



Preliminary assessment of the psychometric properties of the abridged Arabic version of the Zarit Burden Interview among caregivers of cancer patients

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A B S T R A C T

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Purpose: The Zarit Burden Interview (ZBI) is one of the most commonly used measures of caregiver burden. Although it has been translated into and validated in many languages, an Arabic version of the scale was lacking. This study examines the psychometric properties and factor structure of an abridged Arabic version of this measure—the ZBI-A—among caregivers of cancer patients.

Methods: A total of 96 caregivers completed a questionnaire consisting of the ZBI-A, the Hamilton Depression Rating Scale, the World Health Organization Well-Being Index and the Emotional Exhaustion subscale of the Maslach Burnout Inventory. The ZBI-A was assessed using exploratory factor analysis (EFA). Concurrent validity was also examined.

Results: The EFA supported a two-factor structure identical to that of the original ZBI scale. Concurrent validity was supported by the ZBI-A's significant negative association with caregiver well-being and positive association with depression and emotional exhaustion.

Conclusion: These findings suggest that this abridged Arabic version of the Zarit Burden Interview is appropriate for use for assessing caregiving burden.

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Introduction

The Zarit Burden Interview (ZBI) is one of the most commonly used measures of caregiver burden (Knight et al., 2000). Initially developed and validated more than 25 years ago (Zarit et al., 1980), the ZBI has been used to measure strain associated with the care of individuals with dementia. The scale's 22 items are divided into two factors: personal strain and role strain (Zarit et al., 1985), and it has been found to demonstrate adequate concurrent and construct validity (Pratt et al., 1986), as well as high internal reliability (Bachner and Ayalon, 2010). A recent meta-analytic study concluded that responses to this scale are reliable across populations of caregivers (i.e., spouses/partners, children, parents) and care recipients (i.e., cancer, dementia, physical illness, mental illness) (Bachner and O'Rourke, 2007).

Over the years, abridged versions of the ZBI have been introduced. One of the most widely used is the 12-item scale proposed by Bédard et al. (2001). Its scale items were selected through a combination of high factor loadings and high item – total

correlations across different points in time and diagnoses. As in the full 22-item scale, two distinct factors were identified—personal strain and role strain—both demonstrating adequate internal consistency ($\alpha = 0.89$ and $\alpha = 0.77$, respectively). The concurrent validity of responses was also established (Bédard et al., 2001). O'Rourke and Tuokko (2003) examined the psychometric properties of this scale within a large representative Canadian caregiver sample and reported similar findings. As the population ages and new effective treatments are offered for chronic and terminal patients, the burden of care posed upon a patient's informal caregivers is constantly rising. Thus, the importance of developing and translating valid and reliable tools for measuring caregiving burden is a necessity.

While the ZBI has been translated into and validated in many languages, to the best of my knowledge, an Arabic version of the scale was lacking. Given the number of people that speak Arabic worldwide and the fact that life expectancy is increasing in the Arab world (UN, 2010), translation and validation of a research tool for measuring caregiving burden is warranted. The current study examines the psychometric properties, factor structure and concurrent validity of the Arabic version of Bédard et al.'s (2001) abridged ZBI scale among caregivers of cancer patients (ZBI-A).

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Methods

Sample and procedure

Ninety-six Bedouin Arabs, who were primary caregivers of cancer patients, were recruited from the Oncology Institute of Soroka Medical Center, the largest university medical facility in the northern Negev of Israel. The Bedouins are a subgroup within the Arab minority in the State of Israel and constitute approximately 25 percent of the population in the Negev region (210,000).

The prospective respondents were approached by a research assistant who described the study and requested their participation. It was emphasized that the gathered data would be used exclusively for research purposes and that participation was anonymous and voluntary. Respondents completed the questionnaire independently on site and returned it to the research assistant. The distribution and presentation of the questionnaires were identical for all respondents. The study was approved by the ethics committee of the Soroka University Medical Center.

Measures

Scale preparation

The Bédard et al.'s (2001) abridged ZBI was translated from English to Arabic according to accepted procedures (Koller et al., 2007). First, the ZBI was translated from English to Arabic by a bilingual social worker and a physician. The Arabic version was translated back to English by two bilingual graduate students and modified until it was comparable to the original. Emphasis was put on achieving a close verbal translation while maintaining the conceptual meaning of the scale items.

Following the translation process, five respondents were asked to comment on the measure. Based on the respondents' comments, minor changes were made and the final Arabic version was produced (See Appendix 1).

Zarit Burden Interview Arabic Abridged version (ZBI-A). The abridged ZBI is comprised of 12 items (Bédard et al., 2001). Items are rated on a 5-point Likert scale from 0 (never) to 4 (almost always), with a higher score representing a higher sense of burden. The range of the entire scale is 0–48.

Well-being. The World Health Organization Well-Being Index (WHO-5) is a 5-item questionnaire endorsed by the WHO as a screening measure (World Health Organization, 1998) of well-being. Items range along a 5-point Likert scale from 0 (at no time) to 5 (all of the time), with a higher score representing better well-being. The WHO-5 was translated into Arabic and was found valid and reliable (WHO-5, 2013). In this study the internal reliability was high ($\alpha = 0.85$).

Depression. The Hamilton Abridged Depression Rating Scale (HDRS; Bech et al., 1975) is a 6-item questionnaire that measures depressed mood, self-esteem and guilt, social interaction and interests, psychomotor retardation, anxiety, and somatic symptoms. Items are provided along 5-point scales, with the exception of the somatic symptoms item (where responses are provided on a 3-point scale). The HDRS was translated from English to Arabic according to accepted procedures (Koller et al., 2007). As in the original scale, an Exploratory Factor Analysis made on all items yielded a one-factor solution (eigenvalue = 3.575, explained variance 59.58%). The internal reliability was high ($\alpha = 0.81$).

Emotional Exhaustion. The Emotional Exhaustion subscale from the Maslach Burnout Inventory (MBI; Maslach, 1978) consists

of five items rated along a 5-point Likert-type scale ranging from 1 (not at all true) to 5 (very true). This subscale was translated from English to Arabic according to accepted procedures (Koller et al., 2007). As in the original scale, an Exploratory Factor Analysis made on all items yielded a one-factor solution (eigenvalue = 3.810, explained variance 76.04%). The internal reliability was high ($\alpha = 0.92$).

Statistical analysis

The structure of the ZBI-A was explored using exploratory factor analysis (EFA) with principal component analysis (PCA) and varimax rotation. Internal consistency was assessed using Cronbach's alpha coefficient. Concurrent validity was established using Pearson correlation coefficients that examined the associations between caregiver well-being, depression, emotional exhaustion and the ZBI-A. Significance level was set at $p < 0.05$. The data were analyzed with SPSS statistical software, PC version 18.0.

Results

The average age of the caregivers was 38.1 years, and most were women. About half were adult children of patients, and more than half defined their level of religiosity as conservative (Table 2).

Exploratory factor analysis

The sample was first assessed for its suitability for factor analysis. Bartlett's Test of Sphericity was highly significant ($\chi^2 = 447.9$, $p < 0.0001$), and the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy value was 0.78. Both of these

Table 1

Factor loadings of the items of the abridged Zarit Burden Inventory – Arabic version (ZBI-A) ($n = 96$).

Item/factor	Personal strain	Role strain
Do you feel that because of the time you spent with your relative, you don't have enough time for yourself?	0.50	0.05
Do you feel stressed between caring for your relative and trying to meet other responsibilities (work/family)?	0.61	0.03
Do you feel angry when you are around your relative?	0.67	0.17
Do you feel that your relative currently affects your relationship with family members or friends in a negative way?	0.72	0.21
Do you feel strained when you are around your relative?	0.75	0.12
Do you feel that your health has suffered because of your involvement with your relative?	0.81	0.06
Do you feel that you don't have as much privacy as you would like because of your relative?	0.77	0.09
Do you feel that your social life has suffered because you are caring for your relative?	0.80	0.10
Do you feel that you have lost control of your life since your relative's illness?	0.72	0.14
Do you feel uncertain about what to do about your relative?	0.13	0.57
Do you feel you should be doing more for your relative?	0.12	0.84
Do you feel you could do a better job in caring for your relative?	0.03	0.83
Eigenvalue	4.54	2.02
Percent of explained variance	36.9	16.4
Cronbach's alpha	0.81	0.74
Total Cronbach's alpha	0.77	

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