ORIGINAL RESEARCH

Curr Res Soc Sci (2024), 10(1) • 13-33

Turkish Adaptation and Psychometric Properties of Acceptance and Action Questionnaire for Weight-Related Difficulties-Revised

Kiloyla İlgili Zorluklar için Kabul ve Eylem Formu Revize Türkçe Uyarlaması ve Psikometrik Özellikleri

Buse Keskindağ[1]*, Hüseyin Güney[2], Meryem Karaaziz[3]

[1] Bahçeşehir Cyprus University, Department of Psychology, Nicosia, Northern Cyprus
[2] Bahçeşehir Cyprus University, Department of Computer Engineering, Nicosia, Northern Cyprus
[3] Near East University, Department of Psychology, Nicosia, Northern Cyprus

Abstract

The aim of this study was to adapt the revised Acceptance and Action Questionnaire for Weight-Related Difficulties-Revised (AAQW-R) into Turkish language and examine its psychometric properties in a nonoverweight sample. This cross-sectional study included predominantly female individuals (83.2%), and mean age of the sample was 21.5. Final sample size included 161 university students. AAQW-R was translated into Turkish and translated back into English. Internal consistency levels for the total AAQW-R score and its subscales (i.e., food as control, weight as barrier to living, and weight stigma) were obtained for reliability. Measures of general experiential avoidance (AAQ-II), body anxiety (SPAS), dysfunctional eating attitudes (EAT-26), anxiety symptoms (GAD-7) and subjective happiness (SHS) were examined for convergent and divergent validity. Confirmatory factor analysis was conducted to examine the factor structure of the scale. The three-factor structure model was a good fit to the data ($\chi 2$ [N = 161] = 81.27, p < .001, RMSEA = .098, 90% CI [.072, .124]). The Turkish version of AAQW-R and the subscales indicated a good level of internal consistency (α value ranging between .70 and .87). AAQW-R was found positively correlated with general experiential avoidance, dysfunctional eating attitudes and anxiety symptoms, indicating support for convergent validity. No relationship between AAQW-R and subjective happiness demonstrated evidence for divergent validity. Overall, the Turkish version of AAQW-R is valid and reliable tool to measure weight-related experiential avoidance in nonoverweight sample.

Keywords: Acceptance and Commitment Therapy, Weight Prejudice, Confirmatory Factor Analysis, Reliability, Turkish Adaptation.

Öz

Bu çalışmanın amacı, revize edilmiş Kiloyla İlgili Zorluklar için Kabul ve Eylem Formu'nun (KEFK-R) Türkçeye uyarlanması ve aşırı kilolu olmayan bir örneklemde psikometrik özelliklerinin incelenmesidir. Bu kesitsel çalışmaya ağırlıklı olarak kadın bireyler (%83,2) katılmıştır ve örneklemin ortalama yaşı 21,5'tir. Nihai örneklem büyüklüğü 161 üniversite öğrencisinden oluşmaktadır. KEFK -R öncelikle Türkçeye çevrildi ve tekrardan İngilizce'ye çevrildi. Güvenilirlik için toplam KEFK-R puanı ve alt ölçekleri (yani kontrol amaçlı yemek, yaşama engeli olarak kilo ve damgalanması) için iç tutarlılık seviyeleri elde edildi. Genel deneyimsel kaçınma (KEF-II), Beden kaygısı (SFK), işlevsiz yeme tutumları (İYT-26), kaygı belirtileri (GKB-7) ve öznel mutluluk (SMÖ) ölçümleri yakınsak ve ıraksak geçerlilik açısından incelendi. Ölçeğin faktör yapısını incelemek amacıyla doğrulayıcı faktör analizi yapılmıştır. Üç faktörlü yapı modeli verilere iyi uyum sağlamıştır ($\chi 2$ [N = 161] = 81,27, p < 0,001, RMSEA = 0,098, %90 GA [0,072, 0,124]). KEFK -R'nin Türkçe versiyonu ve alt ölçekleri iyi düzeyde bir iç tutarlılığa işaret etmektedir (α değeri .70 ile .87 arasında değişmektedir). KEFK -R'nin genel deneyimsel kaçınma, işlevsiz yeme tutumları ve kaygı belirtileri ile pozitif yönde ilişkili olduğu bulundu ve bu da yakınsak geçerliliği desteklemektedir. KEFK-R ile öznel mutluluk arasında hiçbir ilişki saptanmamıştır. Genel olarak, KEFK-R'nin Türkçe versiyonu aşırı kilolu olmayan örneklemde kiloya bağlı deneyimsel kaçınmayı ölçmek için geçerli ve güvenilir bir araç olduğu söylenebilir.

Anahtar Kelimeler: Kabul ve Kararlılık Terapisi, Kiloya İlişkin Tutumlar, Doğrulayıcı Faktör Analizi, Güvenirlik, Türkçe Uyarlama.

Corresponding Author / Sorumlu Yazar: buse.keskindag@baucyprus.edu.tr

Article Info / Makale Bilgileri:
Received / Gönderim: 10.10.2023 Accepted / Kabul: 27.05.2024

To cite this article / Atıf için:
Keskindağ, B., Güney, H., & Karaaziz, M. (2024). Turkish adaptation and psychometric properties of Acceptance and Action Questionnaire for Weight-Related Difficulties-Revised. *Curr Res Soc Sci, 10*(1), 13-33.

To link to this article / Bağlantı için:
http://dx.doi.org/10.30613/curesosc.1388938

Turkish Adaptation and Psychometric Properties of Acceptance and Action Questionnaire for Weight-Related Difficulties-Revised

Dysfunctional eating attitudes and behaviors have been shown to be frequently related to social appearance and weight-related concern (Mento et al., 2017; O'Hara et al., 2016). Furthermore, dysfunctional eating behaviors can be considered as actions to manage both internal and external demands that an individual may experience (Pellegrini et al., 2021). It is known that people who have not been diagnosed with an eating disorder may also report psychological distress due to weight-related concern (Alimoradi et al., 2020). Nevertheless, an individual with nonoverweight may also report weight-related concern, dysfunctional eating attitudes, and distress related to social appearance (Kluck, 2010; Manaf et al., 2016; Stefano et al., 2016). Individuals with weight concerns and dysfunctional eating attitudes have been suggested to be at greater risk of experiencing psychological distress (Allen et al., 2006; Johnson & Wardle, 2005). Also, an individual with weight concerns may be frequently preoccupied with dieting behaviors to lose weight, which sometimes can have a negative impact on well-being (Neumark-Sztainer et al., 2002).

Acceptance Commitment Therapy focuses on psychological flexibility in which acceptance plays an important role in increasing well-being. On the other hand, experiential avoidance can be considered as psychological inflexibility, which may represent unwillingness to be contact with difficult internal experiences such as thoughts, feelings, and physical sensations. Through experiential avoidance, an individual may attempt to control, suppress, or avoid unwanted thoughts and feelings (Hayes et al., 2004). Original Acceptance and Action Questionnaire (AAQ) was developed to measure experiential avoidance and psychological inflexibility (Hayes et al., 2004). Bond and colleagues have revised Acceptance and Action Questionnaire (AAQ) (Hayes et al., 2004) and proposed AAQ-II, which includes 7 items (Bond et al., 2011). AAQ-II has been translated into 40 languages (Association for Contextual Behavioral Science, n.d.).

Experiential avoidance in relation to eating behaviors can be observed in various forms, such as, eating in order to avoid unwanted thoughts and feelings, emotional eating (eating when not physically hungry), and avoiding social situations where others are perceived to judge an individual's weight (Blodorn et al., 2016; Hill et al., 2015; Litwin et al., 2017; Major et al., 2012; Nguyen-Rodriguez et al., 2009; Spoor et al., 2007). In behavioral approach, difficulties in relation to eating behavior can be understood as ineffective efforts to regulate unwanted thoughts and feelings which may not be directly controlled by oneself, e.g. difficulties in interpersonal relations; in other words, dysfunctional eating behaviors (e.g. chronic dieting to lose weight) may serve as avoiding of more difficult situation (Byrne et al., 2003; Pearson et al., 2010).

Acceptance and Action Questionnaire for Weight-Related Difficulties (AAQW) first was developed by Lillis and Hayes (2008). AAQW is currently available in English (Lillis & Hayes, 2008), Persian (Pirmoradi et al., 2021) and Portuguese (Weineland et al., 2012). The scale includes 22 items that aim to measure difficulties in relation to eating, weight, and physical activity. AAQW has been shown to have an adequate psychometric properties and has been frequently used particularly in interventions (Cardel et al., 2021; Lillis et al., 2009; Niemeier et al., 2012). Palmeira et al. (2016) revised the original scale and established a good psychometric properties of the Portuguese version of the revised AAQW in a large sample that included women with overweight/obesity seeking treatment and women from the general population (nonoverweight). They tested 10 items in several models; e.g., in the first-order structure included three factors, namely 1) food as control (eating as a way to cope with negative emotions), 2) weight as barrier to living (weight or body shape preventing to maintain a valued life) and 3) weight stigma (experiences related to internalized weight stigma). Subsequently, the second-order

structure (three factors that lead to a global factor [i.e., overall weight-related experiential avoidance]) of 10 items has been suggested as the best model indicating good model fit (Chi-Square goodness of fit, χ^2 = 90.242, p < .001; Root Mean Square Error of Approximation [RMSEA] = .066; Comparative Fit Index [CFI] = .996). In the second-order structure, the three-factor structure was the same as in the previous model (first order), but it also included one global factor. This version that included 10 items was titled Acceptance and Action Questionnaire Weight-Related Difficulties -Revised (AAQW-R). Internal consistency levels for overall AAQW-R and subscales (that is, food as control, weight as barrier to living, weight stigma) were found at good level (Cronbach alpha [α] = .88, .77, .73, .79, respectively). Evidence indicating convergent and divergent validity was also reported in the same study (Palmeira et al., 2016).

AAQW-R is available in both English and Portuguese (Palmeira et al., 2016). The English version of AAQW-R was tested in English-speaking female and male adults with overweight/obesity in the United States (US) (Dochat et al., 2020). Similar factor structures were repeated as suggested above (Palmeira et al., 2016). In Model 1, the single-factor structure of AAQW-R was tested. In Model 2, a first-order structure including three factors was tested as indicated earlier. Finally, the second-order structure (three factors leading to one global factor) was tested in Model 3. Researchers have suggested similar results as shown in Palmeira et al. (2016), indicating a good fit of the model for three-factor model of English version of AAQW-R (Chi-square goodness of fit, χ^2 = 91.742, p < .001; RMSEA = .081; CFI = .940). The internal consistency levels for the overall AAQW-R and subscales (i.e. food as control, weight as barrier to living, weight stigma) were indicated at a good level (Cronbach alpha [α] = .86, .71, .73, .78, respectively). They have shown evidence for convergent validity and concluded that the English version of AAQW-R is a valid and reliable tool which can be used as a three-factor measure (i.e., food as control, weight as barrier to living, weight stigma) with or without a total score to measure weight-related experiential avoidance in US adults with overweight/obesity (Dochat et al., 2020).

Weight-related experiential avoidance can be observed in both overweight and nonoverweight samples and it may be related to several psychosocial factors that can have negative impact on quality of life (Hill et al., 2015; Lillis & Hayes, 2008; Lillis et al., 2009; Palmeira et al., 2016). It is important to study weight-related experiential avoidance by using valid and reliable measurement tools such as revised AAQW. Several AAQ variants have been translated into Turkish, these include Acceptance and Action Diabetes Questionnaire (Karadere et al., 2019), Acceptance and Action Questionnaire- II (Yavuz et al., 2016), Acceptance and Action Questionnaire for University Students (Kuru et al., 2021), and Acceptance and Action Questionnaire-Substance Abuse (Uygur et al., 2020). The purpose of this study was to adapt the revised 10-item AAQW to Turkish language and report psychometric properties in a nonoverweight sample. It was hypothesized that translated and adapted version of AAQW-R will indicate similar factor structure and psychometric properties as indicated earlier (Dochat et al., 2020; Palmeira et al., 2016). We expected to observe evidence supporting convergent and divergent validity. More specifically, we expected to observe positive associations between Turkish version of AAQW-R and general experiential avoidance, dysfunctional eating attitudes, social physique anxiety and general anxiety symptoms, whereas negative (small) or no association between Turkish version of AAQW-R and subjective happiness. Additionally, we expected that translated and adapted items will indicate good level of internal consistency.

Method

Participants and Procedure

This study received ethical approval from the Scientific Research Ethics Committee of Near East University in Northern Cyprus (NEU/SS/2022/1208). By using convenience sampling strategy,

potential participants were invited through online advertisements posted on university social media platforms as well as via posters posted on campus. An online survey pack was designed, and its link was made available on the posts so that participants could complete it when available. In total, 200 individuals responded to questions in the survey pack. Weight-related experiential avoidance can vary according to body mass index (BMI) score (Palmeira et al., 2016), therefore, 39 individuals with overweight/obesity were excluded from the sample considering that insufficient data size would not allow subgroup analyzes. The participants provided informed consent. When completed the online survey pack, they were provided with a debrief sheet involving details of the research team, as well as professional support in case required. The sample included 161 university students. There was no missing value in the data set. A general rule of thumb suggesting having a minimum of 5 to 20 cases for indicator variable to conduct confirmatory factor analysis (CFA) has been widely used in the literature (Suhr, 2006). Recent simulation studies have discussed several points that should be considered when deciding on sample size for CFA (Wolf et al., 2013). Despite there is no consensus regarding required sample size to conduct CFA in the literature, a methodological study using Monte Carlo simulation has suggested having minimum sample size of 150 for normally distributed indicator variables without missing data (Muthén & Muthén, 2002).

Instruments

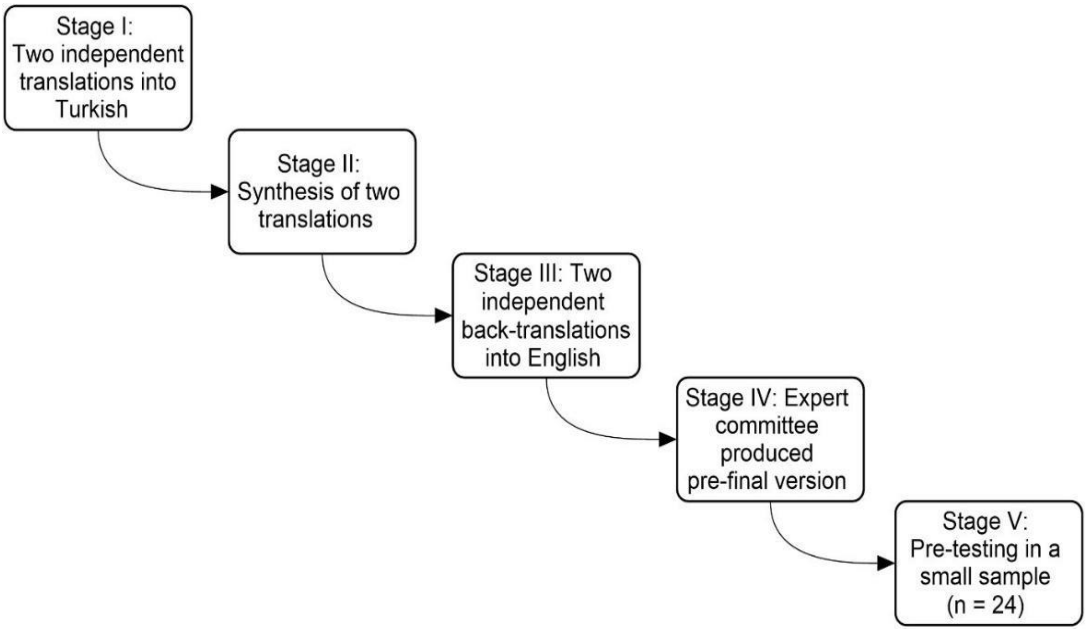
Acceptance and Action Questionnaire for Weight-Related Difficulties Revised (AAQW-R)

This measurement scale is a revised version of the Acceptance and Action Questionnaire for Weight-Related Difficulties (AAQW; Lillis & Hayes, 2008). The original scale involves 22 items to measure weight-related experiential avoidance. Palmeira et al. (2016) revised the original scale, which was reduced to have 10 items. Out of 7 items, each item is rated according to how valid or believable each item is (1 = not true at all – 7 = completely true), while the remaining three items are rated according to the truth of each statement (1 = never true – 7 = always true). The revised version of the scale has been suggested to have three subscales, namely 1) food as control (item 1, 6, 7) e.g. 'My eating impulses control me', 2) weight as barrier to living (item 2, 4, 5) e.g. 'If I gain weight, it means I've failed' and 3) weight stigma (item 3, 8, 9, 10) e.g. 'Other people make it hard for me to accept myself'. Total scores for the overall scale and subscales are calculated by summing scores. Higher scores show a greater level of experiential avoidance related to weight. The revised scale has been indicated to be reliable (Cronbach alpha [α] = .88) and showed both convergent and divergent validity (Palmeira et al., 2016).

After obtaining permission from Palmeira et al. (2016), the Turkish translation and adaptation procedure of the scale was completed according to the stages suggested by Beaton et al. (2000). In the first stage, two faculty members who have proficiency in English language independently translated the AAQW-R into Turkish. In the second stage, one of the researchers synthesized two Turkish translations of the scale and resolved any differences. In the third stage, two professionals in the academic setting who were naive to outcome measurement and have English language skills used the synthesized Turkish version of the scale and independently translated it back into English. In the fourth stage, a group of professionals including a methodologist, a translator, and researchers reviewed the reports of all stages and agreed on a pre-final Turkish version of AAQW-R. In the fifth stage, the Turkish version of AAQW-R was tested in a small group of individuals (n = 24) in the university setting. They were asked to complete the translated scale and explain what they understood about each item to ensure semantic equivalence. No revision was required at this stage (Appendix) (Figure 1). Responses from the pilot study were not included in the psychometric analyzes.

Figure 1

Translation and Adaptation Process Adapted from Beaton et al. (2000)



Acceptance and Action Questionnaire II (AAQ-II)

Psychological flexibility was measured using AAQ-II (Bond et al., 2011). This scale includes seven statements that aim to measure general psychological flexibility. The items include statements such as 'I am afraid of my feelings' and 'Worries get in the way of my success'. The statements are rated on a 7-point scale (1 = never true – 7 = always true). Higher scores indicate greater psychological inflexibility, and hence greater experiential avoidance. The scale has shown to be reliable (Cronbach alpha [α] = .84) and to have support for divergent validity (Bond et al., 2011). Yavuz et al. (2016) translated and adapted AAQ-II into Turkish. The translated version of the scale has been shown to be reliable (Cronbach alpha [α] = .84) and convergent validity in both clinical and non-clinical samples (Yavuz et al., 2016). The current study determined strong internal consistency for AAQ-II (Cronbach alpha [α] = .92).

The Eating Attitudes Test-26 (EAT-26)

Eating attitudes were measured using EAT-26. This scale is a short version of the Eating Attitudes Test-40 which was developed by Garner and Garfinkel (1979). Garner et al. (1982) revised the original scale, which includes 26 items. Items include statements such as 'I avoid eating when I am hungry', 'I like my stomach to be empty' and 'I feel extremely guilty after eating'. The statements are rated according to '3 = Always, 2 = Usually, 1 = Often, 0 = Sometimes, Rarely, and Never'. The last item (26) requires reverse coding. Scores 20 and above indicate dysfunctional eating attitudes that require the attention of healthcare professionals for potential eating disorder (Garner et al., 1982). Ergüney-Okumuş and Sertel-Berk (2020) translated the scale into Turkish. The translated version seems to be reliable (Cronbach alpha [α] = .84) and has evidence for construct validity (Ergüney-Okumuş & Sertel-Berk, 2020). The internal consistency of the scale was found to have strong level of reliability (Cronbach alpha [α] = .92) in the current study.

The Social Physique Anxiety Scale (SPAS)

This scale includes 12 items that aim to measure individuals' social physique related anxiety level (Hart et al., 1989). 'I am comfortable with the appearance of my physique or figure' and 'It would make me

uncomfortable to know others were evaluating my physique or figure' are some of the statements on the scale. The items are rated on a 5-point scale (1=not at all true to 5=extremely true). Higher scores indicate a higher level of anxiety related to the social physique. Only item 1, 2, 5, 8 and 11 requires reverse coding (Hart et al., 1989). The Turkish version of the scale has been shown to have a robust internal consistency (Cronbach alpha [α] = .81) and support for construct validity (Mülazimoğlu Ballı & Aşçı, 2006). In the current study, internal consistency of the scale was observed at moderate level (Cronbach alpha [α] = .63).

Generalized Anxiety Disorder Scale (GAD-7)

To measure the level of self-reported anxiety, the GAD-7 scale was used. The scale has 7 statements that respondents rate considering the last two weeks. The scale includes items such as 'Feeling nervous, anxious or on edge', 'Not being able to stop or control worrying', and 'Becoming easily annoyed or irritable'. Respondents rate items using 4-point scale (0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day). Scores 5, 10, 15 obtained from the test indicate mild, moderate, and severe anxiety, respectively (Spitzer et al., 2006). Individuals obtained 10 and above have been suggested to be evaluated by a mental health professional for potential anxiety disorder (Kroenke et al., 2007). The Turkish version of the scale has been indicated as reliable (Cronbach alpha [α] = .85) and has shown support for construct validity (Konkan et al., 2013). The internal consistency of the scale was found at strong level (Cronbach alpha [α] = .92) in the current study.

Subjective Happiness Scale (SHS)

To measure subjective happiness, SHS was used which includes four items, for example, 'Compared to most of my peers, I consider myself: 1 = less happy – 7 = more happy'. Each item is rated on a 7-point scale. Two items are about the general happiness and their rating related to the happiness of peers. The other two, on the other hand, ask respondents to report the extent to which each statement describes them. The overall score can be computed by means of the responses to all items. Only item 4 is reverse coded. Higher scores indicate a greater level of subjective happiness (Lyubomirsky & Lepper, 1999). The scale was translated into Turkish by Doğan and Totan (2013). The Turkish version of the scale has demonstrated an adequate level of internal consistency (Cronbach alpha [α] = .65 in university students - α = .70 in the community sample) and evidence of convergent validity (Doğan & Totan, 2013). Similarly, the current study found an adequate level of internal consistency of the scale (Cronbach alpha [α] = .69).

Statistical Analyses

All analyzes were performed by using *lavaan* package (Rosseel, 2012) in R open-source statistical software (R Core Team, 2021). To investigate the distribution of the data, the values of skewness and kurtosis were examined. The multicollinearity among items was investigated. The Mahalanobis distance statistic was performed for multivariate outlier analysis.

To determine the factor structure of the Turkish version of AAQW-R, a CFA was performed using maximum likelihood estimation. In total, four models were tested to observe fit: 1) single-factor structure, 2) three-factor structure and 3) second-order factor structure as previously conducted in similar studies (Dochat et al., 2020; Palmeira et al., 2016) and additionally, 4) a bifactor model was tested. In the current study, model fit was mainly assessed through values of chi-square goodness of fit, Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMS). The values of Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) were examined to compare the models. Lower values on AIC and BIC have

been suggested to indicate a better model (Arbuckle, 2008).

In the original form of 10-item AAQW-R, Palmeira et al. (2016) initially tested the first-order structure consisted of three factors, (1) food as control, (2) weight as barrier to living, and (3) weight stigma. Then the second-order structure was tested and it demonstrated good model fit (Chi-Square goodness of fit, $\chi^2 = 90.242$, $p < .001$; RMSEA = .066; CFI = .996). Good levels of internal consistency for overall AAQW-R and subscales (i.e., food as control, weight as barrier to living, weight stigma) (Cronbach alpha [α] = .88, .77, .73, .79, respectively) were reported. Positive relation between overall AAQW-R and BMI and eating pathology indicated support for convergent validity, whereas negative relation between AAQW-R and subjective happiness demonstrated divergent validity in the same study (Palmeira et al., 2016).

Regarding the reliability of the scale, Cronbach's alpha was used to evaluate internal consistency. Pearson's correlation coefficients were used for convergent and divergent validity considering critical effect sizes suggested by Cohen (1988) (i.e., $r \geq .5$, large; $.5 > r \geq .3$, medium; $.3 > r \geq .1$, small). Taking into account previous research findings (Dochat et al., 2020; Palmeira et al., 2016), in the aspect of convergent validity, we expected to observe 1) small to medium positive correlations between Turkish version of AAQW-R total and subscale scores and AAQ-II, 2) small to medium positive correlations between Turkish version of AAQW-R total and subscale scores and EAT-26, 3) medium positive correlation between Turkish version of AAQW-R total score and SPAS, 4) small to medium positive correlation between Turkish version of AAQW-R total and subscale scores and GAD-7, 5) small positive correlation between AAQW-R subscale and total scores and BMI, respectively, and finally, in the aspect of divergent validity, 6) no relationship or (small) negative correlation between Turkish version of AAQW-R total and subscales and SHS.

Results

Preliminary Data Analyses

Regarding normality, the values of skewness and kurtosis were found within acceptable ranges (Skewness < |3| and Kurtosis < |8|) (Kline, 2005). There was no multicollinearity issue in the dataset since variance inflation factor values of all variables were found to be less than 5 (Kline, 2005). The Mahalanobis distance statistic was used to identify multivariate outliers and eight cases were detected as outliers in the whole dataset. As the skewness and kurtosis values were found within acceptable ranges, the outliers were kept in the sample to better represent the population. For the variables, SHS, EAT-26, SPAS, AAQ-II, GAD-7, AAQW-R, AAQW-R Food as control, AAQW-R weight as barrier to living, AAQW-R weight stigma, the obtained skewness values are as follows: -0.40, 1.98, 0.17, 0.77, 0.51, 0.95, 0.85, 1.05, and 1.07, respectively. Moreover, the kurtosis values are as follows: 3.83, 6.75, 4.95, 3.19, 2.85, 3.69, 3.28, 3.82, and 3.52, respectively.

Descriptive Statistics and Reliability Analysis

The sociodemographic characteristics of the participants and descriptive information of the measures have been shown in Table 1. Demographic data was obtained for descriptive statistics. Using information on participants' weight and height, the BMI was calculated for each participant (Centers for Disease Control and Prevention, 2022). The formula used for BMI calculation is as follows (1):

$BMI_i = \frac{w_i}{{h_i}^2}$, where w_i and h_i is the weight and height of the i^{th} participant, respectively. (1)

Considering weight-related experiential avoidance can vary according to body mass index (BMI) score (Palmeira et al., 2016), 39 individuals with overweight/obesity were excluded from the analyses. The

final sample size included 161 participants. The BMI scores of the sample was lower than 25 (nonoverweight). The BMI scores of 24 participants (14.91%) were measured as underweight (<18.5) and 137 (85.01%) participants' BMI scores were reported healthy weight (18.5< BMI< 24.9). 134 (83.23%) of the participants were women. The mean age was 21.5 (SD = 2.91).

The Turkish version of the AAQW-R showed a good internal reliability. Cronbach's alpha values for the overall scale and subscales, food as control, weight as barrier to living and weight stigma were .87, .70, .76, .74, respectively. These values were interpreted according to a review that has indicated labels for different levels of internal consistency (Taber, 2018). In the review, ranges of Cronbach's alpha values have been labelled based how they were widely represented in the literature. For instance, excellent (0.93–0.94), robust (0.81), moderate (0.61–0.65), strong (0.91–0.93), reliable (0.84–0.90), and good (0.71–0.91) level of internal consistency seem to represent different ranges of Cronbach's alpha values (Taber, 2018).

Table 1

Sample Characteristics

Variables	
Demographics	Total (*N* = 161)
Age, *M (SD*)	21.5 (2.9)
Female (n, %)	134 (83.2%)
BMI, *M (SD*)	21.1 (2.3)
Measures	*M* (*SD*)
AAQW-R	24.8 (11.3)
AAQW-R *food as control*	8.3 (4.1)
AAQW-R *weight as barrier to living*	8.2 (4.2)
AAQW-R *weight stigma*	8.3 (4.6)
AAQ-II	21.0 (10.4)
EAT-26	12.9 (13.6)
SPAS	34.4 (6.5)
GAD-7	7.5 (5.3)
SHS	17.8 (4.2)

Note. M = mean; SD = standard deviation; AAQW-R = Acceptance and Action Questionnaire for Weight-Related Difficulties Revised; AAQ-II = Acceptance and Action Questionnaire–II; EAT-26 = Eating Attitudes Test-26; SPAS = Social Physique Anxiety Scale; GAD-7 = Generalized Anxiety Disorder Scale; SHS = Subjective Happiness Scale.

Confirmatory Factor Analyses

The values for all CFA models are presented in Table 2. In Model 1, a single-factor structure of AAQW-R was tested to observe the fit of the model (Figure 2). The findings showed that the chi-square goodness of fit test was significant, however, values of CFI, TLI, and RMSEA indicated that there was no evidence for model fit at acceptable level considering the suggested thresholds for model fit (i.e., CFI > .90, TLI > .90, RMSEA < .05, SRMR < .08 [Hu & Bentler, 1998; Kline, 2005]). This indicated that the single-factor model was not statistically supported by the data.

Table 2

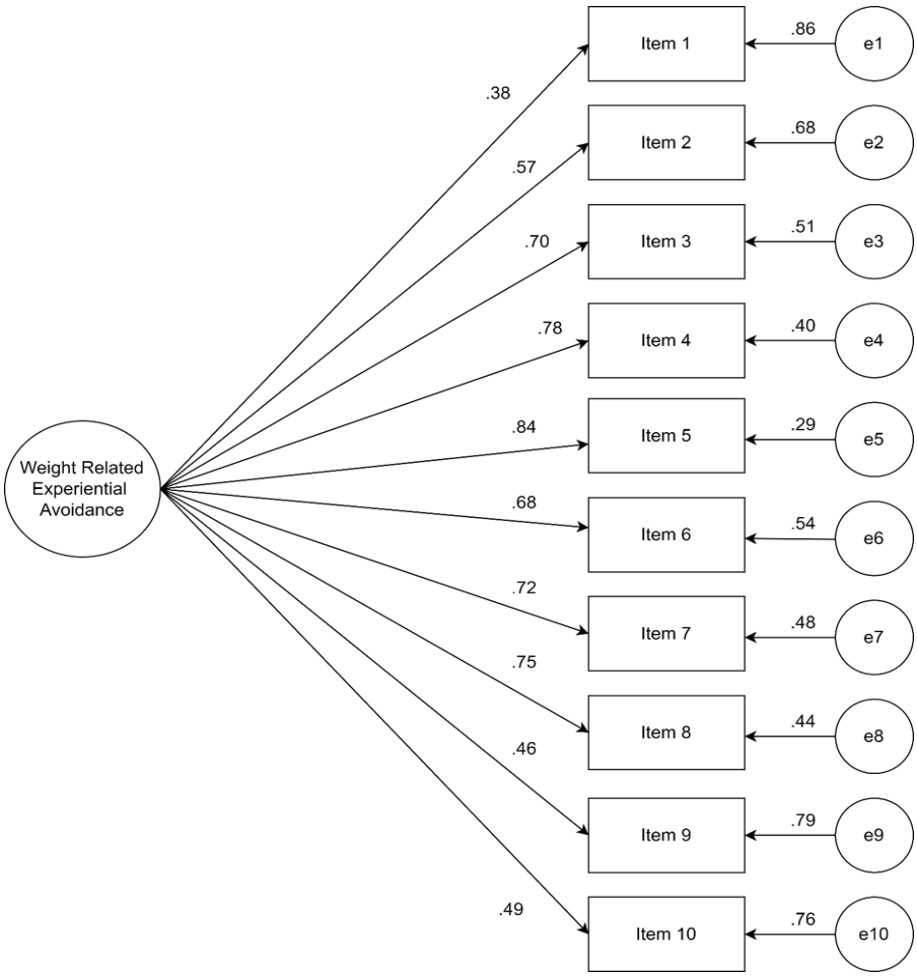
Goodness-of-Fit Statistics for Comparative Models of the AAQW-R Turkish Version (N=161)

Models	Chi-square	Df	CFI	TLI	RMSEA [90% CI]	SRMR	AIC	BIC
1. 1-factor (10 items)	109.356 ***	35	.888	.856	.115 [.091, .140]	.069	5570.596	5632.224
2. 1st Order 3-factor (10 items)	81.265 ***	32	.926	.896	.098 [.072, .124]	.062	5548.505	5619.378
3. 2nd Order 3-factor (10 items)	145.734 ***	35	.833	.786	.140 [.117, .164]	.187	5606.974	5668.602
4. Bifactor 3-factor (10 items)	54.948 ***	25	.955	.919	.086 [.055, .117]	.050	5536.188	5628.630
5. 1st Order 2-factor (10 items)	84.528 ***	34	.924	.899	0.096 [.071, .122]	.065	5547.769	5612.478

Note. Df = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root Mean-Square Residual; AIC = Akaike Information Criterion; BIC = Bayesian Information Criteria.
*** $p < .001$

Figure 2

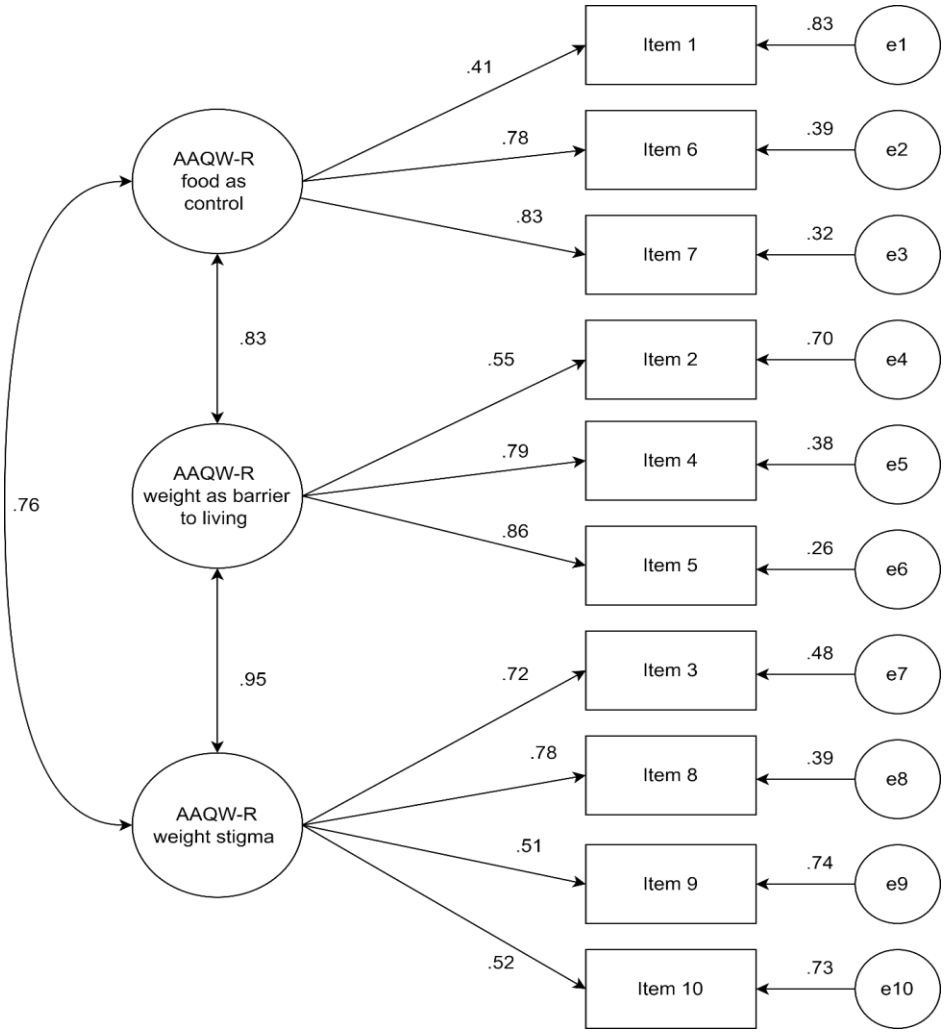
Confirmatory Factor Analysis of Model 1 (1-factor, Standardized) of the AAQW-R Turkish Version



In Model 2, as previously suggested (Palmeira et al., 2016), the three-factor structure was tested. Three subscales, namely, food as control (item 1, 6, 7), weight as barrier to living (item 2, 4, 5) and weight stigma (item 3, 8, 9, 10) were considered as latent variables. The item numbers were used as shown in the revised 10-item scale. Interfactor correlations were determined between the variables. The chi-square goodness of fit test was significant, values of CFI, TLI, RMSEA, and SRMR seemed adequate. Standardized factor loadings for the three-factor structure were significant and values ranged -from .41 to .83 for food as control subscale, -from .55 to .86 for weight as barrier to living subscale, and -from .51 to .78 for weight stigma subscale (Figure 3). Additionally, factors were found to have large correlations (food as control and weight as barrier to living, $r = .83$, $p < .001$; food as control and weight stigma, $r = .76$, $p < .001$; weight as barrier to living and weight stigma $r = .95$, $p < .001$). Model 2 demonstrated lower values on both AIC and BIC, overall, it can be said that Model 2 indicated a better fit to the data compared to Model 1.

Figure 3

Confirmatory Factor Analysis of Model 2 (First order 3-factor, Standardized) of the AAQW-R Turkish Version

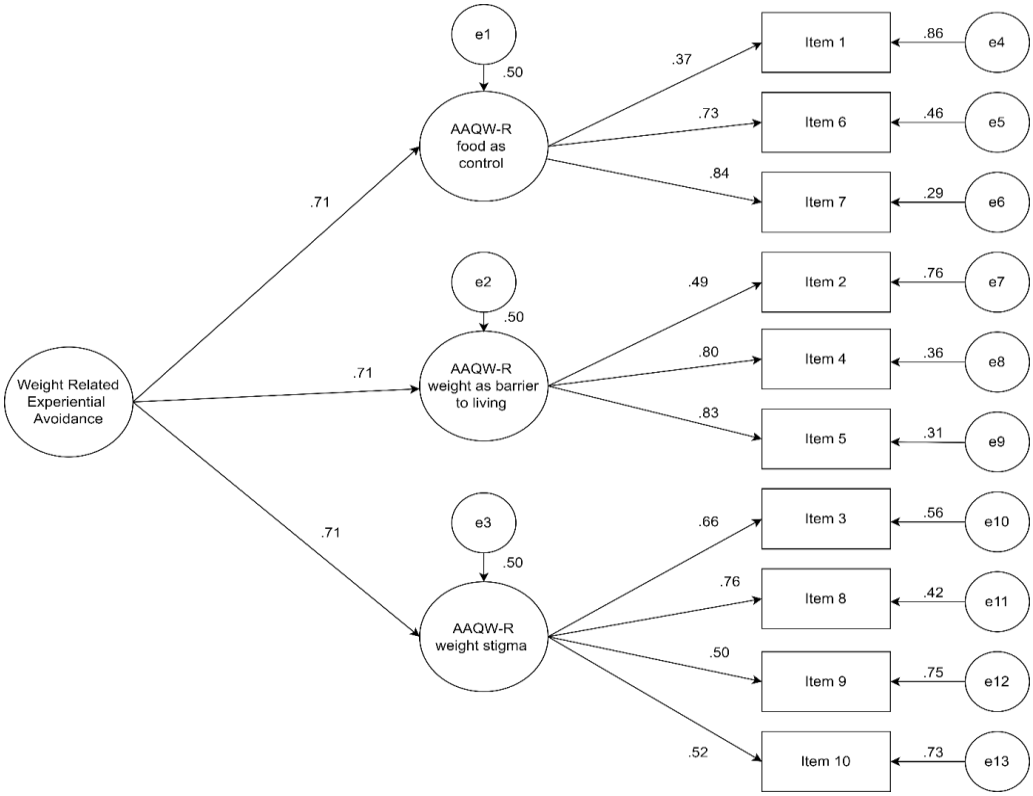


In Model 3, as previously suggested (Palmeira et al., 2016) and examined in a similar study (Dochat et al., 2020), the second-order structure was tested. Model 3 identifies a global factor (weight-related experiential avoidance) that has been suggested to be composed of the three-factor structure (i.e., food as control, weight as barrier to living, and weight stigma) where factors are largely interrelated as

indicated in Model 2. The item loadings in the latent variables were not identical in Model 2 and Model 3. The chi-square goodness of fit test was significant, however, changes in values of degrees of freedom, CFI, TLI, RMSEA and SRMR as well as increase in both AIC and BIC values indicated a poorer fit. Furthermore, the difference in degrees of freedom (dfmodel2 – dfmodel3 = -3) indicated possible under-identification (Brown, 2014) (Table 2). Standardized correlations between the second-order factor (weight-related experiential avoidance) and first-order factors (i.e., food as control [r = .71, p < .001], weight as barrier to living [r = .71, p < .001] and weight stigma [r = .71, p < .001]) are presented in Figure 4. When we compared Model 2 and Model 3, it was clear that Model 2 provided better estimates than Model 3 ($\Delta\chi^2$ [-3, N = 161] = 64.47, p < .001).

Figure 4

Confirmatory Factor Analysis of Model 3 (Second order, Standardized) of the AAQW-R Turkish version

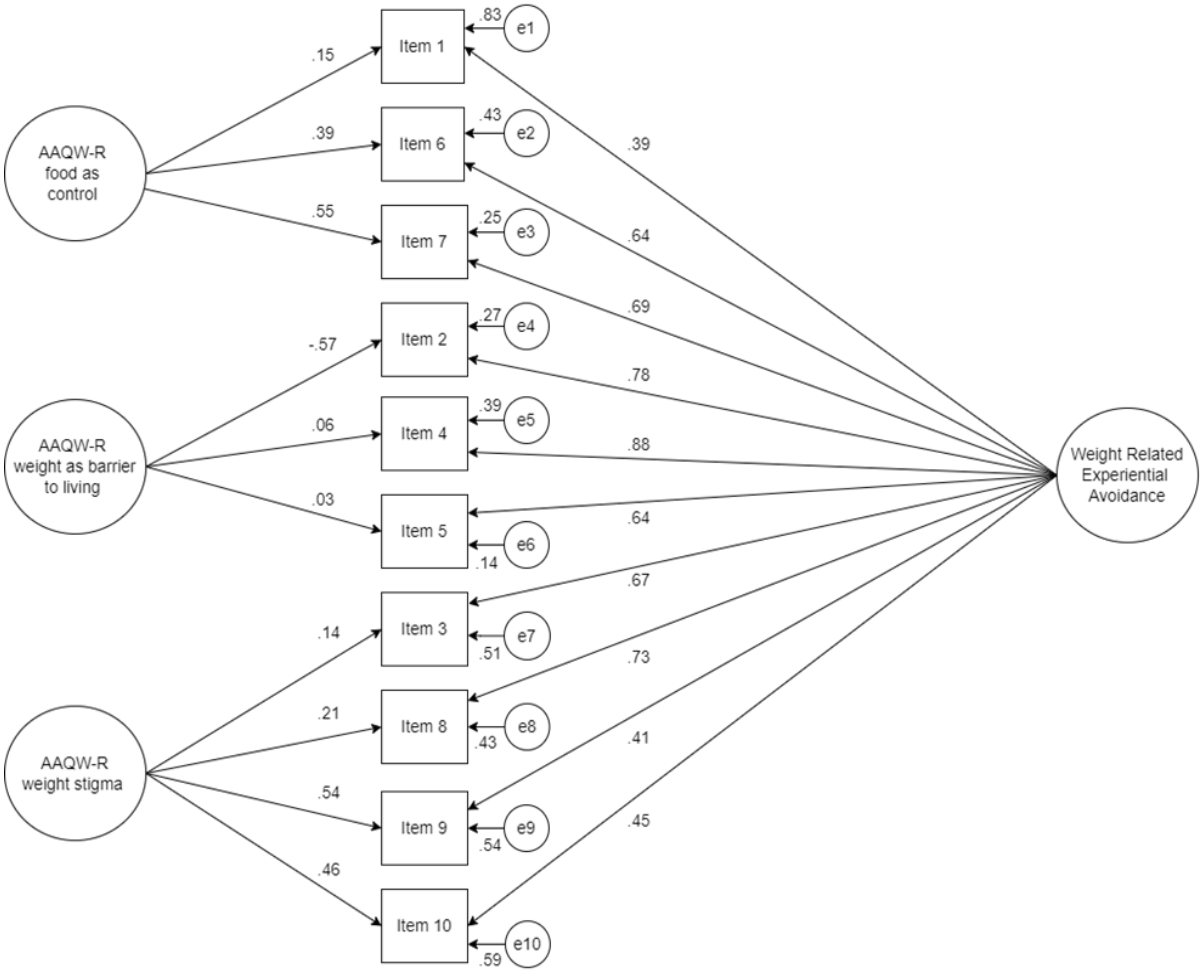


As an alternative to first-order and second-order structures, a bifactor model was tested in the Model 4, as recommended by Dochat et al. (2020). A bifactor is defined as a latent structure in which each item loads onto a general factor and on to a series of grouping factors. In other words, each item has two loading estimates in the model, one is for its relationship with the general factor, whereas another one is for its relationship with a latent variable (e.g., subscale) (Dunn & McCray, 2020). As the bifactor models hypothesize (Brown, 2014), the global and latent factors were specified to be uncorrelated in Model 4. This means that the contribution of latent factors to explaining variability is expected to be independent of the variance explained by the global factor (Brown, 2014). Figure 5 shows each item of the AAQW-R loading on one general factor (weight-related experiential avoidance) at the same time, it shows each item loading onto latent factors (i.e., food as control, weight as barrier to living, weight stigma). Compared to the previous models, item loadings differed and some of the loadings on the latent factors were not significant. Compared to Model 3, the values of chi-square, CFI, TLI, RMSEA, and SRMR as well as change in both AIC and BIC values were reasonable. However, some factors loadings were quite small and nonsignificant indicating that some items may not adequately explain the variance

in the bifactor model (e.g., item 5: 'If I gain weight, it means I've failed"). It is known that bifactor analysis sometimes may demonstrate the psychometric irrelevance of a latent factor when the general factor is added in the model (Chen et al., 2006), that is, after including a global factor (i.e., weight-related experiential avoidance), a latent factor (e.g., weight as barrier to living) may not account for additional and unique variance.

Figure 5

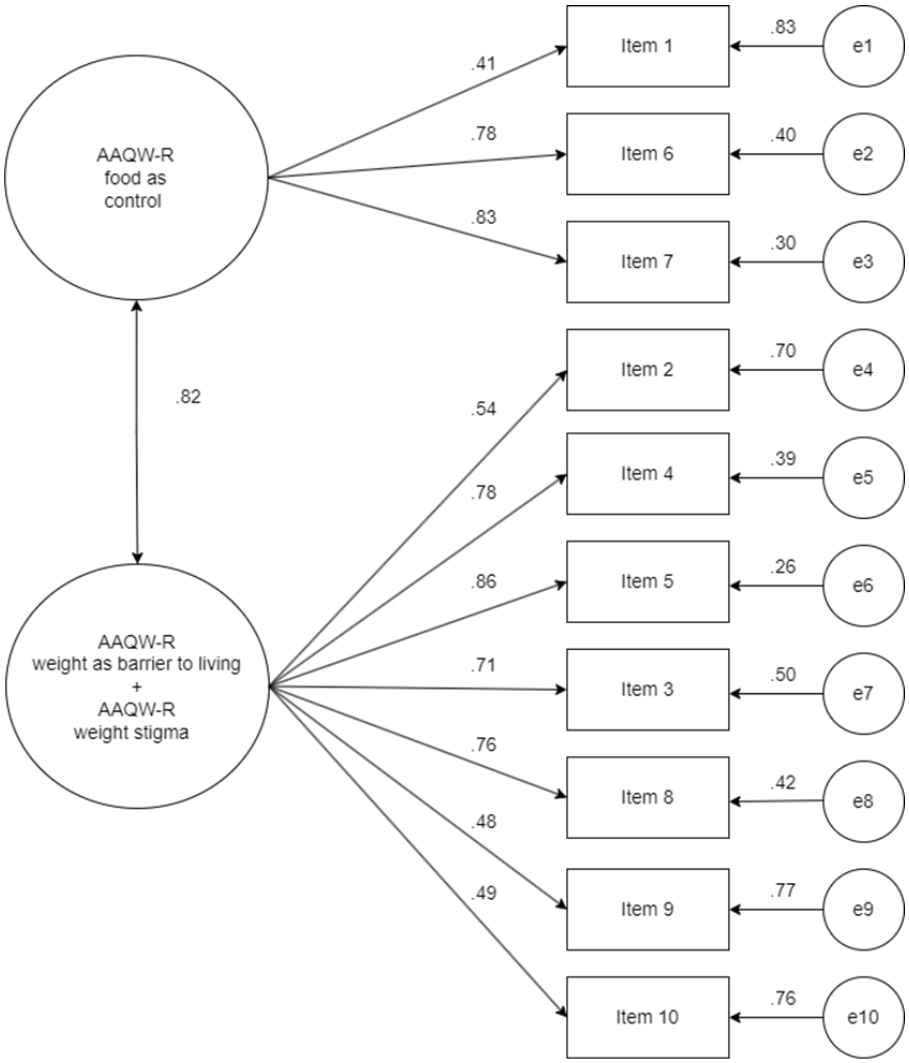
Confirmatory factor analysis of Model 4 (Bifactor, Standardized) of the AAQW-R Turkish version



Considering two factors namely weight as barrier to living and weight stigma were found to have large correlation (.95) in the Model 2 (first order-3 factor structure), they were merged to observe goodness-of-fit statistics for first-order 2-factor model in the Model 5. It yielded similar CFI, TLI, RMSEA, SRMR, AIC and BIC values to Model 2 (first-order 3 factor structure). Chi-square goodness of fit test was significant in Model 5 (Table 2). Additionally, item loadings were also similar to Model 2, χ^2 [N = 161] = 84.53, p < .001, RMSEA = .096, 90% CI [.071, .122]) (Table 2, Figure 6). We run chi-square difference test to determine whether there was significant difference between Model 2 and Model 5 so that we can identify the best model. However, we did not observe significant difference between the (first order) 2-factor and 3-factor structure for AAQW-R (Table 3).

Figure 6

Confirmatory Factor Analysis of Model 2 (First order 2-factor) of the AAQW-R Turkish version



Based on the estimates obtained for each model and nonsignificant difference between Model 2 and Model 5, we concluded that Model 2 (first-order structure – three-factor model) is a good fit to the data and overall, it better represents constructs of weight-related experiential avoidance in the current sample. Similarly, first order 3 factor structure for AAQW-R has been suggested earlier (Dochat et al., 2020; Palmeira et al., 2016).

Table 3

Comparison of Factor Structure Models for AAQW-R

	Df	AIC	BIC	Chisq	Chisq Diff	Df diff	Pr(>Chisq)
3-factor	32	5548.5	5619.4	81.265			
2-factor	34	5547.8	5612.5	84.528	3.2632	2	0.1956

Note. Df = degree of freedom; AIC = Akaike Information Criterion; BIC = Bayesian Information Criteria; Chisq = Chi-square test statistic, Diff = Difference; Pr(>Chisq) = probability of obtaining a chi-squared value greater than what has been observed under the null hypothesis.

Convergent and Divergent Validity

Pearson's correlation coefficients for all measures are shown in Table 4. Consistent with our hypotheses, regarding convergent validity, there were positive medium relationships between AAQW-R total and subscales (i.e., food as control, weight as barrier to living and weight stigma) and AAQ-II. There were positive small but significant relationships between dysfunctional eating attitudes (EAT-26) and total AAQW-R, AAQW-R weight as barrier to living, AAQW-R weight stigma, except for AAQW-R food as control. The total AAQW-R was found to be positively (small) related to social physique related anxiety (SPAS). There were positive (medium) associations between total AAQW-R and subscales and anxiety symptoms (GAD-7). No significant relationship was found between BMI and the total AAQW-R score and subscales. On the other hand, as expected, subjective happiness (SHS) was not related to AAQW-R total score and subscales indicating divergent validity.

Table 4

Bivariate Correlations Between AAQW-R Total and Subscale Scores and (Convergent & Divergent) Validity Measures

Measures	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1- SHS	-									
2- EAT-26	-.15	-								
3- SPAS	-.02	-.10	-							
4- AAQ-II	-.51***	.10	.30***	-						
5- GAD-7	-.53***	.17*	.19*	.56***	-					
6- AAWQ-R_total	-.18	.23**	.21**	.47***	.47***	-				
7- AAWQ-R_ food as control	-.12	.10	.15	.37***	.31***	.85***	-			
8- AAWQ-R_ weight as barrier to living	-.14	.24**	.23**	.40***	.43***	.91***	.70***	-		
9- AAWQ-R_ weight stigma	-.22	.27**	.19*	.47***	.48***	.86***	.55***	.69***	-	
10- BMI	-.01	-.05	.10	-.09	-.12	.14	.12	.09	.15	-

Note. AAQW-R = Acceptance and Action Questionnaire for Weight-Related Difficulties Revised; AAQ-II = Acceptance and Action Questionnaire–II; EAT-26 = Eating Attitudes Test-26; SPAS = Social Physique Anxiety Scale; GAD-7 = Generalized Anxiety Disorder Scale; SHS = Subjective Happiness Scale.
*p < .05, ** p < .01, *** p < .001

Some of the convergent validity measurements established small but statistically significant correlations. However, the statistical analysis did not yield significant (positive) correlation between AAQW-R food as control subscale and dysfunctional eating attitudes (EAT-26). Additionally, BMI was not associated with AAQW-R total score and subscales. Overall, it can be said that there was adequate evidence indicating convergent and divergent validity for the Turkish version of AAQW-R.

Discussion

The purpose of this study was to translate and adapt the AAQW-R which was revised by Palmeira et al. (2016) and used in both nonoverweight and overweight/obese samples. It has been suggested that AAQW-R is a valid and reliable instrument to measure weight-related experiential avoidance in both general and clinical populations (Palmeira et al., 2016). It is important that such valid and reliable measurement tools are available to study weight-related experiential avoidance in different samples as weight-related concern and psychological inflexibility have been reported across socioculturally diverse samples (Dochat et al., 2020; Lillis et al., 2009; Palmeira et al., 2016; Pearson et al., 2012; Weineland et al., 2012). In this study, we translated and adapted AAQW-R into Turkish language. We analyzed psychometric properties of Turkish AAQW-R in a nonoverweight sample by examining reliability and validity measurements. To increase the chances of comparability, we followed previous suggestions and practices (Dochat et al., 2020; Palmeira et al., 2016). The findings of the current study demonstrated that the Turkish version of AAQW-R is reliable and its internal consistency level is comparable with the findings of previous studies. The three-factor model was supported in the Turkish version of AAQW-R. Furthermore, hypotheses regarding convergent and divergent validity were mostly supported by the findings.

Regarding CFA, previous studies analyze were repeated to observe whether the suggested models fit to the data in the current sample. Based on the conceptual framework suggested in the original study of AAQW (Lillis & Hayes, 2008), Palmeira et al. (2016) demonstrated that estimates of second-order model (Model 3) may be good to explain construct of Portuguese version of AAQW-R in a mixed sample including women from general population and women with overweight/obesity. Dochat et al. (2020) replicated first-order and second-order structure models (Model 2 & Model 3, respectively) for English version of AAQW-R. Although they obtained the same estimates for both models, they suggested that the three-factor model (Model 2) was a good fit to their data. They concluded that English version of AAQW-R can be used to measure overall weight-related experiential avoidance as well as subscales (i.e., food as control, weight as barrier to living and weight stigma) in overweight/obese adults in the US (Dochat et al., 2020). In this study, we replicated one-factor structure, first-order (three factors) and second-order (three factors) models (Model 1, Model 2 & Model 3, respectively). The CFA findings indicated that Model 2 was a good fit to the data in the current study, while estimates for Model 3 demonstrated poorer fit. This was supported by a further statistical model comparison test. The difference in degrees of freedom between Model 2 and Model 3 was negative (= -3) which may indicate underidentification (Brown, 2014). It is known that there is a greater chance to observe underidentification when the model includes correlated errors (Brown, 2014). Given that weight-related experiential avoidance has been recommended to be assessed by using total score, the bifactor structure (Model 4) was examined which was not tested earlier. Although model fit estimates were reasonable, some item loadings were small and nonsignificant particularly on the latent factors, however, loadings on the global factor (i.e., weight-related experiential avoidance) were significant. Adding global factor (i.e. weight-related experiential avoidance) may have influence the loadings on latent factors (i.e. subscales) (Chen et al., 2006). Based on the conceptualization of weight-related experiential avoidance and model estimates obtained, it seems that three-factor structure (Model 2) is a good fit to the data in this study.

Literature provides evidence on relationships between AAQW/AAQW-R and several measurements such as eating attitudes, psychological distress, experiential avoidance, and BMI (Dochat et al., 2020; Lillis & Hayes, 2008; Palmeira et al., 2016). Convergent validity of the Turkish version of the scale was assessed using similar measures. As expected, the Turkish version of AAQW-R was found to be positively associated with social physique related anxiety, experiential avoidance, and anxiety

symptoms, demonstrating support for convergent validity. No relationship was found between AAQW-R and subjective happiness, indicating support for divergent validity. Consistent with our hypotheses, the Turkish version of AAQW-R was associated with dysfunctional eating attitudes, however, AAQW-R food as control subscale failed to significantly relate to dysfunctional eating attitudes. AAQW-R food as control subscale represents eating behavior to cope with negative emotions (Palmeira et al., 2016). Considering that the instrument used to measure dysfunctional eating attitudes (EAT-26) is used primarily to identify risk groups for eating disorder (Ergüney-Okumuş & Sertel-Berk, 2020), as a construct, it may not show similarity to food as control subscale in this sample. Also, we did not observe a significant relationship between BMI and AAQW-R. This finding may be due to the sociodemographic characteristics of the sample in this study, which included adults with nonoverweight (MBMI = 21.12, SDBMI = 2.26). There seems to be inconsistency between results from different studies in terms of association between AAQW-R and BMI across different samples (Dochat et al., 2020; Palmeira et al., 2016). Overall, the current study showed evidence for convergent and divergent validity of the Turkish version of AAQW-R in a nonoverweight sample.

Strength and Limitations

Weight-related experiential avoidance has been commonly observed across diverse samples with varying BMI (Dochat et al., 2020; Lillis & Hayes, 2008; Palmeira et al., 2016; Pearson et al., 2012). It is critical to utilize valid and reliable tool to measure weight-related experiential avoidance in non-English speaking societies. This study aimed to translate and adapt AAQW-R into Turkish and examine psychometric properties in a nonoverweight sample. By adopting suggestions for cross-cultural adaptation of self-report measures (Beaton et al., 2000), we attempted to report research stages transparently to increase clarity of the translation process. We followed previous research practices and recommendations (Dochat et al., 2020; Palmeira et al., 2016). For example, Dochat et al. (2020) suggested including only 10 item scale (AAQW-R) without additional items of AAQW. We attempted to replicate their findings in a nonoverweight sample by using AAQW-R only. Our sample included both female and male adults, however, there are some limitations in this study that should be noted, for instance, the female/male ratio in the sample (83.2% female) made it difficult to generalize findings to both genders. Therefore, validity of the scale should be further examined in the future studies including greater number of male individuals. It should be noted that the current sample included participants without overweight, therefore, factor structure and psychometric properties of Turkish version of AAQW-R should be investigated in overweight sample. On the other hand, the current study utilized a cross-sectional survey design, therefore, we did not conduct a test-retest reliability for AAQW-R.

Recommendations for Future Research

The findings of the current study indicates that the three-factor structure of the Turkish version of AAQW-R is a good model representing construct of weight-related experiential avoidance in a nonoverweight sample. Given evidence provided earlier, the current results similarly suggest that AAQW-R can be used to assess subscales separately (i.e., food as control, weight as barrier to living and weight stigma), as well as to measure overall weight-related experiential avoidance. However, further research is required to test the three-factor structure of weight-related experiential avoidance in diverse samples. The Turkish version of AAQW-R should be evaluated in samples with overweight/obese. Studies including various BMI groups, e.g. nonoverweight and overweight/obese, would better observe group differences in terms of weight-related experiential avoidance. Finally, future studies with larger samples and a better female/male ratio should further examine the psychometric properties of the Turkish version of AAQW-R.

Compliance with Ethical Standards

Ethical Approval

This study received ethical approval from the Scientific Research Ethics Committee of Near East University in Northern Cyprus (NEU/SS/2022/1208).

Author Contributions

All authors conceptualised the study. M.K. played a role in acquisition of data. H.G. analysed the data. All authors contributed to interpreting findings. B.K. and H.G. drafted the manuscript, which was revised by M.K.. All authors approved the final version to be submitted.

Declaration of Conflicting Interests

No conflict of interest has been declared by the authors.

Funding

The authors received no financial support for the research.

Acknowledgements

We would like to thank Dr Lara Palmeira for providing permission to translate and adapt AAQW-R to Turkish.

References

Allen, K. L., Byrne, S. M., Blair, E. M., & Davis, E. A. (2006). Why do some overweight children experience psychological problems? The role of weight and shape concern. *International Journal of Pediatric Obesity*, *1*(4), 239-247.

Alimoradi, Z., Golboni, F., Griffiths, M. D., Broström, A., Lin, C. Y., & Pakpour, A. H. (2020). Weight-related stigma and psychological distress: A systematic review and meta-analysis. *Clinical Nutrition*, *39*(7), 2001-2013. https://doi.org/10.1016/j.clnu.2019.10.016

Arbuckle, J. (2008). *Amos 17.0 user's guide*. SPSS Inc..

Association for Contextual Behavioral Science, (n.d.). *AAQ-II*. Retrieved December 21, 2022, from https://contextualscience.org/aaq_and_aaqii_in_30_languages

Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, *25*(24), 3186–3191. https://doi.org/10.1097/00007632-200012150-00014

Blodorn, A., Major, B., Hunger, J., & Miller, C. (2016). Unpacking the psychological weight of weight stigma: A rejection-expectation pathway. *Journal of Experimental Social Psychology*, *63*, 69–76. https://doi.org/10.1016/j.jesp.2015.12.003

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., ... & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, *42*(4), 676-688. https://doi.org/10.1016/j.beth.2011.03.007

Brown, T.A. (2014). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford.

Byrne, S. M., Cooper, Z., & Fairburn, C. G. (2003). Weight maintenance and relapse in obesity: A qualitative study. *International Journal of Obesity*, *27*, 955–962. https://doi.org/10.1038/sj.ijo.0802305

Cardel, M. I., Lee, A. M., Chi, X., Newsome, F., Miller, D. R., Bernier, A., ... & Butryn, M. L. (2021). Feasibility/acceptability of an acceptance-based therapy intervention for diverse adolescent girls with overweight/obesity. *Obesity Science & Practice*, *7*(3), 291-301. https://doi.org/10.1002/osp4.483

Centers for Disease Control and Prevention (2022, July 23). *Body Mass Index (BMI)*. https://www.cdc.gov/healthyweight/assessing/bmi/index.html

Chen, F. F., West, S. G., & Sousa, K. H. (2006). A comparison of bifactor and second-order models of quality of life. *Multivariate Behavioral Research*, *41*, 189–225.

Cohen, J (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Erlbaum.

Dochat, C., Afari, N., Wooldridge, J. S., Herbert, M. S., Gasperi, M., & Lillis, J. (2020). Confirmatory factor analysis of the Acceptance and Action Questionnaire for Weight-Related Difficulties-Revised (AAQW-R) in a United States

sample of adults with overweight and obesity. *Journal of Contextual Behavioral Science*, *15*, 189-196. https://doi.org/10.1016/j.jcbs.2020.01.006

Doğan, T., & Totan, T. (2013). Psychometric properties of Turkish version of the Subjective Happiness Scale. *The Journal of Happiness & Well-Being*, *1*(1), 21-28.

Dunn, K. J., & McCray, G. (2020). The place of the bifactor model in confirmatory factor analysis investigations into construct dimensionality in language testing. *Frontiers in Psychology*, *11*, 1357. https://doi.org/10.3389/fpsyg.2020.01357

Ergüney-Okumuş, F. E., & Sertel-Berk, H. Ö. (2020). The psychometric properties of the Eating Attitudes Test Short Form (EAT-26) in a college sample. *Studies in Psychology*, *40*(1), 57-78. https://doi.org/10.26650/SP2019-0039

Garner, D. M., & Garfinkel, P. E. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, *9*(2), 273-279.

Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine*, *12*(4), 871-878.

Hart, E. A., Leary, M. R., & Rejeski, W. J. (1989). Tie measurement of social physique anxiety. *Journal of Sport and exercise Psychology*, *11*(1), 94-104. https://doi.org/10.1123/jsep.11.1.94

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record*, *54*(4), 553-578.

Hill, M. L., Masuda, A., Melcher, H., Morgan, J. R., & Twohig, M. P. (2015). Acceptance and commitment therapy for women diagnosed with binge eating disorder: A case-series study. *Cognitive and Behavioral Practice*, *22*(3), 367-378. http://dx.doi.org/10.1016/j.cbpra.2014.02.005

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424.

Johnson, F., & Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: a prospective analysis. *Journal of Abnormal Psychology*, *114*(1), 119. https://doi.org/10.1037/0021-843X.114.1.119

Karadere, M. E., Yavuz, K. F., Asafov, E. Y., & Küçükler, F. K. (2019). Reliability and validity of a Turkish Version of the Acceptance and Action Diabetes Questionnaire. *Psychiatry investigation*, *16*(6), 418–424. https://doi.org/10.30773/pi.2019.02.26.2

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Guilford Publications.

Kluck, A. S. (2010). Family influence on disordered eating: The role of body image dissatisfaction. *Body Image*, *7*(1), 8-14. https://doi.org/10.1016/j.bodyim.2009.09.009

Konkan, R., Şenormancı, Ö., Güçlü, O., Aydin, E., & Sungur, M. Z. (2013). Validity and reliability study for the Turkish adaptation of the Generalized Anxiety Disorder-7 (GAD-7) Scale [Yaygın Anksiyete Bozukluğu-7 (YAB-7) Testi Türkçe uyarlaması, geçerlik ve güvenirliği]. *Archives of Neuropsychiatry/Noropsikiatri Arsivi*, *50*(1), 53-58.

Kroenke, K., Spitzer, R. L., Williams, J. B., Monahan, P. O., & Löwe, B. (2007). Anxiety disorders in primary care: Prevalence, impairment, comorbidity, and detection. *Annals of Internal Medicine*, *146*(5), 317–325. https://doi.org/10.7326/0003-4819-146-5-200703060-00004

Kuru, T., Karadere, M. E., Burhan, H. S., & Safak, Y. (2021). Reliability and validity study of the Turkish Version of the Acceptance and Action Questionnaire for University Students. *Psychiatry and Behavioral Sciences*, *11*(1), 18-24. https://doi.org/10.5455/PBS.20201202024935

Lillis, J., & Hayes, S. C. (2008). Measuring avoidance and inflexibility in weight related problems. *International Journal of Behavioral Consultation and Therapy*, *4*(4), 348–354. https://doi.org/10.1037/h0100829

Lillis, J., Hayes, S. C., Bunting, K., & Masuda, A. (2009). Teaching acceptance and mindfulness to improve the lives of the obese: A preliminary test of a theoretical model. *Annals of Behavioral Medicine*, *37*(1), 58-69. https://doi.org/10.1007/s12160-009-9083-x

Litwin, R., Goldbacher, E. M., Cardaciotto, L., & Gambrel, L. E. (2017). Negative emotions and emotional eating: The mediating role of experiential avoidance. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, *22*(1), 97-104. https://doi.org/10.1007/s40519-016-0301-9

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, *46*(2), 137-155. https://doi.org/10.1023/A:1006824100041

Major, B., Eliezer, D., & Rieck, H. (2012). The psychological weight of weight stigma. *Social Psychological and Personality Science*, *3*(6), 651-658. https://doi.org/10.1177/1948550611434400

Manaf, N. A., Saravanan, C., & Zuhrah, B. (2016). The prevalence and inter-relationship of negative body image perception, depression and susceptibility to eating disorders among female medical undergraduate students. *Journal of Clinical and Diagnostic Research: JCDR*, *10*(3), VC01-VC04. https://doi.org/10.7860/JCDR/2016/16678.7341

Mento, C., Le Donne, M., Crisafulli, S., Rizzo, A., & Settineri, S. (2017). BMI at early puerperium: Body image, eating attitudes and mood states. *Journal of Obstetrics and Gynaecology*, *37*(4), 428-434. https://doi.org/10.1080/01443615.2016.1250727

Muthén, L. K., & Muthén, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling*, *9*(4), 599-620. https://doi.org/10.1207/S15328007SEM0904_8

Mülazimoğlu Balli, Ö., & Aşçı, F. H. (2006). Reliablity and validity of "Social Physique Anxiety Scale". *Hacettepe Journal of Sport Sciences*, *17*(1), 11-19. https://dergipark.org.tr/tr/pub/sbd/issue/16400/171453

Neumark-Sztainer, D., Story, M., Hannan, P. J., Perry, C. L., & Irving, L. M. (2002). Weight-related concerns and behaviors among overweight and nonoverweight adolescents: Implications for preventing weight-related disorders. *Archives of Pediatrics & Adolescent Medicine*, *156*(2), 171-178.

Niemeier, H. M., Leahey, T., Reed, K. P., Brown, R. A., & Wing, R. R. (2012). An acceptance-based behavioral intervention for weight loss: a pilot study. *Behavior Therapy*, *43*(2), 427-435. https://doi.org/10.1016/j.beth.2011.10.005

Nguyen-Rodriguez, S. T., Unger, J. B., & Spruijt-Metz, D. (2009). Psychological determinants of emotional eating in adolescence. *Eating Disorders*, *17*(3), 211-224. https://doi.org/10.1080/10640260902848543

O'Hara, L., Tahboub-Schulte, S., & Thomas, J. (2016). Weight-related teasing and internalized weight stigma predict abnormal eating attitudes and behaviours in Emirati female university students. *Appetite*, *102*, 44-50. https://doi.org/10.1016/j.appet.2016.01.019

Palmeira, L., Cunha, M., Pinto-Gouveia, J., Carvalho, S., & Lillis, J. (2016). New developments in the assessment of weight-related experiential avoidance (AAQW-Revised). *Journal of Contextual Behavioral Science*, *5*(3), 193-200. https://doi.org/10.1016/j.jcbs.2016.06.001

Pearson, A., Heffner, M., & Follette, V. (2010). *Acceptance and Commitment Therapy for body image dissatisfaction: A practitioner's guide to using acceptance and mindfulness based behavior change strategies*. New Harbinge

Pearson, A. N., Follette, V. M., & Hayes, S. C. (2012). A pilot study of acceptance and commitment therapy as a workshop intervention for body dissatisfaction and disordered eating attitudes. *Cognitive and Behavioral Practice*, *19*(1), 181-197. https://doi.org/10.1016/j.cbpra.2011.03.001

Pellegrini, R. A., Finzi, S., Veglia, F., & Di Fini, G. (2021). Narrative and bodily identity in eating disorders: Toward an integrated theoretical-clinical approach. *Frontiers in Psychology*, 12:785004, 1-15. https://doi.org/10.3389/fpsyg.2021.785004

Pirmoradi, M.R., Asgharzadeh, A., Birashk, B. Gharaee, B., Salehian, R., Ostadrahimi, A. R., & Akbarzadeh, A. (2021) Psychometric properties of the Persian version of the weight-related experiential avoidance (AAQW): Overweight and obese treatment seeker at the clinical setting. *BMC Psychiatry*, *21*, 335. https://doi.org/10.1186/s12888-021-03352-6

R Core Team (2021). *R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria*. https://www.R-project.org/.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, *48*(2), http://doi.org/10.18637/jss.v048.i02

Suhr, D. (2006). *Exploratory or confirmatory factor analysis.* In SAS Users Group International Conference (pp. 1 - 17). SAS Institute, Inc.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097. https://doi.org/10.1001/archinte.166.10.1092

Spoor, S. T., Bekker, M. H., Van Strien, T., & van Heck, G. L. (2007). Relations between negative affect, coping, and emotional eating. *Appetite*, *48*(3), 368-376. https://doi.org/10.1016/j.appet.2006.10.005

Stefano, E. C., Wagner, A. F., Mond, J. M., Cicero, D. C., & Latner, J. D. (2016). Loss of Control Over Eating Scale (LOCES): Validation in undergraduate men and women with and without eating disorder symptoms. *Eating Behaviors*, *23*, 137-140. http://dx.doi.org/10.1016/j.eatbeh.2016.09.005

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*(6), 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

Uygur, H., Yavuz, K. F., Eren, İ., Uygur, O. F., Selcuk, M., Varsak, N., ... & Demirel, B. (2020). Reliability and validity of the Turkish version of the acceptance and action questionnaire-substance abuse (AAQ-SA) on a clinical sample. *Psychiatry and Clinical Psychopharmacology*, *30*, 47-54. https://doi.org/10.5455/PCP.20200320085704

Weineland, S., Arvidsson, D., Kakoulidis, T. P., & Dahl, J. (2012). Acceptance and commitment therapy for bariatric surgery patients, a pilot RCT. *Obesity Research & Clinical Practice*, *6*(1), e21-e30. https://doi.org/10.1016/j.orcp.2011.04.004

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, *76*(6), 913–934. https://doi.org/10.1177/0013164413495237

Yavuz, F., Ulusoy, S., Iskin, M., Esen, F. B., Burhan, H. S., Karadere, M. E., & Yavuz, N. (2016). Turkish version of Acceptance and Action Questionnaire-II (AAQ-II): A reliability and validity analysis in clinical and non-clinical samples. *Bulletin of Clinical Psychopharmacology*, *26*(4), 397-408. https://doi.org/10.5455/bcp.20160223124107

Appendix

AAQW-R (Turkish Version)

Kiloyla İlgili Zorluklar için Kabul ve Eylem Formu- Revize

Yönerge: Lütfen aşağıdaki ölçeği kullanarak her bir ifadenin sizin için doğruluğunu derecelendiriniz.

1	2	3	4	5	6	7
Asla doğru değil						**Her zaman doğru**

	1	2	3	4	5	6	7
1. Olumsuz hissettiğimde, daha iyi hissetmek için yemek yerim When I have negative feelings, I use food to make myself feel better							
2. İstediğim hayatı yaşayabilmek için görünüşümle ilgili daha iyi hissetmem gerekir. I need to feel better about how I look in order to live the life I want to							
3. Diğer insanlar kendimi kabul etmemi zorlaştırıyor. Other people make it hard for me to accept myself							

Yönerge: Şu anda aşağıdaki düşüncelerin aklınıza geldiğini hayal edin. Her biri ne kadar geçerli ve doğru olurdu? Aşağıdaki ölçeği kullanabilirsiniz.

1	2	3	4	5	6	7
Hiç doğru değil						**Tamamen doğru**

	1	2	3	4	5	6	7
4. Fazla kiloluysam istediğim hayatı yaşayamam. If I'm overweight I can't live the life I want							
5. Kilo alırsam, başarısız oldum demektir. If I gain weight, it means I've failed.							
6. Yeme dürtülerim beni kontrol eder. My eating impulses control me.							
7. Daha iyi beslenmek için yeme dürtülerimden kurtulmam gerekir. I need to get rid of my eating impulses to eat better							
8. Yememem gereken bir şey yersem günümü mahvederim. If I eat anything wrong, I ruin my day							
9. Bedenimden utanmalıyım. I should be ashamed of my body							
10. Başkalarının beni yargılayabileceği sosyal durumlardan kaçınmam gerekir. I need to avoid social situations in which other can judge me							