The Reliability and Validity of the Buss-Perry Aggression Questionnaire (BAQ)-Turkish Version

H. Andaç DEMİRTAŞ-MADRAN

SUMMARY

Objective: The aim of the present study was to develop, and assess the validity and reliability of the Buss-Perry Aggression Questionnaire (BAQ)-Turkish Version.

Methods: The BAQ was translated from English to Turkish by a bilingual individual, and then independently translated back to English by another bilingual individual. The study included 220 students from 2 universities. In order to determine the criterion validity of the BAQ-Turkish Version, its correlation with the Multidimensional Anger Scale anger-related behaviors subscale (Balkaya and Şahin 2003) was determined. To determine the test-retest reliability of the BAQ-Turkish Version the scale was administered twice (with a 4-week interval) to 53 of the participants. To determine the scale's reliability internal consistency (Cronbach's alpha), test-retest, and split-half methods were used. The scale's criterion validity and gender differences were examined.

Results: The scale was observed to have high internal consistency and appropriate stability over a 4-week period. Only 1 significant gender difference was observed—males had significantly higher physical aggression scores than females. All BAQ-Turkish Version subscales were strongly intercorrelated.

Conclusions: The findings support the 4-factor structure of the BAQ-Turkish Version, as originally reported (Buss and Perry 1992), and show that the BAQ-Turkish Version is a reliable and valid instrument for measuring aggression in the Turkish population.

Keywords: Aggression, Buss-Perry Aggression Questionnaire, Turkish version, validity, reliability.

INTRODUCTION

The Buss-Perry Aggression Questionnaire (BAQ) is one of the most widely used aggression scales. BAQ is a self-report scale consisting of 29 items answered on a 5-point Likert-type scale that was adapted from the Buss-Durkee Hostility Inventory (BDHI) (Buss and Durkee 1957). Its 4 subscales measure physical aggression, verbal aggression, hostility, and anger. The physical aggression subscale includes 9 items about physically harming others, the verbal aggression subscale includes 5 items about verbal aggression directed towards others, the anger subscale includes 7 items that measure the affective aspect of aggression, and the hostility subscale includes 8 items that assess the cognitive aspect of aggression.

Many studies have examined the psychometric properties of BAQ using multiple methodologies, most of which have substantiated the findings of the original study (Ireland and Archer 2004; O’Connor, Archer, and Wu 2001; Archer and Haigh 1997a, 1997b; Meesters et al. 1996; Archer, Kilpatrick, and Bramwell 1995; Harris, 1995). The test-retest reliability and internal consistency of the subscales and the total scale are adequate (Archer and Haigh 1997; Harris 1997, 1995, Archer, Kilpatrick, and Bramwell 1995; Buss and Perry 1992). Subscale scores exhibit consistent intercorrelations (Harris 1996; Archer, Kilpatrick, and Bramwell, 1995; Buss and Perry, 1992). Buss and Perry (1992) reported that the internal consistency reliability of the subscales and total scale were as follows: physical aggression subscale: .85; verbal ag-
gression subscale: .72; anger subscale: .83; hostility subscale: .77; total scale: .89.

Adaptation studies of BAQ have been performed for numerous languages, including Dutch (Meesters et al. 1996), Japanese (Nakano 2001; Ramirez, Andreu, and Fujihara, 2001), Spanish (Vigil-Colet et al. 2005; Garcia-Leo’ et al. 2002), Slovak (Lovas and Trenkova 1996), Russian (Ruchkin and Eisemann, 2000), Greek (Tsorbatzoudis 2006), and Chinese (Maxwell 2007), and all reported the same 4-factor structure.

Aggression is a growing problem in Turkey and research on aggression in Turkey is increasing in importance. Yet, there is no comprehensive, well-established scale to measure different dimensions of aggression. BAQ is one of the most widely used aggression scales in Turkey, but there has yet to be a published study on adaptation of the scale for use in Turkey. As such, the present study aimed to adapt the original BAQ to Turkish, validate the Turkish version, and the following:
1. Confirm the factor structure of BAQ-Turkish Version in a Turkish sample;
2. Determine its internal consistency, split-half reliability, and test-retest reliability;
3. Determine its criterion validity.

METHOD

Participants
The study included 220 university students (102 male and 118 female). Mean age of the participants was 21.37 ± 2.248 years (range: 17-20 years). None of the participants was paid for participating, although some received course credit for Introductory Psychology. In total, 53 of the students (24 male and 29 female) with a mean age of 19.53 ± 1.28 years (range: 18-25 years) were used to determine the scale’s test-retest reliability.

Procedure
All participants were administered the BAQ-Turkish Version (Buss and Perry 1992) and the Multidimensional Anger Scale (MDAS) anger-related behaviors subscale (Balkaya and Şahin 2003) in group sessions during classes. All participants completed the scales in approximately 25 min. To determine its test-retest reliability the BAQ-Turkish Version was administered twice (with a 4-week interval) to 53 of the students.

Measures
BAQ was translated from English to Turkish by a bilingual individual, and then independently translated back to English by another bilingual individual. Discrepancies were resolved on the basis of consensus decisions. MDAS was used to determine the criterion validity of the BAQ-Turkish Version. MDAS is a 5-point Likert-type scale consisting of 5 dimensions: anger symptoms, anger-related situations, anger-related thoughts, anger-related behaviors, and interpersonal anger. In the present study only the 26-item anger-related behaviors subscale was used. MDAS is a valid and reliable scale for measuring the multiple dimensions of anger in the Turkish population (Eşiyok, Yasak, and Korkusuz 2007; Balkaya and Şahin 2003).

RESULTS

Reliability analysis
The reliability of the BAQ-Turkish Version was calculated using internal consistency, test-retest, and split-half methods. Cronbach’s alpha coefficient (Cronbach 1951) was used to determine the internal consistency of each of the 4 subscales. As seen in Table 1, the alpha values indicate adequate internal consistency for all 4 factors.

| TABLE 1. Reliability coefficients and mean ± SD BAQ-Turkish Version scores |
|-----------------|------------------|-------------------|
| Total score     | .85              | 81.35 ± 12.52     |
| Physical aggression subscale | .78          | 21.53 ± 6.17     |
| Hostility subscale | .71           | 23.50 ± 4.94     |
| Anger subscale   | .76              | 20.11 ± 5.05      |
| Verbal aggression subscale | .48          | 14.83 ± 2.98     |

With regard to test-retest reliability, 53 of the participants were administered the BAQ-Turkish Version twice (with a 4-week interval). The reliability coefficients were as follows: verbal aggression subscale: .82; physical aggression subscale: .98; anger subscale: .85; hostility subscale: .85; total score: .97. Split-half reliability coefficients with Spearman-Brown correction ranged from .53 to .82 (verbal aggression subscale: .53; physical aggression subscale: .73; anger with resentment subscale: .78; hostility subscale: .75; total score: .82).

Exploratory factor analysis (construct validity)
The results of exploratory factor analysis showed that the scale’s 4 factors explained 13.5%, 10.7%, 10.4%, and 6.8% (physical aggression, hostility, anger, and verbal aggression) of the total variance of the scale’s 29 items. The 4 factors taken together explained 41.4% of the variance. These factors (shown in Table 2) are (a) physical aggression (items 5, 8, 11, 13, 16, 22, 25, and 29); (b) hostility (items 3, 7, 10, 15, 17, 20, 24, and 26); (c) anger (items 1, 9, 12, 18, 19, 23, and 28); and (d) verbal aggression (items 4, 6, 14, 21, and
The results are similar to those obtained by Buss and Perry (1992).

The correlations between the scale’s factors (subscales) are presented in Table 3. All BAQ-Turkish Version subscales were significantly inter-correlated.

Gender differences are shown in Table 4. Only 1 significant gender difference was observed: males had significantly higher

*Scoring of these items is reversed
*Loading ≥0.35.
PA: Physical aggression subscale; AN: anger subscale; HS: hostility subscale; VA: verbal aggression subscale.
BAQ-Turkish Version physical aggression subscale scores (X = 22.85 ± 6.0).

**Criterion validity**

In this study the MDAS anger-related behaviors subscale was used to determine the criterion validity of the BAQ-Turkish Version. The correlation coefficient between the BAQ-Turkish Version and the MDAS anger-related behaviors subscale was .49. Correlation coefficients between the BAQ-Turkish Version subscales (physical aggression, hostility, anger, and verbal aggression) and the MDAS anger-related behaviors subscale were .40, .40, .31, and .27, respectively.

**DISCUSSION**

The principal aim of the present study was to develop the BAQ-Turkish Version, and assess its validity and reliability. Exploratory factor analysis showed that the questionnaire has a 4-factor structure similar to that of the original form and that the scale items corresponded to the items included in the original form. To determine the reliability of the BAQ-Turkish Version internal consistency (Cronbach's alpha), test-retest, and split-half methods were used. The internal consistency (Cronbach's alpha) reliability coefficient for the total scale was .85, and .78 for the physical aggression, .71 for the hostility, .76 for the anger, and .48 for the verbal aggression subscales. The split-half reliability coefficient for the total scale was .82, and the reliability coefficients for the subscales ranged from .53 to .82. Test-retest reliability was .97 for the total scale and ranged from .82 to .98 for the subscales.

To determine the criterion validity of the BAQ-Turkish Version its correlation with the MDAS anger-related behaviors subscale was used; the correlation coefficient between the 2 scales was .49.

In the original study of the scale by Buss and Perry (1992) reported that males had higher scores on the physical aggression, verbal aggression, and hostility subscales. Gender differences were much greater for the physical aggression subscale with a large effect size, whereas the effects for verbal and hostility subscales were smaller. Many studies reported consistent differences in the physical aggression subscale. Some of these studies observed differences only for the physical aggression subscale, as did the present study (Bernstein and Gesn 1997; Harris and Knight-Bohnoff 1996; Williams et al. 1996), whereas others also observed gender differences for the verbal aggression subscale, although the effect was small (Nakano 2001; Ramirez, Andreu, and Fujihara 2001; Archer and Haigh 1997a, 1997b; Bosma, Schouten, and Beuving 1996; Archer, Kilpatrick, and Bramwell, 1995; Meesters et al. 1996).

The present findings support the 4-factor structure of the BAQ-Turkish Version, as reported in the original study (Buss and Perry 1992). The present study's findings also indicate that the BAQ-Turkish version is a reliable and valid instrument for measuring aggression in the Turkish population. The present findings must be viewed in consideration of the limitation of their generalizability, as the present study included only university students. Similar studies should be performed with children, adolescents, and older adults. Despite the limitation of generalizability, the present findings indicate that the BAQ-Turkish Version had adequate reliability and satisfactory validity. A Turkish instrument for assessing the multiple dimensions of aggression is much needed, and the BAQ-Turkish Version described here is expected to meet this need.

**REFERENCES**


