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RESEARCH ARTICLE

The Brief Aggression Questionnaire: Turkish Validity and Reliability Study

Nurettin Göksu Çini[1], Buğra Akay[2], Mehmet Ceylan[2] and Fatih Yaşartürk[*3]

[1]Kırıkkale University, Faculty of Sport Sciences, Deparment of Sport Management, Kırıkkale / Turkey
[2]Kırıkkale University, Faculty of Sport Sciences, Department of Physical Education and Sport Teaching, Kırıkkale / Turkey
[3]Bartın University, Faculty of Sport Sciences, Department of Recreation, Bartın / Turkey
[*]Corresponding author: fatihyasarturk@gmail.com

Abstract
The aim of this study is to test the psychometric properties of the "Brief Aggression Questionnaire (BAQ)," originally developed by Buss and Perry (1992) and revised into a short form by Webster et al. (2014), for Turkish adolescents and adults. The study group consisted of individuals aged 14–52, which is a total of 213 participants, including 168 males (mean age = 29.79) and 45 females (mean age = 26.50), selected through convenience sampling. The construct validity of the questionnaire was tested using Confirmatory Factor Analyses ($\chi 2$=447.78, $p<0.05$, $\chi 2/df$= 1.88, CFI= .97, SRMR= .032, and RMSEA= .034). For the convergent validity of the measurement tool, t-values, factor loadings, and Average Variance Extracted (AVE) were calculated; for discriminant validity, the values of Average Shared Variance (ASV), Maximum Shared Variance (MSV), √AVE, and inter-factor correlations were determined. Additionally, reliability analyses, including the internal consistency coefficient (Cronbach's Alpha) and Composite Reliability (CR) values, were computed. Our findings indicate that the BAQ is a reliable four-factor measurement tool that can be used to assess aggression in Turkish adolescents and adults.

Keywords
Agression Questionnaire, Short Form, Measurement, Validity, Reliability

INTRODUCTION

Aggression is generally defined as any behavior intended to harm others (Bushman & Huesmann, 2010). More specifically, it refers to individual differences in thoughts (hostility), emotions (anger), and behaviors (verbal and physical aggression) that aim to harm another person (Webster et al., 2014). Throughout human history, aggression was an integral part of life for our ancestors living in small groups. As humans became more social, aggression towards others within the social group, crucial for an individual's survival, became less adaptive, and prosocial behaviors became more prevalent (Bushman & Huesmann, 2010). However, even with these changes, extreme forms of aggression have led to unparalleled human tragedies, with millions affected by wars and genocides (Anderson & Bushman, 2002). Aggression has caused more problems than it has solved (Bushman & Huesmann, 2010). Consequently, it is considered a maladaptive and destructive behavior across all societies. Despite societal changes since World War II, homicide rates have risen rather than fallen in several industrialized countries, particularly in the United States (Anderson & Bushman, 2002). Therefore, there is growing interest in understanding the underlying causes of aggressive behaviors.

Today, many social psychologists are interested in understanding why people become aggressive, what factors influence aggression, and how aggression can be reduced (Bushman & Huesmann, 2010). The multidimensional nature of aggression, which develops through the complex

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interaction of physiological, psychological, and social factors (Vitoratou et al., 2009), has made it a frequently researched topic across academic boundaries (Webster et al., 2014). Scientists from various fields, such as anthropology, sociology, and psychology, have attempted to elucidate the origins and development of aggression and its relationship with other behaviors (Lefkowitz et al., 2013). Although various measurement tools have been developed to evaluate aggression (Buss & Perry, 1992; Gladue, 1991; Orpinas & Frankowski, 2001; Raine et al., 2006), the main problem faced by researchers is to accurately and effectively measure individual differences in aggression without compromising validity and reliability (Webster et al., 2014). For this purpose, the Buss-Durkee Hostility Inventory (BDHI), one of the first and most widely used measures of aggression, was used (Buss & Durkee, 1957). The questionnaire, which includes subdimensions of assault, indirect, irritability, negativism, resentment, suspicion, verbal, and guilt (unrelated to the hostility items), consists of 66 items. The authors later conducted two studies among university students and reduced these seven subdimensions into two factors: aggressiveness (assault, indirect aggression, irritability, and verbal aggression) and hostility (resentment and suspicion), thereby attempting to avoid theoretical complexity (Buss & Durkee, 1957). Additionally, Bushman et al. (1991) supported the two-factor structure in their studies, demonstrating that the BDHI measures two dimensions of aggression.

In subsequent studies, Buss & Perry (1992) revised the BDHI to create the 29-item Buss-Perry Aggression Questionnaire (BPAQ). Unlike its seven-factor predecessor, the BPAQ focuses on four aspects of aggression: physical aggression, verbal aggression, anger, and hostility. Researchers have consistently supported the four-factor structure in numerous studies. The BPAQ is more efficient than the BDHI (29 items compared to 66 items) and has improved psychometric properties, including higher internal consistency reliability (Webster et al., 2014). Researchers have consistently supported the four-factor structure in numerous studies. The psychometric properties of the 29-item Turkish version of the BPAQ have been tested in various studies involving university students (Demirtas-Madran, 2012), adolescents (Önen, 2009), and athletes (Sözeren & Kelecek, 2019). Across these studies, which involved different sample groups, the common finding is that the Turkish version of the BPAQ is a valid and reliable instrument for measuring aggression (Kuzucu & Sarıot, 2020). Despite the popularity and widespread use of the BPAQ, the 29-item questionnaire has been considered too lengthy for certain research contexts, especially with the advent of advanced technology and analytical techniques. Researchers have expressed a need for shorter measures of aggression for use in applied settings, specialized samples, field studies, longitudinal research, and daily studies (Webster et al., 2014). Consequently, there has been increased demand for such tools (Widaman et al., 2011). To address this need, Bryant and Smith (2001) developed the short form of the BPAQ (BPAQ-SF). The new short form retains the same four-factor structure—physical aggression, verbal aggression, anger, and hostility— with each factor comprising three items. Unlike the original BPAQ, the BPAQ-SF uses a 6-point Likert questionnaire (Bryant & Smith, 2001). However, many studies involving the BPAQ-SF (Maxwell, 2008; Torregrosa et al., 2020) have preferred the 5-point Likert questionnaire version. The questionnaire has been adapted into Turkish by Kuzucu & Sarıot (2020), thus contributing to the literature.

In the study that forms the conceptual framework of our research, Webster et al. (2014) adapted an alternative short form of the BPAQ and evaluated it across different samples, thereby increasing its generalizability (Webster et al., 2015). The researchers selected three items with the highest factor loadings from each of the four subdimensions of the aggression questionnaire (physical aggression, verbal aggression, anger, and hostility) as defined by Buss & Perry (1992), creating the 12-item Brief Aggression Questionnaire (BAQ). Across five studies (N=3,996) conducted by Webster et al. (2014) and Webster et al. (2015), the BAQ demonstrated theoretically consistent convergent and discriminant validity models with other self-report measures. Confirmatory factor analyses confirmed the four-factor structure, and item response theory methods ensured adequate information recovery. The study results showed stable test-retest reliability and convergent validity aligned with behavioral measures of aggression. Unlike the BPAQ-SF (Bryant & Smith, 2001b), the BAQ includes reverse-scored items. Reverse-scored items are important for reflecting differences

between positive/negative associations and identifying participants' response tendencies. This can help reduce biases by forcing respondents to report a lack of aggression more accurately (Webster et al., 2014). Additionally, short measures are intended to reduce participant fatigue and inattentiveness. Thus, when used alongside other lengthy questionnaires, the complete 29-item BPAQ can avoid unnecessary item addition, which might be overly burdensome for participants. Despite the advantages of the BAQ, no research has been found that tests its psychometric properties in Turkish. Therefore, the aim of this study is to test the psychometric properties of the Brief Aggression Questionnaire (BAQ), originally developed by Buss & Perry (1992) and revised by Webster et al. (2014), for adolescents and adults in Turkish culture.

MATERIALS AND METHODS

Research Model

The research was conducted according to the single survey model, one of the most preferred general survey models in the social sciences. Studies conducted using the survey model aim to present an existing situation or reality as it is (Büyüköztürk et al., 2018). Survey models enable general judgments and inferences about the population through a sample taken from the population, especially when the population is large and difficult to reach (Karasar, 2020). Because this model aims to make general inferences about the population, it is recommended to reach large sample groups. Single survey models can be applied both instantaneously and temporally. Instantaneous surveys examine the situation at a specific moment, while temporal surveys address periodical changes (Bailey, 1987).

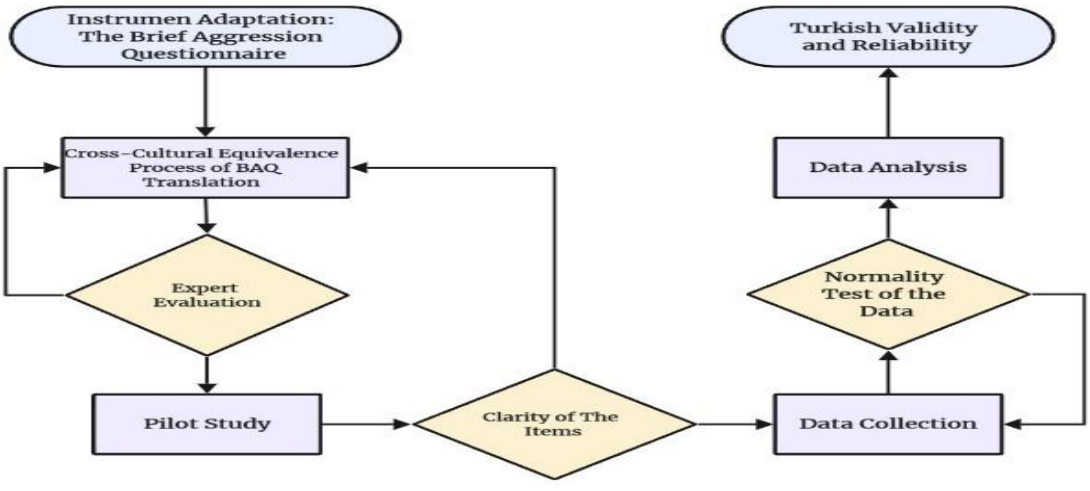

Figure 1. The flowchart of the study

Participants

The study group consisted of individuals aged 14-52. A total of 213 participants, including 168 males (Mean age = 29.79) and 45 females (Mean age = 26.50), were selected using the convenience sampling method, one of the non-random sampling methods, as described by Yıldırım & Şimşek (2011). In quantitative research, the formula $n \geq 50 + 8x$ (number of items) is preferred for determining an appropriate sample size (Green, 1991). According to this formula, for a study using a 12-item questionnaire, a sample size of 146 or more ($n \geq 50 + 8x12$) was considered suitable.

Data Collection Tools

The Brief Aggression Questionnaire (BAQ): The BAQ is the short form of the Buss-Perry Aggression Questionnaire (BPAQ), originally developed by Buss and Perry (1992) to assess individuals' levels of aggression and later adapted by Webster et al. (2014). The measurement tool consists of 12 items and is divided into the following subdimensions: (a) physical aggression, (b) anger, (c) verbal aggression, and (d) hostility. Each subdimension is assessed with three items, and one item in the anger subdimension is reverse-scored. The responses are recorded on a 7-point Likert questionnaire. Additionally, participants were asked to respond to a personal information

form, which included questions to identify their demographic characteristics (age, gender, education, and marital status).

Cross-Cultural Equivalence Process of BAQ

The translation procedures recommended by Brislin (1980) were followed to adapt the measurement tool to Turkish culture and create its Turkish version. Statements in the questionnaire were translated from English to Turkish and back-translated from Turkish to English to ensure linguistic equivalence. These translations were performed by four proficient translators (2 from translation studies and 2 independent), and evaluated by different researchers in the field of social sciences for conceptual and semantic comparison. Following expert evaluation, statements that created differences in meaning were corrected, leading to the final version of the questionnaire. The equivalence of meanings between the original English and Turkish versions of the statements in the questionnaire was verified. Subsequently, the comprehensibility of BAQ items was tested through a pilot study conducted with a sample group of 52 individuals, as recommended by Cattell (1978), which is at least three times the number of items in the questionnaire. Researchers conducted interviews with participants after the application, questioning the clarity of the items. Based on participant feedback, it was concluded that the BAQ items are understandable.

Table 1 presents the Turkish items of the BAQ obtained through translation.

Table 1. English and Turkish versions of the BAQ

Factor and item in English		Factor and item In Turkish	
Physical Aggression		Fiziksel Saldırganlık (FS)	
PA_1	Given enough provocation, I may hit another person.	FS_1	Yeterince tahrik edilirsem başka birine vurabilirim.
PA_2	If I have to resort to violence to protect my rights, I will.	FS_2	Haklarımı korumak için şiddete başvurmam gerekirse, bunu yaparım.
PA_3	There are people who pushed me so far that we came to blows.	FS_3	Beni yumruklaşmaya varacak kadar zorlayan insanlar var.
Verbal Aggression		Sözel Saldırganlık (SS)	
VA_1	I tell my friends openly when I disagree with them.	SS_1	Arkadaşlarımla aynı fikirde olmadığım zaman onlara açıkça söylerim.
VA_2	When people annoy me, I may tell them what I think of them.	SS_2	İnsanlar beni kızdırdığında, onlar hakkında ne düşündüğümü söyleyebilirim
VA_3	My friends say that I'm somewhat argumentative	SS_3	Arkadaşlarım, biraz tartışmacı olduğumu söylerler.
Anger		Öfke (Ö)	
$*A_1$	I am an even-tempered person.	$*Ö_1$	Soğukkanlı bir insanım.
A_2	Sometimes I fly off the handle for no good reason.	$Ö_2$	Bazen sebepsiz yere sinirlenirim.
A_3	I have trouble controlling my temper.	$Ö_3$	Öfkemi kontrol etmekte zorlanırım.
Hostility		Düşmanlık (D)	
H_1	Other people always seem to get the breaks.	D_1	Diğer insanlar her zaman şanslıymış gibi görünüyor.
H_2	I sometimes fell that people are laughing at me behind my back.	D_2	Bazen insanların arkamdan güldüğünü hissederim.
H_3	When people are especially nice, I wonder what they want.	D_3	İnsanlar özellikle nazik olduklarında, ne istediklerini merak ederim.

Items were measured on a 7-point scale, where 1= Extremely Uncharacteristic, 7= Extremely Characteristic of Me, *Calculated as reverse items in the analysis.

Data Analysis

The study obtained written permission from the Kırıkkale University Social and Human Sciences Research Ethics Committee (Decision date: 24.06.2024 / Session No: 06). Participants were informed about the purpose and conduct of the research, and voluntary participation was ensured. Data for the study were collected face-to-face at different times. It took approximately 10 minutes for participants to complete the questionnaire forms, and the entire data collection process was completed over 3 weeks. The analysis proceeded with a total of 213 data sets, excluding 15 incomplete responses.

The validity and reliability of the BAQ were assessed in three stages. In the analysis process,

first, the univariate normality assumption of the data was examined. A range of ±2.00 was used as the reference for skewness and kurtosis values (George & Mallery, 2019). Upon reviewing Table 2, it was determined that the data met the assumption of univariate normality. Additionally, the multivariate normality distribution of the data was evaluated through test results. Due to meeting both univariate and multivariate normality assumptions, parametric test methods, specifically Maximum Likelihood (ML), were employed in this study. CFA was conducted to test the structure of the measurement tool. In the analysis process, model comparisons were tested over four-factor, hierarchical and single-factor models. In the second stage, validity and reliability tests of the questionnaire were conducted. For discriminant validity, √AVE, MSV, ASV, and inter-factor correlation values were calculated. Convergent validity was assessed using factor loadings, t-values, and Average Variance Extracted (AVE) values. In the third stage, the reliability of the measurement tool was examined using Cronbach's alpha for internal consistency coefficient and Composite Reliability (CR) value.

RESULTS

Stage 1. Level of Normality of Data

In the univariate normality assumption, it was determined that the data fall within the ±2.00 range, indicating that they have a univariate normal distribution (Table 2). Additionally, Mardia skewness and Mardia kurtosis values were calculated for the multivariate normality assumption. Based on these procedures, both univariate and multivariate normality assumptions were met. Therefore, Maximum Likelihood (ML) method was preferred during the Discriminant Factor Analysis (DFA) process (Şen, 2020).

Table 2. Normality test of the data

	M	SD	Skewness	Kurtosis
Physical Agression	4.79	1.63	-.539	-.967
Verbal Agression	4.60	1.49	-.579	-.787
Anger	4.80	1.54	-.400	-1.068
Hostilitiy	4.43	1.73	-.179	-1.326
BAQ	4.66	1.49	-.515	-1.038

Stage 2. Model Comparisons

Confirmatory Factor Analysis (CFA) was conducted to test the conceptual structure of the (BAQ). According to Noar (2003), CFA goes beyond exploratory techniques to confirm the structure of the measurement instrument. It also allows for the comparison of different competing models rather than testing a single model. In the adaptation studies of BAQ, single-factor, four-factor, and hierarchical model structures were compared (Webster et al., 2014). Therefore, in line with the relevant literature, this study tested various competing models (single-factor, four-factor, and hierarchical factor models) (Figure 2).

Single-factor model: Each of the twelve items was linked to a single aggression factor.

Four-factor model: A four-factor structure was used to assess aggression. In this CFA, BAQ was modeled as an indicator of four first-level factors.

Hierarchical model: Four first-level factors were linked to second-order high-order (aggression) factors.

Table 3. Comparisons of the models

								Model Comparison		
Model	χ^2	df	X^2/df	RMSEA	SRMR	TLI	CFI		$\Delta\chi^2$	Δdf
1. Four-factor	91.03	48	1.896	.065	.017	.98	.98			
2. Hierarchical	94.44	50	1.889	.064	.018	.98	.98	2 vs.1	3.41	2
3. Single-factor	333,56	54	6.177	.156	.032	.88	.90	3 vs. 2	239.12*	4

In the study, the suitability of the data with the model was evaluated by examining the Root Mean Square Error of Approximation (RMSEA), Standardized-Root Mean Square Residual (SRMR), Tucker Lewis Index (TLI), The Comparative Fit Index (CFI) values. The acceptable fit values for these indices are typically between .05 and .08 for RMSEA and SRMR (Hu & Bentler, 1998), and greater than 0.90 for both CFI and TLI (Schermelleh-Engel et al., 2003). According to the literature, both models (four-factor and hierarchical) demonstrated acceptable fit indices. The proposed four-factor model was compared with two alternative models using χ^2 difference tests. Upon examining the model comparisons, it was found that the fit indices for both the four-factor and hierarchical models were within satisfactory limits, and the χ^2 difference tests were not significant (Table 3). The fit indices of the single-factor model (χ^2/df = 6.177, CFI = 0.906, and RMSEA = .156) did not fall within acceptable limits, and χ^2 difference tests with the hierarchical model were significant. The four-factor model (χ^2/df = 1.896, TLI = .98, CFI = .986, SRMR = .017, and RMSEA = .065) and the hierarchical model (χ^2/df = 1.888, TLI = .98, CFI = .985, SRMR = .018, and RMSEA = .064) were found to fit the data better compared to the single-factor model (χ^2/df = 6.177, were found to fit SRMR = .032, and RMSEA = .156).

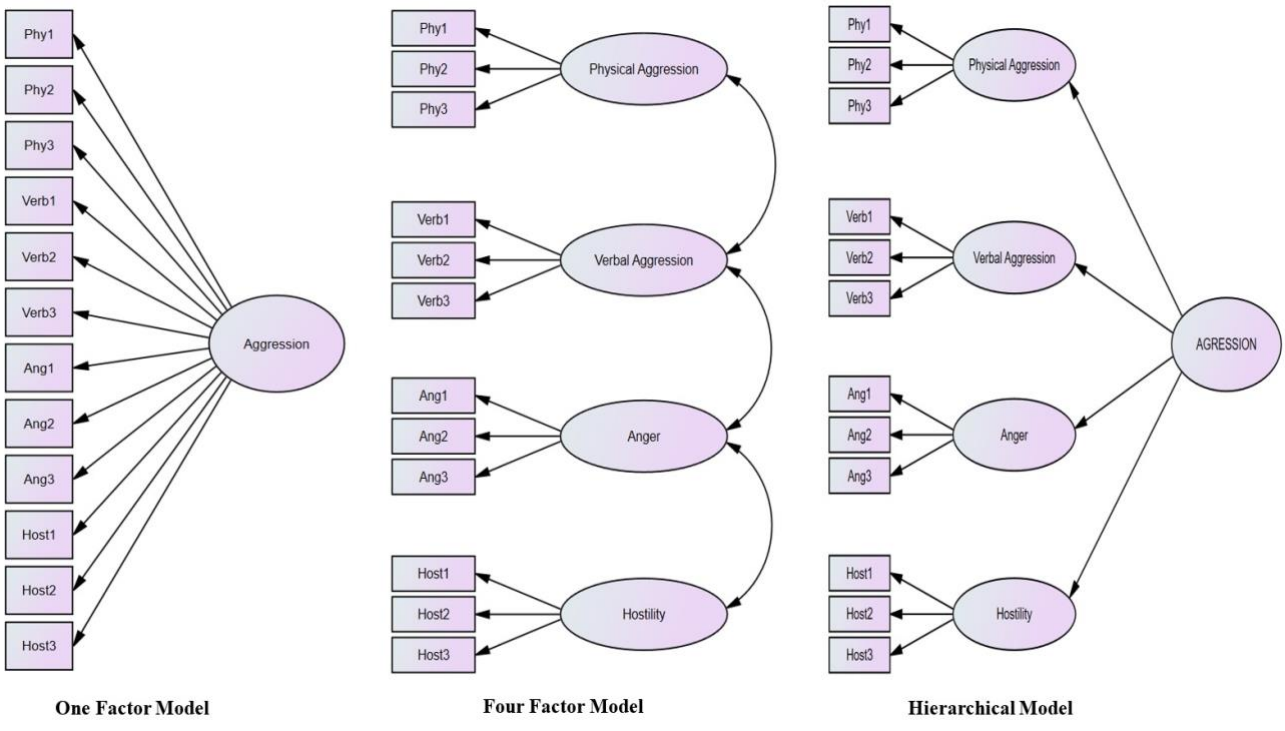

Figure 2. Tested Models. Physical Agression= Phy, Verbal Agression=Verb, Anger=Ang, Hostilitiy=Host

Stage 3. Validity and Reliability Tests

Convergent Validity Test

In this process, tests regarding the validity and reliability of BAQ were conducted using a four-factor model. According to the DFA findings, the four-factor model developed shows a good fit with the data (χ^2=447.78, p<0.05, χ^2/df= 1.88, CFI= .97, SRMR= .032, and RMSEA= .034). These goodness-of-fit values indicate that the model fits the theoretical structure and is reliable. In examining convergent validity, factor loading values, t-values, and Average Variance Extracted (AVE) were utilized. Researchers (Anderson & Gerbing, 1988; Bilgin & Kutlu, 2022; Hung et al., 2016) commonly use the strength of factor loadings and the significance of item t-values to evaluate convergent validity. When examining Table 4, factor loading values range between .76 and .93. Additionally, it was determined that factor loadings for all BAQ items are statistically significant (t-values $\geq \pm$ 1.96) (see Table 4). Lastly, AVE values were calculated for convergent validity. AVE calculation is a critical measure frequently used in DFA to assess the appropriateness of the model to the data and the reliability of measurement tools. Upon reviewing Table 4, AVE values range from .80 to .94. AVE values above 0.50 are recommended (Fornell & Larcker, 1981).

Table 4. The results of CFA, AVE, CR and cronbach alpha

Factors and Items	λ	t-value	SE	R^2	M	SD
Physical Agression (CR=.93; AVE=.83; α=.93)						
PA_1	.91	22.44	.04	.83	4.90	1.79
PA_2	.93	21.22	.05	.87	4.77	1.74
PA_3	.89	22.44	.04	.80	4.72	1.65
Verbal Agression (CR=.92; AVE=.80; α=.93)						
VA_1	.90	19.63	.05	.82	5.00	1.71
VA_2	.91	19.10	.05	.84	4.86	1.58
VA_3	.87	19.63	.05	.76	4.56	1.67
Anger (CR=.90; AVE=.76; α=.90)						
A_1	.76	23.59	.04	.59	4.51	1.55
A_2	.92	15.18	.05	.85	4.69	1.59
A_3	.92	23.59	.04	.85	4.62	1.73
Hostilitiy (CR=.94; AVE=.85; α=.94)						
H_1	.91	22,92	.04	.84	4.62	1.85
H_2	.93	22.09	.04	.86	4.45	1.78
H_3	.90	22.92	.04	.82	4.22	1.86

Discriminant Validity Test

After confirming convergent validity of BAQ, discriminant validity tests were conducted. Initially, correlation coefficients between the factors of BAQ were examined to ensure the structural validity of the measurement tool and determine if it operates appropriately for its intended purpose. It was found that the correlations between the factors of BAQ were moderate (r=.81-.84, p<0.01). Previous studies suggest that correlation values not exceeding .85 (Brown, 2015) and .90 (John & Benet-Martinez, 2000) between factors indicate structural validity. Researchers commonly use the Average Variance Extracted (AVE) value as a robust method to assess structural discriminant validity (Fornell & Larcker, 1981; Franke & Sarstedt, 2019). In this method, the square root of AVE calculated for each construct should be greater than its correlations with other constructs. Additionally, another strong method for establishing discriminant validity involves calculating the Average Shared Variance (ASV) and Maximum Shared Variance (MSV). It is necessary for ASV<MSV and MSV<AVE (Hair et al., 2010). Upon reviewing Table 5, it was observed that the correlations between the sub-dimensions forming BAQ are each less than the square root of AVE for that sub-dimension. Furthermore, for all sub-dimensions, calculated ASV and MSV values indicate that ASV<MSV and MSV<AVE conditions are met. These findings provide strong evidence that BAQ ensures discriminant validity.

Table 5. Discriminant validity of the BAQ

Factor	**MSV**	**ASV**	**1**	**2**	**3**	**4**
1. Physical Agression	.70	**.**68	**(0.91)**			
2. Verbal Agression	.70	**.**68	0.84**	**(0.89)**		
3. Anger	.70	.67	0.84**	0.82**	**(0.87)**	
4. Hostilitiy	.67	.66	0.81**	0.82**	0.81**	**(0.92)**

**= p<0.01

Reliability Testing Stage

Following the validity assessment of BAQ, the structural reliability was evaluated. At this stage, the internal consistency coefficient (Cronbach's alpha) and the composite reliability (CR) of the factors were calculated sequentially (see Table 4). It was found that the alpha values calculated for all sub-dimensions ranged between .90 and .94. These values meet the accepted threshold of .70 for reliability (Taber, 2018). Finally, Composite Reliability (CR) was computed, which is a preferred method for assessing the reliability of measurement tools when there are multiple variables (see Table 4). The CR values for the sub-dimensions ranged between .90 and .94. Researchers generally consider CR values of .60 and above as

sufficientto ensure structural reliability of a measurement tool (Bagozzi & Yi, 1988). Based on these tests, BAQ is considered a valid and reliable measurement tool for assessing aggression.

DISCUSSION

In this study, the *Aggression Questionnaire* developed by Buss and Perry (1992), It was aimed to adapt the *Brief Aggression Questionnaire* (BAQ), which was revised by Webster et al. (2014) for more efficient use, into Turkish (For more information, see: (Buss & Perry, 1992; Webster et al., 2014). The short form of the questionnaire consists of 12 items across four subscales: physical aggression, verbal aggression, anger, and hostility. Analyses confirmed that the questionnaire items loaded onto their respective subscales in a four-factor model, and these subscales were linked to a second-order aggression factor in a hierarchical model (see Table 3 and Figure 2). Furthermore, the questionnaire demonstrated construct validity and convergent-divergent validity (see Tables 4-5). In conclusion, it has been validated that BAQ is a reliable measurement tool for assessing physical aggression, verbal aggression, anger, hostility, and overall aggression in the Turkish context, thereby contributing to the field.

When examining the data structure of BAQ in the Turkish sample, it was observed that the goodness-of-fit indices of the questionnaire indicated a good fit with the collected data. The items belonging to the four subscales of the questionnaire explained variance at an excellent level (R^2>.70), demonstrating strong explanatory power (Field, 2009). The second-order aggression factor also showed good alignment with the data. Upon reviewing Table 3, it was found that the values comparing the four-factor model with the second-order single-factor model (hierarchical model) were very close. The $\Delta\chi^2$ value for model comparison was not significant, indicating no significant difference between the two models. These results suggest that both models are viable. To assess construct validity in the study, AVE and CR values were computed (see Table 4), indicating that these values support the construct validity of the questionnaire (Gürbüz, 2021). Another finding pertained to the convergent and discriminant validity of the questionnaire. Upon reviewing Table 5, MSV and ASV values confirmed that the questionnaire maintains both convergent and discriminant validity (Gürbüz, 2021).

Aggression typically manifests in forms such as physical (Eliot, 2021) and verbal (Kyranides et al., 2024), but can also appear in various forms like social aggression (Juliano et al., 2006). This behavior can have negative effects on individuals and groups (Dodge et al., 2008). Aggression is observed across various settings from early ages to adulthood, including educational environments (Uludag, 2013), workplaces (Mireille LeBlanc & Barling, 2004), and sports contexts (Lafuente et al., 2021), all of which can suffer from its detrimental effects. Accurately measuring this negative behavior and identifying its antecedents and outcomes are crucial for understanding human behavior and taking preventive measures against unexpected outcomes. Therefore, the BAQ serves as an important tool for adaptation in the Turkish context, enabling a deeper exploration of this topic.

BAQ, various empirical and adaptation studies have utilized the questionnaire (Monteiro et al., 2023; Pachi et al., 2021; Pachi et al., 2023; Penubarthi et al., 2023; Sijwali & Sharma, 2023). When compared with its previous forms and other aggression questionnaires, BAQ consistently yields similar results (Webster et al., 2014; Webster et al., 2015; Zimonyi et al., 2021). Furthermore, there are cultural and linguistic adaptation studies of the questionnaire. For instance, Pachi et al. (2021) adapted BAQ to Greek culture and language with a sample of 130 participants. Examination of the adapted questionnaire structure in Greek culture reveals a general Cronbach's Alpha value of .80, indicating high reliability, similar to findings in this study (Büyüköztürk, 2020). Moreover, fit indices suggest that the data fits very well, similar to the findings in this study. In another study, Monteiro et al. (2023) adapted the questionnaire to a Brazilian sample (393 participants). Model comparisons in the study showed that the fit indices of the one-factor model did not fall within the recommended values, unlike the findings in this study. However, the results of the four-factor model and second-order model were parallel to this study, showing good fit indices. These similarities indicate that the questionnaire accurately measures aggression in Turkish culture.

In our country, there are various studies to measure aggression. *The Buss-Perry Aggression Questionnaire*, adapted into Turkish by Önen (2009) and Demirtas-Madran (2012), has been

widely used in many studies (Güler & Özgörüş, 2021; Ulu & İkis, 2016). Additionally, various aggression questionnaires such as the *Children's Aggression questionnaire Parent Form* (Ercan et al., 2016), the *KAR-YA Aggression Questionnaire* for High School and University Students (Karataş & Yavuzer, 2016), and the *Club Aggression Questionnaire* (Kural & Elçi, 2023) are used. However, the BAQ, developed by Buss and Perry (1992) like the well-established BPAQ, evaluates aggression with fewer items, making it a shorter and more efficient form (Webster et al., 2014). Therefore, these characteristics distinguish the questionnaire from other measurement tools.

Aggression, reliably measured with a widely used tool like BAQ, can facilitate a better understanding of the antecedents and consequences of this behavior. The adaptation of this questionnaire allows distinguishing various forms of aggression (physical, verbal, anger, and hostility) in the Turkish sample, enabling a nuanced understanding of aggressive behaviors. As emphasized in previous studies (Dodge et al., 2008; Eliot, 2021; Kyranides et al., 2024), considering the negative effects of aggression on individuals and groups, having a culturally adapted tool like BAQ is highly valuable. BAQ facilitates the analysis of aggression, aiding in the development of targeted interventions and policies aimed at reducing these behaviors. Validating BAQ in the Turkish sample enriches the existing literature and provides a practical resource for addressing aggression in societal contexts.

Limitations and Recommendations

This study has several key limitations. One of these is its reliance on a limited age group, which may not fully reflect aggression behavior across all age groups in the Turkish population. Additionally, while the sample size was deemed sufficient for this study, a larger and more diverse sample could enhance the generalizability of the findings. Future research could consider including a wider age range and incorporating variables from different levels (such as socio-economic status, sports involvement, race, etc.) to examine the applicability of the questionnaire in different segments of the population. Furthermore, longitudinal studies could provide deeper insights into the changes in aggression over time and the long-term reliability of the BAQ. Particularly, investigating the underlying reasons for the emergence of aggressive behavior (e.g., socio-economic status, workplace environment, perception of bullying, domestic violence, peer relationships, etc.) could contribute to reducing and preventing such behavior.

Conflict of Interest

No potential conflict of interest has been declared regarding this article.

Ethical Considerations

This study was conducted with the approval of Kırıkkale University Social Sciences and Humanities Research Ethics Committee with the reference number (26.04.2024-No:06).

Author Contributions

Study Design: NGÇ; Data Collection: NGÇ; Statistical Analysis: BA, FY; Data Interpretation: BA, MC, FY; Manuscript preparation: NGÇ, BA, MC; Literature search: NGÇ, BA, MC. All authors have read and accepted the published version of the manuscript.

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