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Reliability and validity of the abbreviated version of the Mindful Eating Questionnaire in Turkish adults

Confiabilidade e validade de uma versão abreviada do questionário de alimentação consciente em adultos turcos

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ABSTRACT

Objective

To adapt the abbreviated version of the Mindful Eating Questionnaire to Turkish for the Turkish adult population.

Methods

This cross-sectional study includes 709 participants aged between 18-65 years living in the province of Elazığ. The data was collected through a voluntary face-to-face survey. The questionnaire was included their general characteristics and the Mindful Eating Questionnaire -18 and Eating Attitude Test-26. Confirmatory factor analysis was used to test the validity of the Mindful Eating Questionnaire -18. Statistical analyzes were conducted using the R-Project program and IBM®SPSS® version 26.0.

Results

The overall content validity index was 0.93. A confirmatory factor analysis was conducted for the two sub-scales and reduced the abbreviated of Mindful Eating Questionnaire to 18 items. The Cronbach's alpha coefficient was 0.718 for the Mindful Eating Questionnaire-18 total factor scores and Cronbach alpha values for awareness, and disinhibition were found to be 0,843 and 0,789, respectively. The minimum discrepancy per degree of freedom=4.914 and the fit indices were at an acceptable level (RMSEA=0.074, CFI=0.934, SRMR=0.079, TLI=0.925, GFI=0.968, AGFI=0.959).

Conclusion

The findings of study showed that the psychometric properties of the abbreviated Mindful Eating Questionnaire adapted into Turkish were acceptable through construct and internal consistency reliability for adults.

Keywords: Adaptation. Confirmatory factor analysis. Mindful eating. Reliability. Validity.

RESUMO

Objetivo

Adaptar e validar uma versão abreviada do Mindful Eating Questionnaire para a língua turca para uma população turca adulta.

Métodos

Este estudo transversal incluiu 709 participantes com idades compreendidas entre os 18 e os 65 anos, residentes na província de Elazig. Os dados foram recolhidos através de um inquérito presencial voluntário. O questionário incluía as suas características gerais e o Mindful Eating Questionnaire-18 e o Eating Attitude Test-26. Foi utilizada a análise fatorial confirmatória para testar a validade do Mindful Eating Questionnaire-18. As análises estatísticas foram efectuadas utilizando o programa R-Project e o IBM®SPSS® versão 26.0.

Resultados

O índice geral de validade de conteúdo foi de 0,93. Uma análise fatorial confirmatória foi realizada para as duas subescalas e reduziu a abreviação do Mindful Eating Questionnaire para 18 itens. O coeficiente alfa de Cronbach foi de 0,718 para os escores de fatores totais do Mindful Eating Questionnaire-18 e os valores alfa de Cronbach para consciência e desinibição foram 0,843 e 0,789, respectivamente. A discrepância mínima por grau de liberdade = 4,914 e o modelo geralmente se ajustam bem à estrutura (RMSEA=0,074, CFI=0,934, SRMR=0,079, TLI=0,925, GFI=0,968, AGFI=0,959).

Conclusão

Os resultados do estudo mostraram que as propriedades psicométricas do Mindful Eating Questionnaire abreviado adaptado para o turco eram aceitáveis por meio da confiabilidade de construção e consistência interna.

Palavras-chave: Adaptação. Análise fatorial confirmatória. Alimentação consciente. Confiabilidade. Validade.

INTRODUCTION

Mindfulness involves the ability to acknowledge one's awareness and focus on the present without judgment [1]. Mindfulness-based treatments have been applied and successful results have been obtained in many psychiatric diseases such as depression [2], attention deficit/hyperactivity disorder [3], anxiety [4], schizophrenia [5], and substance use disorders [6]. Many studies show that mindfulness-based treatments can also be effective for eating disorders and obesity [7-9]. In addition, mindfulness-based treatments is recognized as a psychological control mechanism that has received significant attention in the literature on healthy eating and weight control as a possible strategy for addressing mindless overconsumption [10].

Mindful eating focuses on the process of eating rather than what is eaten, as well being a new dietary approach. In mindful eating, the first step involves being aware of all the flavors, smells and textures of the food consumed. The second is to be aware of what you are eating if several tasks are being done at the same time while eating, and staying away from the habit of eating automatically. The third is to be aware of what triggers starting and stopping eating [11]. Through the practice of all these processes, it is enabled to internalise the concept of physical hunger-fullness and focus on the food to be consumed at the moment, without being affected by environmental factors, judging food choices and being aware of the effect of emotions and thoughts [12]. Mindful eating is among the conscious behavioral factors related to food selection and consumption in relation to mental well-being [13]. Mindful eating may be important in health-related behavioral changes by distracting people from uncontrolled eating behavior [8]. Therefore, being aware of what you

eat and how much is eaten, especially the portion size consumed, is a modifiable determinant of energy expenditure and an important factor to be addressed in both the prevention and treatment of overweight and obesity [14,15].

In literature, it was shown that the mindful eating intervention has a positive effect on weight loss randomly assigned 36 obese women followed a six-week mindful eating program [16]. As a result of the study, it was determined that there were decreases in Body Mass Index (BMI), Waist-To-Hip Ratio (WHR), binge eating, interleukin-6 (IL-6) and C-Reactive Protein (CRP) in the intervention group [16]. Another study randomized 75 overweight and obese participants to the new mindfulness weight loss program or a standard behavioral weight loss program. Those on the new mindfulness weight loss program were found to have significantly better scores on mindful eating and binge eating at six-month follow-up. In addition, it was determined that more weight loss was predicted in the intervention group [17]. It was shown that a mindful eating intervention in patients with type 2 diabetes gives better results in meeting the self-care needs of the patients [18]. It has been determined that mindful eating intervention in African American breast cancer patients can be effective on weight loss [19].

To our knowledge, there has been a growing trend in research on mindful eating recently. In light of these promising studies, it is very important to have reliable and valid tools to measure the change in which mindful eating interventions targeted. Therefore, mindful eating tools have been developed to assess conscious eating [12,20-23], and validity and reliability studies have been conducted in different sample groups [24-26]. The most cited and first mindful eating tool in the literature was developed by Framson et al. [12] consists of a 28 items and 5 sub-scales (disinhibition, awareness, external cues, emotional response, and distraction). Additionally, this tool developed by Framson et al. [12] constitutes the cornerstone of mindful eating studies. Then, the researchers evaluated the psychometric properties (ie, content, structural and criterion validity, and reliability) of the short version in Italian culture as the necessity of short tools in the field of health is known [27]. In this study, it was aimed to validity and reliability study in adult population of the abbreviated of the mindful eating questionnaire which forms the basis of mindful eating tools and is due to the necessity of short scales in the field of health, by translating it into Turkish through guides.

METHODS

Necessary permission was obtained from the author who developed the scale before starting the study [28]. The linguistic, semantic and cultural adaptation process between the Turkish version and the original of the mindful eating questionnaire and an abbreviated version of the mindful eating questionnaire form was completed. The translation and adaptation process was done according to the methodology of Beaton et al. [29]. It was translated from English to Turkish by two different translators. These two translations were compared and then, these two translation results were a back-translated into English by a third translator. Finally, all these translations were evaluated by a committee of experts with language and field proficiency.

Face validity

To assess face validity, a pilot study was conducted with 60 participants on the prefinal scale. They were asked to answer three open-ended questions regarding the possible ambiguity, intelligibility, and clarity of each item and the overall questionnaire. Minor adjustments were made

as a result of the analysis of the comments. The data obtained as a result of the pilot study were not included in the main study.

Content Validity

10 academicians with language proficiency were asked to evaluate the intelligibility of the items. In this context, scale items were asked to score between 1-4. Scoring was evaluated according to the Davis technique [30], and content validity scores of all items were found to be greater than 0.80 (Supplementary File 1). Experts were also consulted about the language of the scale and the suitability of the items for the purpose, and necessary adjustments were made.

Participants

This study was announced on online platforms via university and city's social media (e.g. Facebook, Instagram), internet panels, e-mail by the researchers between June and December 2021. Those who accepted to participate in the study announced on the online platform were recruited in the Department of Nutrition and Dietetics at Firat University. The International Test Commission recommends reaching 500 people to reveal the factor structure of a test [31]. During this period, 760 individuals were reached and the data of 709 individuals who completed the form completely were included in the analysis. The number of people reached in the study exceeded the number recommended by the International Test Commission. Inclusion criteria of the study: 1) Adulthood (being between 18-65 years), 2) residency in Elazig, 3) being Turkish native, 4) not being pregnant/lactating. The initial sample consisted of 932 people. Missing data in the questionnaire and 223 participants (~24%) who did not meet the study criteria were completely excluded from the study. The final sample consisted of n=709 participants. This study was conducted according to the guidelines in the Declaration of Helsinki. After all participants were given verbal explanations of the study, signed informed consent was obtained. The Firat University Non-Interventional Research Ethics Committee approved all procedures (Approved no: E-97132852-050.01.04-162850).

Measures

The Turkish questionnaire consists of three parts. In the first part, the sociodemographic characteristics of the participants (age, gender, marital status, education level, physical activity status, chronic disease, smoking and alcohol use, etc.) were evaluated. Participants were asked about their height and body weight. Then used to calculate BMI using the following formula: $\text{weight (kg)} / [\text{height (m)}]^2$ [32]. In the second part, there is an abbreviated of the Mindful Eating Questionnaire (MEQ-18), and in the last part, there is the Eating Attitude Test-26 (EAT-26).

An Abbreviated of the Mindful Eating Questionnaire (MEQ-18)

The mindful eating questionnaire was first developed in the USA by Framson et al. [12] to assess eating mindful and its validity and reliability have been demonstrated. The questionnaire consists of 28 items and five sub-scales. Then, the validity and reliability study of its short version was carried out by Clementi et al. [27] in Italy. The scale consists of 20 items and two sub-scales. The scale is in 4-point likert type and each item is scored between 1 (never/rarely) to 4 (usually/always) points. It shows that as the total score increases, the degree of mindful eating increases.

Eating Attitude Test-26 (EAT-26)

The Eating Attitude Test was developed by Garner et al. [33] as a 40-item scale to assess food attitudes. After that, studies were found that the test is sensitive Anorexia Nervosa (AN) and Bulimia Nervosa (BN) and other eating disorders [34,35]. When 14 items were removed with a later factor analysis, it was determined that the scale had the same psychometric properties. EAT-26 was validated for the Turkish population by Ergüney-Okumuş and Sertel [36]. The EAT-26, a 6-point Likert-type scale, contains 26 questions with answers ranging from 0 (never, almost never, and rarely) to 3 (always). Scores equal to or higher than 21 indicate a possible abnormal eating attitude. In this regard, EAT-26 aimed to test the divergent validity of the MEQ-18.

Data Analysis

In this study, reliability and validity analyzes were applied for the MEQ-18. In the first stage, for each item or factor, a Content Validity Index (CVI) was calculated by counting the number of experts who rated them as 3 or 4 and dividing the result by the total number of experts. Frequency analysis results for the demographic characteristics of the participants are presented. Frequency (n) and percentage (%) values of the groups are given together from frequency analysis. Then, Cronbach Alpha reliability analysis was used to evaluate the internal consistency of the scale and Confirmatory Factor Analysis (CFA) was used to test its validity. Diagonal Weighted Least Squares (DWLS) technique was preferred since the data were Likert type in the estimation phase of CFA. Cronbach Alpha reliability analysis results are given together with the Mean (Mean) and Standard Deviation (SD) values of the descriptive statistics of the items.

Finally, it was evaluated whether there was a difference between the physical activity status of the participants in terms of general and sub-scales scores of the MEQ-18. For this purpose, it was evaluated whether the measurement scores were suitable for the normal distribution in the selection of the hypothesis test, and the Anova test was used to compare the independent groups. Tukey test was applied in the multiple comparisons of the groups that were significant as a result of the Anova test. In addition, the direction and degree of the relationship between the MEQ-18, the EAT-26, and BMI were examined. In the selection of the hypothesis test, the conformity of the measurement scores to the normal distribution was evaluated and the direction and severity of the relationship between the two measurement scores were found with the Pearson Correlation test.

All of the CFA findings were obtained using the R-Project program [37], and the lavaan package [38]. Other analysis findings were carried out using the IBM®SPSS® 26 program [39]. In the study, the margin of error was evaluated at the 95% confidence level ($p < 0.05$).

RESULTS

In this study, the data of 709 participants between the ages of 18-65 living in the city of Elazig were investigated. The frequency distributions and descriptive statistics of the demographic information of the participants are given in Table 1. 53.6% of the participants were female and 55.4% had a master's/doctorate degree or bachelor's degree. The rate of smokers was 24.0% and the rate of those consuming alcohol was 7.5%. The physical activity status of the majority of the participants (73.6%) was insufficiently active or lightly active. The mean age of the participants was 30.15 ± 7.47 years and the mean BMI was 24.549 ± 3.955 kg/m².

Table 1 – Basic demographic characteristics of study participants.

Variables	N (%) or $\bar{X}\pm SD$
Sex	
Male	329 (46.4)
Female	380 (53.6)
Education level	
Less than a primary school graduate	15 (2.1)
Primary school graduate	95 (13.4)
High school graduate, diploma or the equivalent	206 (29.1)
Bachelor's degree/Master's/doctorate degree	393 (55.4)
Smoking status	
Yes	170 (24.0)
No	539 (76.0)
Alcohol consumption	
Yes	53 (7.5)
No	656 (92.5)
Physical activity status	
Inactive or insufficiently active	144 (20.3)
Lightly active	378 (53.3)
Moderate active	162 (22.8)
Highly active	25 (3.5)
Chronic diseases	
Yes	630 (88.9)
No	79 (11.1)
Medication	
Yes	59 (8.3)
No	650 (91.7)
Age (years)*	33.038 \pm 11.646
BMI (kg/m ²)*	24.549 \pm 3.955

Note: * $\bar{X}\pm SD$. \bar{X} : Mean; SD: Standard Deviation; BMI: Body Mass Index.

Table 2 shows the descriptive statistics and Cronbach Alpha reliability analysis results obtained from the sub-scales of the MEQ-18. According to the findings, the corrected correlation values of the sub-scales items of the MEQ-18 were found to be positive. In addition, it is seen that there is no significant increase in the reliability coefficient when the items are removed from the sub-scales of the scale. In the light of these findings, the Cronbach's Alpha coefficients for the general and sub-scales of the MEQ-18 are 0.718, 0.843 and 0.789, respectively.

Table 2 – The reliability analysis of the Mindful Eating Questionnaire-18.

1 of 2

Factor	Items	\bar{X}	SD	Adjusted R	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Awareness	I1	2.373	1.003	0.535	0.829	0.843
	I2	2.306	1.029	0.523	0.830	
	I3	2.596	1.021	0.554	0.827	
	I4	2.805	0.989	0.635	0.820	
	I5	2.718	0.993	0.629	0.821	
	I6	2.763	1.002	0.646	0.819	
	I7	2.756	1.059	0.571	0.825	
	I8	3.052	0.989	0.583	0.825	
	I9	2.428	1.040	0.383	0.841	
	I10	2.873	1.018	0.446	0.836	
	I11	2.264	1.014	0.261	0.850	

Table 2 – The reliability analysis of the Mindful Eating Questionnaire-18.

Factor	Items	\bar{X}	SD	Adjusted R	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Disinhibition	I12	3.047	0.981	0.627	0.747	0.789
	I13	3.071	0.977	0.684	0.740	
	I14	2.962	0.980	0.590	0.753	
	I15	2.519	1.068	0.137	0.815	
	I16	2.478	1.073	0.180	0.810	
	I17	2.932	0.976	0.517	0.763	
	I18	2.900	0.993	0.538	0.760	
	I19	2.958	1.010	0.560	0.757	
	I20	2.997	1.000	0.548	0.758	

Note: \bar{X} : Mean; SD: Standard Deviation.

The most frequently used model data fit indices in the literature are given in Supplementary file 1. The minimum discrepancy per degree of freedom (CMIN/ df) result was obtained as 4.914, indicating a good fit [40]. According to the statistics related to the Root Mean Square Error of Approximation (RMSEA) (0.074), Comparative Fit Index (CFI) (0.934), standardized Root Mean Square Residual (SRMR) (0.079), Turker-Lewis Index (TLI) (0.925), Normed Fit Index (NFI) (0.935) the model generally fit well to the structure [41-43]. The other two data fit indices [Goodness of Fit Index (GFI) and Adjusted Goodness-of-fit Index (AGFI)] were perfect (GFI=0.968; AGFI=0.959) [43,44].

Table 3 shows the CFA statistics of the MEQ-18. In the analysis phase, the path coefficients of the items 15 and 16 in the attitude sub-scale were negative and the item 16 was not statistically significant ($p>0.05$). Items 15 and 16 for the attitude sub-scale were excluded from the analysis and CFA statistics were obtained again. According to the findings, all sub-items of the MEQ-18 were found to be statistically significant. Therefore, the MEQ-18 of the two sub-scales compared to the CFA adaptation of the inventory analysis work sample structure was also confirmed in Turkey.

Table 3 – Confirmatory factor analysis statistics of the Mindful Eating Questionnaire-18.

Factor	Items	β	SD	z statistic	p-value
Awareness	I1	1			
	I2	0.990	0.050	19.637	<0.001
	I3	1.034	0.052	19.881	<0.001
	I4	1.137	0.054	21.020	<0.001
	I5	1.140	0.054	20.987	<0.001
	I6	1.160	0.055	21.023	<0.001
	I7	1.075	0.053	20.114	<0.001
	I8	0.953	0.048	19.654	<0.001
	I9	0.734	0.044	16.770	<0.001
	I10	0.804	0.045	17.843	<0.001
	I11	0.585	0.040	14.715	<0.001
Disinhibition	I12	1			
	I13	1.050	0.053	19.924	<0.001
	I14	1.048	0.053	19.854	<0.001
	I17	0.890	0.048	18.635	<0.001
	I18	0.933	0.049	18.890	<0.001
	I19	0.961	0.051	18.987	<0.001
	I20	0.889	0.048	18.599	<0.001

Note: β : Standardized Coefficient; SD: Standard Deviation.

Figure 1 shows the CFA results of the participants' Mindful Eating Questionnaire (MEQ-18). According to the graphical structure obtained as a result of CFA, it is seen that the standardized load values of all items are above 0.30.

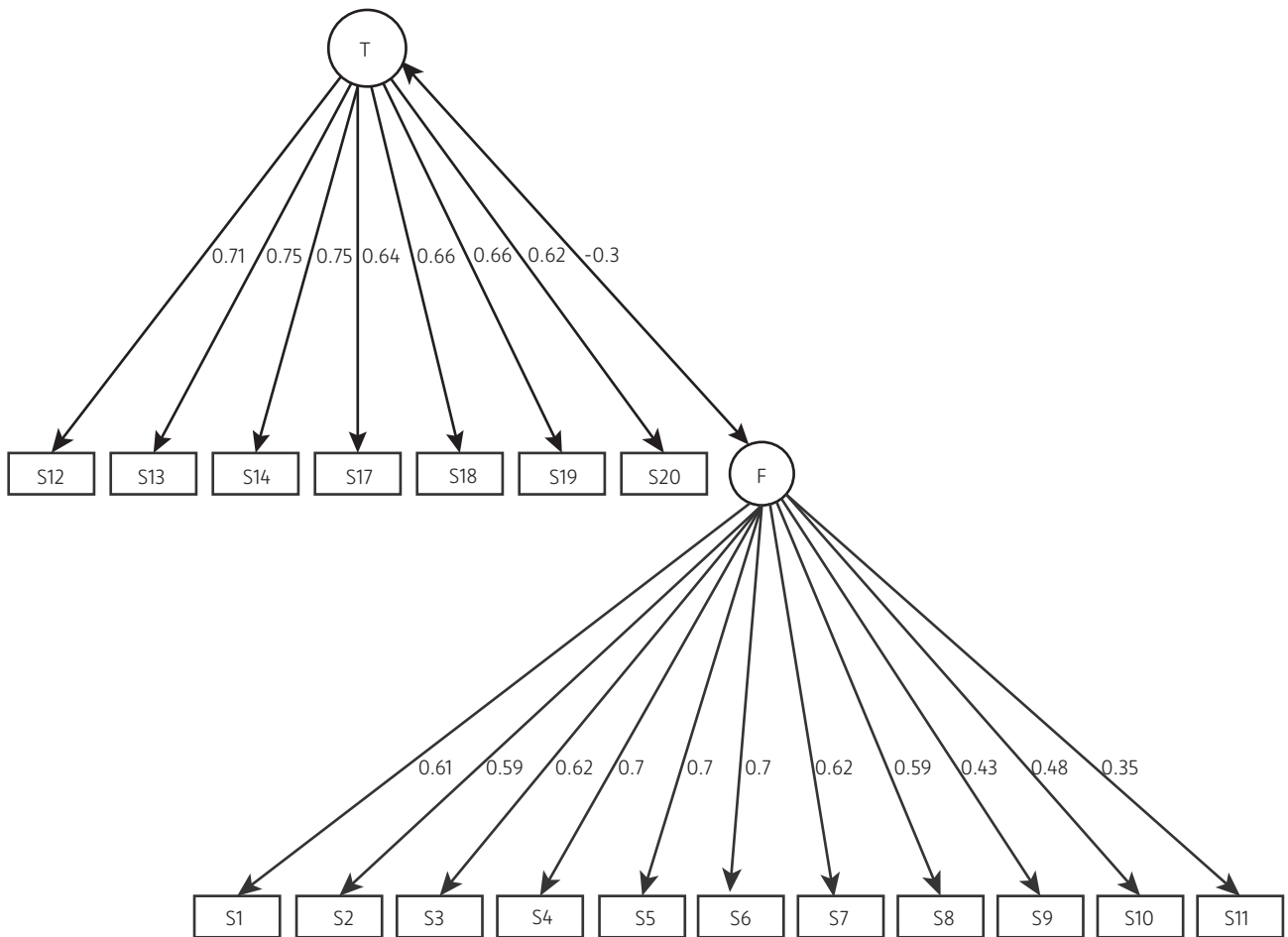


Figure 1 – Confirmatory Factor Analysis standardized factor loadings of the Mindful Eating Questionnaire-18.

Table 4 shows the results of the Anova test according to the physical activity status of the total scores and sub-scales MEQ-18. When the findings are examined, it is seen that the total scores of the participants' awareness sub-scale and MEQ-18 differ statistically according to their physical activity status ($p < 0.05$). When the post hoc results are examined, the awareness sub-scale scores of the participants who inactive or insufficiently active are higher than the participants who highly active. In addition, the MEQ-18 total scores of moderately active participants are higher than the highly active participants.

There was a statistically significant relationship between the total scores of the MEQ-18 and total EAT-26 scores ($p < 0.05$). A negative and moderate relationship ($r = 0.317$) was found between the MEQ-18 and EAT-26 scores. A moderate negative correlation ($r = 0.310$, $p < 0.05$) was found between the awareness sub-scale and the total EAT-26 scores. In addition, a negative low-level relationship ($r = 0.118$, $p < 0.05$) was found between BMI and the disinhibition sub-scale (Supplementary file 1).

Table 4 – Comparison of the total scores and sub-dimensions of the Mindful Eating Questionnaire-18 according to their physical activity status.

Factor	Group	\bar{X}	SD	F	p-value
Awareness	Inactive or insufficiently active	29.972 ^a	6.627	3.432	0.017
	Lightly active	28.320 ^{ab}	7.254		
	Moderate active	29.741 ^{ab}	6.324		
	Highly active	27.040 ^b	7.038		
Disinhibition	Inactive or insufficiently active	25.861	6.037	1.262	0.286
	Lightly active	25.550	5.550		
	Moderate active	26.549	5.116		
	Highly active	26.160	4.432		
MEQ-18	Inactive or insufficiently active	55.833 ^{ab}	7.346	4.762	0.003
	Lightly active	53.870 ^{ab}	8.289		
	Moderate active	56.290 ^a	7.848		
	Highly active	53.200 ^b	6.727		

Note: \bar{X} : mean, SD: Standard Deviation, MEQ-18: An abbreviated of the Mindful Eating Questionnaire, ^a^b: There is no difference between the same letters.

DISCUSSION

In this study, it was aimed to investigate the psychometric properties of an abbreviated version the Mindful Eating Questionnaire in a comprehensive and differentiated way in a heterogeneous population. This study was the first attempt to validity the original translated into Turkish language. In addition, this study contributes to the the advancement of the measuring mindful eating. The MEQ was developed and validated in the USA to assess mindful eating and has demonstrated good criterion validity and reliability [12]. Then, an abbreviated form of MEQ was validation in Italian culture [27]. Researchers suggested that adaptation studies should be carried out in different cultures. In addition, Moor et al. [45] suggested investigating the relationship of mindful eating further with physical activity and BMI. In addition, this study investigated the relationship between the MEQ-18 and physical activity, BMI in the Turkish adult population. The fact that Turkish culture's eating traditions and practices are different from Italian and American cultures reveals the originality and a unique characteristic of this study sample [46]. The fact that Turkish culture's eating traditions and practices are different from Italian and American cultures reveals the originality and a unique characteristic of this study sample [46]. In addition, these differences may be explained by the different understanding of the scale items in Turkish culture. For example, considering the excluded items (item 15 "I stop eating when I am full even when eating something I love" and item 16 "When a restaurant portion is too large, I stop eating when I am full"), it can be concluded that the perception of portion is different in these cultures or the expression of portion size is different. When these two items were removed, the results of the psychometric analysis of the MEQ-18 showed promisingly good results.

In the cross-cultural adaptation study, a two-dimensional factor structure of the short form of the 18-item MEQ provided good cultural and semantic equivalence. During the content validity checks, some appropriate items were removed by the experts. The corrected correlation values of the subscale items of the eating awareness scale were found to be positive, and the Cronbach's Alpha coefficients for the general and sub-dimensions of the scale were 0.718, 0.843 and 0.789, respectively. In addition, it was determined that there was no significant increase in the reliability coefficient when the items were removed from the subscales of the scale.

This study confirmed several hypotheses regarding mindful eating, supporting the construct validity of the MEQ. As hypothesized, there were a significant inverse relationship between subscales and total score with BMI and EAT-26. A negative low-level relationship was found between BMI and

attitude sub-scales. Framson et al. [12], found a significant and strong inverse relationship between all subscales and total score with BMI. In the study of Clementi et al. [27] obesity and eating awareness scores are inversely related. Similarly, many studies were found a negative relationship between BMI and mindful eating [21,22,24,47]. Moreover, a relationship was found between awareness subscale and total score with EAT-26. In the validity and reliability study of the expanded mindful eating scale, a negative correlation was found with the eating disorder inventory [22]. Our findings appear to be consistent with previous findings. In particular, there is an important relationship between eating disorders or risky eating attitudes and eating awareness. Studies have also shown that mindfulness-based interventions for eating disorders increase mindfulness [48,49]. It is clear that clinical controlled intervention studies are needed to provide more evidence on the relationship between eating disorder symptoms and mindful eating. In our study, there was no statistically significant difference between the the highly active participants and other participants in terms of eating awareness. In a study conducted on university students, physical activity level and general mindful eating scores were not significantly related [50]. These results also are consistent with the study conducted by Framson et al. [12]. From these findings, it appears that those who exercise more are not more likely to be mindful eaters. Rather, it suggests that those who exercise more may be less aware of the foods they eat and may be more likely to be emotional eaters.

The study has several strengths, such as the heterogeneity of the sample and its selection to represent the Turkish population. The validity and reliability study was cautiously tested with expert opinions and pilot groups. However, this study had several limitations. First, this study design was cross-sectional so it is not possible to make inferences about temporal associations or cause and effect. Future studies should be planned as longitudinal or randomized controlled. Second, the use of self-reports may contain bias, and future studies may evaluate mindful eating more objectively. However, there is also evidence that self-reports are valid measures of perceptual structures and can be valuable behavioral indicators [51]. Third, physical activity measurement was based on several items and may not be sufficiently precise to detect associations with the MEQ-18. Lastly, test-retest reliability was not measured. More research is needed to better characterize the psychometric properties of the instrument, including test-retest reliability and predictive validity, and to document the relationship of the MEQ-18 to actual dietary practices.

CONCLUSION

The study findings showed that the psychometric properties of the abbreviated MEQ adapted into Turkish were acceptable through construct and internal consistency reliability. This is the first Turkish validity and reliability study of the abbreviated MEQ to characterize and measure mindful eating as far as is known. This scale can be useful in both clinical practice and research to understand and promote healthy eating behavior in the healthy Turkish adult population aged between 18 and 65 years.

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Supplemental File Table

Table – Model Fit Indexes.

Index	Perfect Fit Measure	Good fit measure	Research finding	Conclusion
CMIN/df	0-3	3-5	4,914	Good
RMSEA	0.00 ≤ RMSEA ≤ 0.05	0.05 < RMSEA ≤ 0.08	0.074	Good
CFI	0.95 ≤ CFI ≤ 1.00	0.90 ≤ CFI < 0.95	0.934	Good
GFI	0.95 ≤ GFI ≤ 1.00	0.90 ≤ GFI < 0.95	0.968	Perfect
AGFI	0.95 ≤ AGFI ≤ 1.00	0.90 ≤ AGFI < 0.95	0.959	Perfect
SRMR	0.00 ≤ SRMR ≤ 0.05	0.05 < SRMR ≤ 0.10	0.079	Good
TLI	0.95 ≤ TLI ≤ 1.00	0.90 ≤ TLI < 0.95	0.925	Good
NFI	0.95 ≤ NFI ≤ 1.00	0.90 ≤ NFI < 0.95	0.935	Good

Note: AGFI: Adjusted Goodness-of-fit Index; CFI: Comparative Fit Index; CMIN/df: Relative Chi-square; GFI: Goodness of Fit Index; NFI: Normed Fit Index; RMSEA: Root Mean Square Error of Approximation; SRMR: Standardized Root Mean Square Residual; TLI: Turker-Lewis Index.

Table – Mindful Eating Questionnaire-18 relationships with the EAT-26 and BMI scores.

		SD	1	2	3	4	5
1. EAT-26	13.395	11.503	1	-0.310*	-0.070	-0.317*	-0.033
2. Awareness	28.935	6.954		1	-0.190*	0.736*	0.049
3. Disinhibition	25.863	5.527			1	0.524*	-0.118*
4. MEQ-18	54.798	8.019				1	-0.039
5. BMI	24.549	3.955					1

Experts' Content Validity Evaluation

Expert panel (N=10)						
Item	Relevant	Not Relevant	I-CVI ^a	Interpretation	S-CVI ^b	
Awareness						
1. Before I eat I take a moment to appreciate colors and smells of food.	10	0	1	Appropriate	.93	
2. I notice when the food I eat affects my emotional state.	10	0	1	Appropriate		
3. I taste every bite of food I eat.	7	3	.70	Appropriate		
4. When eating a pleasant meal, I notice if it makes me feel relaxed.	9	1	.90	Appropriate		
5. I appreciate the way my food looks on my plate.	10	0	1	Appropriate		
6. I notice subtle flavors in the foods I eat.	10	0	1	Appropriate		
7. I recognize when I am eating and not hungry.	7	3	.70	Appropriate		
8. I notice when foods and drinks are too sweet.	10	0	1	Appropriate		
9. I recognize when food advertisements make me want to eat.	8	2	.80	Appropriate		
10. When I eat a big meal, I notice if it makes me feel heavy or sluggish.	10	0	1			
11. I notice when I am eating from a dish of candy just because it is there.	10	0	1			
Disinhibition						
12. If there is good food at a party, I will continue eating even after I am full.	10	0	1	Appropriate		
13. If there are leftovers that I like, I take a second helping even though I am full.	10	0	1	Appropriate		
14. When I eat at all you can eat buffets, I tend to overeat.	7	3	.70			
17. When I am eating one of my favorite foods, I do not recognize when I have had enough.	9	1	.90			
18. At a party with a lot of good food, I notice when it makes me want to eat more than I should.	10	0	1	Appropriate		
19. If it does not cost much more, I get the larger size food or drink regardless of how hungry I feel.	10	0	1			
20. I snack without noticing that I am eating.	10	0	1	Appropriate		

^aItem Content Validity Index; ^bScale Content Validity Index.