F. (1994): "Psychosocial aspects of chronic lower leg ulceration in the elderly". West J Nursing Res.; 16(2): 183–192.
7. Augustin M. (2013): "Cumulative life course impairment in chronic wounds".Curr Probl Dermatol; 44: 125–129.
8. Kapp S., Miller C. and Santamaria N. (2018): "The quality of life of people who have chronic wounds and who self–treat". J Clin Nurs.; 27(1–2): 182–192.
9. Izadi K., and Ganchi P. (2005): "Chronic wounds". Clinics in plastic surgery; 32(2): 209-222.
10. Von Stülpnagel C.C., Da Silva N., and Augustin M., et al., (2021): "Assessing the quality of life of people with chronic wounds by using the cross–culturally valid and revised Wound–QoL questionnaire". Wound Rep Reg.; 29: 452–459.
11. Beaton D.E., Bombardier C., Guillemin F. and Ferraz M.B. (2000): "Guidelines for the process of cross-cultural adaptation of self-report measures". Spine (Phila Pa 1976); 25(24):3186-3191.

12. Carole L. Kimberlin and Almut G. Winterstein (2008): "Validity and reliability of measurement instruments used in research". American Journal of Health–System Pharmacy; 65 (23): 2276–2284.
13. Yaghmaie F. (2003): "Content validity and its estimation". Journal of medical education; 3(1): e105015.
14. Goldstein M. S., Elliott S. D. and Guccione A. A. (2000): "The development of an instrument to measure satisfaction with physical therapy". Physical therapy; 80(9): 853–863.
15. Shi J., Mo X. and Sun Z. (2012): "Content validity index in scale development". Zhong nan da xue xue bao Yi xue ban Journal of Central South University. Medical Sciences. Chinese; 37(2): 152–155.
16. Van de Pas C., Biemans A., Boonen R., Viehoff P. and Neumann H. (2016): "Validation of the Lymphoedema Quality–of–Life Questionnaire (LYMQOL) in Dutch Patients Diagnosed with Lymphoedema of the LowerLimbs". Phlebology; 31(4): 257263.
17. Donner A. (1998): "Sample size requirements for the comparison of two or more coefficients of inter-observer agreement". Statistics in Medicine; 17: 1157-1168.
18. Liu J., Li H., Zhang P., Bai R., Fu X., Guan H. and Qi X. (2023):"Translation and validation of 17-item Wound-QoL questionnaire in a Chinese population". International Wound Journal; 20(3): 659-668.
19. Janke T., Kozon V., Valiukeviciene S. and Rackauskaite L., et al., (2024): "Validation of the Wound-QoL-17 and the Wound-QoL-14 in a European sample of 305 patients with chronic wounds". Int Wound J; 21(3):e14505.