RELIABILITY AND VALIDITY OF THE TURKISH VERSION OF THE QUALITY OF LIFE SCALE

Behice ERCİ

ÖZET

Yaşam Kalitesi Ölçeğinin Türkçe Versiyonunun Güvenilirliği ve Geçerliği

Bu çalışmanın amacı Burckhardt'ın geliştirdiği yaşam kalitesi ölçeğinin geçerlik-güvenirliğini test etmek ve Türk toplumuna adapte etmektir. İlaveten örneklem grubunun yaşam kalitesini değerlendirmektir.

Araştırma metodolojik ve tanımlayıcı türde tasarlandı. Erzurum'daki bir sağlık ocağına çocukları veya kendileri için bakım amacıyla gelen 138 kişi araştırmanın örneklemini oluşturdu. Veriler araştırmacı tarafından 1 Mart – 30 Mayıs 2004 tarihleri arasında toplandı. Araştırmaya katılanlar soruları okuyarak cevaplarını veri toplama formuna işaretlediler.

Principle component analizi ve varimax rotasyonu sonucunda ölçek tek faktörde yapılandı. Ölçeğin bütün soruları faktör yükü kriterini sağladı ve ölçeğin alfa değeri 0.92 olarak bulundu. Ölçeğin varyansı %59.1 ve geçerliliği 0.80 olarak saptandı. Toplam madde korelasyonunun da 0.64-0.78 arasında değiştiği saptandı. Ölçeğin Türkçe versiyonunun geçerli ve güvenilir olduğu bulundu.

Anahtar Kelimeler: *Yaşam kalitesi, geçerlilik, güvenirlik*

ABTRACT

The purpose of this study was to test validity and reliability of quality of life scale developed by Burckhardt, and adapted to Turkish population. In addition, quality of life of the participants was to evaluated.

The research was psychometric study. The researcher administered the Quality of Life Scale (QOLS) questionnaire to a sample of 138 Turkish people who were waiting to receive care for themselves or their children at one primary health care centre in Erzurum, Turkey. The data were collected by the researcher between 1 March and 30 May 2004. The samples read each question item, and they placed their answers on the sheets.

The results of the principle components analysis and varimax rotation resulted in one factor structure. All items met criteria and an alpha coefficient of the scale was 0.92. Overall explained variance for this factor model was 59.1%. Pearson's product-moment correlation of items ranged from 0.64 to 0.78, and validity of the scale was 0.80.

The Turkish version of the QOLS has been found to be content valid, to have good reliability, and to show evidence of factor analysis construct validity. The results reported that validity and reliability in this study were in accordance with results from other studies validating the QOLS.

Keywords*: Quality of life, validity, reliability*

INTRODUCTION

The WHO definition of quality of life (QOL) is that it is a subjective evaluation embedded in a specific cultural, social and environmental context (WHOQOL 1998). It can be divided into overall/general QOL and health-related quality of life (HRQOL), and is often stated to be a multidimensional phenomenon (Browne et al. 1994). In addition to, Bowling (1991) defined 'quality of life' as a grade of 'goodness' to cover a whole range of living conditions, e.g. role functioning (domestic or employed), the degree and efficiency of social and

Atatürk Üni. Hemşirelik Yüksekokulu (Doç. Dr.) behice@atauni.edu.tr

community interaction, psychological wellbeing and life satisfaction (Anderson and Burckhardt 1999, Leplege and Hunt 1997, Smith et al. 1999, Haas 1999). Although the definition of QOL is still evolving, Revicki and colleagues (2000) define QOL as a broad range of human experiences related to one's overall well-being. It implies value based on subjective functioning in comparison with personal expectations and is defined by subjective experiences, states and perceptions. Quality of life, by its very natures, is idiosyncratic to the individual, but intuitively meaningful and understandable to most people. This definition denotes a meaning for QOL that transcends health. Measurement of health status often labelled QOL that has reflected this approach. QOL is predominantly concerned with measurement of health status variables. It measures some standard of health in relation to physiological, functional, emotional or social domains of life. Considerable support exists for dispensing with the nation that health is synonymous with quality of life. Much of the confusion between health status and quality of life results from a failure to distinguish between objective health status or outsider perception of health status and the satisfaction of the quadriplegic person with his or her health. Failure to recognise the many dimensions of life other than health that people consider in assessing their own life quality contributes to health care providers' lack of understanding of their patients' lives. Therefore, it is important to recognise quality of life (Anderson and Burckhardt 1999). An example of this type of instrument is the Quality of Life Scale (QOLS), first the scale was developed by American psychologist, John Flanagan (1978, 1982), and befits this definition of QOL. The tool has been tested in various studies and found

to be a valid and reliable tool for measuring quality of life. Over the past 20 years, a number of researchers have used the QOLS to gather quantitative QOL information from diverse groups of healthy adults and people with chronic illnesses (Burckhardt et al 1989, Blixen and Kippes1999, Sperber et al. 1999, Burckhardt et al 1992, Anderson 1995, Dantas et al. 2002). Some researchers have also found it useful for measuring the QOL of parents of children with juvenile rheumatoid arthritis (Press et al. 2000, Press et al. 2002) and relatives of patients with fibromyalgia (Neumann and Buskila 1997).

A few published studies have been found related to quality of life about some chronic illness and healthy persons in Turkey. But any study has been not conducted using Burckhardt's QOLS on person with illness and healthy. The questionnaire was developed in a healthy population and then adapted for use in patients suffering from chronic conditions (Wahl et al.1998). QOLS is a questionnaire measuring an individual's overall satisfaction with life based on different life domains. It is therefore a global or overall quality of life questionnaire, and does not contain disease-specific questions (Burckhardt et al. 1989). However, it comprises important aspects of life which could be affected by disease. The QOLS also makes it possible to compare the overall quality of life between groups of patients with different diseases, and the general population (Wahl et al. 1998). The application and evaluation of the QOLS is easy. Thus, the QOLS would be appropriate to Turkish population.

The purpose of this study was to test validity and reliability of quality of life scale developed by Burckhardt, and adapted to Turkish population. In addition, quality of life of the participants was to evaluate.

METHODS

Design

The research was psychometric study.

Study sample

The researcher administered the Quality of Life Scale questionnaire to a sample of 138 Turkish people who were waiting to receive care for themselves or their children at one primary health care centre in Erzurum, Turkey. The instrument was applied to the sample group by the researcher.

Instrument

The QOLS was originally a 15-item instrument that measured five conceptual domains of quality of life: material and physical well-being, relationships with other people, social, community and civic activities, personal development and fulfilment, and recreation. After descriptive research that queried persons with chronic illness on their perceptions of quality of life, the instrument was expanded to include one more item: Independence, the ability to do for yourself. Thus, the QOLS in its present format contains 16 items. The quality and quantity of descriptive work with large numbers of Americans provided strong evidence for content validity of the QOLS during its early development. However, Flanagan, himself, reasoned that some adaptations for persons with chronic conditions or disabilities might be needed and that different rating scales might produce divergent results. The QOLS has been used in studies of healthy adults and patients with chronic illnesses.

Burckhardt developed the scale from Flanagan Quality of Life Scale, and it has a total of 16 items one scale. The scale items have a 7-point Likert format with the following coding; terrible (1), unhappy (2), mostly dissatisfied (3), mixed (4), mostly satisfied (5), delighted (6), pleased (7). The QOLS is scored by adding up the score on each item to yield a total score for the instrument. Scores can range from 16 to 112. There is no automated administration or scoring software for the QOLS. The QOLS scores are summed so that a higher score indicates higher quality of life. Average total score for healthy populations is about 90 point (Burckhardt and Anderson 2003).

The validity and reliability of the scale were established (Burckhardt et al. 2003). Permission was obtained from Carol S. Burckhardt for the translation and use QOLS. Then the author translated and adapted Burckhardt's scale to measure the participants' quality of life. The two bilingual investigators translated the scale independently to the Turkish language and reached similar results. Therefore the researcher met, reviewed the translations together, and agreed on of the fist draft of the translated tool. Then the tool was given to five bilingual health professional judges to validate the translation and to determine the cultural appropriateness of the tool. The judges suggested minor changes in wording and the translated scale was revised accordingly. The translated Turkish scale was then back translated to English. The two back translations were almost identical and matched the original meaning of the English version. No changes in wording were needed as a result of the back translation. Finally, language validity was provided to Turkish population.

Data collection

A self-administered question-naire was designed to include the translated version of QOLS, demographic information of the participants. Demographic variables included age, education, marital status, monthly income. The data were collected by the researcher in the primary health care centre to the participants between 1 March and 30 May 2004. The samples read each question item, and they placed their answers on the sheets. This procedure

took approximately 5 to 10 minutes for each subject.

Ethics Considerations

Permission to undertake this study was gained from the ethical committee at the Atatürk University and informed consent was obtained from each participant. Participants were assured of their right to refuse to participate or to withdraw from the study at any stage. The anonymity and confidentially of participants was guaranteed.

Data Analysis

Data analysis included internal consistency of the scale was tested using Cronbach's alpha reliability coefficients. Construct validity was determined using principal components factor analysis. Predictive validity of the scale was assessed by Pearson's correlation. Correlation was used to establish the relationship between QOL and demographic features.

RESULTS

The mean age of the subjects was 34.7 ± 11.1 years and most of the samples were married (87.7%). The majority of the subjects (71.0 %) were women, 38.4% were graduated from primary school, and their monthly income was low (537.2 ± 345.2 $).

Table 1. The demographic characteristics of the sample group

Demographic Characteristics	X ± SD	
Age (Year)	34.7 ± 11.1	
Monthly income ($)	537.2 ± 345.2	
Gender	**N**	**%**
Female	98	71.0
Male	40	29.0
Education Level	**N**	**%**
Primary School	53	38.4
Secondary School	18	13.0
High School	40	29.0
University	27	19.6
Marital Status	**N**	**%**
Married	121	87.7
Single	17	12.3
Total	**138**	**100.0**

Findings about the scale construction were shown in Table 2.

Table 2. Rotated factor loading, alpha and product-moment correlation of items

Item of the scale	Factor loading	Item alpha	product-moment correlation
1. Material comforts home, food, conveniences, financial security	.467	.92	.664
2. Health - being physically fit and vigorous	.541	.92	.662
3. Relationships with parents, siblings & other relatives- communicating, visiting, helping	.650	.92	.698
4. Having and rearing children	.613	.92	.667
5. Close relationships with spouse or significant other	.584	.92	.656
6. Close friends	.531	.92	.644
7. Helping and encouraging others, volunteering, giving advice	.599	.91	.756
8. Participating in organizations and public affairs	.468	.92	.651
9. Learning- attending school, improving understanding, getting additional knowledge	.632	.91	.774
10. Understanding yourself - knowing your assets and limitations - knowing what life is about	.548	.92	.712
11. Work - job or in home	.582	.92	.738
12. Expressing yourself creatively	.704	.91	.786
13. Socializing - meeting other people, doing things, parties, etc.	.558	.92	.667
14. Reading, listening to music, or observing entertainment	.805	.92	.676
15. Participating in active recreation	.647	.92	.645
16. Independence, doing for yourself	.530	.92	.688

Table 2 presents the results of the factor analysis and varimax rotation. Items were kept in a factor grouping since the factor loading was greater than 0.40, and loaded highly on only one factor. This resulted in one factor structure.

The reliability coefficient for the scale was calculated using Cronbach's alpha technique. All items met criteria (table 2) and an alpha coefficient of the scale was 0.92. Overall explained variance for this factor model was 59.1%. Pearson's product-moment correlation of items ranged from 0.64 to 0.78, and validity of the scale was 0.80.

Table 3. The participant's scores of quality of life

QOLS	Minimum score	Maximum score	Scale mean	Item mean
	24.00	112.00	88.98 ± 15.67	5.56+0.97

The mean score of the quality of life was 88.98; item mean score was 5.56 point. The subjects have quality of life mostly satisfied.

Table 4. The relationship between quality of life and demographic characteristics

QOLS	Age	Gender	Education	Monthly income	Marital status
	.085	-.028	.243**	.198*	-.045

*$p < 0.05$
** $p < 0.01$

The relationship between quality of life and demographic characteristics was examined, it was found that there were the relationship between quality of life and education ($r = 0.243**$), and monthly income ($r = 0.198*$). Education was an important predictor factor, and education explained 59% of the total variance of the quality of life. Also, monthly income explained 39% of the total variance of the quality of life. There were not the relationship between quality of life and age, gender, and marital status.

DISCUSSION

Conceptual, semantic and linguistic divergence may exist between cultures. Success in using a quality of life measure previously developed in another language requires a systematic approach to the translation and validation of the measure (Guillemin et al. 1993). In this study the researcher translated to the Turkish language, adapted, and tested QOL scale for measuring quality of life, and validity language of the scale was high. The scale provided validity and reliability to Turkish population. The Norwegian version was judged to have satisfactory face and content validity by experts on the concept, nurses in dermatology and 15 patients suffering from psoriasis. The questionnaire has content validity and reliability (Burckhardt and Anderson 2003).

The present study's finding was compatible with the result of given study.

The factor analysis indicated one factor. The minimum cut-off point that is acceptable is 0.30 for factor loading (Burns and Grove 1993). In this

study all items met this criteria and factor loading of the items ranged from 0.46 to 0.80 (Table 2). All the items loaded on scale as in Burckhardt's developed tool, thus the construct validity of this scale was confirmed. The scale was found to be internally consistent and mutually exclusive. A reliability of 0.80 is considered the lowest acceptable coefficient for a well-developed measurement tool. For a newly developed instrument, a reliability of 0.70 is considered acceptable (Burns and Grove 1993). In this study the reliability coefficient obtained was high (0.92). Burckhardt found Cronbach's alpha for QOLS was 0.86. The result of the present study was very similar to that of Burckhardt's (Burckhardt et al. 2003).

In this study Pearson's product-moment correlation of items ranged from 0.64 to 0.78, and validity of the scale was 0.80. Burckhardt and colleagues (2003) found Pearson's product-moment correlation of items ranged from 0.78 to 0.51, and validity of the scale was 0.83.

In the present the subject have quality of life mostly satisfied, and the mean score of the quality of life was 88.98. Previous one study determined that the total mean score of QOLS was 82.34 ± 12.90 in Norway (Wahl et al. 1998).

There were the relationship between quality of life and education, and monthly income in the current study. Education 59% and monthly income explained 39% of the total variance of the quality of life. Recent one study stated that low socio-economic status was the major factor.

This can be a cause of poor quality life and health (Chan 2000). Tseng and Wang (2001) found that education and income affected overall quality of life, and these variables explained 40.1% of the total variance of quality of life. The result of this study was similar to the results of Chan, and Tseng and Wang.

CONCLUSION

When using an overall quality of life measure such as the Quality of Life Scale, it is possible to compare the impact with other patient groups and a healthy population. Then conclusions concerning the influence of diseases on overall quality of life may be easier to draw. In summary, the Turkish version of the QOLS has been found to be content valid, to have good reliability, and to show evidence of factor analysis construct validity. The results reported that validity and reliability in this study were in accordance with results from other studies validating the QOLS (Burckhardt et al. 1992). The measure also meets other criteria regarding enhancement of validity and reliability, such as brevity, clarity, and ease of administration and coding. The measure seems to capture important aspects in the healthy adults. The QOLS is a reliable and valid instrument for measuring quality of life from the perspective of the healthy people. Therefore, the QOLS may be satisfactory for use as an outcome measure in the care of the healthy person in Turkey. However, further validation in healthy adults is necessary before it can be claimed that the instrument is sensitive to change.

REFERENCES

Anderson KL, Burckhardt CS. (1999). Conceptualization and measurement of quality of life as an outcome variable for health care intervention and research. J Adv Nurs. 29:298-306.

Anderson KL. (1995). The effect of chronic obstructive pulmonary disease on quality of life. Res Nurs Health. 18:547-556.

Blixen CE, Kippes C. (1999). Depression, social support and quality of life in older adults with osteoarthritis. Image: J Nurs Scholar. 31:221-226.

Bowling A. (1991). Measuring Health – A Review of Quality of Life Measurement Scales. Open University Press, Milton Keynes.

Browne JP, O'Boyle CA, McGee HM et al. (1994). Individual quality of life in the healthy elderly. Quality of Life Research 3: 235–244.

Burchardt CS, Archenholtz B, Bjelle A. (1992). Measuring the quality of life of women with rheumatorial arthritis or systemic lupus erythematosus. A Swedish version of the QOLS. Scand J Rheumatol. 21: 190-195.

Burckhardt CS, Mannerkorpi K, Hedenberg L et al. (1994). A randomized, controlled clinical trial of education and physical training for women with fibromyalgia. J Rheumatol. 21 (4): 714-720.

Burckhardt CS, Woods SL, Schultz AA et al. (1989). Quality of life of adults with chronic illness: A psychometric study. Res Nurs Health. 12:347-354.

Burckhardt CS, Anderson KL (2003). The Quality of Life Scale (QOLS).: Reliability, Validity, and Utilization. Health and Quality of Life Outcomes 1 (60): 1-7.

Burckhardt CS, Anderson KL, Archenholtz B et al. (2003). The Flanagan Quality of Life Scale: Evidence of Construct Validity. Health and Quality of Life Outcomes 1 (59): 1-7.

Burns N. Grove S.K. (1993) The Practice of Nursing Research Conduct, Critique and Utilization, 2nd edn. W.B. Saunders Company, Philadelphia.

Chan C. (2000). The quality of life of women of Chinese origin. Health and Social Care in the Community 8 (3): 212–222.

Dantas RAP, Motzer SA, Ciol MA. (2002). The relationship between quality of life, sense of coherence and self-esteem in persons after coronary artery bypass graft surgery. Internat J Nurs Studies. 39:745-755.

Flanagan JC. (1978). A research approach to improving our quality of life. Am Psychologist. 33: 138-147.

Flanagan JC. (1982). Measurement of the quality of life: Current state of the art. Arch Phys Med Rehabil. 63:56-59.

Guillemin EG, Bombardier C, Beaton D. (1993). Cross-culture adaptation of health-related quality of life measures: Literature review and proposed guidelines. J Clin Epidemiol. 46: 1417-32.

Haas BK (1999). Clarification and integration of similar quality of life concepts. Image: J Nurs Scholar. 31:215-220.

Leplege A, Hunt S. (1997). The problem of quality of life in medicine. JAMA. 278:47-50.

Neumann L, Buskila D. (1997). Quality of life and physical functioning of relatives of fibromyalgia patients. Sem Arthritis Rheumatol. 26:834-839.

Press J, Neumann L, Abu-Shakra M et al. (2000). Living with a child with familial Mediterranean fever: Does it affect the quality of life of the parents? Clin Experiment Rheumatol. 18: 103-106.

Press J, Neumann L, Uziel Y et al. (2002). Assessment of quality of life of parents of children with juvenile chronic arthritis. Clin Rheumatol. 21: 280-283.

Revicki DA, Osoba D, Fairclough D et al. (2000). Recommendations on health-related quality of life research to support labeling and promotional claims in the United States. Qual Life Res. 9: 887-900.

Smith KW, Avis NE, Assmann SF. (1999). Distinguishing between quality of life and health status in quality of life research: a meta-analysis. Qual Life Res. 8: 447-459.

Sperber AD, Atzmon Y, Neumann L et al. (1999). Fibromyalgia in the irritable bowel syndrome; Studies of prevalence and clinical implications. Am J Gastroenterol. 94: 3541-3546.

Tseng S, Wang RH (2001). Quality of life and related factors among elderly nursing home residents in southern Taiwan. Public Health Nursing 18 (5): 304-311.

Wahl A, Burckhardt C, Wiklund I et al. (1998). The Norwegian Version of the Quality of Life Scale (QOLS-N). Scand J Caring Sci. 12: 215–222.

WHOQOL (1998). Development of the World Health Organization WHOQOL-BREF Quality of Life Assessment. Psychol Med. 28: 551–558.