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Testing a Turkish Adaption of the Brief Psychological Adjustment Scale and Assessing the Relation to Mental Health

Kısa Psikolojik Uyum Ölçeğinin Türkçe Uyarlamasının Test Edilmesi ve Ruh Sağlığı ile İlişkisinin Değerlendirilmesi

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ABSTRACT

Psychological adjustment is essential for achieving better mental health. There is a scarcity of available measures in assessing the general psychological adjustment. The Brief Psychological Adjustment Scale-6 (BASE-6) is used to assess one's general psychological distress and adjustment. The purpose of this cross-sectional study was to adapt the BASE-6 into Turkish language, to investigate the factor structure and measurement invariance of the scale and to investigate its relationship with mental health. The sample included 154 undergraduate students (66 females and 88 males) aged between 18 and 44 years, with a mean of 21.48 years (SD = 4.03). All participants were asked to complete the BASE-6, Satisfaction with Life Scale and Depression, Anxiety and Stress Scale-21. The results showed that confirmatory factor analysis (CFA) demonstrated that the original one-factor structure was confirmed in this sample. The results of a multi-group CFA demonstrated measurement invariance across gender groups. Using Cronbach's alpha (α) and McDonald's omega (ω), internal consistency reliability was found to be good for the general factor. Concerning convergent validity, the Pearson product-moment correlation indicated that the BASE-6 had a significant negative relationship with the satisfaction of life and a positive and significant relationship with depression, anxiety and stress. According to multiple regression analysis, the results demonstrated that the BASE-6 was able to predict a significant amount of variance in satisfaction with life, depression, anxiety and stress. The present findings suggest that researchers and practitioners in Turkey can utilise the BASE-6 to reliably and validly measure psychological adjustment based on an overall score.

Keywords: Brief Psychological Adjustment Scale, gender invariance, validation, Turkish adaptation, mental health

ÖZ

Psikolojik uyum pozitif ruh sağlığı için gereklidir. Literatürde genel psikolojik uyumu ölçen sınırlı sayıda ölçüm aracı mevcuttur. Kısa Psikolojik Uyum Ölçeği-6 (BASE-6) kişinin genel psikolojik sıkıntısını ve uyumunu değerlendirmek için kullanılan bir ölçektir. Bu kesitsel çalışmanın amacı BASE-6'yı Türkçeye uyarlamak, ölçeğin faktör yapısını ve ölçme değişmezliğini incelemek ve ruh sağlığı ile ilişkisini araştırmaktır. Bu araştırmanın örneklemi 154 lisans öğrencisinden (66 kadın ve 88 erkek) oluşmaktadır. Çalışma grubunu oluşturan kişilerin yaş aralığı 18 ile 44 yaş arasında değişmekte olup yaş ortalaması 21.48'dir (*SS* = 4.03). Çalışmaya dahil olan katılımcılardan BASE-6, Yaşam Doyumu Ölçeği ve Depresyon, Anksiyete ve Stres Ölçeği-21'i doldurmaları istenmiştir. Doğrulayıcı faktör analiz (DFA) sonuçları, ölçeğin tek faktörlü yapısının bu örneklemde doğrulandığını göstermiştir. Çok gruplu DFA analizi sonuçları cinsiyet grupları arasında ölçüm değişmezliği olduğunu göstermiştir. Cronbach alpha ve McDonald's omega testleri kullanılarak ölçeğin genel faktör yapısı için yeterli düzeyde iç tutarlılık güvenirliği olduğu saptanmıştır. Yakınsak geçerlik kapsamında Pearson moment çarpımı korelasyonu, BASE-6'nın yaşam doyumu ile negatif ve anlamlı; depresyon, kaygı ve stres ile pozitif ve anlamlı bir ilişkisi olduğunu göstermiştir. Çoklu regresyon analizi sonuçlarına göre BASE-6'nın yaşam doyumu, depresyon, anksiyete ve stres değişkenlerindeki varyansı anlamlı olarak yordadığı görülmüştür. Mevcut bulgular Türkiye'deki araştırmacıların ve pratisyenlerin, insanların genel psikolojik uyumunu güvenilir ve geçerli bir şekilde ölçmek için BASE-6'yı kullanabileceğini göstermektedir.

Anahtar Kelimeler: Kısa Psikolojik Uyum Ölçeği, cinsiyete göre ölçme değişmezliği, geçerlilik, Türkçe uyarlama, ruh sağlığı

Over the past few decades, there are emerging gaps in assessing psychological distress and adjustment which place increased pressure on the measurement of psychological adjustment (Cruz, Peterson, Fagan, Black, & Cooper, 2019). Psychological adjustment is essential for achieving a better mental health. Although many well-validated measures of psychological adjustment are readily available in the extant literature, there are limited measures available that can be used to assess general psychological adjustment with a brief and low-cost instrument. Given the importance of studying and assessing psychological adjustment which requires a reliable and valid measurement tool, the present study aimed to adapt a Turkish version of the Brief Adjustment Scale–6 (BASE-6) which can serve to compare results of cross-cultural research.

Psychological adjustment is characterized as one's personal sense of distress and the degree to which they function in daily life (Cruz et al., 2019; Peterson, 2015). Individuals with higher psychological adjustment are thought to have a greater capacity to function positively. A substantial body of research provides scientific evidence for the link between poor psychological adjustment and increased psychopathology and higher prevalence rates of psychosocial problems among young adults (Bender, van Osch, Sleegers, & Ye, 2019; Freitas et al., 2013). For example, psychological adjustment is associated with burnout (Samios, 2018), mental health disorders (Bantjes & Kagee, 2018), and quality of life and life satisfaction (Chambers et al., 2017).

Several instruments have been developed to measure psychological adjustment. The first instrument is an Outcome Questionnaire– 45.2 (OQ-45.2; Lambert, 2015) that is a widely established self-report questionnaire containing 45 items. The OQ-45.2 has been developed to assess psychological adjustment both at general level and domain-specific level. The OQ-45.2 assesses three fundamental aspects of clients' functioning: symptomatic functioning (i.e. anxiety and depression), social role (i.e. work adjustment and quality of life) and interpersonal well-being (i.e. friendship and family relations) (Lambert, Harmon, Slade, Whipple, & Hawkins, 2005). Although the questionnaire has indicated good psychometric properties (Lambert et al., 2004), it has been criticized in terms of its lengths and complex scoring which may have detrimental effects on assessment completion (Cruz et al., 2019). A second instrument is the Outcome Rating Scale (ORS; Miller, Duncan, Brown, Sparks, & Claud, 2003) that contains four items measuring different areas of functioning: symptom distress, interpersonal well-being, social role, and overall well-being or functioning. The ORS was particularly introduced to address the

issues with the complexity and length of scoring the OQ-45.2. These areas of functioning are measured on a visual analogue format scored with a ruler. The ORS has demonstrated good psychometric properties both in clinical and nonclinical samples. A third instrument is the BASE-6 (Cruz et al., 2019) that measures general psychological adjustment. With the items included in the scale, the BASE-6 can help researchers to carry out a large-scale survey with a battery of questionnaires. In comparison with OQ-45.2 and ORS, the BASE-6 has been newly presented for use in psychotherapy. As far as known, the scale has not been previously validated in any countries, perhaps due to being newly introduced. Therefore, this is the first validation study for the BASE-6.

The BASE-6 contains six items such as "To what extent have you felt tense, anxious, and/or afraid this week?" and "How much has emotional distress interfered with feeling good about yourself this week?". In a study by Cruz et al. (2019), confirmatory factor analyses demonstrated that a one-factor solution of the BASE-6 existed across three different samples (i.e. a community sample, college student sample, and clinical sample). Other than the original study, a one-factor structure of the scale has not yet been replicated in any other studies. Furthermore, Cruz et al. (2019) found that the BASE-6 was positively correlated with symptom distress, interpersonal, and social role subscales and the OQ-45.2 total score with a moderate to high correlation ranging between .54 and .81. The scale was also positively related with the Patient Health Questionnaire-9 and the Generalized Anxiety Disorder–7 with a high correlation. Moreover, using two different community-based samples, a high positive correlation between the BASE-6 and the OQ-45.2 was confirmed in the study of Peterson (2015). In terms of the reliability, the BASE-6 yielded excellent internal consistency reliability with the Cronbach's value varying between .87 and .93. In the test-retest method, the BASE-6 showed an intraclass coefficient value of 0.77 over one-week period. These results show that the BASE-6 is a reliable and valid instrument for assessing psychological adjustment.

Given that the BASE-6 was basically validated in Western cultural settings, the results of such studies are needed to be verified in Eastern cultural settings. Individuals in different cultures may respond to the BASE-6 differently. Therefore, it is important to examine the psychometric properties of the BASE-6 in a sample drawn from a non-Western culture. This will allow the researcher to compare results and advance the cultural applicability of the scale.

The aim of this study was to evaluate the psychometric features of the BASE-6 in a Turkish population. To test whether a one-factor structure existed in the original study holds true in Turkish culture, the factor structure of the BASE-6 was first evaluated with confirmatory factor analysis (CFA). It was hypothesised that the one-factor structure model fitted the data well. Earlier research has not tested the measurement invariance across gender. Therefore, secondly, it examined the measurement invariance to test whether the measurement structure underlying the BASE-6 is the same across gender. The BASE-6 was expected to be invariant across gender. Third, the reliability of the BASE-6 was assessed using both Cronbach's alpha (α) and McDonald's omega (ω). It was expected that the reliability of the BASE-6 would be high. Fourth, given the relevance of psychological adjustment to mental health, convergent validity was explored using well-validated measures of mental health (i.e. satisfaction with life, depression, anxiety and stress). The BASE-6 was hypothesised to be negatively related with satisfaction with life whereas to be positively correlated with depression, anxiety and stress. Furthermore, the impact of BASE-6 in predicting mental health indicators has not been examined thus far. The current study expected that the BASE-6 would significantly predict mental health indicators. All in all, this study will not only offer evidence to support psychometric properties of the BASE-6, but also enhance understanding of how this measure may perform as a measure of psychological adjustment among the Turkish population.

METHOD

Participants

The sample comprised of 154 university students. All participants were Turkish speaking and studied at the Ağrı İbrahim Çeçen University located east of Turkey. Of the 154 respondents, 42.9% were females (N = 66) and 57.1% were males (N = 88), whose ages range between 18 and 44 years (M = 21.48, SD = 4.03). Most participants (64.9%) reported their perceived socioeconomic status as medium, 24.7% as high, 3.2% as low, 2.6% as very low and 2.6% as very high. Only a very small portion of the respondents (1.9%) did not provide information as to their socioeconomic status. In terms of education level, 59.1% respondents were freshmen, 24.7% were junior, and 14.9% and 1.9% were respectively sophomore and senior. There is no consensus among researchers in the literature in terms of the sample size in confirmatory factor analysis. According to some authors (e.g., Ferguson & Cox, 1993), a minimum sample size of N

= 100 is adequate for performing factor analysis. Others (e.g., Iacobucci, 2010) recommend recruiting at least five or ten participants per item. Considering that six items require at least 30 or 60 participants, in this study the number of participants was 154, which was about two and a half or five times the number of items. Thus, it can be said that the sample size was sufficient to conduct factor analysis.

Measures

Brief Psychological Adjustment-6 (BASE-6). The BASE-6 was developed by Cruz et al. (2019) and it is a self-report instrument of general psychological adjustment comprising of six items. Each item assesses how a participant has been feeling in the past week. Items are rated on a 7-point scale (ranging from *1 = Not at all* to *5 = Extremely*). A sample item is "To what extent have you felt irritable, angry, and/or resentful this week?". Using three different adult samples, the original study demonstrated good internal consistency (α = .87-.93) and test-retest reliability (intraclass correlation was .77) over one-week period. Cronbach's alpha coefficient was .88 in this study.

Satisfaction with Life Scale (SWLS). SWLS was developed by Diener, Emmons, Larsen, and Griffin (1985) and it is a 5-item self-report measure that assesses global evaluation of one's life satisfaction. Responses are based on a 7-point Likert scale (ranging from *1 = Strongly disagree* to *7 = Strongly agree*). A sample items is "In most ways my life is close to my ideal.". It used the Turkish version of the SWLS which was translated and promoted by Durak, Senol-Durak, and Gencoz (2010) who provided good evidence of reliability and validity. Within the present study, the measure presented an acceptable internal consistency reliability (α = .70).

Depression, Anxiety and Stress Scale-21 (DASS-21). DASS-21 was developed by Lovibond and Lovibond (1995) and it measures symptoms of psychological discomfort in clinical and nonclinical samples. The scale contains 21 items grouped into three subscales: anxiety (e.g., "I was aware of dryness of my mouth"), depression (e.g., "I couldn't seem to experience any positive feeling at all"), and stress (e.g., "I found it hard to wind down"). Each subscale has seven items rated on a 4-point scale (ranging from *0 = Did not apply to me at all* to *3 = Applied to me very much or most of the time*). In Turkish culture, the DASS-21 demonstrated satisfactory internal consistency ranging from .76 to .82 (Yıldırım & Belen, 2019; Yılmaz, Boz, & Arslan, 2017). In this study, the Cronbach's alpha reliability coefficient value was .90 for depression, .84 for anxiety, and .83 for stress.

Procedure

The translation of the BASE-6 included several steps. First, the six items were translated into Turkish by three bilingual academics. Then the Turkish version was translated back into English by another independent bilingual academic. Following these two steps, the consistency between the two versions were discussed by the academics in terms of the content, grammar, accuracy and consistency of the Turkish form of the scale. A final version of the translated scale was obtained after amending the required corrections.

Administration of the questionnaires were done during regular class hours using a pen-paper version. Participants were asked to respond to each question and the full survey took approximately 10 minutes to complete. They all were instructed about the aims of the study. Participants were assured about the anonymity and confidentiality of the responses. They were given with a battery of self-reports containing the BASE-6 and mental health measures as well as questions pertaining demographic information. They were not given any incentives for their involvement in this study. All participants answered questions on a voluntary basis. The protocol of the study was reviewed and approved by the institutional review board of Ağrı İbrahim Çeçen University (decision date and number 2020-1481).

Data Analysis

The one factor structure proposed by the original study was tested using Confirmatory Factor Analysis (CFA). As Chi square test ($\chi 2$) is very sensitive to sample size, the following fit indices were used to assess the model's goodness of fit: comparative fit index (CFI), non-normal fit index (NNFI), root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR). Following recommendations of Hu and Bentler (1999), the fit was assumed satisfactory when NNFI and CFI ≥ 0.90, RMSEA ≤ 0.10, SRMR ≤ 0.05. Alongside degrees of freedom, the relative chi-square was also reported (CMIN/DF), which is assumed to be acceptable when its value is less than 5. A multi-group confirmatory factor analysis (MGCFA) was performed to assess measurement invariance (i.e., metric, configural, and scalar invariance) across gender. Measurement invariance is a statistical technique that addresses the fundamental question of whether measurement of latent constructs is equivalent across multiple groups (Xu & Tracey, 2017). Configural invariance represents the assumption that factor structure of a scale is invariant across groups. Metric invariance represents the as-

sumption that factor loadings of a scale are invariant across groups. Scalar invariance represents the assumption that item intercepts of a scale are invariant across groups. Apart from the traditional measure of internal consistency test, Cronbach's α, it was also reported McDonald's ω, which has been found to produce a more accurate estimation of a scale's reliability over coefficients alpha, beta, omega, and glb (Revelle & Zinbarg, 2009), to test whether the Turkish translation of BASE-6 had good reliability. Additionally, Pearson's product moment correlations were performed to examine the relationships between psychological adjustment and mental health indicators. Finally, several linear regression analyses were carried out to examine whether psychological adjustment could predict mental health indicators. All CFAs were performed using AMOS 24 software while other analyses were conducted using SPSS 24 software. McDonald's ω was calculated using JASP software (JASP Team, 2017).

RESULTS

Confirmatory Factor Analysis

First, a CFA analysis was performed to examine whether the original six items on the BASE-6 could be replicated in Turkey. The results of the CFA showed that the proposed model presented a good fit to the data with all the fit indices of the model meeting their associated criteria ($X^2 = 22.13$, df = 9, $p < .01$; CIMIN/DF = 2.46, CFI = .97, NNFI = .95, RMSEA = .10, SRMR = .04). Figure 1 presents the standardised factor loadings that ranged from .65 to .82.

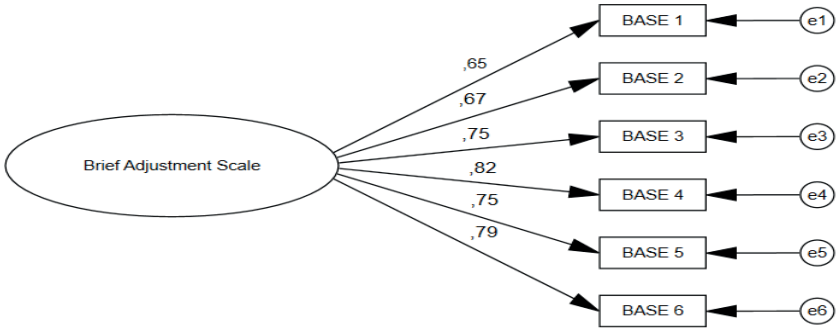

Figure 1. Standardised factor loadings for the Brief Psychological Adjustment Scale

Measurement Invariance Across Gender

The next step of the analysis was to examine whether the one-factor model was invariant across gender groups using MGCFA. As presented above, it was reported the same goodness of fit indices to evaluate the model fit for the structure of BASE-6. To test whether the assumption of invariance was held, the invariance models were examined by comparing ΔCFI criterion which should be equal to or less than .01 (Chen, 2007). The results of MGCFA are presented in Table 1.

Table 1. Results for Multi-group CFA for the One-factor Model across Gender

Model	X^2	*df*	CMIN/DF	CFI	NNFI	RMSEA	SRMR	Comparison	ΔCFI
Original model	22.13	9	2.46	0.97	0.95	0.098	0.042		
Invariance models									
Model 1	34.72	18	1.93	0.96	0.94	0.078	0.059		
Model 2	36.45	23	1.59	0.97	0.96	0.062	0.059	2 versus 1	0.007
Model 3	38.40	29	1.32	0.98	0.98	0.046	0.059	3 versus 2	0.010

Note. Model 1 = Configural model; Model 2 = Metric model; Model 3 = Scalar model

In terms of configural invariance, the results indicated that the configural model adequately fitted the data, RMSEA = .08, CFI = 0.96, with all factor loadings being significant ($p < .001$). This suggests that the one-factor structure model fit the data well in female and male groups. Concerning metric invariance where item loadings were constrained to be equal across gender groups, the results demonstrated that the model adequately fitted the data, RMSEA = .06, CFI = 0.97, and all factor loadings were significant ($p < .001$). There were no significant changes between the metric model and the configural model (ΔCFI = .007). These results demonstrated that the factor loadings were invariant across the gender groups. As for scalar invariance where the factor loadings and intercepts were constrained to be equal across the gender groups, the results showed that the model fitted the data very well, RMSEA = .05, CFI = 0.98, with all factor loadings being significant ($p < .001$). There were no significant changes between the scalar model and the metric model (ΔCFI = .010). These findings demonstrate that the intercepts were invariant across the gender groups.

Reliability

The scale reliability was estimated using the Cronbach's α and McDonald's ω. Both Cronbach's α and McDonald's ω were 0.88. Corrected item-total correlation coefficients ranged between .62 (item 1) and .75 (item 4). Inter-item correlations between the items varied between .43 and .65. Except item 5, participants reported higher mean scores on

each item. Correlation matrix and descriptive statistics for the six items are reported in Table 2.

Table 2. Correlation Matrix and Descriptive Statistics for the Six Items

Item	*Mean*	*SD*	Skew	Kurt	CITC	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
1.Bu hafta kendinizi ne derecede asabi, sinirli ve/ veya kırılmış hissettiniz?	4.53	1.83	-0.31	-0.57	0.62	—	.59*	.46*	.49*	.48*	.51*
2.Bu hafta kendinizi ne derecede gergin, endişeli ve/ veya korkmuş hissettiniz?	4.29	2.01	-0.21	-1.02	0.63		—	.46*	.56*	.43*	.52*
3. Bu hafta kendinizi ne derecede mutsuz, güveni kırılmış ve/veya depresyona girmiş hissettiniz?	4.08	2.18	-0.05	-1.29	0.69			—	.63*	.57*	.62*
4. Duygusal sıkıntılarınızın bu hafta kendinizi iyi hissetmenizde ne kadar olumsuz etkisi oldu?	4.18	2.18	-0.12	-1.31	0.75				—	.65*	.63*
5.Duygusal sıkıntılarınızın bu hafta ilişkileriniz üzerinde ne kadar olumsuz etkisi oldu?	3.73	2.18	0.12	-1.40	0.69					—	.61*
6.Duygusal sıkıntılarınızın bu hafta iş, okul ve benzeri alanlardaki performansınıza ne kadar olumsuz etkisi oldu?	4.29	2.11	-0.21	-1.19	0.73						—

Note. *$p < 0.01$; CITC = Corrected item-total correlation

Convergent Validity

Correlation and regression analyses were conducted to provide evidence of convergent validity for the Turkish version of BASE-6. To do this, the correlations between psychological adjustment, measures of life satisfaction, depression, anxiety and stress were examined. The results are presented in Table 3 and Table 4. Correlation results showed that higher scores on psychological adjustment scale were related with lower scores on satisfaction with life scale and higher scores on depression, anxiety and stress scales (See Table 3).

Table 3. Descriptive Statistics and Correlation between BASE-6 and Mental Health Variables

Variable	*Mean*	*SD*	*Skew.*	*Kurt.*	1.	2.	3.	4.	5.
1. Psychological adjustment	25.10	9.88	-0.16	-0.86	(.88)	-.35*	.55*	.54*	.64*
2. Life satisfaction	18.01	6.49	-0.16	-0.74		(.70)	-.44*	-.15	-.29*
3. Depression	7.49	5.94	0.56	-0.81			(.90)	.67*	.68*
4. Anxiety	7.14	5.18	0.62	-0.52				(.84)	.69*
5. Stress	8.71	5.36	0.20	-0.78					(.83)

Note. * $p < 0.01$; values presented within the parenthesis refer to Cronbach alpha.

To examine predictive validity of the scale, a series of linear regression analyses were conducted in which psychological adjustment was considered as an independent variable and mental health indicators were considered as dependent variables (See Table 4). The results revealed that psychological adjustment explained 12% of the variance in life satisfaction [$\beta = -.35$, $p < 0.001$; $F(1,153) = 21.32$, $R = .35$, $R^2 = .12$, $p < 0.01$], 30% of the variance in depression [$\beta = .55$, $p < 0.001$; $F(1,153) = 65.21$, $R = .55$, $R^2 = .30$, $p < 0.01$], 29% of the variance in anxiety [$\beta = .54$, $p < 0.001$; $F(1,153) = 61.63$, $R = 54$, $R^2 = .29$, $p < 0.01$], and 41% of the variance in stress [$\beta = .03$, $p < 0.001$; $F(1,153) = 105.02$, $R = .64$, $R^2 = .41$, $p < 0.01$].

Table 4. Psychological Adjustment as a Predictor of Mental Health Variables

Predictor	Outcome	*B*	*β*	*t*	*p*
Psychological adjustment	Life satisfaction	-0.23	-0.35	-4.62	0.00
	Depression	0.33	0.55	8.08	0.00
	Anxiety	0.28	0.54	7.85	0.00
	Stress	0.35	0.03	10.25	0.00

DISCUSSION

In order to measure individuals' general psychological distress and adjustment and assist planning suitable interventions, there is a need to have an inclusive, easy to administer, cost effective, both psychometrically sound and clinically fruitful instrument. The purpose of this study was to examine the psychometric features of the Turkish version of the BASE-6, to test measurement invariance across gender and to investigate its relation to mental health variables. This study is the first psychometric evaluation of the Turkish version of the BASE-6. The evidence reported in the current study adds import-

ant information about the construct validity, measurement invariance, reliability and convergent validity of the Turkish version of the BASE-6. The results broadly showed that the original one-factor structure was replicated in Turkish culture.

The construct validity of the Turkish adaptation of the BASE-6 was analysed using CFA. The proposed model where the six items on the scale were assumed to reflect a one-factor, presented a good fit to the data, yielding a one-factor structure with all parameter estimates being significant. This is in line with the results reported in the previous study (Cruz et al., 2019) in which one-factor solution has been supported using both clinical and non-clinical samples. The emergent consistent factor structure between original and Turkish version of the BASE-6 may imply cultural applicability of the scale in terms of the same meaning of the construct.

It also examined factor invariance across gender groups which has not been examined in the original study, and this is one of the important contributions of the present study. This study found that the configural, metric and scalar invariance of the Turkish BASE-6 held across gender groups. These results suggest that the Turkish BASE-6 assesses the same construct for different gender groups. This is important in terms of allowing to compare the true differences in the scores of psychological adjustments between males and females without considering whether different sex groups measure the same structure. This would also support generalisability of the findings across the male and female groups.

Using two different reliability tests, Cronbach's α and McDonald's ω, the scale reliability was found to be .88 showing that the internal consistency of the one-factor model was satisfactory. In the original study (Cruz et al., 2019), Cronbach's α values were .87, (college student), .89 (clinical sample), and .93 (community sample). This variation may reflect the individual and cultural differences for the items in the BASE-6. The evidence reported in this study would strengthen the evidence of satisfactory reliability.

With regards to convergent validity, the relationship between psychological adjustment and mental health indices including satisfaction with life, depression, anxiety and stress was explored. Psychological adjustment was found to be positively correlated with depression, anxiety, and stress, and negatively correlated with life satisfaction. These results are in accordance with the study of Cruz et al. (2019) who found positive correlation between the BASE-6 and symptom distress, interpersonal, social role, pa-

tient health questionnaire and generalized anxiety disorder. These findings suggest that psychological adjustment correlates but does not overlap with some other measures of psychological distress such as depression, anxiety and stress. Furthermore, the performance of BASE-6 in predicting mental health outcomes (i.e. satisfaction with life, depression, anxiety and stress) adds an important support for the predictive validity of the BASE-6 as a self-report screening measure because it shows that the BASE-6 is not only a correlate of mental health indicators, but also a predictor of mental health.

This study has some possible limitations that need to be acknowledged. First, data were collected from university students using a non-probability sampling method. Given that students differ from other populations in terms of certain sociodemographic characteristics (e.g., education level and income), they cannot be treated as representative of the whole population. Second, test-retest correlation was not examined over time and the correlation between BASE-6 and mental health indicators was only limited to satisfaction with life and depression, anxiety and stress. Thus, future research should provide evidence of test-retest reliability and correlate the BASE-6 with constructs not measured in the current study (e.g., psychological well-being, happiness, positive and negative affect, coping strategies, personality traits). Third, the data were collected via self-report measures in which participants may have answered in a socially desirable way. Fourth, as to measurement invariance, only invariance across gender groups was tested. Subsequent studies should examine measurement invariance across other groups such as cross-cultural and age groups. Fifth, a conclusion about the causality among the variables cannot be affirmed. It is important to replicate these results using longitudinal or experimental design to examine whether higher psychological adjustment can cause better mental health or lower psychological adjustment can cause lower mental health. Finally, there was limited access to the sample, thereby only CFA could be performed. This may limit the validity of the study. Future research using exploratory factor analysis would be fruitful to determine the underlying factor structure of the BASE-6, particularly on community and clinical samples.

This study has several important implications. First, given the high prevalence rates of psychological distress and adjustment among students (Rodríguez-Fernández, Ramos-Díaz, Madariaga, Arrivillaga, & Galende, 2016), researchers and educators need to have a reliable and valid screening instrument that can be easily implemented, scored and interpreted with low cost. Due to the unidimensional factor structure of the BASE-6, researchers and practitioners can conveniently utilise the scale by using an overall

score and a cut-off score. Second, it is important for researchers and practitioners to have evidence of measurement invariance across gender when they evaluate true differences in psychological distress and adjustment from gender perspective. Finally, the association between the BASE-6 and mental health indicators provides empirical support for the usefulness of the scale within mental health context.

In conclusion, the current study provides useful evidence in respect to the construct validity and multigroup factorial invariance of the Turkish version of the BASE-6 among university students. The one-factor model, which was invariant across gender, indicated a good model fit to the data. The scale was related with mental health indicators. The findings suggest that researchers and practitioners can use the BASE-6 to measure general psychological distress and adjustment as a reliable and valid measure.

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