



# Students School Burnout Inventory: Development, Validation, and Reliability of Scale

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## Abstract

**Background:** Over the past several decades the concept of burnout has been an important topic for the domain of education and psychology. One of the challenges regarding burnout is to develop an effective instrument, which considers cultural differences into account. By reviewing literature, we can figure out that there are some burnout instruments, which most of them are just for teachers, counselors, and workers. Despite the important effects of burnout among students, there is no instrument that assesses high school student burnout specifically. The aim of this study is to develop an instrument for high school students, which is valid, reliable, and suitable for Iranian culture.

**Methods:** The population is taken from students of the public high school of Basht, Kohkiloie va Boier Admad, Iran. Using multi-stage random sampling method, 443 students were selected from 1st, 2nd, and 3rd grade of Basht high schools.

**Results:** Exploratory factor analysis results showed that 16 indicators loaded on 4 factors. The amount of total variance explained was 50.18%. Similarly, 1st and 2nd order confirmatory factor analysis results demonstrated that the model was well fit since fit indices such as GFI, CFI, AGFI, and IFI were greater than 0.90 and RMSEA was lower than 0.05. The internal consistency coefficient of the scale was 0.83.

**Conclusions:** In sum, we can say that our scale, which has 4 components has not only a good validity but also a great reliability.

**Keywords:** School Burnout, High School Students, Exploratory and Confirmatory Factor Analysis

## 1. Background

In the recent years, interest for examining deleterious effects of burnout has increased significantly among researchers (1), which has become a popular research topic in different professional contexts (2, 3). The burnout phenomenon is worthy of deeper scientific analysis since most of the research papers emphasize its negative consequences, both on the individual and the institutional levels (4). For instance, Shaufeli, Maslach, and Marek (1993) (5) asserted that the burnout syndrome negatively affects the vitality of the individual as well as his purpose, self concept, and attitudes toward life and sport. Although burnout is considered to be primarily a work-related concept, it can be observed in educational institutions such as schools since school is an environment where students spend most of their time and is practically considered as a second home (6). Although students are not like employees psychologically and professionally, we can categorize

the core activities of students in the same way as employees' activities since they are supposed to go to school and do assignments in order to achieve a qualification (7). In the field of psychology, burnout is not an official term or diagnosis. In last decades it refers to a sense of fatigue and inability to do things normally in the workplace. This sense is caused by a lot of work demands that the individual has to achieve in a specified time interval. Nowadays, there is an ongoing controversial debate among researchers defining burnout. Some scholars regard it as a work-related phenomenon exclusively while others consider it as a wider phenomenon. In general, burnout is similar to other well-known concepts. It evolves gradually and can take on a different meaning depending on how it is perceived by each individual; however, in many cases, the term burnout refers to the inability to cope with work pressures (8).

Burnout among students refers to fatigue that originates from a pessimistic attitude toward school duties, excessive academic demands, and being incomplete as a

student (9). School burnout can cause several problems such as absenteeism, low motivation, and relatively high dropout rates (10, 11). Burnout is a significant hindrance for high school students who work hard and are supposed to make our world a better place to live. Edelwich and Brodsky (1980) (12) believe that burnout would be less important and its impact would be far less devastating if it has effects on students individually and alone. They argue that burning out may transfer from a student to another. For these reasons, burnout is a significant educational issue. Knowing the psychology of burnout and its main structures will help us to handle burnout problems more effectively and even prevent it.

A review on recent literature shows that there is no instrument to specifically assess high school students' burnout despite its importance. It is obvious that the first step to deeply understand high school students' burnout is to develop a valid and reliable inventory, which explicitly measures high school students' burnout. This kind of inventory would supply us with accurate information, which will enable us to cope with student burnout effectively. Therefore, the main aim of this research is to develop an instrument for Iranian high school students. This inventory takes cultural differences into account.

### 1.1. Research and Theoretical Framework

In theory domain, researchers usually define burnout operationally based on Maslach's theoretical framework (13, 14). Maslach found a single syndrome for student's burnout. This syndrome is defined by 3 components, which has been named as emotional weakness (losing emotional resources), depersonalization (having a pessimistic attitude towards persons who should receive attention and care), and personal characteristics (having less success and competence in work environment) (15). Despite the wide acceptance of the Maslach's theoretical framework, dimensionality of his theory has been criticized strongly. Many researchers have suggested that burnout has a 4 factor structure (16), while others proposed that it is composed of 5 factors (17). Densten (2001) (17) believes that burnout has 2 emotional (psychological and somatic components), 2 personal (self and others' views components), and 1 depersonalization factor. All of these theoretical frameworks are inconsistent with Maslach's framework.

In the research realm, Kokkinos (2006) (18) has investigated burnout among 771 educators in Cyprus by using a Greek translation of the MBI-ES. He utilized the exploratory and confirmatory factor analysis. The result clearly supported the 3 factors structure of burnout. Other studies have found a 2 factor structure (19-22), while a 4 factor

structure has been showed by other researchers (23-26). According to these research results, it can be concluded that burnout is a complex phenomenon with a multi-factorial structure.

After an extensive review of the literature and the empirical results, we concluded that the observed differences regarding the dimensional structures are because of cultural differences, which exist among different populations. This fact clearly shows that every population should have his own instrument for assessing important construct of burnout. In addition, we found that there is no specific instrument to measure burnout among high school students despite its cruciality. Therefore, we decided to develop a new instrument to measure burnout in Iran, which considers cultural differences into account. We name it as comprehensive high school student burnout inventory (CHSBI). For this purpose, we integrated the research results into a consistent and comprehensive framework, which clearly reflects the dynamics of the burnout process in high school settings coherently and reliably. Subsequently, we developed the items of CHSBI. Although many other interesting inventories exist, they do not measure high school student burnout specifically and can stretch to much more broader settings. For instance, Maslach burnout inventory (MBI), which has been developed by Maslach and Jackson, can be utilized only among employees who work with people. Another burnout instrument, which has been created by Pines and Aronson, is the burnout measure (BM). This instrument just measures physical, emotional, and mental exhaustion. The BM can be utilized by any individual within or out of the workforce.

If we contemplate all the above mentioned results, we will easily reach to a conclusion that none of the inventories measure high school student burnout. It is vital for us to understand the real reasons of a burnout and its psychological effects. The identification of true reasons requires that we use inventories that are specific for a specific period of life span as well as special environment and particular culture. The main aim of this project is to develop an instrument, which is suitable for high school students as well as the Iranian society.

## 2. Methods

This research had these features: the goal was "applied", the method of gathering data was "descriptive", and the design was "correlation".

### 2.1. Population, Sample, and Sampling Method

The research population was comprised of all high-school students of Basht city in Kuhkuleie va Buiere Ahamr

province in the 2014 - 2015 school year (about 7000 students in 12 schools) of whom, 443 students were selected as subjects using random clusters. In the 1st step in choosing the sample, 3 all-boy high-schools and 3 all-girl high-schools were randomly selected; in the second step, from among the different clusters in the high-schools, 3 classes were randomly selected and finally, the questionnaire was presented to all the students in the selected classes. The questionnaire had 17 items, which should be answered in a 6-point rating Likert scale. Each item was scored between 1 and 6. The sum of item scores made the total score. In this instrument the lowest score is 17 and the highest score is 102.

### 3. Results

We take missing values, outliers, and assumption violations of normality, linearity, and homoscedasticity for continuous variables into account. In Table 1, you can see means, standard deviations, skewness, kurtosis, and item-total correlation of the inventory Items.

As Table 1 indicates, item-total correlation coefficient for item 1 is negative. Therefore, we eliminated it due to further considerations. All other item-total correlation coefficients were positive and statistically significant at the alpha level of 0.01. The Values of skewness and kurtosis show that all variables are relatively normally distributed.

#### 3.1. Construct Validity

In this research, test of sphericity was significant ( $P = 0.001$ ) and initial KMO index was 0.88, which clearly demonstrates that data are appropriate for EFA. Bartlett's test of sphericity provides the researcher with a test of the null hypothesis that none of the variables are significantly correlated. A significant Bartlett's test enables us to reject the null hypothesis of lack of sufficient correlation between the variables. When this value is significant, it shows that our data are suitable for factor analysis. Second, we considered a factor loading of 0.30 or higher as a significant load (27). Third, the determinant of the correlation matrix was 0.032 that provide the requirement for EFA. Finally, we have also considered the fact that there should be at least 3 indicators for each anticipated factors.

Table 2 shows eigenvalues, Cumulative percent of explained variance, percent of explained variance, and the factor loading after varimax rotation. In our analysis, there were 4 eigenvalues greater than 1.0, which explained 50.18% of variance. This explained percent of variance shows that the construct validity of the scale is acceptable. Due to the characteristics of the factors, we named factor 1 as pessimism toward the school, factor 2 as Burnout from school

assignments, factor 3 as feeling of inadequacy in school, and factor 4 as Burnout from problems which school develops.

Table 2 has shown that every factor has at least 3 indicators. Factor loading of each indicator is more than 0.30.

We used the 1st order confirmatory factor analysis since it directly considers the measurement errors, which are associated with each item. In Table 3, the first order confirmatory factor analysis has been showed for extracted factors.

When we have a sample size of 400 or more the Chi Square test is usually significant, therefore, we have to use other fit indices (28). As you can see in Table 3, all requirements for good fitting have been met. We used the 2nd order CFA to clarify whether the extracted factors come together as a single concept, which is the school burnout, or not. Fit indices of this model were shown in Table 1 and the path diagram was shown in Figure 1.

As the result of Table 4 shows, the construct validity of our scale was confirmed. The 3-week test-retest correlation for the comprehensive school burnout inventory was excellent, ( $n = 27$ )  $r = 0.85$ .

### 4. Discussion

Many teenagers cope with adolescent problems successfully; however, some have special difficulties during this stage of life since it begins with several changes psychologically, academically, and educationally. As a result, we can say that some adolescents may experience a burnout during the school year due to the fact that they spend most of their time there. Around the world as well as Iran, parents force their teen students to get good grades and be among the top students. Due to this, students usually spend a lot of time for studying and solve many different tests in order to reach their goals. Teen parents and their teachers have a great amount of expectations regarding their achievement. They usually force them to study harder and be smarter (29). Thus, in this complex situation, they may face higher levels of burnout syndrome. School burnout is one of the most important constructs in research domains since it has positive relationships with other deleterious variables such as absenteeism, low motivation, and high dropout rates (10, 11). According to these facts, we need to develop an instrument, which can consider specific culture differences. This instrument should have a suitable validity and reliability since this kind of questionnaire can give us more accurate information, which results in better decisions.

The main aim of this research was developing a valid and reliable questionnaire. To achieve this, we developed a scale with 4 components. The results of EFA demonstrated

**Table 1.** Descriptive Statistics of Inventory Items

Items	Means	SD	Skewness	Kurtosis	Item-Total Correlation
1. I feel overwhelmed by my schoolwork	3.76	1.50	-0.31	-0.80	-0.04
2. I feel a lack of motivation to finish school work	2.68	1.57	0.64	-0.68	0.44 <sup>a</sup>
3. I want to quit from my high school	1.99	1.55	1.42	0.75	0.51 <sup>a</sup>
4. I have less and less intention to give effort in doing my school work	2.64	1.55	0.64	-0.63	0.54 <sup>a</sup>
5. School makes life boring	3.05	1.78	0.31	-1.27	0.38 <sup>a</sup>
6. I have no interest in doing school homework	2.52	1.64	0.85	-0.48	0.61 <sup>a</sup>
7. High school is meaningless	1.96	1.42	1.60	1.69	0.54 <sup>a</sup>
8. I often have feelings of inadequacy in my schoolwork	2.57	1.61	0.79	-0.54	0.58 <sup>a</sup>
9. I do not have the ability to compete with my classmates	2.54	1.59	0.78	-0.49	0.55 <sup>*</sup>
10. Others often criticize me for inadequacy in school works	3.26	1.46	0.25	-0.80	0.33 <sup>a</sup>
11. School demands disturbs my friendships	2.79	1.73	0.59	-0.92	0.53 <sup>a</sup>
12. I would not continue my education knowing that I will not be successful	2.07	1.52	1.34	0.68	0.57 <sup>a</sup>
13. I do not know the reasons why I am still studying at the school	2.17	1.49	1.21	0.48	0.51 <sup>a</sup>
14. I do not have sufficient energy to complete my school assignments	2.78	1.58	0.57	-0.73	0.61 <sup>a</sup>
15. There is no meaning in doing school assignment	2.75	1.62	0.66	-0.64	0.51 <sup>a</sup>
16. I feel like I don't care about school anymore	2.05	1.53	1.40	0.83	0.59 <sup>a</sup>
17. I do not have the ability to study at the school	2.49	1.52	0.80	-0.39	0.56 <sup>a</sup>

<sup>a</sup>P < 0.01.

that the 16 items has loaded on 4 factors. The amount of total variance explained was 50.18%. Similarly, the results of 1st and 2nd order confirmatory factor analysis demonstrated that the model was well fit. The internal consistency coefficient of the scale was 0.83. In conclusion, we can say that our scale, which has 4 components, has not only a good validity but also a great reliability. These findings are in line with the conducted studies of some researchers (16, 23-26) (1988), while inconsistent with others (19-21) due to the fact that they found a 2 factor structure.

In Iran, it seems that school burnout, like other behavioral phenomena, has been affected by several factors and it could not be explained by just 2 or 3 factors. This instrument will help teachers, counselors, principals, and top policy makers of the educational system to figure out how many students are suffering from school burnout as well as helping them to find good solutions to cope with this problem. In addition, this instrument, along with 4 components, can specifically determine what components have stronger effects and what components have weaker effects.

Although this instrument is a practical, valid, and reliable questionnaire, we must consider limitations of research into account when we want to generalize the results. First of all, the statistical population was limited just to a single city, which was Basht. Second, this research has

been conducted in a special period of time. Third, this paper is a quantitative research, which should be combined with a qualitative research if we want to reach a better and more in depth view regarding a burnout.

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**Table 2.** Factor Loading after Varimax Rotation, Eigenvalues, Percent of Explained Variance and Cumulative Percent of Explained Variance

Items	Factor 1	Factor 2	Factor 3	Factor 4
16	0.64			
3	0.64			
7	0.53			
12	0.51			
2		0.72		
4		0.70		
15		0.55		
14		0.53		
6		0.42		
9			0.72	
8			0.65	
17			0.58	
10			0.43	
5				0.77
11				0.54
13				0.45
<b>Eigenvalues</b>	4.76	1.20	1.04	1.01
<b>Percent of explained variance</b>	14.27	14.18	12.26	9.47
<b>Cumulative percent of explained variance</b>	14.27	28.45	40.71	50.18

**Table 3.** Fit Indices of First Order Confirmatory Factor Analysis for Extracted Factors

Fit Indices	$\chi^2 / df$	P	NFI	NNFI	CFI	GFI	RMSEA
	2.09	0.00000	0.94	0.96	0.97	0.95	0.052

**Table 4.** Fit Indices of the Second Order CFA

Fit Indices	$\chi^2$	df	$\chi^2 / df$	(GFI)	(CFI)	(AGFI)	(IFI)	(RMSEA)
	205.28*	100	2.05	0.95	0.97	0.93	0.97	0.049

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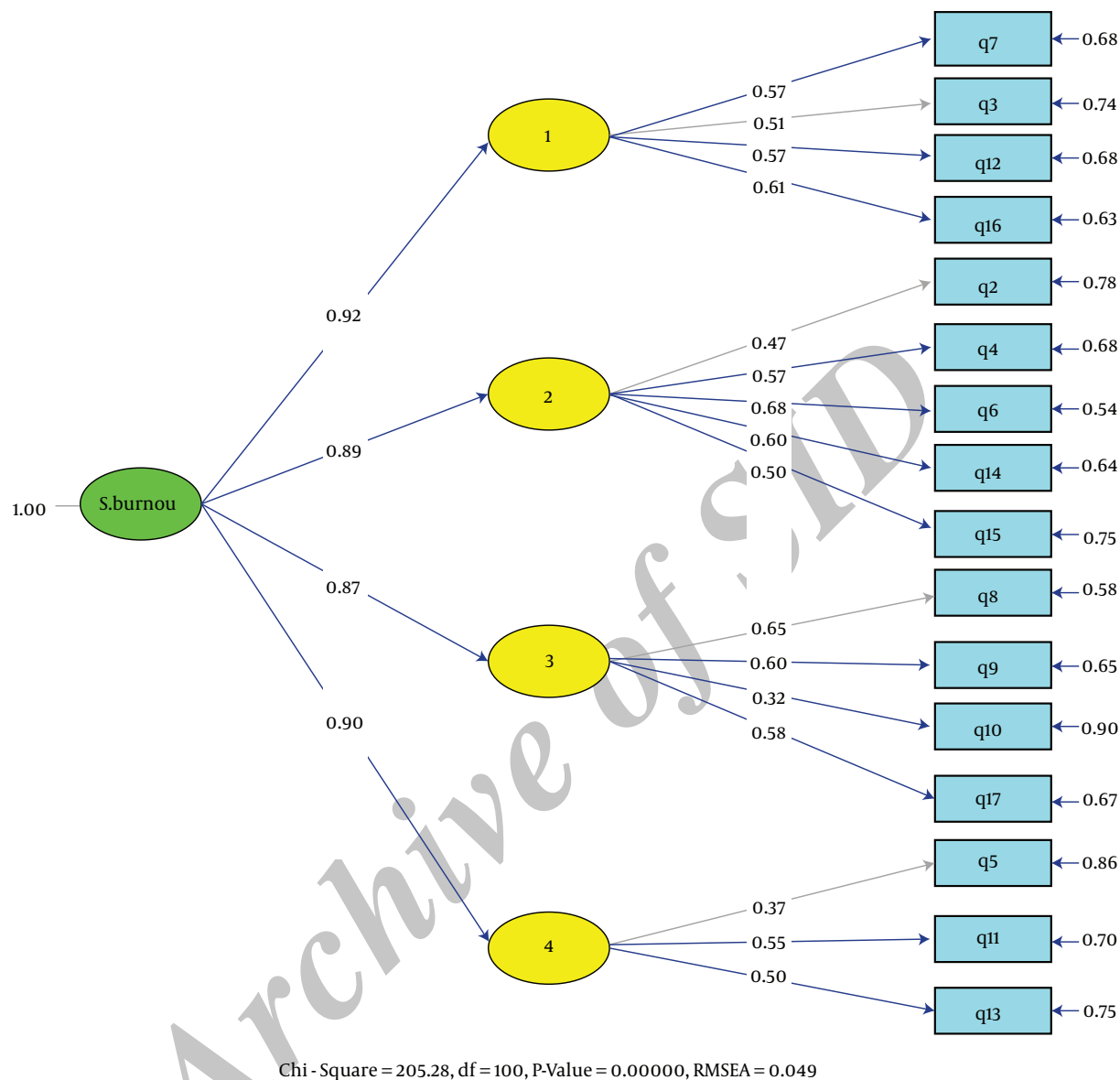


Figure 1. Second Order Confirmatory Factor Analysis of School Burnout

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