



# Translation, Cultural Adaptation and Validation of the Kidney Disease Quality of Life–Short Form 1.3 in an African Country

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## ABSTRACT

**Background.** The impact of dialysis on patient quality of life has been recognized as an important outcome measure. The Dialysis Outcomes and Practice Patterns Study compared quality of life in 4 continents [1], but very scarce information is available about dialysis patients' quality of life in Africa. The objective of this study was to translate the Kidney Disease Quality of Life–Short Form (KDQOL-SF) into Moroccan and measure its psychometric properties.

**Methods.** The questionnaire was first translated into Moroccan by 2 independent translators, and then 2 backward translations into English were performed after pretesting in 10 dialysis patients. The final questionnaire was then administered to 80 dialysis patients. Reliability was estimated by internal consistency and test–retest reliability. Validity was assessed using known group comparisons and correlations between overall health rating and scales scores.

**Results.** Some activities were substituted since they were not common in Morocco. All subscales had a Cronbach  $\alpha$  above the recommended value except for 3 scales. All of the items showed good test–retest reliability. Correlation of items within subscales was higher than that of items outside subscales in 87% of cases. Regarding construct validity, all KDQOL-SF scales had significant correlation with overall health rating except for sexual function and dialysis staff encouragement. Furthermore, the questionnaire could be used to discriminate between subgroups of the patients.

**Conclusions.** The psychometric properties of the KDQOL-SF resulting from this first-time administration of the instrument support the validity and reliability of the KDQOL-SF as a measure of quality of life of patients having hemodialysis in Morocco.

**H**EALTH-RELATED QUALITY OF LIFE (QOL) is known to be impaired in patients undergoing dialysis compared to general population [2,3]. In the last decades, advances in dialysis therapy led to increasing life expectancy, but few efforts were made to improve patients' QOL. Currently, QOL is increasingly recognized as one way of measuring treatment outcome [4,5]. As a consequence, a number of generic and specific questionnaires of QOL have been developed.

The Kidney Disease Quality of Life–Short Form (KDQOL-SF) is a disease-specific instrument, developed in the United

States by Ron Hays to assess the functioning and well-being of people with kidney disease [6]. It is one of the most complete instruments currently available in patients with chronic kidney disease [2]. This questionnaire has been translated in multiple languages [7–11] and has been widely used in studies, particularly in the Dialysis Outcomes and

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Practice Patterns Study [1] and in the United States Renal Data System—Annual Data Report [12].

To date, a Moroccan version of the questionnaire has not yet been developed. Therefore, the purpose of this study was to translate the KDQOL-SF into Moroccan, to adapt it culturally and test its psychometric properties in a Moroccan dialysis population.

## PATIENTS AND METHODS

### The Questionnaire

The KDQOL-SF consists of 79 items divided into 19 scales (8 generic scales, 11 disease-specific scales) and an overall health rating item [6]:

- Short-form 36 (SF-36) [13] (8 dimensions/36 items): physical functioning (10 items), role limitations caused by physical problems (4 items), role limitations caused by emotional problems (3 items), pain (2 items), general health (5 items), social functioning (2 items), emotional well-being (5 items), energy/fatigue (4 items), and 1 item about health status compared to 1 year previously.
- Kidney disease-targeted items (11 dimensions/43 items): symptom/problem list (12 items), effects of kidney disease (8 items), burden of kidney disease (4 items), cognitive function (3 items), quality of social interaction (3 items), sexual function (2 items), sleep (4 items), social support (2 items), work status (2 items), patient satisfaction (1 item), dialysis staff encouragement (2 items).
- Overall health rating (1 item scored separately).

For each scale, a score can be calculated according to a standard procedure available on: <http://gim.med.ucla.edu/kdqol>. Scores range from 0 to 100, with a higher score indicating better QOL.

### Translation Procedure

The study protocol was approved by R. Hays and the local ethical committee of Ibn Sina University Hospital Center. The translation steps were carried out according to specifications established by the KDQOL Working Group.

#### Forward Adaptation.

1. Items and response choices of the original version of the KDQOL-SF were independently translated into Moroccan by 2 translators whose first language is Moroccan. Following this, a seminar including translators, nephrologists, psychiatrists, and a sociologist was organized. All the options were reviewed, problems with specific terms and differences in the cultures of the countries were resolved, and a consensus version of the questionnaire was made. After this meeting, the translators independently rated the level of difficulty of the translation between 0 (not at all difficult) and 100 (extremely difficult).
2. Two external translators evaluated the equivalence of each item and response scale according to a scale from 0 (“not at all equivalent”) to 100 (“exactly equivalent”).
3. The Moroccan version of the questionnaire was tested in a sample of 10 patients on hemodialysis to detect comprehension problems. Mean patient age was  $39 \pm 13$  years (20–57 years), 6 were males, and 8 had not completed elementary school or were illiterate. The test took the form of face-to-face interviews immediately followed by retrospective interviews about comprehension problems and choices among a number of alternative renderings.

*Backward Adaptation.* Two backward translations were done by English native translators and a consensus version was compared to the original English version.

### Test Field

To measure psychometric properties, the Moroccan version was administered to 80 patients on dialysis at Ibn Sina Hospital. Inclusion criteria were (1) age more than 18 years, (2) dialysis treatment for 3 months without life-threatening disease at the time of the test, (3) patient consent. Exclusion criteria were language difficulties.

In this cross-sectional study, 78% of patients were in hemodialysis and 22% in peritoneal dialysis (Table 1). The majority were females and mean age was  $43.9 \pm 14.2$  years. The mean time on dialysis among the patients was  $104.8 \pm 120$  months.

### Statistical Analysis and Psychometric Properties

Means of each scale and standard deviation were determined. Reliability and validity were determined. Percentages of floor and ceiling were also assessed. Ceiling effects were taken as being the percentage of respondents with scores of 100 and floor effects were the percentage of respondents having a score of 0. Ceiling and floor effects should be less than 30% to ensure that the scale captures the full range of potential responses within the population and that changes over time can be detected.

*Multi-item/Multi-Item Correlations.* Correlation coefficients were calculated by using Pearson correlation to assess the strength of relationships between items within and outside each scale.

The item internal consistency assesses item correlation with a corresponding scale, corrected for overlap. A correlation corrected for overlap is the correlation of an item with the remaining items of the scale, which removes the bias of correlating an item with itself. A correlation of 0.4 or more has been used as the standard for supporting the item's internal consistency.

The discriminant validity was assessed by comparing item correlation within and outside each scale. We hypothesized that each

**Table 1. Patient Characteristics**

Parameters	Patients on Dialysis (n = 80)
Age (y)	$43.9 \pm 14.2$
Sex ratio	0.7
Peritoneal dialysis (%)	22
Hemodialysis (%)	78
Educational level (%)	
Illiterate	28
Elementary	22
High school	23
College	27
Civil status: married (%)	
Yes	61
No	39
Duration on dialysis (mo)	$104.8 \pm 120$
Cause of kidney disease (%)	
Glomerulonephritis	26
Diabetes	14
Tubulointerstitial nephritis	18
Vascular	5
Unknown etiology	34
Other	3

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