Psychometric Properties of a Greek Translation of the Intuitive Eating Scale-2 (IES-2) in Adults From Cyprus

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Abstract

The construct of intuitive eating is commonly assessed using the 23-item, 4-factor Intuitive Eating Scale-2 (IES-2; Tylka & Kroon Van Diest, 2013). In this study, we assessed the psychometric properties of a novel Greek translation of the IES-2 in adults from Cyprus. In Study 1 ($N = 626$), an exploratory factor analysis indicated that the IES-2 should be conceptualised as consisting of six factors that showed complete invariance across women and men. Study 2 ($N = 793$) using exploratory structural equation modelling (ESEM) and bifactor analysis (B-ESEM) indicated that the 6-factor B-ESEM model had adequate fit and evidenced complete invariance across sex once the correlated uniqueness of negatively worded IES-2 items was accounted for. This final model evidenced adequate composite reliability, and a global G-factor evidenced adequate convergent, concurrent, and discriminant validity. In contrast, the IES-2 S-factors showed more equivocal patterns of validity, with some S-factors showing less-than-adequate associations with body image variables, self-esteem, symptoms of disordered eating, and fruit and vegetable intake. In general, these results provide satisfactory evidence of the psychometric properties of the Greek IES-2 in adults from Cyprus, but also suggest that models of IES-2 scores may vary across national or cultural contexts.

***Keywords*:** Intuitive eating; Exploratory structural equation modelling; Bifactor analysis; Test adaptation; Cyprus; Greek

Introduction

Intuitive eating is an eating style that includes giving oneself unconditional permission to eat until satiated, flexible and adaptive eating behaviours that are regulated by internal physiological cues rather than external emotional and situational cues, and choosing nutritious foods that match the needs of one's body (Tribole & Resch, 1995, 2012). As a construct, intuitive eating prioritises the body's internal physiological cues in guiding eating behaviour, making it distinct from other forms of healthy eating (e.g., nutritionally healthy eating, which prioritises the nutritional quality of food; Belon et al., 2022). Extant research shows that intuitive eating is associated with a range of positive outcomes (for a review, see Linardon, Tylka et al., 2021), including improved physical health (e.g., Teas et al., 2022), better psychological well-being (e.g., Gödde et al., 2022), more positive body image (e.g., Linardon, Anderson et al., 2021; Modica, 2021), improved diet quality (e.g., Jackson et al., 2022), and weight stability (e.g., Tylka et al., 2019). Additionally, interventionist studies have shown that intuitive eating is modifiable and leads to positive changes in a variety of outcomes related to health (for a review, see Babbott, Cavadino et al., 2022). As such, there is currently focused attention on the construct of intuitive eating as a means of promoting adaptive eating, as well as positive physical and psychosocial outcomes (Resch & Tylka, 2019).

Currently, the most widely used instrument to operationalise the construct of intuitive eating is the Intuitive Eating Scale-2 (IES-2; Tylka & Kroon Van Diest, 2013), a revision of the Intuitive Eating Scale (Tylka, 2006). The IES-2 is a 23-item instrument that was found to reduce to a 4-dimensional factor structure in samples of United States college students based on exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The four dimensions reflect *Unconditional Permission to Eat* (i.e., an individual's willingness to eat when hungry and a refusal to label certain foods as forbidden; 6 items), *Eating for Physical*

Rather than Emotional Reasons (i.e., eating when one is physically hungry rather than to cope with emotional distress; 8 items), *Reliance on Hunger and Satiety Cues* (i.e., an individual's trust in their internal hunger and satiety cues and reliance on these cues to guide eating behaviours; 6 items), and *Body-Food Choice Congruence* (i.e., a tendency to make food choices that honour one's health and body functioning; 3 items).

Given the importance of delivering food security and access to nutritionally adequate diets for growing populations worldwide (United Nations, 2015), it is unsurprising that scholars have sought to validate instruments – such as the IES-2 – that allow for measurement of adaptive eating. Thus, studies using CFA have supported the original 4-dimensional model of IES-2 scores or a 4-dimensional model with minor modifications in adults from Turkey (Akırmak et al., 2021; Bas et al., 2017), French-speaking Canada (Carbonneau et al., 2016), Portugal (Duarte et al., 2016), Iran (Nejati et al., 2021), Germany (Ruzanska & Warschburger, 2017; van Dyck et al., 2016), Brazil (da Silva et al., 2020), and Hungary (Román et al., 2021), as well as in adults from Australia and New Zealand seeking treatment for an eating disorder (Babbott, Mitchison et al., 2022). However, an important limitation of these studies is the sole reliance on CFA, which only allows scholars to examine the fit of *a priori* hypothesised models. That is, CFA would not have allowed scholars in these studies to determine whether there were better-fitting models of IES-2 scores, which would have required more exploratory factor analytic techniques (Swami & Barron, 2019; Swami, Todd et al., 2021).

Importantly, where studies have utilised either exploratory analyses or a combination of exploratory and confirmatory analytic methods, there has limited support for the 4-factor model of the IES-2. Thus, studies that have relied on either EFA or an EFA-to-CFA strategy have reported that the IES-2 should be conceptualised as a 3-factor model in adults from Romania (Vintilă et al., 2020), France (Camilleri et al., 2015), Malaysia (Swami et al., 2020), and Cyprus (Giannakou et al., 2022), as well as in Hispanic college students in the United States (Saunders et al., 2018). Similarly, EFA-based studies with low-income and racial minority populations in the United States have supported models consisting of five or six factors (Khalsa et al., 2019; Madanat et al., 2020). Even where an EFA-to-CFA strategy allows for the extraction of a 4-factor model, as in Polish adults (Małachowska & Jeżewska-Zychowicz, 2022), this is typically severely truncated (i.e., the loss of about a third of the IES-2 items). Relatedly, at least one CFA-based study has also failed to support the 4-factor model of IES-2 scores, instead reporting support for a 3-factor model in Portuguese adolescents with overweight/obesity (Ramalho et al., 2022).

Even in these studies, however, the reliance on CFA may have been a limiting factor. This is because, in CFA, items are only allowed to load on to their respective hypothesised latent factor, while cross-loadings across latent factors are forced to be zero (Marsh et al., 2009, 2014; Morin et al., 2016). However, EFA-based results have consistently shown that cross-loadings are common across IES-2 subscales (Khalsa et al., 2019; Swami et al., 2020; Vintilă et al., 2020). This suggests that the assumption of zero cross-loadings is highly improbable and especially problematic (Marsh et al., 2014; Morin et al., 2016). Put differently, when scholars utilise CFA to assess the factorial validity of the IES-2 and assume cross-loadings to be zero, they are essentially ignoring the fact that IES-2 items often overlap and associate with other conceptually related constructs. This, in turn, leads to biased estimates of factor correlations and of associations between these factors and other variables (Asparouhov & Muthén, 2009; Marsh et al., 2011, 2014; Zhang et al., 2022).

In fact, failure to model even negligible cross-loadings could lead to biased parameter estimates, whereas allowing for the free estimation of unnecessary cross-loadings still results in unbiased parameter estimates (Asparouhov et al., 2015). This, in turn, can lead to additional model misspecifications (e.g., poor goodness-of-fit indices; Marsh et al., 2020), forcing researchers to rely on suboptimal *post hoc* procedures to correct the situation (e.g., examining modification indices to locate potential areas of misspecification). However, even well-fitting CFA models may hide these misspecifications given their ability to absorb unmodelled cross-loadings through an inflation of factor correlations, without letting them impact model fit (e.g., Morin et al., 2016, 2020). Thus, even if the fit of the *a priori* 4-factor structure of the IES-2 has been confirmed in previous research, this is no guarantee that this structure provides a non-artefactual conceptualisation of the latent constructs measured by this instrument.

An alternative method to assess the factorial validity of the IES-2 is to combine EFA and exploratory structural equation modelling (ESEM; Marsh et al., 2013, 2014; Morin et al., 2013, 2020). ESEM was specifically designed to integrate the best elements of both EFA and CFA, including the relaxation of the zero cross-loadings requirement of CFA (a feature typically limited to EFA), while also allowing researchers to obtain goodness-of-fit statistics, residual correlations, standard error estimates, tests of measurement invariance, and tests of associations between latent constructs (i.e., features typically limited to CFA). As a result, ESEM provides a more useful approach to address the aforementioned limitations of CFA for the assessment of factorial validity (Morin et al., 2020). In fact, where studies have utilised ESEM – either solely as with adults from the United States (Swami et al., 2022) or following an initial EFA as with adults from Italy (Swami, Maïano et al., 2021) – it has been possible to produce support for the original 4-factor model of IES-2 scores. Importantly, however, these studies have also suggested that it is necessary to control for the correlated uniqueness (Marsh, 1996) of seven negatively worded IES-2 items in order to achieve adequate fit (Swami et al., 2022; Swami, Maïano, et al., 2021).

Separately, there are also questions about the higher-order modelling of IES-2 scores. In the parent study, Tylka and Kroon Van Diest (2013) suggested that it was possible to conceptualise the IES-2 as consisting of four lower-order intuitive eating factors that contribute to a higher-order factor. Although some studies have relied on this representation to compute total IES-2 scores (e.g., Messer et al., 2021), not all studies have been able to support this higher-order modelling (e.g., Román et al., 2021; Vintilă et al., 2020). Importantly, higher-order models assume that associations between indicators and the higher-order factor are indirect (i.e., mediated by the lower-order factors) and that associations between the indicators and the unique part of the first-order factor are also mediated by the lower-order factor (Brunet et al., 2016; Gignac, 2016). Such an assumption may be problematic empirically (Gignac, 2016), which has led psychometricians to consider bifactor models as more realistic representations of multidimensional associations (Morin et al., 2016a, 2020).

In bifactor models, items are allowed to define a global G-factor (i.e., intuitive eating) and one specific S-factor (e.g., body-food choice congruence), with all S-factors specified as orthogonal to one another and in relation to the G-factor (Morin et al., 2016). This method allows for the total item covariance matrix to be separated into: (i) a global component that explains the variance shared among responses to all items, and; (ii) specific factors that explain the covariance associated with items subsets not already explained by the global component. Studies that have compared higher-order and bifactor models of the IES-2 have consistently noted poor fit of higher-order models and improved fit of bifactor models (Ramalho et al., 2022; Swami et al., 2022). Importantly, however, it is bifactor ESEM models that account for the correlated uniqueness of negatively worded items that have the most optimal fit, as compared to bifactor and higher-order CFA models of the IES-2 (Swami et al., 2022).

1.1. The Mediterranean Context

The extant evidence suggests that the 4-factor model of IES-2 scores may have adequate fit across national and linguistic groups when modelled using bifactor ESEM and when accounting for correlated uniqueness of negatively worded items (Swami et al., 2022; Swami, Maïano, et al., 2021). However, it remains a possibility that the construct of intuitive eating varies across national or cultural groups. This, in turn, may help explain the equivocal results *vis-à-vis* the factorial validity of the IES-2. For example, in one cross-national study using the Reliance and Hunger and Satiety Cues of the IES-2 (Strodl et al., 2021), item intercepts had to be freely estimated across countries to achieve adequate measurement invariance, suggesting that the meaning of items on this subscale may have differed across nations. Other scholars have likewise suggested that the meaning and nature of intuitive eating may vary according to cultural norms and patterns of eating, which may affect the way in which the construct of intuitive eating is operationalised using the IES-2 (Swami et al., 2020; Vintilă et al., 2020).

One particular world region in which it would be interesting to further consider these issues is the region surrounding the Mediterranean Sea basin. Beginning with the seminal observation that a “Mediterranean Diet” (MedDiet) is associated with lower incidence of cardiovascular disease (Keys et al., 1986), robust evidence now suggests that a MedDiet is associated with improved health, better quality of life, longevity, and reduced risk for a variety of chronic illnesses (for a review, see Sotos-Prieto et al., 2022). The traditional MedDiet is characterised by specific food consumption practices (e.g., use of extra virgin oil in food preparation and cooking, plant-based meals with high consumption of fruits, vegetables, legumes, nuts, and seeds, and moderate consumption of seafood, fermented dairy, poultry, and eggs; Hidalgo-Mora et al., 2020). Some scholars further suggest that, besides being a dietary pattern, the MedDiet also includes or is associated with adaptive eating styles and habits (e.g., planning nutritional behaviour, an awareness of hunger and satiety cues, eating in moderation, eating healthily in response to those cues, and making conscious food choices; Aranceta-Bartrina et al., 2019).

Additionally, traditional eating and food preparation practices that are unique to Mediterranean populations may also have an impact on the construct of intuitive eating. For Greeks, food is often the central focus of social events, with people gathering to cook, consume, and enjoy meals together, discussing and savouring the sensory properties of food throughout. For instance, Sutton's (2009) ethnography of mindful cooking and eating on the Greek island of Kalymnos highlighted the ways in which Greeks learn to cook and eat in socially valued ways. As an example, Sutton described how food items are cut in the hand rather than on a surface, facilitating interaction and socialisation during food preparation. Such practices can be construed as forms of "embodied" relationships with food, that may in turn affect the nature and meaning of intuitive eating in Mediterranean populations. Of course, even in Mediterranean populations, traditional eating habits and patterns have progressively given way to Westernised habits (Argyrides & Kkeli, 2015; Trichopoulou et al., 1993), which makes it all the more important to better understand the nature and meaning of intuitive eating in these groups.

1.2. The Present Studies

In the present research, therefore, our overall objective was to assess the psychometric properties of a novel Greek translation of the IES-2 in a sample of adults from Cyprus, an island country in the eastern Mediterranean Sea. Food has played a central role in social and cultural life in Cyprus (Karageorghis, 2007), with a MedDiet and family involvement in food preparation being historically dominant (Katsounari, 2009). More recently, however, the country has seen a shift in eating habits and attitudes towards Westernised diets shaped by postmodern perceptions of food engagement and the desocialisation of the food market (Ioannou, 2009). In particular, increasing urbanisation, the growing participation of women in economic life, fewer household members and generations living together, and desocialisation (including lower emphasis on socialised cooking and joint meals) have led to a shift away from a traditional MedDiet toward eating patterns more common in Westernised settings (Burlingame et al., 2015). Indeed, some authors have warned that such changes have placed the MedDiet at threat, leading to increased disordered eating and poorer adaptive eating styles (Dougall & Koehring, 2016).

To assess the psychometric properties of the Greek IES-2, we first examined its factorial validity. To do so, and following recent recommendations (Swami et al., 2022; Swami, Maïano, et al., 2021), we utilised an EFA-to-ESEM analytic framework. Specifically, in Study 1, we assessed the factor structure of the IES-2 using EFA, which allowed us to determine the best-fitting model of scores for our data without limitations in terms of modelling. Next, in Study 2, we aimed to assess the factorial validity of the model derived from Study 1 using ESEM. In Study 2, we also assessed the extent to which model fit would be improved with bifactor modelling while accounting for the correlated uniqueness of negatively worded IES-2 items (Swami et al., 2022; Swami, Maïano, et al., 2021). Beyond factorial validity, we also examined evidence of construct validity in Study 2 and, across both studies, we assessed measurement invariance of the optimal model of IES-2 scores across sex.

2. Study 1: Exploratory Factor Analysis

The aim of Study 1 was to conduct an initial assessment of the factor structure of Greek IES-2 scores in adults from Cyprus using EFA. Importantly, the factor structure of the IES-2 has been previously examined in this national context (Giannakou et al., 2022). Specifically, based on an EFA with a sample of predominantly female participants (N = 379; 83.3% of women), it was reported that the IES-2 reduced to three dimensions consisting of two factors that combined items from across three IES-2 facets (8 items and 6 items, respectively) and one factor combining items from across two IES-2 facets (5 items). However, factor extraction methods in this study may have been problematic (i.e., reliance on methods that may have led to under-extraction of factors and under-retention of items; cf. Swami & Barron, 2019). Additionally, although no assessment of higher-order structure was conducted, the authors also extracted a total score for use in analyses. Given these issues, as well as previous work suggesting that it may be possible to support a 4-factor model of IES-2 scores using advanced EFA methods in the Mediterranean context (Swami, Maïano, et al., 2021), we elected to conduct a fresh EFA in the present study.

Our preliminary expectation was to be able to support the 4-factor model of IES-2 through EFA, although we did not rule the possibility of a discrepant model. Additionally, in an extension to the work of Giannakou et al. (2022), we also sought to examine the invariance of the derived measurement model across sex. Previous studies that have assessed gender/sex invariance of the IES-2 in other national contexts have generally supported full scalar or latent mean invariance (Duarte et al., 2016; Swami, Maïano, et al., 2021; Swami et al., 2020, 2022; Vintilă et al., 2020), although it should be noted that at least one study evidenced only metric invariance (da Silva et al., 2020). Based on these findings, we preliminarily expected to minimally establish scalar invariance in the present study, which – given that partial or full scalar invariance is a precondition for examining latent differences in scores (Chen, 2007) – would allow us to examine sex differences in IES-2 factor scores.

2.1. Method

2.1.1. ***Participants***. The sample for Study 1 consisted of 315 women and 311 men who ranged in age from 17 to 70 years (M = 35.26, SD = 10.36) and in self-reported body mass index (BMI) from 14.71 to 53.22 kg/m^2 (M = 25.48, SD = 5.36). In terms of ethnicity, 52.4% of the sample identified as Greek Cypriot and 47.6% identified as Greek.

2.1.2. ***Materials***

2.1.2.1. ***Intuitive eating***. Participants completed a novel translation of the 23-item IES-2 (Tylka & Kroon Van Diest, 2013), with items rated on a 5-point scale ranging from 1 (*strongly disagree*; Greek: *συμφωνώ απόλυτα*) to 5 (*strongly agree*; Greek: *διαφωνώ απόλυτα*). We were not aware that a Greek translation of the IES-2 had been produced (Giannakou et al., 2022) when we began this project. As such, we produced our own translation of the IES-2 by following the 5-step procedure recommended by Beaton et al. (2000). Specifically, two translators – one informed, and one uninformed – first independently forward-translated the IES-2 instructions, items, and response options from English to Greek. Next, the two translations were examined by a third, independent translator who resolved any discrepancies and produce a synthesised translation. Third, the synthesised translation was then back-translated by two translators naïve to the IES-2 back into English. Fourth, the forward- and back- translations were compared by an expert committee comprising all the translators and first and third authors of the present study, who resolved any minor inconsistencies between versions. In the fifth and final stage, the translated IES-2 was pre-tested in a sample of 18 individuals (women = 55.56%) who broadly matched the target sample. Participants in the pre-test study provided qualitative feedback regarding their level of understanding, as well as suggestions for improvements to enhance comprehension (based on open-ended questions). This feedback was returned to the committee, who agreed that no further revisions were necessary. We also compared our translation of the IES-2 with that of Giannakou et al. (2022) and uncovered minor discrepancies in terms of wording and syntax (e.g., Giannakou and colleagues used the word καταναλώνω [consume] instead of the word τρώω [eat]. For this reason, we additionally submitted both our translation and that of Giannakou et al. (2022) to an independent translator unaffiliated with either study, who indicated that our translation was a closer approximation of the original in English in terms of intended semantic meaning. The final items of our translation of the IES-2 in Greek are reported in Appendix 1.

2.1.2.2. ***Demographics.*** All participants completed a demographics questionnaire that included items on age, sex, and ethnicity. Participants were also required to provide self-reported height and weight which were used to calculate BMI (kg/m^2).

2.1.3. ***Procedures.*** Ethics approval was obtained from the relevant departmental ethics committee (approval code: ΕΕΒΚ ΕΠ 2021.01.69) and the study was carried out in accordance with the principles of the Declaration of Helsinki. Data for Study 1 were collected between December 2021 and June 2022, with participants recruited via advertisements placed on social media and supplemented through the use of a snowball sampling method. The study was advertised as a study about "body image and eating behaviours" and inclusion criteria included being a Cypriot resident and citizen, being fluent in the Greek language (a national language of Cyprus), and being over 18 years of age. All participants were provided with further information regarding the study requirements, and participation was anonymous, voluntary, and without remuneration. Participants provided digital informed consent before completing an online survey consisting of the IES-2 and the demographics questionnaire. Internet Protocol (IP) addresses were checked to ensure that no participant answered the survey more than once. Participants received written debriefing information upon completion of the survey.

2.1.4. ***Analytic strategy.*** There were no missing responses in the dataset. Prior to analyses, all negatively keyed IES-2 items were reverse-coded so that all reported loadings were positive. EFAs was performed using Mplus 8.8's (Muthén & Muthén, 2022) robust weighted least squares estimator with mean and variance adjusted statistics (WLSMV). In a first step, eight EFAs with one to eight correlated latent factors were examined (henceforth Models 1-1 to 1-8) using Mplus's ESEM capabilities. The decision to select eight as the upper limit was exploratory; that is, given that previous work has indicated a possibility that IES-2 scores reduce to up to six factors (Khalsa et al., 2019; Madanat et al., 2020), we selected a higher upper limit to account for this possibility in the present dataset. As recommended by Marsh et al. (2009, 2014), the EFAs were estimated with an oblique geomin rotation and an epsilon value of .5. The optimum number of factors to retain in this model was determined based on Horn's (1965) parallel analysis. This test was conducted using the *psych* package v.2.0.12 (Revelle, 2020) in *R* v.4.0.3 using a weighted least square factor method, a principal axis factor analysis, polychoric correlations, and a total of 50 randomly generated data sets.

Parallel analysis was complemented by examining the following fit indices: the Steiger-Lind root mean square error of approximation (RMSEA) and its 90% CI (values close to .06 considered to be indicative of good fit and up to .08 indicative of adequate fit), the standardised root mean square residual (SRMR; values < .09 indicative of good fit), the Tucker-Lewis index (TLI; values close to or > .95 indicative of good fit), and the comparative fit index (CFI; values close to or > .95 indicative of adequate fit) (Hu & Bentler, 1999; Steiger, 2007). The composite reliability of scales from the best factor solution was estimated using McDonald's (1970) omega (ω), with values greater than .70 reflecting adequate internal reliability (Dunn et al., 2014).

In a second step, the optimal EFA model was examined separately in women and men. Next, the measurement invariance of this EFA model was examined across sex using the following sequence (Morin et al., 2011): (i) configural invariance; (ii) weak invariance (loadings); (iii) strong invariance (thresholds); (iv) strict invariance (uniquenesses); (v) invariance of the latent variances/covariances; and (vi) invariance of latent mean factors. Model comparisons (i.e., the preceding model served as comparison) were based on changes

(Δ) in CFIs, TLIs, and RMSEAs. A sequence was considered as invariant when ΔCFIs-ΔTLIs were ≤ -.01 and ΔRMSEAs ≤ -. 015 (Chen, 2007; Cheung & Rensvold, 2002).

2.2. Results and Discussion

2.2.1 Exploratory factor analysis. The fit indices for the 1- to 8-factor models (Models 1-1 to 1-8) are presented in Table 1. The results showed that, for models with one and two factors (Models 1-1 and 1-2), fit indices were uniformly unsatisfactory (CFI-TLI < .90; RMSEA > .15), whereas for the model with three factors the CFI value was acceptable, but TLI and RMSEA values were unsatisfactory (TLI < .90; RMSEA > .08). For models with four to five factors (Models 1-3 to 1-5), CFI/TLI values were acceptable (CFI-TLI > .90 or > .95), but RMSEA values were unsatisfactory (> .09). Finally, in models with six to eight factors (Models 1-6 to 1-8), fit indices were all acceptable (CFI-TLI > .95; RMSEA ≤ .08). Results from parallel analysis conducted in *R* (see Figure 1) converged on solutions with five to seven factors. However, given that the RMSEA value was unsatisfactory for the 5-factor solution, only the 6- and 7-factor solutions were inspected in detail. Factors were similar across both solutions, except for the original Unconditional Permission to Eat factor, which was split into two dimensions in the 7-factor solution. For the sake of retaining a parsimonious model and in the absence of a clear theoretical justification for selecting a 7-factor model, we elected to retain the 6-factor model. Standardised parameter estimates, estimates of composite reliability, and latent factor correlations for the 6-factors model are reported in Table S1 in Supplementary Materials.

The first factor, which we termed Avoiding Emotional Eating; AEE) after Khalsa et al. (2019) and Madanat et al. (2020), comprised 4 items (from the original Eating for Physical Rather than Emotional Reasons factor) with moderate-to-large loadings and cross-loadings of a lower magnitude. The second factor, which we termed Trust in Bodily Cues (TBC) comprised three items (from the original Reliance on Hunger and Satiety Cues factor) with large loadings and cross-loadings of a lower magnitude. The third factor comprised six items measuring Unconditional Permission to Eat factor (UPE). Loadings from these items were of a moderate-to-large magnitude and with cross-loadings of a lower magnitude, except for two items (Items #1 and 4) that have modest equal loadings in another factor. The fourth factor, which we termed Avoiding Food-Related Coping Strategies (AFRCS) following Khalsa et al. (2019) and Madanat et al. (2020), comprised four items (from the original Eating for Physical Rather than Emotional Reasons factor) with moderate-to-large loadings and cross-loadings of a lower magnitude. The fifth factor comprised three items measuring Body-Food Choice Congruence (BFC) with large loadings and cross-loadings of a lower magnitude. Finally, the sixth factor – which we termed Hunger and Satiety Cues (HSC) – comprised three items (from the original Reliance on Hunger and Satiety Cues factor) with moderate-to-large loadings and cross-loadings of a lower magnitude.

As shown in Table S1 in the Supplementary Materials, all composite reliability coefficients were acceptable-to-excellent and latent factor correlations were mostly significant, with a small-to-moderate magnitude. These results thus confirm the relative independence of the latent factors. Given that Items #1 and 4 were problematic, they were excluded and an alternative 6-factor model was re-estimated. As illustrated in Table 1, results showed that fit indices for this model (Model 1-9) were acceptable and were substantially improved when compared with the original 6-factor model (ΔCFI = +.009; ΔTLI = +.016; ΔRMSEA= -.009). Standardised parameter estimates, estimates of composite reliability, and latent factor correlations for this alternative model are presented in Table 2. Results showed that main loadings were of moderate-to-large magnitude and that cross-loadings were small. Finally, all composite reliability coefficients were acceptable-to-excellent and latent factor correlations were mostly significant, with a small-to-moderate magnitude. Therefore, this model (hereafter “alternative 6-factor model”) was retained in subsequent analyses.

2.2.2 Sex invariance. Table 1 presents the goodness-of-fit statistics of the alternative 6-factor model examined separately in women and men (Models 2-1 and 2-2). Fit indices for the subsamples of women and men were all acceptable (CFI-TLI > .95; RMSEA ≤ .08). Additionally, as illustrated in Table 1, fit indices from the measurement invariance test (Models 2-3 and 2-8) across sex were all acceptable (CFI-TLI > .95; RMSEA ≤ .08). Results supported the complete (configural, weak, strong, strict, latent variance-covariance invariance, and latent mean) measurement invariance of the alternative 6-factor model.

2.2.3. Discussion. Based on the results of Study 1, several important points are worth highlighting. First, unlike earlier work in Italy (Swami, Maïano et al., 2021) – another Mediterranean context – we found that a 4-factor model of IES-2 scores did not achieve adequate fit in the present study. Second, using advanced EFA methods and more robust extraction methods, we failed to find support for a 3-factor model, as previously found in Cyprus (Giannakou et al., 2022). Indeed, in the present study, models with one to five factors generally evidenced poor fit to the data and, with the exception of the 5-factor model, were unfavoured by parallel analysis. Instead, the results of Study 1 suggested that either a 6- or 7-factor model best represented the Greek IES-2 in the present dataset. Of these models, we elected to retain the 6-factor model, which offered a more parsimonious accounting of the intuitive eating construct. Further, given substantive cross-loadings on two items, we examined fit of an alternative 6-factor model, which we found to evidence improved fit and complete invariance across sex. This model retains 21 of the 23 original IES-2 items and is the model we aimed to cross-validate in Study 2.

3. Study 2: Exploratory Structural Equation Modelling and Bifactor Analysis

The objective of Study 2 was to cross-validate the findings of Study 1 using ESEM and bifactor analysis. Specifically, we compared the fit of the alternative 6-factor model derived from Study 1 using ESEM and bifactor-ESEM (B-ESEM). As recently recommended by Swami and colleagues (Swami, Maïano et al., 2021; Swami et al., 2022), these models were estimated while using correlated uniqueness (CUs) in order to control for the methodological artefact introduced by the negatively worded IES-2 items. Additionally, in Study 2, the invariance of the optimal IES-2 model (ESEM or B-ESEM) across sex was again examined. Finally, in Study 2, we also examined construct validity of the optimal IES-2 model (ESEM or B-ESEM) based on associations with constructs that have been shown to be associated with intuitive eating in previous work (e.g., Barad et al., 2019; Carrard et al., 2021; Linardon & Mitchell, 2017; Tylka & Kroon Van Diest, 2013).

More specifically, to estimate we convergent validity, we examined associations between IES-2 factor scores and body appreciation and appearance evaluation, respectively, with the expectation of positive and small-to-moderate correlations. Additionally, we also examined associations with symptoms of disordered eating (i.e., eating restriction and eating concern) and BMI, with the expectation of negative and small-to-moderate correlations. To estimate concurrent validity, we examined associations between IES-2 factor scores and self-esteem. Positive and small-to-moderate associations would be taken as evidence of concurrent validity. Additionally, we also examined associations with fruit and vegetable intake, with the expectation of positive and small-to-moderate associations. Finally, to examine discriminant validity, we examined associations with social desirability, with the expectation of weak or non-significant associations with IES-2 factors.

3.1. Method

3.1.1. *Participants*. The sample for Study 2 consisted of 448 women and 345 men who ranged in age from 18 to 70 years (M = 33.69, SD = 11.22) and in self-reported BMI from 14.53 to 47.40 kg/m^2 (M = 24.99, SD = 5.11). In terms of ethnicity, the majority of the sample (74.1%) of the sample identified as Greek and 25.0% identified as Greek Cypriot (missing = 0.9%).

3.1.2. ***Measures***

3.1.2.1. ***Intuitive eating*.** Participants completed the Greek version of the IES-2 as described in Section 2.1.2.1 above.

3.1.2.2. ***Body appreciation***. All participants completed the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015; Greek translation: Argyrides, 2020). The 10-item BAS-2 assesses acceptance of one's body, respect and care for one's body, and protection of one's body from unrealistic beauty standards. Items were rated on a 5-point scale (1 = *never*, 5 = *always*) and an overall score was computed as the mean of all items, so that higher scores reflect greater body appreciation. Scores on the Greek version of the BAS-2 have been shown to reduce to a unidimensional factor and to have adequate internal consistency and construct validity (Argyrides, 2020). In the present study, McDonald's ω for scores on this scale was .95 (95% CI = .94, .95).

3.1.2.3. ***Appearance evaluation*.** Participants completed the Appearance Evaluation (AE; 7 items) subscale of the Multidimensional Body-Self Relations Questionnaire-Appearance Subscales (MBSRQ-AS; Cash, 2000; Greek translation: Argyrides & Kkeli, 2013). The AE subscale of the MBSRQ-AS is a 7-item measure of one's feelings of physical attractiveness and satisfaction with one's looks. All items on this measure were rated on a 5-point scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*). An overall score was computed as a mean of all the items with higher ratings reflecting higher satisfaction with one's appearance. Scores on the Greek version of the MBSRQ-AS have been shown to reduce to a 2-factor structure, with the AS subscale nomologically distinct, and to have adequate internal consistency and structural validity in adolescent girls and boys (Argyrides & Kkeli, 2013). In the present study, McDonald's ω for scores on this subscale was .92 (95% CI = .90, .92).

3.1.2.4. *Symptoms of disordered eating.* We used the Restriction (5 items) and Eating Concern (5 items) subscales of the Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Harrison, 2003; Greek translation: Giovazolias et al., 2013), a measure assessing eating attitudes and behaviours over the previous 28 days. Items were rated on a 7-point scale ranging from 0 (*no days*) to 6 (*every day*), and 0 (*not at all*) to 6 (*markedly*). Subscale scores were computed as the mean of all items with higher scores reflecting greater disordered eating symptomatology. Adequate internal consistency and construct validity have been reported for scores on the Greek version of the EDE-Q (Giovazolias et al., 2013). In the present study, McDonald's ω was .83 (95% CI = .81, .85) for Eating Restriction and .83 (95% CI = .79, .83) for Eating Concern.

3.1.2.5. *Self-esteem.* Participants completed the 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; Greek translation: Galanou et al., 2014). The RSES is a widely used measure assessing global self-esteem on a 4-point scale (1 = *strongly disagree*, 4 = *strongly agree*). Higher scores reflect greater self-esteem. Scores on the Greek version of the RSES have been shown to have adequate internal consistency and construct validity (Galanou et al., 2014). In the present study, McDonald's ω for RSES scores was .91 (95% CI = .90, .92).

3.1.2.6. *Social desirability.* Social desirability was assessed using the Marlowe-Crowne Social Desirability Scale Form C (MCSDS-C; Reynolds, 1982; Greek translation: Lavidas & Gialamas, 2019). The MCSDS-C is a 13-item measure of the tendency to respond to test items in a manner that is socially desirable or acceptable. Participants report whether items are true or false for themselves, and higher scores indicate greater levels of social desirability. Adequate internal consistency and construct validity have been reported for scores on the Greek translation of the MCSDS-C (Lavidas & Gialamas, 2019).

3.1.2.7. Fruit and vegetable intake. To assess fruit and vegetable intake, we used Greek translations of two separate single-item screeners (Cook et al., 2015). For fruit intake, participants were asked "Over the LAST 1 MONTH ONLY, on average, how many servings of fruit did you eat per day?" Participants rated the item on a 6-point scale from 0 = *none* to 6 = *4 or more servings per day*. For vegetable intake, participants were asked, "Over the LAST ONE MONTH ONLY, on average, how many servings of vegetables/legumes did you eat per day?" Participants responded on a 9-point scale from 0 = *none* to 9 = *7 or more servings per day*.

3.1.2.8. *Demographics.* All participants completed a demographics questionnaire which included questions on age, sex, and ethnicity. Participants were also required to provide self-reported height and weight which were used to calculate BMI (kg/m^2).

3.1.3. *Procedures*. Procedures for Study 2 were identical to Study 1 with the following exceptions: (a) all data were collected between January 2022 and April 2022; (b) attention checks were placed at two points in the survey (which were failed by eight participants who were removed the dataset prior to any analyses), and; (c) the order of presentation of measures in the survey was counterbalanced.

3.1.4. *Analytic strategy*. The alternative 6-factor solution obtained from Study 1 was examined using ESEM and B-ESEM. As recommended in the literature (e.g., Asparouhov & Muthén, 2009), both of these models used target rotation (i.e., all cross-loadings were "targeted" to be as close to zero as possible). The B-ESEM model comprises one more factor than the ESEM model: in the B-ESEM model, all items have a main loading on both a global factor (G-factor) and on their specific factors (S-factors). The analyses were performed using Mplus 8.8's (Muthén & Muthén, 2022) WLSMV estimator. Additionally, as previously mentioned, ESEM and B-ESEM models were examined using correlated uniqueness among negatively worded IES-2 items. In these models, four CUs were included between Item #9 (on the UPE factor) and Items #2, 5, 10, and 11 (on the AEE factor). In a second step, the optimal model (ESEM or B-ESEM) retained in the first step was examined separately in men and women, and its measurement invariance across sex was examined, so as to cross-validate the results from the test of invariance in Study 1. The same sequence as that reported in Section 2.1.4 was used, with the exception of the addition of the invariance of CUs.

Construct validity was examined in the overall sample using a structural equation model (SEM) in which the IES-2 factor structure was estimated based on the optimal model (ESEM or B-ESEM). In this model, the latent factors of the IES-2 and the observed scores of appearance evaluation, body appreciation, BMI, fruit intake, self-esteem, social desirability, symptoms of disordered eating (i.e., eating restriction and eating concern), and vegetable intake were all correlated. Based on Cohen (1992), values $\leq .10$ were considered weak, $\sim .30$ were considered moderate, and $\sim .50$ were considered strong correlations.

3.2. Results and Discussion

3.2.1. Exploratory structural equation modelling and bifactor analysis. The fit indices for the alternative 6-factor ESEM and B-ESEM models are presented in Table 1 (Models 3-1 to 3-2)[1]. Results from the alternative 6-factor ESEM and B-ESEM showed that all fit indices were acceptable (CFI and TLI > .95; RMSEA ≤ .08). Additionally, results showed that the level of fit was substantially improved in the B-ESEM model (ΔCFI = +.009; ΔTLI = +.018; ΔRMSEA= -.025) relative to the ESEM model. Thus, although results seem to favor the B-ESEM solution, its parameters should be carefully examined and contrasted with the ESEM (Morin et al., 2016).

The detailed parameter estimates from the ESEM and B-ESEM solutions are reported in Tables 3 and Table S2 in the Supplementary Materials, respectively. The ESEM model had modest-to-substantial main factor loadings (λ =.378-.948; M_{λ} = .714) coupled with reasonably small, yet non-negligible, cross-loadings ($|\lambda|$ = .000-.402; $M_{|\lambda|}$ = .082). Moreover, estimates of composite reliability were adequate (ω = .771 to .918) and latent factor correlations were all statistically significant with a small-to-moderate magnitude (r = -.210 to .675; $M_{|r|}$ = .326). Analyses of B-ESEM parameters showed that the G-factor is moderately well-defined and well-defined by items from five of the S-factors (AEE, TBC, AFRCS, BFC, and HSC; λ = .314-.857; $M_{|\lambda|}$ = .611), but weakly defined by items from the UPE S-factor (λ = -.021-.240; $M_{|\lambda|}$ = .144), suggesting that these items might tap into a different construct (see Table S2). Therefore, we estimated an alternative B-ESEM model[2] encompassing AEE, TBC, AFRCS, BFC, and HSC as S-factors, but including UPE as a distinct correlated CFA factor. As illustrated in Table 1, this alternative model (Model 3-3) resulted in an acceptable level of fit to the data. Inspection of standardised parameters (see Table 4) showed that the G-factor is reliable (ω = .964) and moderately well-defined and well-defined by all S-factors (λ = .321-.866; M_λ = .611). Additionally, results revealed four well-defined S-factors: AEE (λ = .388-.536, M_λ = .458; ω = .810), TBC (λ = .461-.755, M_λ = .586; ω = .778), BFC (λ = .688-.909, M_λ = .804; ω = .894) and HSC (λ = .309-.718, M_λ = .561; ω = .806). However, the AFRCS S-factor was less well-defined (λ = .049-.528, M_λ = .302; ω = .608), which could be attributed to two items (Items #12 and 15) that mainly serve to define the G-factor. Finally, the UPE CFA factor was well-defined and reliable (λ = .502-.793, M_λ = .670; ω = .768). The present results support the B-ESEM representation of the present data. Therefore, this model (henceforth "alternative B-ESEM model") was retained for subsequent analyses.

3.2.2. Sex invariance. Table 1 presents the fit indices of the alternative B-ESEM model examined separately in women and men (Models 4-1 and 4-2). Results showed that all fit indices were acceptable (CFI-TLI > .90 or > .95; RMSEA ≤ .08) for women and men. Moreover, as illustrated in Table 1, fit indices from the measurement invariance tests across sex were acceptable (Models 4-3 to 4-9). Results supported the complete (configural, weak, strong, strict, CUs, latent variance-covariance invariance, and latent mean) measurement invariance of the alternative B-ESEM.

3.4. Construct validity. Goodness-of-fit statistics from the SEM including the IES-2 latent factors and the other measures was acceptable: $\chi^2(235) = 901.439$, CFI = .977, TLI = .958, RMSEA = .060 (90% CI = .056, .064). As illustrated in Table 5, the IES-2 G-factor was significantly and (a) positively correlated with appearance evaluation, body appreciation, and self-esteem; and (b) negatively correlated with BMI, symptoms of disordered eating (eating restriction and concern), and social desirability. Results for the AEE S-factor showed significant and (a) positive correlations with appearance evaluation, body appreciation, and self-esteem; and (b) negative correlations with BMI, symptoms of disordered eating (eating restriction and concern), and social desirability. Our results also showed that the TBC S-factor was significantly and (a) positively correlated with appearance evaluation, body appreciation, and self-esteem; and (b) negatively correlated with BMI and symptoms of disordered eating (eating restriction and concern). Moreover, the UPE CFA factor was significantly and (a) positively correlated with appearance evaluation, body appreciation, and self-esteem; and (b) negatively correlated with symptoms of disordered eating (eating restriction and concern), and fruit and vegetable intake. The AFRCS S-factor was significantly and positively correlated with appearance evaluation and self-esteem only. Additionally, the BFC S-factor was significantly and positively correlated with all variables (except for BMI, which was negatively correlated), but not significantly correlated with eating concern and social desirability. Finally, the HSC S-factor was significantly and negatively correlated to symptoms of disordered eating only.

3.5. Discussion. The results of Study 2 that both the ESEM and B-ESEM alternative 6-factor models had adequate fit to the data, but of the two models it was the latter than had substantively improved fit indices. Interestingly, however, the G-factor in the B-ESEM model was well-defined by items from five of the six S-factors (AEE, TBC, AFRCS, BFC, and HSC), but only weakly defined by items from the UPE S-factor. That is, these results suggest that the UPE S-factor may be tapping a separate construct compared to the other S-factors. Modelling UPE as a distinct correlated CFA factor provided adequate fit to the data and this final model was also found to evidence complete invariance across sex. Finally, the results of Study 2 also provided evidence of convergent, concurrent, and discriminant validity, although not uniformly. Thus, associations between the IES-2 G-factor and additional variables included in Study 2 were all in the expected directions, with the exception of fruit and vegetable intake. Similarly, associations between the S-factors and the additional variables were generally consistent with our expectations, though several exceptions were notable (e.g., the non-significant associations between some S-factors and fruit and vegetable intake, and the lack of significant effects generally with the HSC S-factor).

4. General Discussion

The results of the two studies reported here suggest that, in adults from Cyprus, the Greek IES-2 can be optimally modelled as five S-factors and a global G-factor (i.e., a B-ESEM model). This is discrepant from the 3-factor EFA-based model that Giannakou and colleagues (2022) previously derived in the Cypriot context, although – as we mentioned above – their results are likely problematic given the high possibility of factor under-extraction and item under-retention. Additionally, the results of Study 1 also indicated that a 4-factor model of IES-2 evidenced less-than-adequate fit indices, as did any model with fewer than six factors. This is particularly notable given that other work in the Mediterranean context (i.e., in Italy) using the same analytic strategy as we utilised here was able to support the original 4-factor model (Swami, Maïano et al., 2021). Rather, despite the same analytic strategy, our results indicate that the construct of intuitive eating is more complex in the Cypriot context.

Specifically, we initially found that the Unconditional Permission to Eat (UPE) factor could be retained as in its original formulation by Tylka and Kroon Van Diest (2013). However, two items in this factor showed substantive cross-loadings and their elimination from modelling substantively improved fit. Interestingly, however, in Study 2, we found that the IES-2 G-factor was only weakly defined by items from the UPE S-factor. This is of particular note given that unconditional permission to eat is typically considered a core facet of intuitive eating (Tribole & Resch, 1995, 2012). Two possible explanations are worth considering in relation to this finding. First, it is possible that, in the Cypriot context at least, the four retained UPE items are more closely related to a construct separate to intuitive eating, as it is usually defined (Tribole & Resch, 1995, 2012). However, given that the UPE factor (modelled as distinct correlated CFA factor) generally showed the strongest correlations with indices of convergent validity (i.e., body appreciation, appearance evaluation, symptoms of disordered eating) and was only one of two factors significantly associated with fruit and vegetable intake, a more likely explanation is that it is the UPE factor that is most proximally tapping an intuitive eating construct, with the remaining S-factors possibly tapping a distinct, yet related, construct as summarised in the G-factor.

Also noteworthy was our finding that two of the original IES-2 factors – Eating for Physical Rather than Emotional Reasons and Reliance on Hunger and Satiety Cues – were both split in two in the present study. That is, rather than representing two factors, the present results suggest that items on these factors in fact load on to four unique facets of intuitive eating (i.e., AEE, AFRCS, TBC, and HSC). Broadly speaking, these results mirror findings that have been reported in low-income Black sample (Khalsa et al., 2019) and Latina women (Madanat et al., 2020) in the United States. In explaining these findings, Khalsa and colleagues (2019) suggested that they may reflect the impact of cultural and socioeconomic factors, or the intersection between these factors, on intuitive eating. It is possible to level a similar explanation to account for the present findings: for instance, it may be that cultural factors that are more prominent in the Cypriot context – such as the role of the family in food preparation, eating practices, and diet perceptions (Angastinioti et al., 2020) – help to explain the present findings. That is, the specific cultural context of Cyprus may mean that the specific dimentionality of the IES-2 is more complex than in some other cultural contexts.

Additionally, although construct validity of these four unique factors was also generally supported, it was notable that these S-factors showed occassionally comparatively weaker associations with additional variables included in Study 2. For instance, these S-factors were generally not significantly associated with fruit and vegetable intake, and were only weakly associated with body image variables (i.e., appearance evaluation, body appreciation) and self-esteem. In particular, the factor that we termed Hunger and Satiety Cues was only significantly and weakly associated with disordered eating symptoms, but not significantly associated with any of the other variables. In line with our reasoining *vis-à-vis* the UPE factor above, therefore, the extent to which these facets truly tap an intuitive eating construct may be questioned. In contrast, we were able to retain the Body-Food Choice Congruence (BFC) factor as it was originally formulated by Tylka and Kroon Van Diest (2013), and this factor evidenced stronger indices of construct validity. The significant, positive, and moderately strong associations between the BFC factor and vegetable and fruit intake, respectively, were particularly notable, as this factor has been previously strongly linked with higher diet quality (Jackson et al., 2022).

Beyond issues of factorial and construct validity, the present results also indicated that the 6-factor B-ESEM model of IES-2 evidenced complete invariance across sex. These results are consistent with previous work indicating that IES-2 factor scores achieve scalar (Duarte et al., 2016; Swami, Todd et al., 2020; Tylka & Kroon Van Diest, 2013; Vintilă et al., 2020) or complete invariance (Swami et al., 2022; Swami, Maïano et al., 2021) across gender/sex. Unlike in the parent study (Tylka & Kroon Van Diest, 2013), however, where men were found to have significantly higher IES-2 factor scores than women, our results indicated invariance of latent means. Nevertheless, this finding is mirrors recent findings in Italy where invariance of latent means on IES-2 S-factors was also generally supported (Swami, Maïano et al., 2021). Further, the present results indicated that latent factors in our final model of the Greek IES-2 evidenced adequate composite reliability. Overall, then, these results suggest that the 6-factor B-ESEM model of Greek IES-2 presents adequate psychometric properties and may be suitable for future use in the Cypriot context.

In contrast, our results showed that, despite using the same analytic strategy as in recent studies (Swami et al., 2022; Swami, Maïano et al., 2021), it was not possible to support a 4-factor model of IES-2. This, in turn, raises the possibly that the construct of intuitive eating as it is currently conceptualised (Tribole & Resch, 1995, 2012; Tylka & Kroon Van Diest, 2013) may not adequately or consistently capture the meaning of adaptive eating styles in Cyprus. For instance, as other scholars have suggested in other national contexts (Swami et al., 2020; Vintilă et al., 2020), it is possible that the construct of intuitive eating represents a largely Western definition of eating styles that may not translate effectively to all national or cultural contexts. As others have recommended (Khalsa et al., 2019; Swami et al., 2020), future qualitative research may help scholars to better understand the nature and manifestation of intuitive eating in the Cypriot context. Indeed, such research may be particularly well-suited to helping us understand the extent to which each of the identified factors here are most closely related to a core intuitive eating construct, and possibly also to more fully integrate UPE into the model.

4.1. Limitations and Conclusion

In keeping with recent recommendations (Swami et al., 2022; Swami, Maïano et al., 2021), a strength of the present study was the application of an EFA-to-ESEM analytic framework that concurrently examined fit of a bifactor model and additionally controlled for the CUs of negatively worded IES-2 items. Nevertheless, there were several limitations to the present work, which we acknowledge here. First, given our opportunistic sampling method combined with snowball sampling, it is unlikely that our samples are representative of the wider adult population in Cyprus. In a similar vein, we did not assess participants' place of residence, which may be important given that eating practices and overweight/obesity rates may vary across urban and rural Cyprus (Savva et al., 2015). In future research, aside from recruiting more representative samples of adults from Cyprus, it may also be useful to include additional variables that may affect patterns of intuitive eating, such as socioeconomic status and other income-related indices (Quattrocchi et al., 2022).

Aside from sampling limitations, the present work was limited in the sense that, for our assessment of construct validity, we were reliant on the small number of instruments that had been psychometrically validated for use in Greek-speaking Cypriot populations. Finally, although data for the present were collected after most COVID-19-related restrictions had been removed in Cyprus, it is difficult to know how the context of the COVID-19 pandemic may have affected our results. Certainly, there is some evidence to suggest that the pandemic may have affected various lifestyle outcomes in Cyprus, including adherence to a MedDiet (Kolokotroni et al., 2021). In particular, it appears that adults from Cyprus were more likely to eat healthily (e.g., higher consumption of fruits, vegetables, legumes/pulses, fish, and poultry, and a lower consumption of alcohol) during the pandemic compared to pre-pandemic (Kyprianidou et al., 2022).

These limitations aside, the present results – based on an EFA-to-ESEM analytic framework – suggests that scores on the Greek IES-2 are best conceptualised as consisting of five S-factors and a global G-factor. This 21-item model of the Greek IES-2 offered the best fit to the data compared to all other models that were tested in the present study, including a

4-factor model. From a theoretical point-of-view, our results broadly support the continued use of an EFA-to-ESEM analytic framework for assessing the factorial validity of IES-2 scores in test adaptation studies. From a practical point-of-view, our results suggest that the Greek IES-2 can be considered a psychometrically valid tool for the assessment of intuitive eating in adults from Cyprus. This may be particularly important, as the IES-2 could be included in interventions aimed at promoting adaptive eating styles in Cyprus, a national context marked by a high prevalence of disordered eating attitudes and behaviors (Hadjigeorgiou et al., 2018). More broadly, however, our findings also suggest that the IES-2 may not offer a common method for assessing the construct of intuitive eating across cultural contexts, which may limit utility of this instrument in international research.

Footnotes

[1]As recommended by Morin et al. (2016) CFA and B-CFA models were estimated. Nevertheless, despite the CFI and TLI values from these models were acceptable (> .90 or .95), RMSEA values were unsatisfactory (RMSEA > .08). Therefore, these models were not contrasted with their ESEM and B-ESEM counterparts given that they both presented unsatisfactory levels of fit to the data.

[2] For an illustration of an alternative B-ESEM model, see Sandrin et al. (2022).

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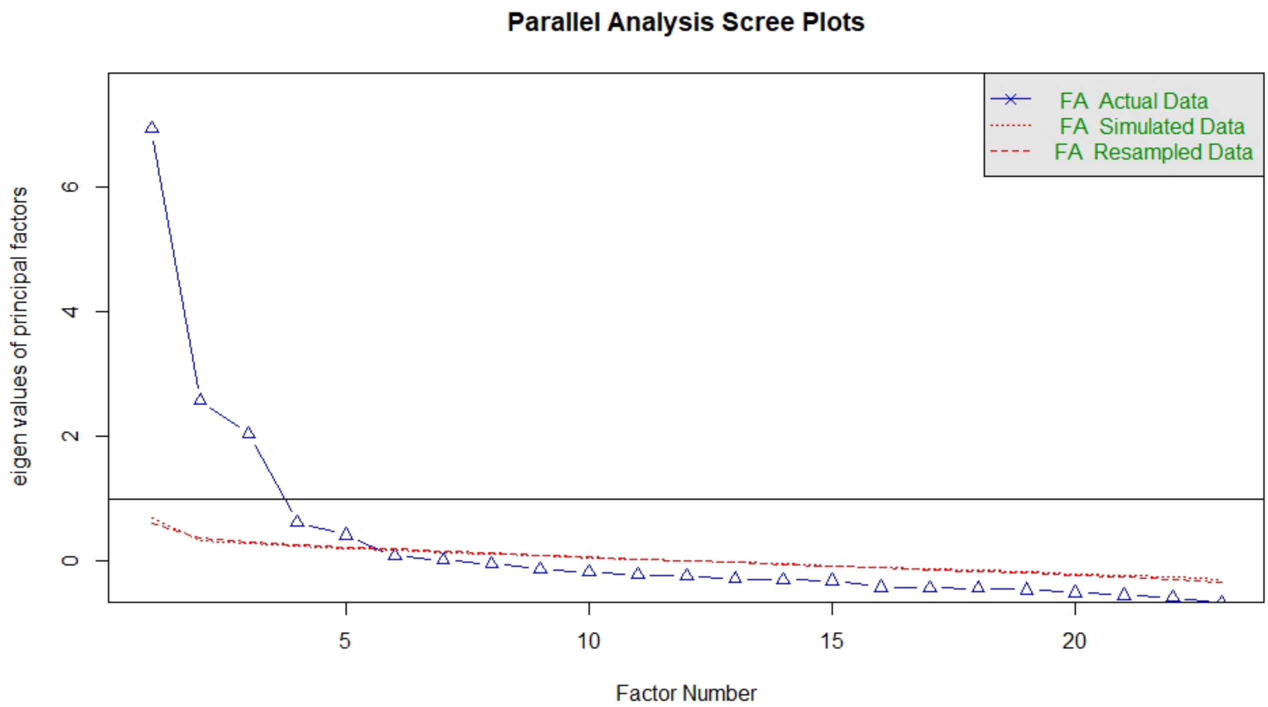

Figure 1. Scree plot and parallel analysis from the exploratory factor analysis of the Intuitive Eating Scale-2 in the first split-half subsample. *Note*. FA = factor analysis

Table 1.
Goodness-of-Fit Statistics of Factor Analyses for the IES-2

Models	Study	Nº	Description	Wχ²	df	CFI	TLI	RMSEA	RMSEA 90% CI LB	RMSEA 90% CI UB	CM	ΔWχ²	df	p	ΔCFI	ΔTLI	ΔRMSEA
EFA	Study 1	1-1	1-factor	6663.773*	230	.683	.651	.211	.207	.216	-	-	-	-	-	-	-
		1-2	2-factor	4564.670*	208	.785	.739	.183	.178	.188	-	-	-	-	-	-	-
		1-3	3-factor	2146.250*	187	.904	.869	.129	.124	.134	-	-	-	-	-	-	-
		1-4	4-factor	1499.932*	167	.934	.901	.113	.108	.118	-	-	-	-	-	-	-
		1-5	5-factor	913.139*	148	.962	.936	.091	.085	.097	-	-	-	-	-	-	-
		1-6	6-factor	576.037*	130	.978	.957	.074	.068	.080	-	-	-	-	-	-	-
		1-7	7-factor	386.915*	113	.987	.970	.062	.055	.069	-	-	-	-	-	-	-
		1-8	8-factor	232.597*	97	.993	.983	.047	.040	.055	-	-	-	-	-	-	-
		1-9	Alternative 6-factor	357.492*	99	.987	.973	.065	.057	.072	-	-	-	-	-	-	-
ESEM: MI across sex	Study 1	2-1	Men	244.937*	99	.985	.968	.069	.058	.080	-	-	-	-	-	-	-
		2-2	Women	231.261*	99	.988	.975	.065	.054	.076	-	-	-	-	-	-	-
		2-3	Configural invariance	476.667*	198	.987	.972	.067	.059	.075	-	-	-	-	-	-	-
		2-4	Weak invariance	473.744*	288	.991	.987	.045	.038	.053	2-3	130.22	90	.003	+.004	+.015	-.022
		2-5	Strong invariance	547.416*	345	.990	.988	.043	.036	.050	2-4	118.22	57	< .001	+.001	+.001	-.002
		2-6	Strict invariance	599.068*	366	.989	.987	.045	.039	.052	2-5	80.14	21	< .001	-.001	-.001	+.002
		2-7	Variance-Covariance invariance	629.593*	387	.988	.987	.045	.038	.051	2-6	62.50	21	< .001	-.001	.000	.000
		2-8	Latent mean invariance	730.705*	393	.984	.983	.052	.046	.058	2-7	49.48	6	< .001	-.004	-.004	+.007
ESEM	Study 2	3-1	6-factor	536.902*	95	.985	.967	.077	.070	.083	-	-	-	-	-	-	-
B-ESEM		3-2	6-factor	249.189*	80	.994	.985	.052	.044	.059	-	-	-	-	-	-	-
		3-3	Alternative 6-factor	583.391*	109	.984	.969	.074	.068	.080	-	-	-	-	-	-	-
Alternative B-ESEM: MI across sex	Study 2	4-1	Men	283.600*	109	.984	.969	.068	.058	.078	-	-	-	-	-	-	-
		4-2	Women	415.224*	109	.983	.968	.079	.071	.087	-	-	-	-	-	-	-
		4-3	Configural invariance	687.472*	218	.984	.969	.074	.068	.080	-	-	-	-	-	-	-
		4-4	Weak invariance	840.000*	287	.981	.973	.070	.064	.075	4-3	189.043	69	< .001	-.003	+.004	-.004
		4-5	Strong invariance	874.319*	343	.982	.978	.063	.057	.068	4-4	76.950	56	.033	+.001	+.005	-.007
		4-6	Strict invariance	933.275*	364	.981	.978	.063	.058	.068	4-5	73.122	21	< .001	-.001	.000	.000
		4-7	CUs invariance	927.264*	368	.981	.978	.062	.057	.067	4-6	5.771	4	.217	.000	.000	-.001
		4-8	Variance-Covariance invariance	931.286*	396	.982	.981	.058	.054	.063	4-7	132.031	28	< .001	+.001	+.003	-.004
		4-9	Latent mean invariance	988.318*	403	.980	.979	.061	.056	.065	4-8	40.059	7	< .001	-.002	-.002	+.003

Notes. IES-2 = Intuitive Eating Scale - second version; EFA = exploratory factor analyses; ESEM = exploratory structural equation modeling; B-ESEM = bifactor ESEM; Wχ² = robust weighed least square (WLSMV) chi-square; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; 90% CI = 90% confidence interval of the RMSEA; LB = lower bound; UB = upper bound; CM = comparison model; MI = measurement invariance; Δ = change from the previous model; ΔWχ² = WLSMV chi square difference test (calculated with the Mplus DIFFTEST function). * $p \leq .01$

Table 2.
Standardised Parameters Estimates from the Alternative Exploratory Factor Analyses of the IES-2 in Study 1

Items	AEE (λ)	TBC (λ)	UPE (λ)	AFRCS (λ)	B-FCC (λ)	HSC (λ)	δ
IES2_2	**.793**	.062	*.022*	.134	-.054	.071	.195
IES2_3	*.036*	.092	**.755**	-.077	*.007*	*-.065*	.417
IES2_5	**.666**	.074	*-.013*	.234	.057	*-.021*	.320
IES2_6	.115	**.716**	.054	*-.012*	.143	.126	.256
IES2_7	-.065	**.697**	.080	*.055*	*-.012*	.082	.412
IES2_8	*-.022*	**.617**	*.031*	*.032*	*-.005*	.347	.248
IES2_9	*.092*	*-.048*	**.416**	-.238	-.124	*-.008*	.749
IES2_10	**.711**	*-.041*	.068	.173	.098	.089	.254
IES2_11	**.860**	.046	*.010*	.081	*-.018*	.096	.116
IES2_12	.158	-.072	.201	**.577**	.136	.122	.392
IES2_13	*.028*	.149	-.063	**.699**	*.020*	*-.001*	.430
IES2_14	.160	.081	-.056	**.772**	*-.015*	*.036*	.218
IES2_15	.314	-.066	.115	**.501**	.218	.181	.262
IES2_16	-.074	*.024*	**.742**	.078	*-.007*	.099	.397
IES2_17	*-.016*	.109	**.424**	.132	-.215	.108	.680
IES2_18	*-.046*	.097	*-.051*	.168	**.617**	*-.051*	.528
IES2_19	*.039*	*.035*	-.050	*-.003*	**.897**	.050	.147
IES2_20	*-.038*	*.039*	*.004*	*-.002*	**.821**	*.048*	.305
IES2_21	.151	.314	.124	*.058*	.148	**.411**	.377
IES2_22	*.011*	.081	*.019*	*.014*	.033	**.874**	.121
IES2_23	*.025*	.194	*.027*	*.024*	*-.004*	**.793**	.132
ω	.912	.818	.709	.833	.848	.873	
AEE	-						
TBC	.111	-					
UPE	.116	.188	-				
AFRCS	.493	.175	.057	-			
B-FCC	.114	.166	-.096	.237	-		
HSC	.251	.545	.216	.245	.158	-	

Notes. λ = factor loadings; δ = Uniqueness; AEE = avoiding emotional eating; TBC = trust in bodily cues; UPE = unconditional permission to eat; AFRCS = avoiding food-related coping strategies; B-FCC = body-food choice congruence; HSC = hunger and satiety cues; ω = McDonald's omega; Non significant loadings and correlations are underlined and italicized.

Table 3.
Standardised Parameters Estimates from the Exploratory Structural Equation Model of the IES-2 in Study 2.

Items	AEE (λ)	TBC (λ)	UPE (λ)	AFRCS (λ)	B-FCC (λ)	HSC (λ)	δ
IES2_2	**.911**	.092	-.040	*-.010*	*-.006*	*-.017*	.161
IES2_5	**.522**	.151	-.072	.394	-.056	*-.032*	.270
IES2_10	**.684**	*.003*	*.033*	.208	*.007*	*.038*	.252
IES2_11	**.884**	.054	*-.011*	*.039*	-.043	.052	.117
IES2_6	.231	**.632**	*.009*	-.089	.102	.102	.370
IES2_7	-.060	**.897**	.055	*.022*	*.025*	-.109	.263
IES2_8	.073	**.534**	.051	*.003*	-.061	.333	.334
IES2_3	-.121	.095	**.734**	.073	*-.024*	-.107	.449
IES2_9	*-.049*	*-.069*	**.482**	-.098	-.186	.120	.664
IES2_16	-.079	*.043*	**.868**	.079	.069	-.103	.288
IES2_17	.112	*-.034*	**.523**	*-.075*	-.070	.177	.618
IES2_12	.402	-.104	.147	**.378**	.164	.083	.344
IES2_13	-.194	.058	-.066	**.919**	*-.031*	*.046*	.323
IES2_14	.116	.056	*.000*	**.837**	*-.029*	*.021*	.116
IES2_15	.350	-.123	.132	**.471**	.203	.130	.226
IES2_18	*-.018*	*.033*	*-.051*	*.070*	**.713**	*.009*	.423
IES2_19	-.089	.067	-.039	*.019*	**.948**	*-.008*	.068
IES2_20	*-.046*	*-.034*	*-.032*	*.000*	**.885**	.051	.219
IES2_21	.112	.224	.088	*-.040*	.150	**.436**	.488
IES2_22	*-.039*	*.019*	-.051	.072	*.023*	**.879**	.199
IES2_23	-.085	.095	.044	.113	-.030	**.863**	.109
ω	.918	.815	.771	.871	.901	.856	
AEE	-						
TBC	.254	-					
UPE	.157	.345	-				
AFRCS	.675	.351	.112	-			
B-FCC	.229	.296	-.210	.358	-		
RHSC	.430	.599	.303	.381	.194	-	

Notes. λ = factor loadings; δ = Uniqueness; AEE = avoiding emotional eating; TBC = trust in bodily cues; UPE = unconditional permission to eat; AFRCS = avoiding food-related coping strategies; B-FCC = body-food choice congruence; HSC = hunger and satiety cues; ω = McDonald's omega; Non significant loadings and correlations are underlined and italicized.

Table 4.
Standardised Parameters Estimates from the Alternative Bifactor Exploratory Structural Equation Model of the IES-2 in Study 2.

Items	AEE (λ) S-factor	TBC (λ) S-factor	UPE (λ)	AFRCS (λ) S-factor	B-FCC (λ) S-factor	HSC (λ) S-factor	G-factor	δ
IES2_2	**.536**	-.047		-.040	*-.036*	-.054	**.739**	.159
IES2_5	**.388**	*.005*		.241	*-.001*	*-.029*	**.726**	.263
IES2_10	**.392**	-.077		.065	-.061	-.038	**.761**	.252
IES2_11	**.515**	-.065		*-.028*	-.091	*-.008*	**.779**	.114
IES2_6	-.106	**.461**		-.164	.075	.118	**.625**	.339
IES2_7	-.114	**.755**		*.032*	.081	.087	**.395**	.246
IES2_8	.089	**.543**		*.015*	*-.030*	.382	**.500**	.300
IES2_3			**.704**					.505
IES2_9			**.502**					.748
IES2_16			**.793**					.370
IES2_17			**.679**					.540
IES2_12	.068	-.119		***.049***	*-.020*	-.119	**.819**	.293
IES2_13	*-.014*	*-.021*		**.528**	.075	*-.013*	**.608**	.345
IES2_14	.154	*-.021*		**.501**	*.019*	-.038	**.792**	.096
IES2_15	.075	-.120		**.130**	*.036*	-.075	**.866**	.206
IES2_18	*.010*	*.028*		.058	**.688**	*-.002*	**.323**	.418
IES2_19	*-.024*	.084		.038	**.909**	*.007*	**.321**	.061
IES2_20	-.092	*-.020*		*-.028*	**.814**	*-.014*	**.343**	.211
IES2_21	-.215	.186		-.203	*.024*	**.309**	**.634**	.380
IES2_22	*-.005*	.137		*-.012*	*.030*	**.655**	**.573**	.222
IES2_23	*.015*	.251		.040	-.046	**.718**	**.581**	.080
ω	.810	.778	.768	.608	.894	.806	.964	

Notes. λ = factor loadings; δ = Uniqueness; AEE = avoiding emotional eating; TBC = trust in bodily cues; UPE = unconditional permission to eat; AFRCS = avoiding food-related coping strategies; B-FCC = body-food choice congruence; HSC = hunger and satiety cues; S-factor = specific factor; G-factor = global factor; ω = McDonald's omega; Non significant loadings and correlations are underlined and italicized.

Table 5.
Construct Validity Analyses of the IES-2

	AEE S-factor	TBC S-factor	UPE	AFRCS S-factor	B-FCC S-factor	HSC S-factor	G-Factor
Appearance evaluation	.121***	.156***	.181***	.017	.202***	.054	.492***
Body appreciation	.118***	.227***	.234***	.072*	.218***	.050	.524***
Body mass index	-.151***	-.085*	-.044	.088	-.092**	.000	-.285***
Eating restriction	-.201***	-.228***	-.501***	.075	.160***	-.103**	-.220***
Eating concern	-.320***	-.197***	-.295***	-.042	.036	-.073**	-.519***
Fruit intake	-.047	-.015	-.250***	.051	.435***	-.064	.010
Self-esteem	.090*	.126***	.199***	.084*	.129***	.002	.349***
Social desirability	-.195***	-.012	-.057	-.017	-.009	.008	-.193***
Vegetable intake	.069	-.010	-.229***	-.034	.370***	.040	-.056

Notes. IES-2 = Intuitive Eating Scale - second version; AEE = avoiding emotional eating; TBC = trust in bodily cues; UPE = unconditional permission to eat; AFRCS = avoiding food-related coping strategies; B-FCC = body-food choice congruence; HSC = hunger and satiety cues. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

Appendix 1

Intuitive Eating Scale-2 Items in English and Greek.

Item	
1	I try to avoid certain foods high in fat, carbohydrates, or calories / Προσπαθώ να αποφεύγω ορισμένα τρόφιμα με υψηλή περιεκτικότητα σε λιπαρά, υδατάνθρακες ή θερμίδες.
2	I find myself eating when I'm feeling emotional (e.g., anxious, depressed, sad), even when I'm not physically hungry / Πιάνω τον εαυτό μου να τρώει όταν είμαι συναισθηματικά φορτισμένος/η (π.χ. αγχωμένος/η, θλιμμένος/η, λυπημένος/η), ακόμα κι όταν δεν πεινάω.
3	If I am craving a certain food, I allow myself to have it / Εάν λαχταρώ ένα συγκεκριμένο φαγητό, επιτρέπω στον εαυτό μου να το φάει.
4	I get mad at myself for eating something unhealthy / Εκνευρίζομαι με τον εαυτό μου όταν τρώω κάτι ανθυγιεινό.
5	I find myself eating when I am lonely, even when I'm not physically hungry / Πιάνω τον εαυτό μου να τρώει όταν νιώθω μόνος/η ακόμη κι όταν δεν πεινάω.
6	I trust my body to tell me when to eat / Εμπιστεύομαι το σώμα μου να μου πει πότε να φάω.
7	I trust my body to tell me what to eat / Εμπιστεύομαι το σώμα μου να μου πει τι να φάω.
8	I trust my body to tell me how much to eat / Εμπιστεύομαι το σώμα μου να μου πει πόσο να φάω.
9	I have forbidden foods that I don't allow myself to eat / Υπάρχουν φαγητά που έχω απαγορεύσει στον εαυτό μου να τρώει.
10	I use food to help me soothe my negative emotions / Χρησιμοποιώ το φαγητό

για να καταπραΰνω τα αρνητικά μου συναισθήματα.

11 I find myself eating when I am stressed out, even when I'm not physically hungry / Πιάνω τον εαυτό μου να τρώει όταν είμαι αγχωμένος/η ακόμη κι όταν δεν πεινάω.

12 I am able to cope with my negative emotions (e.g., anxiety, sadness) without turning to food for comfort / Είμαι σε θέση να αντιμετωπίσω τα αρνητικά μου συναισθήματα (π.χ. άγχος, θλίψη) χωρίς να στρέφομαι στο φαγητό για να κατευνάσω τα συναισθήματα αυτά.

13 When I am bored, I do NOT eat just for something to do / Όταν βαριέμαι, ΔΕΝ τρώω απλά για να έχω κάτι να κάνω.

14 When I am lonely, I do NOT turn to food for comfort / Όταν νιώθω μοναξιά, ΔΕΝ στρέφομαι στο φαγητό για να νιώσω καλύτερα.

15 I find other ways to cope with stress and anxiety than by eating / Βρίσκω άλλους τρόπους να αντιμετωπίσω το στρες και το άγχος παρά με το φαγητό.

16 I allow myself to eat what food I desire at the moment / Επιτρέπω στον εαυτό μου να φάει το φαγητό που επιθυμεί τη δεδομένη στιγμή.

17 I do NOT follow eating rules or dieting plans that dictate what, when, and/or how much to eat / ΔΕΝ ακολουθώ κανόνες διατροφής ή δίαιτες που υπαγορεύουν τι, πότε ή/και πόσο να τρώω.

18 Most of the time, I desire to eat nutritious foods / Τις περισσότερες φορές επιθυμώ να τρέφομαι με θρεπτικά φαγητά.

19 I mostly eat foods that make my body perform efficiently (well) / Τρώω κυρίως τρόφιμα που κάνουν το σώμα μου να αποδίδει αποτελεσματικά (καλά).

20 I mostly eat foods that give my body energy and stamina / Τρώω κυρίως τρόφιμα που δίνουν στο σώμα μου ενέργεια και αντοχή.

21	I rely on my hunger signals to tell me when to eat / Βασίζομαι στα σημάδια της πείνας που μου στέλνει το σώμα μου για να μου πει πότε να φάω.
22	I rely on my fullness (satiety) signals to tell me when to stop eating / Βασίζομαι στα σήματα πληρότητας (κορεσμού) που μου στέλνει το σώμα μου, για να μου πει πότε να σταματήσω να τρώω.
23	I trust my body to tell me when to stop eating / Εμπιστεύομαι το σώμα μου να μου πει πότε να σταματήσω να τρώω.

Supplementary Materials

Table S1. *Standardised Parameters Estimates from the 6-factor Exploratory Factor Analyses of the IES-2 in Study 1.*

Table S2. *Standardised Parameters Estimates from the Bifactor Exploratory Structural Equation Model of the IES-2 in Study 2.*

Table S1.
Standardised Parameters Estimates from the 6-factor Exploratory Factor Analyses of the IES-2 in Study 1.

Items	AEE (λ)	TBC (λ)	UPE (λ)	AFRCS (λ)	B-FCC (λ)	HSC (λ)	δ
IES2_1	.152	.208	**.396**	-.229	-.410	-.083	.470
IES2_2	**.768**	*.022*	*-.003*	.180	-.060	.137	.197
IES2_3	-.072	*.021*	**.727**	*.035*	*.016*	*.045*	.468
IES2_4	.429	.270	**.477**	-.165	*.026*	-.170	.460
IES2_5	**.672**	.105	*-.012*	.253	.075	*-.042*	.305
IES2_6	*.033*	**.674**	*.014*	.059	.154	.194	.281
IES2_7	-.133	**.655**	*.039*	.103	*.002*	.151	.429
IES2_8	*-.028*	**.640**	*.016*	*.024*	*.016*	.348	.241
IES2_9	.165	*.076*	**.511**	-.305	-.079	-.145	.578
IES2_10	**.694**	-.068	.051	.214	.100	.139	.255
IES2_11	**.831**	*.007*	*-.015*	.131	*-.015*	.158	.122
IES2_12	.181	*-.055*	.204	**.581**	.133	.119	.392
IES2_13	.075	.207	-.062	**.675**	*.020*	-.057	.436
IES2_14	.212	.152	*-.048*	**.746**	*-.012*	*-.029*	.233
IES2_15	.325	-.069	.113	**.516**	.208	.203	.256
IES2_16	-.163	*-.054*	**.717**	.167	*-.009*	.214	.419
IES2_17	*-.050*	.097	**.417**	.169	-.225	.149	.668
IES2_18	*-.059*	*.059*	*-.060*	.178	**.623**	*-.011*	.511
IES2_19	.056	*.050*	*-.027*	*-.021*	**.893**	.040	.165
IES2_20	*-.005*	.078	*.033*	*-.038*	**.837**	*.011*	.296
IES2_21	.123	.319	.100	.090	.146	**.434**	.383
IES2_22	.070	.156	*.028*	-.039	*.031*	**.818**	.152
IES2_23	.066	.222	*.024*	*-.025*	*-.004*	**.799**	.115
ω	.909	.803	.750	.828	.851	.866	
AEE	-						
TBC	.146	-					
UPE	.150	.221	-				
AFRCS	.407	.134	*-.007*	-			
BFC	.084	.117	-.150	.249	-		
HSC	.193	.486	.144	.269	.167	-	

Notes. λ = factor loadings; δ = Uniqueness; AEE = avoiding emotional eating; TBC = trust in bodily cues; UPE = unconditional permission to eat; AFRCS = avoiding food-related coping strategies; B=FCC = body-food choice congruence; HSC = hunger and satiety cues; ω = McDonald’s omega; Non significant loadings and correlations are underlined and italicized.

Table S2.
Standardised Parameters Estimates from the Bifactor Exploratory Structural Equation Model of the IES-2 in Study 2.

Items	AEE (λ) S-factor	TBC (λ) S-factor	UPE (λ) S-factor	AFRCS (λ) S-factor	B-FCC (λ) S-factor	HSC (λ) S-factor	G-factor	δ
IES2_2	**.535**	-.042	-.049	-.038	-.046	-.057	**.738**	.158
IES2_5	**.389**	*.014*	-.048	.245	*-.007*	*-.035*	**.723**	.262
IES2_10	**.403**	-.093	*-.002*	.075	-.043	-.040	**.754**	.251
IES2_11	**.516**	-.064	*-.021*	*-.020*	-.091	*-.015*	**.777**	.116
IES2_6	-.146	**.510**	*.018*	-.183	*.041*	.060	**.657**	.248
IES2_7	-.096	**.679**	.177	*.046*	.119	.102	**.395**	.316
IES2_8	.101	**.524**	.173	*.027*	*.005*	.374	**.504**	.291
IES2_3	-.071	.146	**.698**	*.029*	-.130	*-.008*	**.119**	.455
IES2_9	*.001*	*.022*	**.485**	-.101	-.271	.120	***-.021***	.665
IES2_16	*-.029*	.110	**.823**	*.036*	-.065	*-.002*	**.196**	.265
IES2_17	*.033*	*.035*	**.503**	-.101	-.189	.151	**.240**	.619
IES2_12	.086	-.144	*.002*	**.072**	*.005*	-.121	**.809**	.297
IES2_13	*-.016*	*.001*	-.075	**.544**	.053	*-.014*	**.603**	.331
IES2_14	.168	*-.033*	*-.014*	**.504**	*.029*	*-.034*	**.781**	.105
IES2_15	.091	-.148	*-.014*	**.149**	.060	-.073	**.857**	.204
IES2_18	*.012*	*.041*	-.143	.058	**.673**	*.007*	**.316**	.421
IES2_19	*-.028*	.095	-.153	.041	**.901**	*.009*	**.314**	.054
IES2_20	-.093	*-.011*	-.170	*-.029*	**.797**	*-.006*	**.336**	.213
IES2_21	-.211	.168	.070	-.187	*.037*	**.289**	**.640**	.393
IES2_22	*-.022*	.142	*.018*	*-.021*	*.013*	**.646**	**.590**	.213
IES2_23	*.010*	.222	.136	.033	*-.016*	**.700**	**.595**	.087
ω	.812	.774	.759	.632	.891	.794	.953	

Notes. λ = factor loadings; δ = Uniqueness; AEE = avoiding emotional eating; TBC = trust in bodily cues; UPE = unconditional permission to eat; AFRCS = avoiding food-related coping strategies; BFC = body-food choice congruence; HSC = hunger and satiety cues; S-factor = specific factor; G-factor = global factor; ω = McDonald's omega; Non significant loadings and correlations are underlined and italicized.