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ORIGINAL ARTICLE

Turkish validity and reliability of Eustachian Tube Dysfunction Questionnaire-7[☆]

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KEYWORDS

Eustachian tube;
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Abstract

Introduction: During clinical evaluations, in order to interpret patients' complaints caused by Eustachian Tube Dysfunction and to monitor the success of the treatment, standardized and disease-related scales are necessary.

Objective: The aim of this study was to investigate the validity and reliability of the Turkish version of Eustachian Tube Dysfunction Questionnaire-7.

Methods: Forty patients diagnosed with Eustachian Tube Dysfunction and 40 healthy individuals were enrolled for the study. After language validation of the Eustachian Tube Dysfunction Questionnaire-7 for Turkish, a scale was completed by the both Eustachian Tube Dysfunction and control groups. Two weeks after the first evaluation, 15 of the cases filled out the scale again without any treatment intervention. Known-groups method was used in validity analysis. Floor-ceiling effect, test-retest method, item-total score correlation and internal consistency analysis were used in reliability analyses.

Results: Cronbach's alpha coefficient was 0.714 for the entire questionnaire. The test-retest reliability coefficient for the total scale was determined as 0.792, indicating correlation between the two questionnaires completed by the same patient over time. In the Eustachian Tube Dysfunction group, total and each item scores were found significantly higher than the control group ($p < 0.001$).

Conclusion: The Turkish version of Eustachian Tube Dysfunction Questionnaire-7 was found to be highly valid and reliable. This scale is recommended to use for screening of Eustachian Tube Dysfunction and evaluating treatment outcome.

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PALAVRAS-CHAVE

Trompa de Eustáquio;
Confiabilidade e
validade;
Estudos de validação

Validade e confiabilidade do Eustachian Tube Dysfunction Questionnaire-7 no idioma turco**Resumo**

Introdução: No intuito de interpretar as queixas dos pacientes causadas por disfunções na trompa de Eustáquio durante uma avaliação clínica, e para monitorar o sucesso do tratamento, há necessidade de escalas padronizadas relacionadas à doença.

Objetivo: O objetivo deste estudo foi investigar a validade e a confiabilidade da versão turca do Eustachian Tube Dysfunction Questionnaire-7.

Métodos: Quarenta pacientes diagnosticados com DTE e 40 indivíduos saudáveis foram incluídos no estudo. Após a validação do Eustachian Tube Dysfunction Questionnaire-7 para o idioma turco, o questionário foi aplicada aos grupos disfunções na trompa de Eustáquio e controle. Duas semanas após a primeira avaliação, 15 pacientes preencheram o questionário novamente sem qualquer tratamento. O método de grupos conhecidos foi utilizado na análise de validade. Os efeitos teto e chão, o método teste-reteste, a correlação se escore de item-total e a análise de consistência interna foram utilizados nas análises de confiabilidade.

Resultados: O coeficiente alfa de Cronbach foi de 0,714 para todo o questionário. O coeficiente de confiabilidade teste-reteste para a escala total foi determinado como 0,792, indicando correlação entre os dois questionários preenchidos pelo mesmo paciente ao longo do tempo. No grupo disfunções na trompa de Eustáquio, foi observado que os escores total e de cada item foram significativamente maiores do que no grupo controle ($p < 0,001$).

Conclusão: A versão no idioma turco do Eustachian Tube Dysfunction Questionnaire-7 foi considerada altamente válida e confiável. Recomenda-se a utilização dessa escala para a triagem de disfunções na trompa de Eustáquio e avaliação do resultado do tratamento.

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Introduction

Beyond just being a tube that links two anatomic spaces, the Eustachian tube possesses crucial functions for the middle ear cavity as such as ventilating, regulating its pressure and protection.¹ Once these functions are disrupted Eustachian Tube Dysfunction (ETD) occurs. This condition is common in otorhinolaryngology practice.² In the beginning, ETD causes complaints such as mild aural fullness. However, as the situation gets more obstinate it may induce tympanic membrane retractions, adhesions, recurrent otitis media with effusion and even chronic otitis media. Hence, diagnosis and treatment for chronic ETD is critically important.³ During clinical applications, in order to interpret patients' complaints caused by ETD and to monitor the success of the treatment, it is required to have standardized and disease-related scales. For this purpose, McCoul et al. published 'Eustachian Tube Dysfunction Questionnaire-7 (ETDQ-7)' as a valid and reliable method for clinical applications.⁴ This scale has been used to assess the effectiveness of the treatment as well as determining the severity of disease.⁵⁻⁷ The aim of this study was to investigate the validity and reliability of the Turkish version of ETDQ-7.

Methods

This study was designed as a validation study. This study was in accordance with Declaration of Helsinki and has been approved by the Local Ethics Committee (20478486-348). All

participants were fully informed about the study and written informed consent forms were obtained. To carry out the validity and reliability of Turkish version of ETDQ-7, permission was obtained from the author of the original scale (Anand, V.).

Selection of participants

In validity and reliability studies, it is suggested that sample size is required to be at least 5-10 fold more than number of items.^{8,9}

Selection of the case group

A total of 40 individuals (older than 18 years old) admitted to outpatient clinic of otorhinolaryngology between August 2015 and December 2015 and were diagnosed with ETD were enrolled for the ETD group. Participants who had chronic diseases like diabetes mellitus, hypertension, atherosclerosis, or were diagnosed with active upper respiratory infection, tympanic membrane perforation, hearing loss and/or tinnitus in Ear, Nose and Throat (ENT) examination and failed to fill ETDQ-7 form were excluded from the study.

Selection of the control group

Forty healthy, age and sex-matched adults were included as a control group. It was proven with medical examination

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