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Adaptation of Maslach Burnout Inventory-student Survey: Validity and Reliability Study*

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Abstract: The aim of this study to adapt the Maslach Burnout Inventory-Student Survey (MBI-SS) to Turkish high school students. The construct validity, convergent validity, internal consistency and test-retest reliability of the scale was investigated. According to confirmatory factor analysis, the scale was found to have a three-factor structure: Exhaustion (EX-5 items), Cynicism (CY-4 items) and Professional Efficacy (PE-6 items). For the convergent validity of MBI-SS, Utrecht Work Engagement Scale-Student (UWES-S) adapted to high school students. It was determined negative and significant moderate correlations between the scales. For the internal consistency of MBI-SS, the Cronbach alfa coefficient were as follows: .75, .78 and .71, respectively. In addition, test-retest reliability was found.997, .995 and.994. The validity and reliability for the scale are judged to be adequate.

Key words: MBI-SS · Emotional exhaustion · Cynicism · Professional efficacy · Turkey · High school students

INTRODUCTION

Burnout is defined as a syndrome with physical and mental dimensions which entails physical exhaustion, long-term fatigue, emotions of helplessness and desperation and negative attitudes towards work, life and other people [1]. A burn-out individual experiences fatigue and disappointment due to failing to achieve their expectations from a lifestyle or relationship they are committed to. Further, if expectations from an individual are well beyond his capabilities, her/his inner resources and life energy become depleted over time and her/his efficiency falls [2].

Even though burnout first emerged as a concept related to work life, it has recently started to be studied in relation to school life. Students may not own a business or be considered employees; however, from a psychological point of view their studies may be considered work. Students attend their courses and do homework in order to succeed on exams and advance their grade level [3]. School burnout stems from a lack of inner resources related to school life and the mismatch between students' self expectations and the expectations of their family, friends and teachers. The burnout dimension of school burnout is related to academic stress. Cynicism is similar to low learning motivation, while decreased is similar to low academic self perception [4]. Zhang, Gan and Cham [5] suggest the following as symptoms of academic burnout: feeling tired due to reading demands, exhaustion, being sarcastic about homework, displaying apathetic attitudes and behaviors, becoming insensitive, feeling inadequate as a student and a reduction in efficiency.

Young people in Turkey experience long-term stress as they struggle to meet the expectations of their teachers and families within a demanding schooling system and to secure entry into higher education. Throughout elementary education, they attend school as well as extra classes and private tutorials; grapple with assignments and projects; and take many exams before the ultimate Level Determination Examination (LDE). Following this, they carry on with more regular, extra and private classes and prepare for the two-stage university entrance exam. Kelecioğlu and Bilge [6] state that only one third of high school graduates who wish to pursue higher education gain entry into a program and that the demand for two- and four-year programs is different. Fear of not being able to enter a department of their choice or having to study a course that they do not really like cause young people to be pessimistic and lead to significant problems and

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tensions between them and their families [7]. Those who cannot cope with the hardships involved may give up on their responsibilities, wish to drop out of school, have interpersonal problems and gain bad habits. The nationwide study on violence in secondary education conducted by the Education Union (Egitim-Sen) in 2006 revealed that non-attendance is widespread in 97% of Turkish schools, not meeting responsibilities in 96% and improper treatment of teachers in 87%. The study also reported that drugs were found in 12% of schools and other pleasure-inducing substances in 15% [8]. The age of starting to smoke is also decreasing in Turkey. There are research results which report the rate of cigarette use as 9% in elementary and secondary schools, 29-50% in high schools and between 21-48% at universities [9].

The number of studies on young people is increasing in Turkey owing to the problems caused by adolescence and the above-mentioned anxieties. Indeed, a bigger number of studies concern themselves with depression, stress, stress caused by academic expectations, exam anxiety, fear of failing, fear of negative evaluation and loneliness than issues such as self concept, subjective well-being or social support [6,10-20]. A literature survey on student burnout shows that the Maslach Burnout Inventory was adjusted for use with university students [21] and that the student survey was adapted to different cultures and compared with one another [22-24]. The present study aims to adapt the Maslach Burnout Inventory – Student Survey (MBI-SS) for use with high school students considering the hardships that these students face in Turkey and the preventive functioning of Psychological Counseling and Guidance. The aims of the study are to: a) identify the factor structure of the MBI-SS for Turkish high school students, b) determine the internal consistency and decisiveness of subscale scores and c) examine the convergent validity of the tool with the school engagement scale.

METHODS

Study Groups: The Turkish adaptation and validity and reliability studies of the Maslach Burnout Inventory – Student Survey were undertaken with three groups.

Group 1: An accurate and intelligible Turkish translation of the Maslach Burnout Inventory – Student Survey (MBI-SS), prepared by translators and field experts, was piloted on 178 students from grades 9, 10, 11 and 12 in Çorum Fatih High School during the 2008–2009 school year. The piloting showed that there were no items that were not understood by students and the survey was finalized.

Group 2: The population of the study comprised 5,438 students attending five regular high schools located in Çorum during the 2008–2009 school year. Sample size was determined by using the formula for calculating sample volume in limited populations as suggested by Özdamar [25]. Piloting was conducted on 178 students attending Çorum Fatih High School. Following this, a minimum of 557 participants was aimed, taking 2.58 as the critical value for.01 and.05 for standard error. Accordingly, a total of 657 students, 401 females and 256 males, who were attending five regular high schools located in Çorum during the 2008–2009 school year, were admitted to the study.

Of the participants, 61% were females and 39% were males. Of these, 2% were aged 13, 6.8% were aged 14, 19.3% were aged 15, 24.4% were aged 16, 32.4% were aged 17, 16.3% were aged 18 and 4% were aged 19. Ninth graders comprised 21%, 10^{th} graders comprised 25.7%, 11^{th} graders comprised 25,7% and 12^{th} graders comprised 27.5%. As can be seen, 20.7% were 9^{th} graders with no study track. Those in the Turkish-Math study track comprised 23.1%, those in the Science track comprised 21.5%, those in the Social Sciences track comprised 18.3% and those in Foreign Languages track comprised 16.4%.

Group 3: For the test-retest reliability of the MBI-SS and Utrecht School Engagement Scale (UWES-S), both were implemented twice with a three-week interval on 83 students from Çorum Fatih High School.

Measures

Maslach Burnout Inventory-Student Survey (MBI-SS): Schaufeli, Salanova, Gonzales-Roma and Bakker [21] implemented the Maslach Burnout Inventory–General Survey on university students. The general survey was prepared for all employees. During the adaptation stage, one item in the Cynicism scale (When I'm in class or I'm studying I don't want to be bothered) was found to carry double-meaning and thus removed. This increased internal consistency coefficients. The coefficients obtained during the reliability studies of the Maslach Burnout Inventory–Student Survey (MBI-SS) were .66, .79 and .74, respectively. Frequency of burnout symptoms is rated on a seven point rating scale ranging from 'never' to 'always', where greater values indicated that the respondent experienced those feelings in question with increasing frequency. The 15-item MBI-SS [26] translated to Turkish by language and field experts has three

subscales. Each item on these three subscales receives between 0-6 points and the scores for each subscale are calculated separately. The Exhaustion (EX) and Cynicism (CY) dimensions include negative statements while Professional Efficacy (PE) includes positive ones. The positive statements require reverse scoring. Thus, high scores from EX and CY subscales and low scores from the PE subscale show burnout.

Utrecht School Engagement Scale (UWES-S): The Utrecht School Engagement Scale (UWES-S), which was adapted for use with university students by Schaufeli, Martinez, Marque's-Pinto, Salanova and Bakker [27] was used in the study for the criterion validity of the MBI-SS. The scale has three subdimensions: Vigor (VI-5 items), Dedication (DE-5 items) and Absorption (AB-5 items). Items in all subscales are scored as follows "Never= 0, Almost never = 1, Rarely= 2, Sometimes= 3, Often= 4, Very often=5, Always= 6". Higher scores from these subscales suggest higher school engagement. The scale, which was translated to Turkish by language and field experts, was tested for validity and reliability for use with high school students. Confirmatory factor analysis showed that construct validity was secured after removing four items. The distribution of the 11 items on the scale is as follows: The subscale VI has three items and DE and AB each have four items. The internal consistency (Cronbach Alpha) values of the Utrecht School Engagement Scale subdimensions were.796;.794 and.746. In addition to these, decisiveness was also determined. To this end, the UWES-S was implemented twice on 83 students, with a three-week interval. All correlations calculated for the subscales of the UWES-S were meaningful at the level 0.01 (.991, .934, .994). Particularly considering that correlations between the test-retest scores of each subscale are close to +1, it may be argued that the scale has a very high level of decisiveness.

Procedure and Data Analysis: The permission to translate the MBI-SS into Turkish was obtained from tha authot. Then th MBI-SS was translated from English to Turkish by language and field experts. Items that all experts agreed on appeared as they were on the scale. Items on which there was disagreement were screened by the researchers and the best translations was chosen. Expert opinion was consulted once again for these items to ensure consensus and thus the Turkish form of the scale was drawn. The Turkish form of the MBI-SS was implemented in this study on high school students from Çorum attending grades 9, 10, 11 and 12. The construct and convergent validity of the scale was tested. For reliability, internal consistency and test-retest reliability coefficient were calculated [28, 29, 30]. The analyses were conducted on LISREL 8.7 and SPSS (Statistical Package for Social Sciences) 15.0.

RESULTS

Confirmatory Factor Analysis: In the study, both the MBI-SS and the UWES-S were piloted on 178 students attending grades 9, 10, 11, 12 in Çorum Fatih High School. As a result, it was found that all items were understood by the students and the scale was finalized.

The 15-item scale was then implemented in 5 regular high schools across Çorum, on 657 students attending grades 9, 10, 11 and 12. Data obtained were subjected to confirmatory factor analysis. In order to warrant reliability for the MBI-SS, its construct validity was explored. The scale has the three subdimensions of EX (5 items), CY (4 items) and PE (6 items).

The confirmatory factor analysis showed that, when no modification is made in the model, the results ensure construct validity to a certain extent. Particularly a Chi-square / independence degree between 3-5 revealed that the model has an acceptable level of fitness. Similarly, the lack of fitness indices RMSEA, RMR and SRMR values also showed that the model is at an acceptable level. As the fitness indices GFI, NFI, CFI are above the level of 0.95, it may be stated that there is a high level of fitness.

Among the suggested modifications, two that ensure an adequate level of adjustment and are aligned with the theoretical framework were considered. During the modification process, no factor was linked to another one; however, error variance between the rather similar items 1-14 and 4-7 in the first factor were linked. These items made almost the same statement; therefore, modifications were made in them after obtaining the confirmation of field experts. After the modification shown in Figure 2 was made, the values in the fitness and lack of fitness indices changed in the positive direction and suggested that the model is a good one.

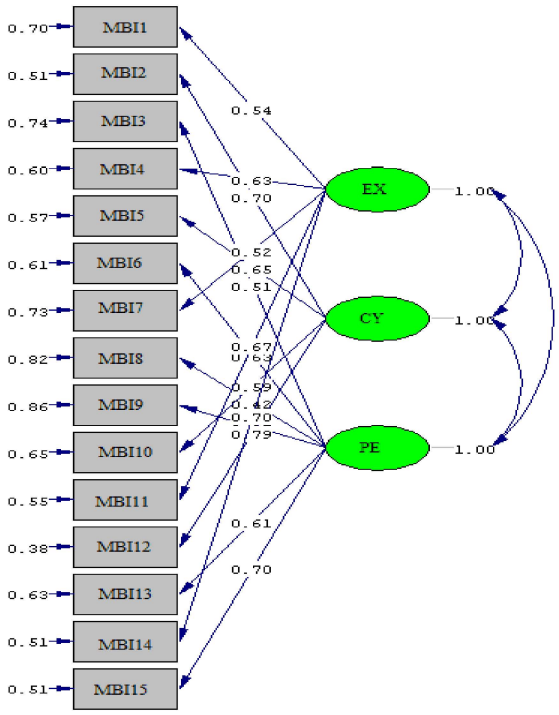

Fig. 1: MBI-SS Confirmatory Factor Analysis Relationship Chart and Standard Values

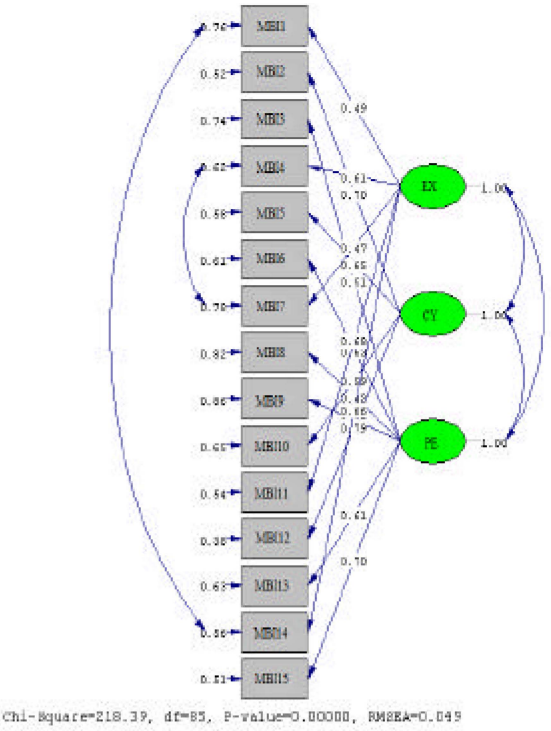

Fig. 2: Relationship Chart and Standard Values Obtained after Making Two of the Modifications Suggested

Convergent Validity: The UWES-S was used in order to determine the convergent validity of the Burnout Scale. The UWES-S was developed to test students' school engagement levels in three subdimensions: Vigor (VI), Dedication (DE) and Absorption (AB). VI and DE are thought to be the opposites of EX and CY, respectively. Thus, strongly negative correlations may be expected between VI and EX and DE and CY. The subdimensions of PE and AB are not thought to be opposites or have a distinctive nature [23].

As burnout is thought to erode academic engagement and as all burnout and school engagement scales score professional efficacy inversely as reduced efficacy, at least a partially negative relationship is expected. In other words, as in the approximate calculation proposed by Cohen and Holliday [30], the correlation between burnout and school engagement scales should exceed.40. As the scales EX and VI and CY and DE are clear opposites, a strong relationship is expected between these pairs [21].

Table 1: Model Fit Indices Based on MBI-SS Confirmatory Factor Analysis Results

SCALE	CHI-SQUARE / 2	GFI / AGFI	NFI	NNFI	CFI	RMSEA	RMR	SRMR
NOT MODIFIED	3.18	0.95 / 0.96	0.95	0.96	0.97	0.058	0.14	0.050
MODIFIED	2.56	0.96 / 0.94	0.96	0.97	0.98	0.049	0.13	0.046

Note: GFI: goodness-of-fit index; AGFI: adjusted goodness-of-fit index; NFI: Bentler-Bonett normed fit index; NNFI: Bentler-Bonett nonnormed fit index (also known as the Tucker-Lewis index; CFI: comparative fit index; RMSEA: root mean square error of approximation; RMR: root mean residual; SRMR: standardized root mean residual

Table 2: MBI-SS and UWES-S Subscale Correlations

MBI-SS	VI	DE	AB
EX	-0.425*	-0.414*	-0.431*
CY	-0.489*	-0.539*	-0.509*
PE	-0.506*	-0.551*	-0.510*

*p<0.01

Note: MBI-SS: Maslach Burnout Inventory; EX: Exhaustion; CY: Cynisism; PE: Professional Efficacy; VI: Vigor; DE: Dedication; AB: Absurption

Table 3: Item statistics of the subscales of the MBI-SS

MBI-SS	Mean	Standard Deviation	N	Item -Test Score Correlation	Cronbach Alpha Reliability
EX					
MBI1	2.4855	1.65652	657	.468	0.751
MBI4	2.3272	1.93359	657	.536	
MBI7	3.1872	1.87082	657	.482	
MBI11	1.6240	1.67575	657	.510	
MBI14	2.1050	1.80013	657	.598	
CY					0.775
MBI2	1.7900	1.57390	657	.586	
MBI5	1.5647	1.84023	657	.589	
MBI10	2.0122	1.82292	657	.520	
MBI12	1.8569	1.71104	657	.627	
PE					
MBI3	2.2070	1.55089	657	.421	0.711
MBI6	1.7626	1.60836	657	.497	
MBI8	.8935	1.39934	657	.363	
MBI9	2.1735	1.58510	657	.315	
MBI13	2.5099	1.66939	657	.489	
MBI15	1.9406	1.66962	657	.572	

Note: MBI-SS: Maslach Burnout Inventory; EX: Exhaustion; CY: Cynisism; PE: Professional Efficacy

Table 4: Test-retest reliability of the subscales of MBI-SS

MBI-SS	EX REPEATED	CY REPEATED	PE REPEATED
EX	0.997*	0.647*	0.507*
CY	0.646*	0.995*	0.555*
PE	0.498*	0.542*	0.994*

*p<0.01

Note: MBI-SS: Maslach Burnout Inventory; EX: Exhaustion; CY: Cynisism; PE: Professional Efficacy

As shown in Table 2, when self-competence is reversely scored as reduced efficacy, the correlations between the subscales of the MBI-SS and UWES-S are negative and statistically meaningful at the level 0.01. According to these results, a negative and moderately meaningful relationship exists between the subscales of the MBI-SS and UWES-S.

Internal Consistency and Test-Retest Reliability: Findings from the internal consistency analysis of the scale can be found in Table 3. It can be seen that the Cronbach Alpha coefficient of subscale EX is 0.75, thus showing that the scale has an acceptable level of reliability. Correlations between the total subscale scores of items in subscale EX vary between 0.468 and 0.59. It may thus be stated that the correlation between the items and scale scores are at a moderate level and statistically significant. All item mean scores remaining below the expected mean value of 3 shows that these individuals overall have low burnout levels.

The Cronbach Alpha coefficient of the CY subscale was approximately 0.78, showing a moderate level of reliability. Correlations between the items of the CY subscale with total subscale scores vary between 0.586 and 0.627. It may thus be stated that the correlations between these items and overall scale scores are at a moderate level and statistically significant. All item mean scores remaining well below the expected mean value of 3 shows that these individuals overall have low burnout levels.

The Cronbach Alfa coefficient of the PE subscale is approximately 0.71. This values suggests that the scale has an acceptable level of reliability. Correlations between the items of the PE subscale and total subscale scores vary between 0.315 and 0.572. Correlations between these items and scale scores are moderate and statistically significant. All item mean scores remaining below the expected mean value of 3 shows that these individuals overall have low burnout levels.

In addition to internal consistency, decisiveness was also explored (Table 4). To this end, 83 students took the MBI-SS twice in three weeks. Correlations between the scores were calculated. All were meaningful at the level 0.01. Correlations obtained particularly by the retest of the subscales were close to +1.

DISCUSSION

This study adapted the MBI-SS for use with Turkish high school students. The construct validity, criterion validity, internal consistency and test-retest reliability of the scale were explored. The analyses confirmed the three-factor structure of the original scale. These were EX (5 items), CY (4 items) and PE (6 items). The findings suggested a high level of construct validity for the scale. The correlation coefficients obtained through criterion validity studies with the UWES-S are negative and moderately meaningful, showing that the scale possesses criterion validity.

An investigation of the internal consistency of the subscales of the MBI-SS showed an acceptable level of reliability. Correlations between the items and scores of each subscale were almost moderate and statistically significant. All item mean scores remaining below the expected mean value of 3 shows that these individuals overall have low burnout levels. The reliability coefficients obtained by the test-retest method were also meaningful. Correlations involving retest scores were close to +1, thus revealing a very high level of decisiveness. The scale thus has very high test–retest reliability.

These findings have revealed that the scale is a valid and reliable tool in measuring high school students' burnout. Still, the study has several limitations. To start with, it was conducted on students attending five regular high schools located in the central district of Çorum. Therefore, school type was not considered as a variable. This makes the nationwide generalization of these results difficult. A second limitation was that convergent validity was measured by using one single scale.

CONCLUSION

This study adapted the MBI-SS for use with Turkish high school students. The analyses revealed findings that the tool is valid and reliable. Below are some recommendations for researchers and practitioners.

- The MBI-SS may be implemented on students from different types of high schools and the results may be compared. Such studies should also consider variables such as gender, grade level and academic success.
- The relationship between scores from the EX, CY and PE subscales of the MBI-SS and other tools measuring depression, academic stress, social support, loneliness, perfectionism and irrational beliefs may be studied.
- This tool may be used in combination with inventories that may affect student burnout and school engagement in school counseling programs. Psycho-educational programs may be organized for preventive and protective purposes. Afterwards, the results may be shared with administrators, teachers and parents in order to develop solutions.
- Validity and reliability efforts in this study involving the UWES-S to test convergent validity may be replicated with bigger sample sizes. Comparisons may also be made between variables such as school type, gender, grade level and academic achievement.

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