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The development and validation of an academic burnout questionnaire among Moroccan trainee teachers using the maslach burnout inventory-student survey

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Abstract:

BACKGROUND: Stress and burnout syndrome are more common for people who work in professions that include direct contact with humans, such as education and the medical field. To contribute to the prevention of this syndrome, the Maslach Burnout Inventory-Student Survey (MBI-SS) has been validated and used in different countries worldwide except for Morocco. The main purpose of this study is to develop and validate a special version of the MBI-SS scale to assess academic burnout among Moroccan trainee teachers during their training period.

MATERIALS AND METHODS: A self-administered questionnaire was carried out to assess the sociodemographic factors and certain stressors of the interviewees as well as the MBI-SS. Two hundred fifty-five trainee teachers of the CRMEF (Regional Centre for Education and Training) participated to assess the validity of the MBI-SS scale in its French version and its three components during the academic year 2020/2021 of the Rabat-Salé-Kénitra region. The inferential method of data analysis was used by Cronbach's alpha to determine the overall reliability of the instrument as well as the three components of the assessment. After that, exploratory factor analysis was carried out.

RESULTS: Sixty five percent of the participant were male, and most of them were between the ages of 20 and 30 years. The results demonstrated a satisfactory psychometric characteristic for its dimensions and validated the 3-dimensional structure of the MBI-SSM, yet they indicate the necessity to remove two items to guarantee their reliability. The Cronbach's alpha value of the MBI-SSM was greater than (0.7). The Cronbach's alpha also showed a good homogeneity for the three dimensions of the MBI-SSM, (0.853) for emotional exhaustion, (0.570) for cynicism, and (0.776) for academic efficacy.

CONCLUSIONS: It is concluded that the MBI-SSM is determined to be an objective and a valid instrument and can be used to assess academic burnout in the Moroccan context.

Keywords:

Academic burnout, exploratory factor analysis, Maslach Burnout Inventory-Student Survey, Morocco, psychometric characteristics, trainee teachers

Introduction

Burnout syndrome was first introduced in the 1970s to reveal professional exhaustion (which concerns people who exercise a profession in contact with individuals is regular).[1] It is a condition of dissatisfaction and anxiety caused by a strong work dedication, also known as the clapper syndrome since it causes a

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decline in job devotion.[1,2] Other studies proceeded to describe the characteristics of burnout syndrome noting that it has three dimensions; the first and most important is emotional exhaustion (EE); the second is cynicism (CY) (depersonalization), and the third is a decreased level of personal achievement.[2,3]

On the one hand, when a person experiences EE, he feels stressed because his emotional reserve has been depleted. CY, on the other hand, refers to pessimistic, cynical, or extremely aloof from his colleagues, and a decreased level of personal achievement refers to sentiments of degradation in one's skills and efficiency.[3,4]

Scientific burnout examinations revealed that both EE and CY emerge together, while perceptions of ineffectiveness are occasionally perceived. According to previous studies, student burnout syndrome is identical to worker burnout syndrome.[5,6] Although trainee teachers do not officially work, they are also engaged in some way. Activities performed such as internships at schools, dealing with students, learning the teaching profession, and passing exams are all considered stressful activities. Student burnout is characterized as experiencing study stress, developing a cynical attitude and disinterest toward studying, and feeling inadequate as a student.[6,7] This concept is based on the Maslach burnout inventory-student survey (MBI-SS), which measured academic burnout.

According to the literature, Moroccan studies on burnout have mostly focused on burnout among healthcare employees. Trainee teachers, on the other hand, tend to be particularly susceptible to burnout.[8,9] A version customized to MBI-SS students developed by (Faye-Dumanget *et al*., 2017)[10] has been designed to examine the professional burnout of trainee teachers (in training). Previous research has shown that this instrument is valid and reliable. The study investigated the validity and reliability of this instrument (Cronbach's alpha = 0.798). The MBI-SS demonstrated excellent psychometric qualities for its three dimensions in a variety of student demographics from worldwide.[11-14] This inventory has not been used in Morocco before this date.

The studied population appears to be sensitive and vulnerable to the risk of burnout. This study was conducted in response to the need for a standardized inventory for Moroccan trainee teachers. The primary purpose of this research is to assess the three components of the MBI-SS scale and to study its reliability and validity on a sample of CRMEF (Regional Center for Education and Training) trainee teachers.

Materials and Methods

Study design and setting

This cross-sectional study took place between April and June 2021. The population studied concerns trainee teachers from the Rabat-Salé-Kénitra area who are pursuing their training at Morocco's several regional training and public education centers.

Study participants and sampling

Two hundred and ninety trainee teachers responded to the study, 35 of them were not coded for several reasons, including (empty answers/irrelevant answers.) Therefore, 255 trainee teachers were eligible for our study. Ninety-three of them enrolled in primary school and 162 in secondary school with an average age of 27 years ± 4.9 years (extremes 21–45 years) and a male majority of 65.1%.

Data collection tool and technique

We established a 15-item scale after evaluating a number of studies on assessing school burnout among trainee teachers. Although this scale would be used by an Arab-French community, it was referred to professionals, such as higher education professors for their academic opinion and linguists to rate the readability of the items. We were able to preserve the overall number of items after conferring with these experts, but we had to adjust some words in some items to fit the teaching job and also the Moroccan context. They are structured in three dimensions:

- Emotional exhaustion
- Cynicism
- Academic efficiency.

Likewise, we carried out a self-administered questionnaire to assess the sociodemographic and some stress factors of the interviewees. As a result, a survey form was delivered in a paper edition to the regional education and training centers in the Rabat-Salé-Kénitra zone and asked to be completed. The responders were entrusted with the privacy of the data by the participant's anonymity. This research included one center (RABAT) and four annexes (Kenitra-Sidi kacem-Khemisset).

The validation approach for the scale of academic burnout among trainee teachers in our analysis is divided into two steps. First, Cronbach's alpha was used to determine the overall reliability of the instrument as well as the three components of the assessment. After that, exploratory factor analysis was carried out. The analysis entails having *a priori* knowledge of a theoretical construct, in this case, the three components of burnout (EE, CY, and academic efficiency (AE), and we wish to confirm this validated factor structure by Christina Maslach and Susan Jackson in 1980. The

Statistical Package for the Social Sciences was used to conduct statistical analyses (SPSS, version 21).[15]

Exploratory factor analysis is the most effective way for summarizing data and determining the internal structure of a theory since it is a multivariate data analysis approach.[16] This allows researchers to investigate the correlations between multiple factors at the same time.[17] The Kaiser–Meyer-Olkin (KMO) test was employed in our research. A KMO significantly lower than 0.5 is considered unsatisfactory; 0.5 is considered low, and over 0.6 is considered acceptable; 0.7 is considered medium; 0.8 is considered meritorious, and 0.9 is considered excellent,[18] and we used Bartlett's sphericity test to determine the polymerase chain reaction's potential efficacy. A Bartlett's test $P < 0.05$ is rejecting the null hypothesis of a significant absence of correlations between the variables.[19] We, therefore, calculated Cronbach's alpha to assess the scale's reliability and consistency. For an exploratory study, an alpha between 0.6 and 0.8 is appropriate.[20,21]

Ethical consideration

This study was approved by the regional director of CRMEF Rabat with all the necessary permissions. All participants completed and signed an informed consent form, and they were free to discontinue participating in this study whenever they wished.

Results

The data were collected between April and June 2021, with trainee teachers participating voluntarily and answering anonymously. The collected data were coded directly using the SPSS statistics version 21.

Exploratory factor analysis

To determine the construct validity, we used factorial analysis on the main axes with Varimax rotation [Table 1]. The KMO index and Bartlett's Sphericity test were used to show the data suitability matrix performing factor analysis [Table 2]. The KMO index was 0,866, which was considered to be excellent by Bisquerra-Alzina (1989). The Bartlett's Sphericity test (χ^2 = 1268,691; $P < 0.001$) rejects the null hypothesis, confirming that there is no values intercorrelation. The exploration method reveals three factors with eigenvalues >1 which explains 49,601% of the total variance. The three dimensions are clearly defined and distinct in terms of their respective factors. There was an EE, CY, and an AE.

As indicated in [Table 3], the EE is the first factor that contains five items (EE_1, EE_2, EE_3, EE_4, and EE_5) and represents 25,024%. Cynism, the second factor, consists of three items (CY_1, CY_2, and CY_3) and represents 18,897%. The third factor is the AE which includes five items (AE_1, AE_2, AE_3, AE_4, and AE_5) and represents 5,679% of total variance.

Table 1: Factor matrix after rotation

Items	Component		
	AE	CY	EE
AE_1	0.799		
AE_2	0.706		
AE_3	0.700		
AE_4	0.691		
AE_5	0.685		
CY_1		0.336	
CY_2		0.318	
CY_3		0.612	
EE_1			0.672
EE_2			0.644
EE_3			0.596
EE_4			0.581
EE_5			0.539

AE: Academic efficacy, CY: Cynicism, EE: Emotional exhaustion

Table 2: The Kaiser-Mayer-Olkin index and Bartlett test

Measurement of KMO sampling	0.866
Bartlett sphericity test	
Chi-square approximate	1268.691
ddl	78
Bartlett test	0.000

KMO: Kaiser-Mayer-Olkin

Table 3: Distribution of trainee teachers according to their sociodemographic characteristics

Variable	255 participants, *n* (%)
Gender	
Male	166 (65.1)
Female	89 (34.9)
Age	
20-30	208 (81.4)
30-40	43 (17)
>40	4 (1.6)
Study level	
Bachelor	189 (74)
Master	60 (23.6)
PhD	6 (2.3)
Training cycle	
Primary	93 (36.4)
Secondary	162 (63.6)

Internal consistency of theoretical dimensions and deletion of items

According to the communalities and Nunnally's classification, which generally allows Cronbach's alpha index higher than 0.70, we decided to remove items 15 and 2 since they do not meet these two criteria. Cronbach's alpha (0.78), as well as those for EE (0.853), CY (0.570), and AE (0.776), are all adequate in light of these findings [Table 4].

Table 4: Cronbach's alphas values of the three dimensions

Test	Component		
	AE	CY	EE
Cronbach's alpha	0.853	0.570	0.776
Percentage variance explained	25.024	18.897	5.679
Percentage total variance explained		49,601	

AE: Academic efficacy, CY: Cynicism, EE: Emotional exhaustion

Discussion

Various studies have recently focused on the subject of academic burnout. In this regard, the current study used factorial analysis to investigate the validity and internal consistency of a burnout measure (MBI-SS) among Moroccan trainee teachers. Like many other countries, Germany,[19] Brazil,[20,12] Chile,[21] Colombia,[22] France,[10] Hungary,[23] and Portugal (Campos and Maroco, 2012; Maroco and Tecedeiro, 2009), the three-dimensional aspect was maintained and support the three-dimensional structure of the questionnaire. EE, the first factor, is a result of being exhausted because of studies and academic activities. CY, the second factor, focuses on aspects of the trainee teacher's detachment attitude. AE, the third factor, is related to a feeling of incompetence as a trainee teacher. Research completed among 667 French students in France demonstrated the three-dimensional aspect.[24] In Spain, a study of 1209 secondary-school students indicated that EE, AE, and CY explain, respectively, 33.27%, 19.09%, and 9.019% of the total variance. In this study, the exploratory and confirmatory factor analysis support 12-item model divided into three factors: EE (items 1, 3, 4, and 5), CY (items 6, 7, 8, and 9), and academic effectiveness (items 10, 11, 12, and 15).[25] In Iran, a study was conducted on 238 female students at the University of Isfahan.[14] A principal component factor analysis with Varimax rotation was employed to assess the construct validity; the variables EE, CY, and AE explained 67.27% of the variance.[14]

To determine the reliability of MBI-SS, the internal consistency method was used. Coefficient Cronbach's alpha for the EE, AE, and CY, respectively, were 0.853, 0.776, and 0.57. The first two factors, EE (0.853) and academic effectiveness (0.776) are in subscales with an acceptable internal consistency index. Factor three, detachment attitude, achieved a modest coefficient considered of 0.57. Based on the results, we conclude that each of the burnout inventory subscales has internal reliability that is within acceptable standards. A Turkish study of 1020 high school students in the ninth, tenth, eleventh, and twelfth grades showed that Cronbach's alpha coefficients for EE, CY, and AE are respectively 0.838, 0.844, and 0.875.[26] In Morocco, a study recently conducted revealed that Cronbach's alpha of all items was 0.75. Internal consistency of the three dimensions (EE, CY, and AE) indicated acceptable psychometric quality.[27-28]

Limitation and recommendation

However, our study has a limitation; the recruited trainee teachers are from a single region in Morocco (Rabat-Salé-Kénitra). It will be interesting to compare the findings of this study to other regions with larger sample sizes.

Conclusions

The study demonstrated a satisfactory psychometric characteristic for the MBI-SSM and specially designed to assess the level of academic burnout among trainee teachers. We believe that this tool can be used to assess academic burnout in the Moroccan context.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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