Report

Turkish version of Skindex-29

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Abstract

Background There is a clear need for a useable measure of health-related quality-of-life (HRQoL) for dermatology patients. Most of the existing dermatology-specific measures were developed for the English language, and these measures should be adapted for use in other cultures.

Objective To adapt Skindex-29 (one of the most widely recognized dermatology-specific quality-of-life indices) for the Turkish cultural setting.

Patients and methods Forward and backward translations were carried out, and for doubtful items the process was repeated until a satisfactory agreement with the original version of Skindex-29 was achieved. The intermediate Turkish version was administered to a group of 20 randomly selected Turkish adults with and without skin conditions. The final Turkish version of the Skindex-29 was administered to 456 patients attending Osmangazi University Dermatology outpatient clinics. Reliability, construct and content validity were assessed.

Results The instrument was internally consistent, with Cronbach's α-coefficients of 0.94, 0.76, 0.88, and 0.92 for entire questionnaire, symptom, emotional, and functional scales, respectively. The Turkish Skindex-29 demonstrated construct and content validity.

Conclusion Our evaluation of the Skindex-29 indicates that the instrument is a comprehensible, useable, reliable and valid measure of quality-of-life for Turkish dermatologic patients.

Introduction

There has been an increasing interest by clinicians and researchers in both general and disease-specific health-related quality-of-life (HRQoL).[1–4] Traditionally, the choice of treatment regimen and its effectiveness have been evaluated primarily by the dermatologist's judgment of the severity of the disease. However, physicians' judgments do not correlate well with patients' perception of the severity of their diseases.[5–11] Hence, measuring HRQoL becomes an important part of a successful clinical treatment

Recently developed dermatological quality-of-life measures have most often been in English.[1–3,12,13] These tools need to be translated and adapted for use in Turkish. Another alternative would be to develop a measure initially in Turkish, which would be more expensive, and take more time and effort compared with adapting a proven measure from English. Moreover, a cultural adaptation of a well-studied and standardized measure makes cross-cultural comparisons possible.

Skindex-29 has been well studied and widely accepted as a quality-of-life measure designed for dermatology patients. It was originally developed in the USA and eventually adapted to German,[14] Spanish,[15] French,[16] and Italian.[5] A shorter form of the measure, Skindex-16, was recently translated to Japanese.[17] All these cultural adaptations proved to be reliable, internally consistent and generally valid measures. Our goal was to generate a semantically equivalent translation of Skindex-29 into Turkish and evaluate its measurement properties.

During the adaptation process we followed the methodology used to create the Spanish version of Skindex-29 and the Japanese version of Skindex-16,[15,17] which is consistent with generally accepted guidelines for cultural adaptation.[18] The adaptation process to Turkish was carried out in the two phases of translation and evaluation of measurement properties.

Materials and Methods

Phase I: translation

Forward translation
Skindex-29 was translated by five Turkish bilingual people. Translators included two of the authors of this report who are

familiar with medical English and one ESL instructor at Osmangazi University English Language School. The remaining two translators hold postgraduate degrees from north America. Translators reached a consensus on a unique translation before proceeding.

Backward translation

Two bilingual persons whose primary language is English separately translated the initial Turkish translation of Skindex-29 back into English.

Review of backward translations

The author of the original Skindex-29 reviewed both backward-translations. Semantic equivalence of the each backward-translated questionnaire item was classified according to following scale: (a) satisfactory agreement, (b) almost satisfactory agreement with one or two uncertain words, and (c) doubtful translation.

Repeated forward and backward translations

Items classified as (b) and (c) were again translated forward and backward until a satisfactory agreement with the original items was reached. This process produced the intermediate Turkish version of Skindex-29.

Pretesting of the intermediate Turkish version

The intermediate Turkish version was administered to a group of 20 randomly selected Turkish adults with and without skin conditions. The subjects commented on the comprehensibility of the questionnaire items.

Refinement of the intermediate Turkish version

Any item found problematic in the pretesting step was translated forward and backward to generate the final Turkish version of the Skindex-29.

Phase II: evaluation of measurement properties

Internal consistency reliability, construct validity, and content validity of the Turkish version were examined.

Sample

The final Turkish version of Skindex-29 was administered to 456 patients attending the dermatology outpatient clinics of Osmangazi University. All patients were informed about the nature of the research and only consenting adults were given the questionnaire. Subjects were given enough time to answer the questionnaire and to return it to the dermatologist during the medical examination. The dermatologist then completed the background information, diagnosis, and an estimation of severity of the disease as assessed by the following question: "In your experience, among all patients you have seen with this condition, how severe is this patient's condition?" Possible answers to the question were: (1) "very mild", (2) "mild", (3) "moderate", (4) "severe", and (5) "very severe". Respondents who left greater than 10% (three or more)

of the items unanswered were excluded from the evaluation phase. Subjects were categorized into those with isolated skin lesions such as tumors, nevi, warts, cysts and those with inflammatory dermatoses, such as psoriasis and acne. A control group of healthy adults also responded to the questionnaire.

Scoring

The five possible scale responses were transformed into a linear scale from 0–100, no effect on the patient's quality-of-life to maximum effect, respectively. In addition to an overall average score for each patient, scores for the emotional, functional, and symptom scales were also calculated, and SPSS for Windows© version 11.5 was used for statistical analysis.

Internal consistency reliability

Cronbach's α-coefficient was calculated for each individual scale and the overall score.

Construct validity

Patients with inflammatory dermatoses were expected to have higher scores than patients with isolated lesions. Similarly, patients with any skin disease were expected to have higher scores than healthy individuals.

Content validity

Patients were asked an additional open-ended question "What is it about your skin problem that bothers you most?" and responses were examined by two of the authors to determine if the items in the questionnaire addressed the concerns stated in the open-ended question.

Results

Phase I

One of the authors of the original Skindex-29 identified 21 items as having satisfactory agreement: (a) one item as very close to satisfactory (a-b), and seven items as (b) or (c) (problematic). Translating the phrase "skin condition" to Turkish presented a problem since instead of using "skin condition" translators preferred the word "skin". After initial review by the American author, the Turkish translation was changed to stress "skin condition" more and clarify the ambiguity in the meaning. Words and concepts that proved particularly difficult to translate into Turkish included the difference between "ashamed" and "embarrassed". The backward-translation process was repeated until a satisfactory agreement was accorded. Another problematic concept was "frustrated", as there is no Turkish word that means precisely the same. Instead of a single word, two different expressions were used to explain the concept. The word "depressed" presented a different type of difficulty; the word has only recently entered the Turkish language (written as "depresif" in Turkish). We were concerned, however, that less literate

subjects might have difficulty understanding the meaning, and added an explanation within brackets to ensure that respondents would understand. We also paid special attention to the comprehensibility of this item during the pretest phase. Pretests did not indicate any problems with comprehension of the questionnaire items. Hence, the version administered during the pretest phase was finalized as the Turkish Skindex-29 (Table 1).

Phase II

Seventeen of the 456 patients declined to participate. Of the remaining 439, only 20 were excluded from further analysis

Table 1 Turkish adaptation of Skindex-29

1. Cildim aciyor.
2. Cild rahatsizligim uyku kalitemi etkiliyor.
3. Cilt rahatsizligimin ciddi olabileceginden endiseleniyorum.
4. Cild rahatsizligim, calismami ve hobilerimle ugrasmami guclestiriyor.
5. Cild rahatsizligim sosyal hayatimi etkiliyor.
6. Cild rahatsizligim yuzunden kendimi depresif (ruhsal cokuntu icinde) hissediyorum.
7. Cild problemimde yanma veya batma hissediyorum.
8. Cild problemim yuzunden evde kalmayi tercih ediyorum.
9. Cild rahatsizligimin iz birakmasindan endise ediyorum.
10. Cildim kasiniyor.
11. Cild problemim sevdiklerimle yakinlasmama engel oluyor.
12. Cild rahatsizligimdan dolayi utaniyorum.
13. Cild rahatsizligimin daha kotuye gitmesinden endise ediyorum.
14. Cild rahatsizligim yuzunden bircok seyi yalniz yapmayi tercih ediyorum.
15. Cild rahatsizligimdan dolayi kizginim.
16. Su cild problemimi rahatsiz ediyor (banyo yapmak, ellerimi yikamak vs.).
17. Cild rahatsizligim duygularimi ifade etmemi guclestiriyor.
18. Cildim tahris oluyor.
19. Cild rahatsizligim diger insanlarla iliskilerimi etkiliyor.
20. Cild problemimden dolayi mahcubiyet duyuyorum.
21. Cild rahatsizligim sevdigim insanlar icin problem oluyor.
22. Cild rahatsizligim yuzunden caresiz kaldigimi, cesaretimin kirildigini hissediyorum.
23. Cildim hassas.
24. Cild rahatsizligim insanlarla birlikte olma istegimi azaltiyor.
25. Cild rahatsizligim yuzunden kendimi kucuk dusmus hissediyorum.
26. Cild problemimde (lezyonumda) kanamalar oluyor.
27. Cild problemim beni rahatsiz ediyor.
28. Cild rahatsizligim cinsel hayatimi etkiliyor.
29. Cild rahatsizligim beni yoruyor.

Open-ended question:
Cild probleminizle ilgili sizi en cok rahatsiz eden sey nedir? (Lutfen detayli olarak yaziniz) 1–30 numarali sorular icin kullanilan besli secenek grubu:
a) Hicbir zaman
b) Nadiren
c) Bazen
d) Siklikla
e) Her zaman

Table 2 Demographic and clinical characteristic of patients

Patients' details	*n*	%
Age:		
< 30 years	189	45.1%
30–39 years	70	16.7%
40–49 years	78	18.6%
50–59 years	52	12.4%
> 60 years	30	7.2%
Sex:		
Male	175	41.8%
Female	244	58.2%
Marital status:		
Married	224	53.5%
Single/divorced	184	43.9%
Widow	9	2.1%
Not available	2	0.5%
Education:		
Primary school	77	18.4%
Secondary school	107	25.5%
Post secondary	227	54.2%
Not available	8	1.9%

Table 3 Duration of skin disease

Duration (months)	*n*	%
0–1	50	11.9
1–12	128	30.5
> 12	238	54.4
Empty	13	3.1

owing to greater than 10% (three or more) of the questionnaire items being unanswered. The mean age of patient sample was 35.6 ± 14.2 years. Age, education and marital status of participants are given in Table 2. The control group consisted of 104 healthy individuals with a mean age of 32 ± 10.5 years.

The control group did not differ statistically from the patient group in the above-mentioned features.

Localizations of lesions were classified as visible (face, hand and forearm) and invisible (covered areas). Of 419 respondents, 178 had visible lesions. Chronicity of the disease was also examined (Table 3).

The Kruskal–Wallis test showed no statistically significant difference between age groups, marital status, educational level, lesion localization, duration of disease and Skindex-29 scale scores ($P > 0.05$). However, Mann–Whitney U-test results demonstrated that Skindex-29 symptom and emotion scale scores of female patients were higher than those of male patients ($P < 0.05$). However, there was no statistically significant difference in function scale scores between different sexes ($P > 0.05$).

Eighty-one of the respondents had isolated skin lesions and 249 had inflammatory dermatoses. The remainder of the 419 patients had alopecia, hirsutism, hyperhidrosis, keratinization disorder, nail disorders, oral lesions and pigmentary disorders.

Internal consistency reliability

The entire questionnaire and the symptom, emotional, and functional scales were internally consistent with Cronbach's α-coefficients of 0.94, 0.76, 0.88, and 0.92, respectively.

Construct validity

As hypothesized, the mean scores of patients with inflammatory skin diseases were higher ($P < 0.05$) than those of patients with isolated skin conditions. Similarly, the mean scores of healthy individuals were significantly lower than those of people having dermatological diseases ($P < 0.01$).

Content validity

353 patients responded to the open-ended question about what concerned them most about their skin condition (the remaining 66 patients either left the question blank or did not respond specifically about their skin condition or the ways in which they were concerned). These patients responded with 566 different aspects of their condition bothering them. Items in the Turkish Skindex-29 covered 63% of these 566 mentions. The most frequent mention was itching, 21.6%. Examples of mentions that were not included in the items of the instrument were (worried about appearance, 13.4%; chronicity, 6.4%; redness of the skin 3.7%; resistance to treatment, 3.3%; skin condition's effect on choice of apparel, 3.2%; and worry about skin condition being contagious, 3.2%.

Comparison of responses of American, Spanish and Turkish respondents

Skindex scale scores of the Turkish patients were very similar to those of the American and Spanish respondents. More strikingly, our results indicated that in the group of patients with isolated lesions, the scores of the Turkish respondents were more similar to the American patients' results than those of the Spanish patients. Scores of the patients with inflammatory dermatoses were similar in all three ethnic groups (Table 4). Thus, despite significant cultural and socioeconomic differences among Turkish, Spanish and American subjects, the quality-of-life of patients in all three ethnic groups was affected similarly by dermatologic diseases.

According to the physician's assessment, the severity of the disease ranged from very mild, 34%; mild, 44%; moderate, 17%; severe, 3% to very severe, 2%. Spearmen's correlation coefficient (ρ) demonstrated that the physician's assessment of the severity of the disease and patients' scale scores were poorly correlated (symptom scale $\rho = 0.182$,

Table 4 Comparison of Turkish, Spanish and American Skindex-29 scale scores

	Scale scores		
	Emotional	**Functional**	**Symptom**
Patients with isolated lesions			
Turkish (81)	22 ± 19	8 ± 11	22 ± 16
Spanish (42)	14 ± 10	4 ± 5	18 ± 14
American (76)	21 ± 21	9 ± 17	22 ± 20
Patients with inflammatory dermatoses			
Turkish (249)	35 ± 21	23 ± 21	38 ± 18
Spanish (41)	39 ± 21	21 ± 20	41 ± 19
American (358)	39 ± 26	23 ± 24	40 ± 22

$P < 0.01$; function scale $\rho = 0.219$, $P < 0.01$; emotion scale $\rho = 0.269$, $P < 0.01$).

Discussion

The Turkish version of Skindex-29 is a valid and reliable quality-of-life measure for Turkish patients with skin diseases. During the translation process, the most problematic English words to express in Turkish were "embarrassed", "ashamed", "frustrated", and "depressed." The expression "skin condition" presented another challenging concept. Working with the author of the original Skindex-29, we changed the Turkish translation until a satisfactory version was created.

Skin diseases seem to affect Turkish female patients' quality-of-life more severely. Female patients' emotion and symptom scores were significantly higher than those of male patients. Zacharia *et al.* reported similar results.[19] A study with contact dermatitis patients showed that female patients' quality-of-life was more affected than that of male patients.[20] In another study on a group of patients with contact dermatitis, females showed more impaired quality-of-life in the mental health dimension.[21] This might be explained by female subjects' giving relatively more importance to their appearance. However several other published studies have found no significant difference between male and female respondents regarding HRQoL,[22–25] indicating that the issue of gender differences may require further study.

Tests of the measurement properties demonstrated that the individual scales and overall scores of the Turkish Skindex-29 were internally consistent. These results also indicate the measure's construct validity and content validity. However, additional studies are needed to demonstrate the reproducibility and responsiveness of the instrument.

Although our research goal was not to evaluate scale score differences among Turkish, American and Spanish patients, we found that symptoms, emotions, and functioning scores

were strikingly similar. This finding was somewhat surprising since Turkish patients arguably vary greatly in cultural and socio-economic backgrounds. Our results indicate, however, that skin diseases' effects on individuals' quality-of-life appeared to be relatively independent of their cultural background. Moreover, responses about aspects of skin disease not directly addressed by Skindex-29 items were similar among all three patient groups. For example, appearance and chronicity of the disease were among the most commonly stated concerns of Turkish patients, depicting similarity to the Spanish and American results.

Similar to the results in other cultural contexts, the physicians' judgment of the severity of skin diseases did not correlate well with the Turkish patients' perception of their own skin conditions. This finding supports more extensive use of HRQoL measures in regular clinical evaluations.

To our best knowledge, this work represents the second complete example of a dermatological HRQoL questionnaire translated to Turkish. The first being DLQI's Turkish version,[26] which is a widely used and compact questionnaire used for daily clinical practice. Although it covers impairments, it has only one question about emotional life. The emotional scale of Skindex-29 has 10 questions. The Turkish version of Skindex-29 will be an alternative to the existing adopted Turkish measure and can be expected to be used more extensively in clinical evaluations and academic research.

One of the primary objectives of culturally adopting Skindex-29 was its potential of providing a widely accepted and tested means for cross-cultural studies. Our results suggest that the Turkish version of Skindex-29 will permit such studies of skin diseases in Turkish patients, and point to an area of interesting research on this subject.

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