Validation of Farsi Translation of the Ocular Surface Disease Index

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Abstract

Purpose: To develop and validate a Farsi version of Ocular Surface Disease Index (OSDI) for the Iranian population.

Methods: This study was a translation and cross-cultural adaptation and validation of Farsi version of OSDI. Four bilingual (English-Persian) individual including three physicians and one native English teacher were asked to translate the original English OSDI questionnaire in Farsi. Following back and forth translation, integration and pilot check, the translation team came to consensus on translation. Consecutive patients visited in ophthalmology clinic, underwent comprehensive general ophthalmology exam and specific assessments for dry eye including non-anesthetic Schirmer’s test, fluorescein tear break-up time, Fluorescein and Rose Bengal staining and Farsi OSDI (F-OSDI). F-OSDI was again rechecked within 2-7 days after the examination.

Results: Forty-four participants were enrolled into study. Thirty-two (72.7%) were male and 12 (27.3%) female. Mean age of participants was 45.5 (SD = ±15.97, range = 18-80) years. Twenty five percent were less than 31 years old and 10% percent older than 65. The cronbach’s alpha for the questionnaire was 0.807. Questions number 7, 8 showed excellent, and question12 showed good internal consistency, respectively. There was a significant correlation between all pre measures and post assessments.

Conclusion: The obtained F-OSDI showed acceptable internal consistency and test-retest reliability. This F-OSDI could be used for assessment of dry eye, ocular surface discomfort and quality of life in Iranian and Farsi speaking populations.

Keywords: Ocular Surface Disease Index; Dry Eye Disease; Dysfunctional Tear Syndrome; Transcultural Farsi Translation

INTRODUCTION

The Ocular Surface Disease Index (OSDI) questionnaire is a valid instrument to assess how often patients experience symptoms of ocular surface disturbances,
including the symptoms of dysfunctional tear syndrome (DTS). Currently, the OSDI is widely used to evaluate symptoms of DTS. It is one of the major criteria for diagnosis of DTS.[2] Furthermore, the OSDI is used to evaluate the severity of disease and effect of treatment targeting the ocular surface. The OSDI is a patient reported measure that generates numerical data. This measure is widely used in diagnosis, assessment of severity, and impact on quality of life of patients with DTS and other ocular surface diseases.[2,3] It has been suggested by International Dry Eye Workshop (DWEDS) as a valuable instrument in ocular surface disease studies.[3]

The OSDI has undergone transcultural adaptation and validation process into the Spanish,[4] Chinese,[5] Portuguese[6] and Turkish[7] languages. We aimed to translate the OSDI into Farsi and validate it to utilize this essential tool for therapeutic and research purposes.

**MATERIALS AND METHODS**

The OSDI questionnaire included 12 questions in three domains: ocular symptoms, vision related functioning, and environmental triggers. Each patient rated symptoms on a 5-point scale from always (score 4) to never (score 0) for each question concerning different eye issues.

The sum score of the questions in each domain is the score of that domain. The total OSDI score was defined on scale of 0 to 100 translation process as:

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\text{OSDI} = \frac{\text{Sum of scores on domains} \times 25}{\text{# of answered questions}}
\]

According to the OSDI score, patients were classified as normal or with mild, moderate, or severe dry eye disease. The overall OSDI score defines the ocular surface as normal (0-12 points), or as having mild (13-22 points), moderate (23-32 points), or severe (33-100 points) disease.

**Translation**

A forward–backward procedure was applied to translate the OSDI from English into Persian. The translation and transcultural adaptation process included translation of the original English version (Outcomes Research Group, Allergan, Inc., Irvine, CA, USA) of the OSDI into Farsi by one English teacher and two bilingual ophthalmologists working individually. Then the translations were unified by consensus. The cultural adaptation was done to ensure the translated questionnaire is easy and understandable for patients who are able to communicate in Persian. The translation was distributed to 15 patients and their understanding was determined. Necessary changes were incorporated to make the questionnaire understandable. The Farsi version was then translated into English and one native English teacher was asked to assess the comprehension.

The final questionnaire was administered to adult participants in an ophthalmology clinic who had been referred for dry eye. All patients underwent a comprehensive general ophthalmology examinations and specific assessments for dry eye, including non-anesthetic Schirmer’s test, fluorescein tear break-up time (TBUT) fluorescein and rose bengal staining, and reporting using the Oxford scale and Farsi OSDI (F-OSDI). The F-OSDI was rechecked within 2 to 7 days after the examination.

**Patient Population**

The study enrolled patients who were referred to our clinic for dry eye between March and August 2013. Patients who were unable to fully communicate in Persian or who did not consent to participate were excluded. Patients with conjunctivitis, a history of contact lens use, previous intraocular or ocular surface surgeries, allergies, or eyelid malpositions were also excluded from the study.

The study was reviewed and approved by the IRB of the eye research center. Consent was obtained from the participants.

**Reliability and Validity**

Test–retest reliability was examined using weighted kappa between two OSDI evaluations performed 1 week apart. As the responses to OSDI questions are ordinal, the weighted kappa reflects the agreement between the two evaluations more accurately than other measurements, such as Pearson’s correlation. As the status of patients can change within days, a short interval was employed between the test and retest times to have results comparable. Internal consistency of the questionnaire was assessed by Cronbach’s alpha coefficient; an alpha >0.7 was considered acceptable.

**RESULTS**

Forty-four participants were enrolled in the study; 32 (72.7%) were male and 12 (27.3%) were female. The mean participant age was 45.5 ± 15.97 (range, 18–80) years; the age of 25% of the participants was <31 years and that of 10% of the participants was >65 years. The most frequently listed symptoms were discomfort upon exposure to wind (76.7%) and discomfort in dry weather (76.1%).

The Cronbach’s alpha coefficient for the questionnaire was 0.807. Questions number 7, 8 showed excellent, and question12 showed good internal consistency, respectively. There was a significant correlation between all test- and re-test assessments [Table 1]. There was a minor change in the inter-rater coefficient among age groups [Table 2]. Kappa analysis for intra-observer agreement for each question showed
The Ocular Surface Disease Index (OSDI) questionnaires is currently used extensively in clinical and research settings to assess ocular surface disorders such as dry eye, blepharitis, and allergic and inflammatory conditions. The OSDI was developed to evaluate the symptoms and impact of dry eye.

The main strengths of this study include the recruitment of dry eye Persian patients, systematic evaluations for dry eye and applying current criteria for diagnosis of dry eye. There are limitations in this study.
study. The heterogeneous population of patients in terms of different educational and socioeconomic status and different cognitive abilities might have affected the responses.

In conclusion, the F-OSDI demonstrated satisfactory test-retest, and internal consistency, reliability, and validity for evaluation of dry eye symptoms and quality of life in the patients in this study.

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Conflicts of Interest

There are no conflicts of interest.

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