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## Translation, Psychometric and Concept Analysis of the Occupational Balance-Questionnaire Based on a Turkish Population

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### ABSTRACT

Occupational balance is a crucial concept in occupational therapy, accepted as a key component of health and well-being. The *Occupational Balance-Questionnaire* (OB-Quest) is designed as a standardized instrument to assess occupational balance. This study investigated the validity and reliability of the OB-Quest Turkish, which consisted of translation, cross-cultural adaptation, and analysis psychometric properties phases. The factor structure of the OB-Quest indicated a good model fit. The criterion-related validity showed a positive correlation with Beck Depression Inventory and a negative correlation with the 12-item Short Form Survey. The OB-Quest-Turkish showed questionable internal consistency and an excellent correlation between test-retest.

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### KEYWORDS

Occupational balance; psychometrics; reliability and validity; self-report

## Introduction

Occupational balance refers to the perception of having an ideal mix of occupations in life. In other words, it is the subjective perception of having both the best number of and variation in occupations (Wagman et al., 2012). From an occupational therapy perspective, occupational balance refers to the balance between different aspects of life, such as work and leisure-related activities (Christiansen & Matuska, 2006). This concept is complex and considered a bridge that connects occupation and health (Stamm et al., 2009). It has been shown that occupational balance is related to stress, life satisfaction, health and wellbeing (Håkansson et al., 2009;

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Wagman & Håkansson, 2019). Therefore, occupational balance is identified as an indication of good subjective health and is considered crucial for promoting health (Dür et al., 2015; Wagman & Håkansson, 2014a).

Yerxa highlighted the significance of creating an individualized occupational balance through discovering, developing and acting on their own interests and by participating in the roles, habits and rituals of their culture (Yerxa, 1998). The person's environment and culture are essential factors in choosing activity preferences, creating routines and establishing occupational balance (Borgh et al., 2018; Dür et al., 2015; Håkansson et al., 2011). In addition, there are indicators of occupational imbalance, such as excessive time spent in one area, being a parent, feeling over-occupied or under-occupied (Backman, 2004). For example, Turkish women are a determining factor in the family; a controlling power plays a significant role in shaping the family (Aktaş et al., 2012). With the changing social structure with industrialization, working women's lives in contemporary Turkey are divided between home and work. While the traditional gender roles of Turkish women have continued, they have additional duties if they also work in the business world. Thus, women may experience occupational balance problems between family roles and duties as wives and mothers and the demands of business life (Bozkurt et al., 2011; Topgül, 2016). Eklund et al. have highlighted the significance of the interaction between personal preferences and environmental influences, including different factors, such as physical, mental, social and cultural aspects, in assessing occupational balance (Eklund et al., 2017).

Although the concept of occupational balance has been debated from an academic perspective, the experimental dimension, which affects individuals, has not been adequately examined in the literature. Continuing the discussions only at the academic dimension constitutes an obstacle to the development of evidence-based intervention strategies. In occupational science and clinical reasoning, occupational balance is an important factor as life stressors and health determinants change (Backman, 2004). However, we should note that there is limited research in the literature. Thus, evidence-based research is needed to identify the factors and interventions that affect occupational balance (Wagman & Håkansson, 2019) and standardized scales play a key role in discovering how people perceive meaningful occupations in performance area.

Occupational balance was first assessed using a simple two-page questionnaire designed for a study published by Wilcock, which examined the participation of individuals' current and ideal physical, mental, social and rest occupations. However, to our knowledge, this questionnaire has not been used in another study (Wilcock et al., 1997). Another questionnaire, titled the *Occupational Balance Questionnaire* (OBQ), was developed by

Wagman and Håkansson (Wagman & Håkansson, 2014b). This scale is important, given that it has been found to be reliable and valid; it focuses on an individual's satisfaction with their occupations regarding their number and variety (Wagman & Håkansson, 2014b, 2019). Existing occupational balance tools focus on individuals' satisfaction regarding the time spent in specific occupations or regarding the number or types of occupations (Dür et al., 2015). The *Occupational Balance-Questionnaire* (OB-Quest) was developed with the idea of presenting as a new perspective. OB-Quest directly focused on the balance between meaningful occupations, such as "challenging and relaxing activities" or "participation of stressful or fewer stressful activities." The first draft of the OB-Quest was piloted in 20 additional patients and healthy people. After the feedback, some of the questions were rewritten. The final version of OB-Quest has contained ten items addressing seven components (Dür et al., 2014). The OB-Quest considers four features that have not previously been addressed by occupational balance tools, such as 1) challenging and relaxing activities, 2) involvement in stressful and less-stressful activities, 3) the impact of an individual's health status on activities and 4) the adaptation of activities following a change in living conditions. The OB-Quest was developed as a generic self-reporting tool to evaluate the occupational balance. Its clarity and short administration time provide an advantage in clinical use. The original scale was constructed in German and translated into English following standard translation procedures (Dür et al., 2014). The OB-Quest is currently available in Danish and Chinese, as seen in the literature (Hansen et al., 2020; Ho et al., 2020). Since research and evidence-based clinical practice need to reflect Turkish culture, there is a need for standardized scales that assess occupational balance. The present study aims to translate the OB-Quest into Turkish and reporting the psychometric properties of the Turkish OB-Quest.

## Methods

This study was designed as a methodological study. It was conducted in line with the institutional and national ethical standards of the responsible committee on human experimentation and consideration of the Declaration of Helsinki. All participants were informed of the aim of the present study; and signed an informed consent form. Ethical approval for this study was granted by the Clinical Research Ethics Committee of Hacettepe University on 16 December 2015 (approval number: GO 15/735-43).

## Data collection

The socio-demographic form was used to obtain information, including age, gender, marital status, occupation and working duration. In addition,

participants completed the *OB-Quest*, the *Beck Depression Inventory* (BDI) and the 12-item *Short Form Survey* (SF-12) (Beck, 1961; Dür et al., 2014; Hagell et al., 2017). These instruments were chosen to calculate criterion-related validity due to the relationship between occupational balance and depression and quality of life (Wagman et al., 2019; Yu et al., 2018).

**Occupational Balance-Questionnaire (OB-Quest):** The OB-Quest was developed by Dür et al. (2014) as a self-reporting outcome instrument for evaluating occupational balance. The OB-Quest was developed based on the experiences of chronically ill patients and healthy people. Construct validity of the OB-Quest was examined using Rasch analyses, and the results of the item and fit statistics referring to construct validity were fit. The original version of the OB-Quest's internal consistency was shown by Cronbach's alpha as 0.57. The OB-Quest includes ten items and seven components: 1) challenging and relaxing activities, 2) activities with acknowledgment by the personal and by the sociocultural context, 3) involvement in stressful and less-stressful activities, 4) the impact of a health condition on activities, 5) rest and sleep, 6) variety of activities and 7) the adaptation of activities according to a change in living conditions. Each item is scored by the Likert scale, ranging from 1 to 3 (see the English version of the OB-Quest, found in Table 4 of Dür et al.'s study [2014]). A score of 1 indicates a positive score, such as 'having a wide variety of activities,' and 3 indicates a negative score, such as 'not having a wide variety of activities or not showing any variation.' The OB-Quest has the total score calculated by adding the items; a low score indicates good occupational balance (Dür et al., 2014).

**The Beck Depression Inventory (BDI):** The BDI was developed by Beck in 1961. The BDI measures the presence and level of depressive symptoms, consisting of 21 items rated on a 4-point scale (Beck, 1961). The total score ranges from 0 to 63, with higher scores represent an increase in depression levels. Those with a score of 13 and above are assumed to show signs of depression. The internal consistency was .90 and .89, respectively; test-retest stability was also high ( $r = .94$ ). Convergent and discriminant validity results were satisfactory (Kapci et al., 2008). The Turkish scale was adapted by Hisli et al. (Hisli Şahin, 1988).

**The 12-item Short Form Survey (SF-12):** The SF-12 was created by simplifying the SF-36. The SF-36 was developed by Ware et al. in 1993 to evaluate the quality of life and health outcomes (Ware Jr et al., 1996). The SF-12 has two components as SF-12 physical (SF-12 PCS) and SF-12 mental (SF-12 MCS); scores were calculated for two parameters separately. The SF-12 PCS is represented by physical functioning, role limitations (physical), bodily pain and general health scales, while the SF-12 MCS is represented by vitality, social functioning, role limitations (emotional), and

mental health scales (Hagell et al., 2017). Low scores are associated with a low quality of life, and each component score is calculated according to the algorithm described by Ware et al. (1995). The SF-12 is an easy-to-apply questionnaire with proven reliability and validity when translated into Turkish. The Turkish version of scale was conducted by Soylu and Kütük (Kocyigit et al., 1999; Soylu & Kütük, 2021).

## **Participants**

This study was conducted with individuals who were students or employees in the Department of Health Science at the Hacettepe University and their relatives between April 2018 to May 2020. This study included 339 voluntary participants who were native Turkish speakers, literate, healthy and aged 18–65 years. Individuals who had been diagnosed with acute or chronic diseases were excluded from this study. Students, patients, faculty staff or relatives who met the inclusion criteria were invited to join the present study and were asked to complete the forms. The sample size required for this study was calculated as at least ten times the number of items in the scale to produce reliable conclusions through multivariate analysis, as suggested by Tabachnik and Fidell (Tabachnick et al., 2007). According to Tabachnik and Fidell's recommendation, the number of individuals required to complete the OB-Quest in this study was calculated as being at least 100. This study consisted of two parts: first, the translation and cross-cultural adaptation were undertaken, and second, analyses of the psychometric properties of the Turkish OB-Quest were performed.

## **Procedure**

### ***Part I: Translation and cross-cultural adaptation***

The developers of the original questionnaire were contacted to seek their permission for the OB-Quest to be translated into Turkish, and the researchers obtained this permission using an email. The five-stage translation-back translation method, proposed by Beaton et al., was used in the cross-cultural adaptation of the questionnaire (Beaton et al., 2000). *The first stage* included translation procedures by two therapists, who are the authors in this study, and one of whose mother tongues is Turkish, but who are also fluent in English.

*In the second stage*, two forms were compared to avoid discrepancies. The OB-Quest was then converted into a single text by the research team. The OB-Quest did not require any cultural adaptations; a simple arrangement was enough to provide clarity. Researchers edited only items 9 and

10, both of which consisted of just one sentence. These items were split into two – an “example and question” – to overcome the complexity of the translation and to maintain the integrity of meaning. The first part of these sentences, “How well can you adapt your activities in your everyday life to changed living conditions,” remained a question in the Turkish version. The sentences, such as “a changed state of health” and “in these questions, such as a change of your professional life or employment status” in the second part of these questions were given as examples. After the arrangements, researchers agreed regarding the Turkish version of the OB-Quest.

*In the third stage*, two translators who spoke very good English and Turkish back-translated the final version of the Turkish OB-Quest into English. *In the fourth step*, an expert committee meeting was held with a team of authors and translators to consider the final version of the OB-Quest. *The final stage* involved a pilot study. After the translation process, the pilot study was conducted with 30 people. None of the participants made a negative comment about the Turkish OB-Quest. The pilot study’s participants were not included in the sample.

## **Part II: Analysis of the psychometric properties of the OB-Quest**

### **Data analysis**

IBM SPSS Statistics, Version 21.0, 2012 (IBM Corp., Armonk, NY, USA), was used for the statistical analysis at the 95% confidence level. Descriptive analysis was used to describe participants’ demographic data and questionnaire results. Nominal and ordinal parameters were described by frequency analysis and scale parameters were presented as a mean and standard deviation ( $X \pm SD$ ). The Kolmogorov–Smirnov test was used to test the normality of the scale scores (Lilliefors, 1967). Test results showed the parameters were not normally distributed, so the Mann-Whitney U and the Kruskal-Wallis test were used to assess the differences among parameters (MacFarland & Yates, 2016; Ostertagova et al., 2014). The statistical significance value was accepted as  $p < 0.05$ . Missing values were excluded from the analysis. Confirmatory factor analysis (CFA) and Spearman correlations were used to evaluate the instrument’s validity, and Cronbach’s alpha and test-retest analyses were used to evaluate its reliability (Alpar, 2013; Harrington, 2009).

### **Reliability**

*The internal consistency* of the Turkish OB-Quest was analyzed using Cronbach’s alpha scores. Cronbach’s alpha coefficients range from 0 to 1, and reliability is higher as it approaches 1. A general rule of thumb is

that a Cronbach's alpha score of 0.70 or above is good. A coefficient alpha of  $< 0.5$  suggests unacceptable reliability,  $0.5 - 0.6$  is poor reliability,  $> 0.6$  is questionable reliability,  $> 0.7$  is acceptable reliability,  $> 0.8$  is good reliability and  $> 0.9$  is excellent reliability (George & Mallery, 2003).

**Test-retest reliability** was assessed with the intra-class correlation coefficient (ICC). The OB-Quest's total score and each item's ICC value were calculated (Koo & Li, 2016). ICC values were interpreted as poor if they were  $< 0.40$ , moderate if they were  $0.40 - 0.60$ , good if they were  $0.60 - 0.75$ , and excellent if they were  $0.75 - 1.00$  (Alpar, 2013). To assess test-retest reliability 7–10 days after the first application, 54 people were selected randomly from 339 participants, and the OB-Quest was reapplied.

### Validity

**Construct validity** was determined using a CFA and structural equation modeling (SEM) with IBM AMOS software. In SEM, an evaluation of a model's fit is based on variables measured without error. For each estimation procedure, many goodness-of-fit (GFI) indices were applied to investigate whether the model was consistent with the empirical data. In addition, model fit indices were examined with the root mean square error of approximation (RMSEA), the chi-square/degree of freedom (CMIN/DF), the GFI and the adjusted goodness of fit index (AGFI). The RMSEA is a measure of approximate fit in the population. As a guideline, values that are  $\leq .05$  can be considered to indicate a good fit, with values between  $.05$  and  $.08$  suggesting an adequate fit. CMIN/DF is the minimum discrepancy divided by its degrees of freedom. A CMIN/DF of  $< 3$  indicates an acceptable fit between the hypothetical models (Kline, 2015). The GFI measures the relative number of variances and covariances in the sample, and the AGFI corrects the GFI, which is affected by the number of indicators of each latent variable. The GFI and AGFI are chi-square-based calculations independent of degrees of freedom. The recommended cutoff values for acceptable values are those  $\geq 0.90$  (Schermelleh-Engel et al., 2003).

**The criterion-related validity** of the scale was investigated using the Spearman correlation between the Turkish OB-Quest, the SF-12 and the BDI.

### Results

Table 1 shows the demographics of the respondents.

Baseline characteristics of participants and difference analysis results based on demographic properties are shown in Table 2. The ages of the participants affected their occupational balance; occupational balance decreased in those of the 36–55 years age range, with the highest levels



**Table 1.** Demographic characteristics of respondents.

Parameters	Value
Age (year)	<b>X ± SD</b> 29.43 ± 11.96
Age (year)	<b>n (%)</b>
18-25	186 (54.8)
26-35	63 (18.5)
6-45	41 (12.09)
46-55	37 (10.9)
56-64	12 (3.5)
<b>Gender</b>	<b>n (%)</b>
Female	239(70.5)
Male	100 (29.4)
<b>Marital status</b>	<b>n (%)</b>
Single	233(68.7)
Married	106(31.2)
<b>Occupation</b>	<b>n (%)</b>
Student	160 (47.1)
Health care provider	85 (25.07)
Other	94 (27.7)
<b>Working time</b>	<b>n (%)</b>
None	178 (52.5)
1-5 years	91 (26.8)
6-10 years	20 (5.89)
Over 10 years	50 (14.7)

**Table 2.** Baseline characteristics of participants and difference analysis results based on demographic properties.

Parameters	OB-QUEST	BDS	SF-12 MCS	SF-12 PCS
<b>Age (year)</b>	<b>X ± SD</b>	<b>X ± SD</b>	<b>X ± SD</b>	<b>X ± SD</b>
18-25	18.38 ± 2.67	12.76 ± 9.57	39.38 ± 10.05	49.69 ± 7.5
26-35	18.82 ± 3.43	9.39 ± 9.09	42.79 ± 10.06	50.1 ± 7.17
36-45	19.4 ± 3.43	10.9 ± 7.16	60.75 ± 42.31	48.83 ± 7.5
46-55	19.13 ± 3.11	13.29 ± 7.02	41.69 ± 10.24	45.42 ± 7.95
56-64	16.4 ± 3.23	8.83 ± 4.46	47.64 ± 7.57	46.9 ± 5.28
<b>p</b>	<b>0.031<sup>a</sup></b>	<b>0.016<sup>a</sup></b>	<b>0.009<sup>a</sup></b>	<b>0.011<sup>a</sup></b>
<b>Gender</b>				
Female	18.83 ± 2.89	12.75 ± 9.11	39.52 ± 10.08	48.09 ± 7.84
Male	18.07 ± 3.26	9.4 ± 8.01	44.24 ± 9.34	51.51 ± 6.21
<b>p</b>	0.053 <sup>b</sup>	<b>0.001<sup>b</sup></b>	<b>0.000<sup>b</sup></b>	<b>0.000<sup>b</sup></b>
<b>Marital status</b>				
Single	18.35 ± 2.08	12.15 ± 9.4	50.07 ± 10.15	49.81 ± 7.46
Married	19.16 ± 3.4	10.91 ± 7.5	42.77 ± 9.73	47.54 ± 1.57
<b>p</b>	<b>0.042<sup>b</sup></b>	0.607 <sup>b</sup>	<b>0.027<sup>b</sup></b>	<b>0.008<sup>b</sup></b>
<b>Occupation</b>				
Student	18.42 ± 2.64	13.21 ± 9.35	39.01 ± 10.22	49.44 ± 7.69
Health care provider	18.52 ± 3.03	9.14 ± 7.88	42.87 ± 9.51	50.74 ± 6.55
Other	18.98 ± 3.56	11.67 ± 8.59	42.39 ± 9.87	47.04 ± 7.88
<b>p</b>	0.390 <sup>a</sup>	<b>0.002<sup>a</sup></b>	<b>0.004<sup>a</sup></b>	<b>0.005<sup>a</sup></b>
<b>Working time</b>				
None	18.41 ± 2.67	13.1 ± 9.44	39.60 ± 10.09	48.81 ± 7.92
1-5 years	18.82 ± 3.47	7.84 ± 6.72	43.18 ± 10.25	50.07 ± 7.22
6-10 years	18.85 ± 3.64	12.85 ± 12.6	40.18 ± 10.11	52.30 ± 5.99
Over 10 years	18.82 ± 3.08	13.50 ± 6.56	41.74 ± 9.15	47.08 ± 6.84
<b>p</b>	0.954 <sup>a</sup>	<b>0.000<sup>a</sup></b>	0.411 <sup>a</sup>	<b>0.004<sup>a</sup></b>

X: Mean, SD: Standard Deviation. <sup>a</sup>Kruskal-Wallis Test, <sup>b</sup>Mann-Whitney U Test.

observed in those over the age of 56 years. While single individuals had better occupational balance than married individuals, it was noted that gender, occupation, and duration of work had no impact on occupational balance.

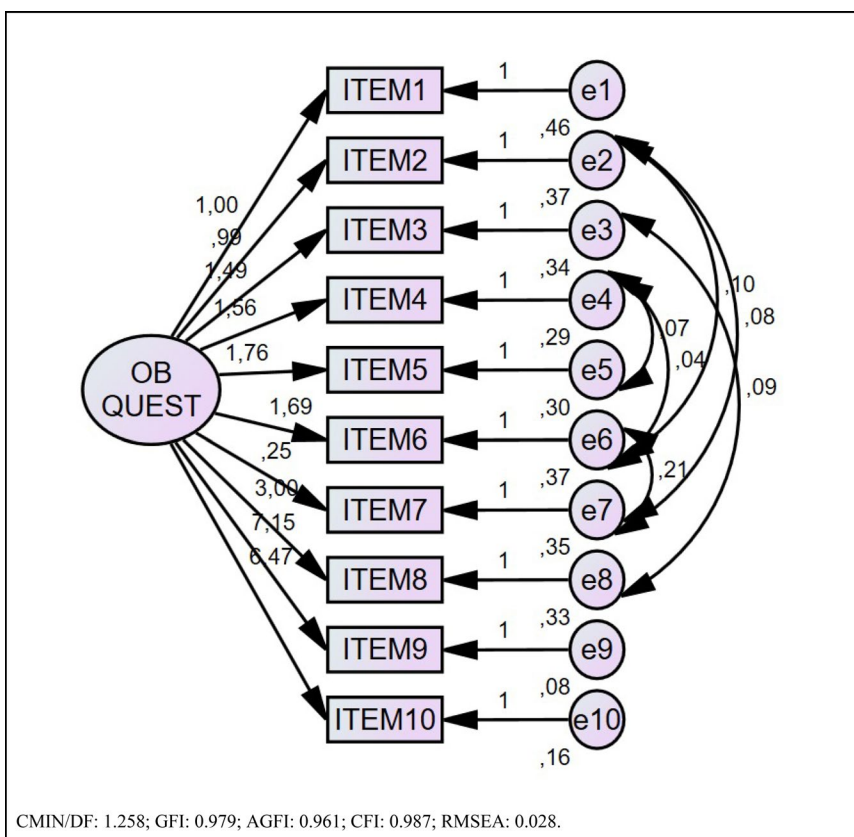
Tables 3 and 4 show the reliability results. Cronbach's alpha for the OB-Quest total score was 0.645, indicating questionable internal consistency. While the OB-Quest has questionable reliability for measuring occupational balance, it demonstrated excellent test-retest reliability. All of the items in the Turkish OB-Quest also proved to be reliable. Results of the Turkish OB-Quest total score showed an excellent correlation between the test-retest (ICC = 0.898). Each item demonstrated excellent or good test re-test reliability – except for item 5, which showed moderate reliability (Table 4).

**Table 3.** Reliability results of the Turkish OB-Quest.

	Min-max	Median	Corrected item-total correlation	Cronbach's Alpha if item deleted
Item 1	1-3	2	0.131	0.661
Item 2	1-3	2	0.282	0.626
Item 3	1-3	2	0.196	0.643
Item 4	1-3	2	0.304	0.622
Item 5	1-3	2	0.280	0.627
Item 6	1-3	1	0.435	0.593
Item 7	1-3	1	0.235	0.635
Item 8	1-3	2	0.294	0.624
Item 9	1-3	2	0.505	0.576
Item 10	1-3	2	0.455	0.587

**Table 4.** Intraclass correlation coefficients (ICC) and 95% confidence intervals (CI) for each item.

Items	ICC	95% CI (lower-upper bound)
1. Do you generally find your activities in your everyday life under-demanding?	0.774	0.613-0.869
2. Do you generally find your activities in your everyday life over-demanding?	0.715	0.508-0.835
3. Do you generally receive enough appreciation for activities in your everyday life?	0.783	0.625-0.874
4. How often do you feel overstressed in your everyday life?	0.731	0.537-0.844
5. How much are your activities in your everyday life affected by your health?	0.584	0.267-0.762
6. Do you get enough rest?	0.775	0.612-0.870
7. Do you get enough sleep?	0.896	0.822-0.940
8. Do you have sufficient variety of different activities that you do? For example, do you do a mixture of physical activities and more sedentary ones (where you are sitting down or staying still)? Or a mixture of creative activities and activities that are more routine for you?	0.718	0.512-0.837
9. How well can you adapt your activities in your everyday life to changed living conditions, such as a changed state of health?	0.651	0.402-0.797
10. How well can you adapt your activities in your everyday life to changed living conditions, such as a change of your professional life or employment status?	0.767	0.601-0.865
<b>Total score</b>	<b>0.898</b>	<b>0.819-0.942</b>



**Figure 1.** The path diagram of confirmatory factor analysis.

**Table 5.** Correlation analysis results between OB-Quest and other scale scores.

	r	p
BDI	0.314	0.000
SF-12 PCS	-0.294	0.000
SF-12 MCS	-0.408	0.000

BDI: Beck Depression Inventory, SF-12 PCS: physical component score, SF-12 MCS: mental component score.

The CFA was performed to investigate the structure of factors in the OB-Quest (see [Figure 1](#)). The results provided a good fit for the data, lending support to the originally hypothesized structure of the questionnaire, which was CMIN/DF: 1.258, GFI: 0.979, AGFI: 0.961, CFI: 0.987 and RMSEA: 0.028.

The correlation analysis was conducted between the Turkish OB-Quest, the BDI and the SF-12 to analyze the criterion-related validity of the scale (see [Table 5](#)). While the results showed moderate correlations with the BDI score (positive) and the SF-12 MCS (negative), the SF-12 PCS score had a weak correlation with the OB-Quest. At the same time, these results

reflected increasing depression scores and decreasing quality of life scores concerning occupational imbalance.

## Discussion

This study aims to translate the OB-Quest into Turkish, adapt it cross-culturally and examine its psychometric properties through validity and reliability testing. A psychometric analysis suggests that the Turkish OB-Quest has good validity and is a reliable scale for understanding occupational balance. The Turkish OB-Quest showed questionable internal consistency, excellent test-retest reliability, and construct validity. The criterion-related validity results showed a moderate correlation with the BDI score (positive) and the SF-12 MCS (negative) and a weak correlation with the SF-12 PCS (negative). This study indicates that the Turkish OB-Quest could be used to assess occupational balance in the Turkish population.

The cross-cultural adaptation of the OB-Quest required minimum effort, and feedback from the instrument's translators, back translators and participants were positive. The translation process was completed with minor arrangements, as mentioned in Part I of the introduction. Similarly, minor cultural adaptations were sufficient to produce the Chinese and Danish versions. While adjustments were made in items 5 and 8 of the Chinese OB-Quest, it is seen that some expressions were added to items 5, 9 and 10 in the Danish version to increase clarity (Hansen et al., 2020; Ho et al., 2020).

Dür et al. developed the German and English versions of the OB-Quest simultaneously. The original OB-Quest Cronbach's alpha score is 0.57, which is poor (Dür et al., 2014). The Danish OB-Quest's Cronbach's alpha value (0.59) is similar to the original version and shows low reliability. However, the Chinese OB-Quest has good internal consistency (a Cronbach's alpha of 0.80). The Turkish OB-Quest Cronbach's alpha score is 0.645, and it has questionable internal consistency. When considering the original and the various OB-Quest versions' Cronbach's alpha scores, these results may be due to an insufficient number of questions on the scale. Therefore, the original OB-Quest could be improved in the future by increasing the number of questions. The Chinese OB-Quest's test-retest results demonstrate excellent reliability (ICC = 0.98), as does the Turkish OB-Quest (ICC = 0.898). However, the Danish OB-Quest's reliability was examined using a different method, using Cronbach's alpha and the Person Dissociation Index (PSI). Therefore, the results are unsuitable for a test re-test comparison (Hansen et al., 2020; Ho et al., 2020). The Turkish OB-Quest's lowest ICC values were for item 5 (moderate) and item 9 (good). Item 5 relates to the impact of health on daily activities, and item 9 relates to

adapting following a change in health. Given that the questions did not cover periods like the previous week or month suggests that acute health conditions, such as pain, may have affected answers given at the moment. However, considering current ICC values, this has a negligible effect.

The original study analyzed the overall fit, the items and fit statistics using a Rasch analysis and showed that the OB-Quest was a valid instrument for patients with arthritis and healthy people (Dür et al., 2014). The Chinese OB-Quest's content validity index (CVI) was calculated. The CVI results show that the Chinese version of the OB-Quest has good content validity, and it is suitable for assessing occupational balance in the Chinese population (Ho et al., 2020). In comparison, the Danish OB-Quest reported that items 1 and 9 showed a misfit to the Rasch model. In the Danish OB-Quest, overall and individual item fit was achieved after deleting items 1 and 9 and splitting item 4 into two gender-specific items. Differences between the original and Danish OB-Quests' results were explained by differences between the sample groups, and it has been suggested that groups should be evaluated who have reduced functional skills (Hansen et al., 2020). To examine the fit of the models, it is not necessary to evaluate all factors. The CMIN/DF is accepted as an indicator of a good fit (Schermelleh-Engel et al., 2003). Therefore, we investigated four factors for our data, and the structure revealed a good model fit for the CFA; the Turkish OB-Quest demonstrated good construct validity. This demonstrated that the Turkish OB-Quest could be a useful tool for assessing occupational balance.

We conducted a correlation analysis between the Turkish OB-Quest and the BDI, SF-12 PCS and SF-12 MCS to analyze the convergent validity of the scale. While the OB-Quest has a moderate correlation with the BDI (positive) and SF-12 MCS (negative), it has a weak correlation with the SF-12 PCS (negative). Forhan and Backman have revealed that occupational balance has a positive relationship with social function, general health and bodily pain, which are indicators of the quality of life of individuals with RA. They defined the general health status as an important predictor of occupational balance, and their results demonstrated a moderate correlation between general health and dimensions of occupational balance. Therefore, they have attended to the necessity of occupational balance models adopting a multidimensional concept (Forhan & Backman, 2010). Physical capacity is one factor that negatively affects occupational balance; it decreases over time for reasons, such as chronic conditions. In this study, a younger population constituted the majority, explaining the weak correlation with the SF-12 PCS. On the other hand, correlation coefficient results could be related to the concept that general health does not fully cover the occupational balance. Therefore, the correlation results can be considered sufficient to indicate criterion-related validity.

Individuals' occupational balance and quality of life should not be considered independent of health conditions. Ho et al. (2020) indicated that about insomnia, which directly affects the quality of life of individuals, severity also affects occupational balance. In addition, the symptoms of RA, participation in occupations meaningful for the individual and satisfaction were determined as an important factor for the occupational balance and quality of life (Forhan & Backman, 2010). Similarly, Bejerholm stated that individuals with schizophrenia who were more engaged in meaningful activities had improved occupational balance and quality of life (Bejerholm, 2010). Conversely, Aas et al. found no significant relationship between the occupational balance and quality of life of nursing home residents; however, when comparison according to the genders, between the men's occupational balance and quality of life scores had shown a positive relationship (Aas et al., 2020). Wagman et al. conducted a study with patients suffering from anxiety and depression. The results demonstrated that a high quality of life and a low level of depression were associated with occupational balance (Wagman et al., 2019). Our study's correlation results support the conclusion that individuals with good quality of life and low depression scores have better occupational balance. However, occupational balance and quality of life scores were higher in single individuals than those who were married, while depression scores were worse – but there was no significant difference between them. These findings show the relationship between occupational balance, depression, and quality of life while at the same time demonstrating that this relationship changes according to different demographic characteristics.

The findings obtained in the present study, which has included healthy individuals of different ages, are like those of the original OB-Quest. In further studies, conducting research into collaborating with individuals of specific disease groups can provide valuable insights into defining the use of the OB-Quest.

Occupational balance is still in the process of development as a concept, and it may have even more facets than are currently being discussed or addressed. For instance, the occupational balance has been associated with many different factors, such as occupations and one's values, the meaning of one's occupations, one's interests, cultural role expectation and performance, changes in occupational balance over the lifespan, and use of time (Borgh et al., 2018; Dür et al., 2015; Eklund et al., 2019; Håkansson et al., 2011; Oakley et al., 1986). However, the OB-Quest does not have any items that directly examine these factors. For example, OB-Quest does not include any items to evaluate the time directly, such as "has enough time or is satisfied with the way he/she uses it," on the other hand. The OB-Quest, which approaches occupational balance assessment from a different perspective that considers the addition of different components of occupational balance, can support the development of the questionnaire.

### **Study limitations**

Our study has some limitations. First, given that most of the individuals who participated in this study were university students and their relatives may be a potential limitation, and it is acceptable to use within the Turkish population with caution and qualifications. Second, the OBQ is a self-report scale; there is the possibility of biased reports, especially social desirability. Third, occupational balance is a new concept, and no assessment tool has yet been accepted as the gold standard; however, the concept has been associated with depression and quality of life in the literature. Therefore, we used the BDI and the SF-12, a short form of the SF-36, to determine its validity. The SF-12 assesses some components of occupational balance. However, the two scales do not cover all of the OB-Quest's domains. Finally, the concept of occupational balance may need further clarification because of its association with personal and cultural values, the personal and cultural meaning of an occupation, actual use of time, perception of time use, actual role performance, lifetime role expectations, and possibly other factors that have not yet been identified. Although OB-Quest has a new perspective on the occupational balance assessment, it does not cover all the factors associated with the occupational balance concept in the assessment. Therefore, additional tools may be needed to provide a clear and complete assessment of the client's strengths and weaknesses.

### **Conclusion**

This study suggests that the Turkish OB-Quest indicates questionable reliability and good validity, and it is proper for use within the Turkish population. We believe that developments in occupational therapy will be supported by a better understanding of the concept of occupational balance about the quality of life and wellbeing. Moreover, it can guide researchers and clinicians and help implement evidence-based studies and plan interventions.

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### **Declaration of interest**

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

### **Research ethics section and patient consent**

All patients were informed about the study, and informed consent was obtained. Hacettepe University Clinical Research Ethical Board approved the study (Approval Number: GO 15/735-43), and all participants signed an informed consent form.

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