



## Research Article

# Psychometric Properties of Turkish Version of the Dutch Objective Burden Inventory



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## SUMMARY

**Purpose:** The purpose of this study was to assess the psychometric properties of the Dutch Objective Burden Inventory (DOBI) for the Turkish society.

**Methods:** This is a descriptive, methodological study. The sample was composed of 230 heart failure patients' caregivers.

**Results:** The DOBI was translated using translation and back-translation. The translated Turkish version was submitted to eight experts who analyzed it for its content validity. Scores from the experts were evaluated using the Kendall W analysis, and no statistically significant difference was found among the scores (Kendall  $W = .13, p = .338$ ). In the confirmatory factor analysis, factor loading was found to be between 0.75 and 1.00 for all subscales. Thus, the DOBI demonstrated acceptable internal consistency (the components displayed  $\alpha$  scores from .96 to .99), good test-retest reliability (no statistically significant differences were found,  $p > .050$ ).

**Conclusions:** The Turkish version of the DOBI scale is a valid and reliable tool for the Turkish population. It can be used in nursing practices and research.

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## Introduction

Heart failure (HF) is a frequent health problem whose incidence rate increases each year with high mortality and morbidity rates [1]. It is a significant health problem due to its high prevalence, and the very high morbidity and mortality rates it causes. It is a disease which leads to low quality of life due to the patient's failure to meet basic needs, change in body image [2], lack of self-care behaviors and activities of daily living [3,4], chronic fatigue, sexual dysfunction [5,6], and concerns about the future [7]. As the stages of the disease progress, patients require the help of others to meet their basic needs with most of the care being provided by family members. Frequent hospitalization of patients with HF due to the effects of their intensifying symptoms, their cognitive deficiency, medication regimens, and implanted devices can all cause an increase in the stress levels and overall burden on caregivers, causing the caregivers to experience depressive symptoms and the impairment of their emotional and physical health [8]. Since HF requires a long

period of treatment after the diagnosis, this affects not only patients but also the caregivers of the patients physically, psychologically, socially, spiritually and also causes an economic burden along with intense stress [9].

In the study of Hooley, Butler, and Howlett [10], in which they examined the relationship between the quality of life and depression of caregivers of HF patients and their burden, the authors stated that a caregiver's burden is related to his or her depression, and that they have a low level of quality of life [10]. Emotional and physical burden cause caregivers more anxiety and depression, more impaired health, more doctors' visits, and greater use of psychotropic medicine than the normal population [11]. In their work, Aldred, Gott, and Gariballa [12] stated that HF affects the whole life of patients and caregivers. Boyd et al [13] explained that patients and caregivers cannot receive professional support but have a great need for support during diagnosis. The caregivers and patients experience problems because of physical limitations and psychosocial effects. It has also been found that all these factors increase the burden of caregivers and negatively affect patients' and caregivers' psychosocial situation [13].

While the importance of support is emphasized for patients with HF, the physical [14], psychological [9,15], social [12], economic [9], and spiritual burden [9] on caregivers is ignored. A

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caregiver's burden has an obvious impact on HF care, but this issue has not been researched adequately. In order to reduce the burden of the caregiver, the first thing to do is to determine the nature of the burden experienced. Nursing interventions can be planned for caregivers. This information can become a part of the caregivers' support, and health providers can use it as a point of reference and as a continuous assessment tool when planning patient care. As a result, patients' and caregivers' quality of life can both increase. Thus, it is necessary to measure the burden of HF patients' caregivers through appropriate measurement tools. However, currently there is no reliable or valid measurement tool in Turkey. The Dutch Objective Burden Inventory (DOBI) developed by Luttkik et al [14] is one of the most frequently used scales in the field, but a validated Turkish version has not been available.

The DOBI should be adapted to Turkish society so it may be used in Turkey. Although some concepts are common phenomena for many societies, tests developed in a specific culture and a specific language reflects comprehension, conceptualization, and sampling characteristics of that specific culture. Tests should be systematically examined in detail [16–18]. This study was carried out to assess the psychometric properties of a Turkish version of the DOBI.

## Methods

### Study design

This study used a descriptive, methodological design.

### Setting and sample

The study was conducted in the cardiology outpatient clinic and service of a university hospital. It is recommended that sample number should be 5 or 10 times the scale item number to perform the factor analysis for validity and reliability studies [19]. In this study, we aimed to reach at least 190 caregivers on the basis of scale item number, and 230 caregivers were included in the research sample. For test-retest purposes, the instrument should be administered for a second time. For test-retest analysis, a group of at least 30 participants is recommended [17,20]. In this study, 10 days following the first administration, the DOBI was given to 30 caregivers who were willing to take part in the retest. For the purposes of the study, a caregiver was defined as the person whom the HF patient identified as the primary helper with their daily activities, who voluntarily accepted to participate in the research, was literate in Turkish, had no hearing or speaking impairment, and was aged 18 years and older. Factors that disqualified caregivers from sampling were their diagnosis with any psychiatric disease and their care being provided to patients at a price.

### Instruments

#### Demographic and care-related characteristics

This form is comprised of 11 questions regarding caregivers' sociodemographic characteristics: age, sex, marital status, educational status, occupation, social insurance, economic condition, his/her relation to patient, whether he/she lives with patient, care giving period, and whether he/she has a chronic disease.

#### DOBI

The DOBI, which Luttkik et al [14] developed in 2008, was used to examine its reliability and validity for the Turkish Society. The DOBI measures objective and subjective burden in caregivers for HF patients. This scale is composed of 38 items in total. It has four subscales including personal care (11 items), practical support (11 items), motivational support (10 items), and emotional support (6

items). Each item represents a specific caregiving task. Using a 3-point Likert scale, caregivers were asked to rate both the frequency and perceived burden for each caregiving task. If a caregiver did not perform a specific task, no response is required for the subjective component of that specific item. Frequency responses represent objective burden and perceived burden scores represent subjective burden. Higher scores represent higher levels of caregiver burden. Mean objective and subjective burden scores are reported for each domain. Total scores for all components range from 1 to 3. Total scores for each component were computed by adding the items values in each component and then dividing them by the number of items in that component. The internal consistency of the components was calculated using the Cronbach  $\alpha$ . The components of DOBI's objective burden displayed  $\alpha$  scores from .81 to .84 [14].

### Procedure

#### Translation of the DOBI

Language validity of the scale was analyzed as the first step of the research conducted to test the validity of the scale for the Turkish society. The DOBI was translated from English into Turkish by all the researchers and two linguists. The researchers reviewed this preliminary Turkish version of the scale and then drafted one Turkish version of the DOBI. The forward-translated version was then back-translated by a professional bilingual translator unfamiliar with either the English or the Turkish versions of the DOBI to ensure the accuracy of the translation. The translated English form and the original form were compared by the researchers. If the items or response choices between the forward-translated and back-translated instruments did not match, the choice of words was discussed among the translators until a final version was composed [17,18].

#### Content validity of the DOBI

The translated Turkish version was submitted for expert opinion (5 faculty members from the Faculty of Nursing and 3 clinical nurses from the Department of Cardiology) in an analysis of its content validity. Experts were asked to rate each item in the Turkish version of the DOBI based on relevance, clarity, and simplicity on a scale of 1 (not appropriate at all) to 10 (completely appropriate).

#### Pretest

Acquiring the final form with expert opinions, the scale was used in pre-interviews conducted with 12 caregivers. The data from these caregivers was not used in validity and reliability tests.

#### Data collection

The data was acquired by the researchers between March 2012 and March 2013 in face-to-face interviews, explaining the aim of the research to the caregivers who were part of the research sampling in the clinics where the research was carried out.

#### Data analysis

Analysis was conducted using descriptive statistics and appropriate reliability and validity statistical tests using SPSS 15.0 (SPSS Inc., Chicago, IL, USA). Confirmatory factor analysis (CFA) was assessed by using LISREL 8.0 (Scientific Software International, Inc, Lincolnwood, IL, USA). Expert opinions for the content validity of the scale were evaluated through Kendall W analysis. CFA was used for construct validity [21–23]. Pearson product-moment correlation coefficient was used in the reliability analysis, as well as item total score correlation and Cronbach  $\alpha$  analysis. Test-retest

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