

Maslach Burnout Inventory: Factorial structure and reliability in university students in the health area of Chile -MBI-HSS in students in the health area of Chile

Rocío Glaría- López^a, Cristhian Pérez-Villalobos^b, Paulina Ortega-Bastidas^c, Berta Schulz-Bañares^d, Pablo Espinoza-Melgarejo^e

Abstract

Background: Academic burnout has been understood both as a consequence and response to permanent stress linked to the role, activity, and academic environment of an insidious nature and evil consequences that may affect the development, the understanding, and the satisfaction of students in their education and academic life. To evaluate the social dimension within the educational process, there is the MBI-HSS, of which there is little evidence of its psychometric properties.

Methods: The present quantitative study of relational analytical scope was carried out through a cross-sectional, non-experimental design by means of a survey. Through non-probabilistic quota sampling, a sample of 426 students from four undergraduate health programs was obtained: Medicine, Kinesiology, Chemistry and Pharmacy, and Speech Therapy, using the career coursed by the students as a segmentation criterion. The students responded to a version of the Maslach Burnout Inventory (MBI), specifically of the MBI-HSS. An Exploratory Factor Analysis was performed, using the Main Axis Analysis extraction method (MAA),

Subsequently, to estimate the internal consistency of the identified factors, the Cronbach's Alpha reliability coefficient of each item was calculated. In addition to evaluating the discriminant capacity of the items, the correlation of each item with the corrected total score of its factor was calculated.

Results: The analyzes showed the presence of three factors: Emotional Exhaustion, Lack of Personal Accomplishment, and Depersonalization, all with adequate reliability.

Conclusion: The results of this study are consistent with the original proposal by Maslach et al., 1981, which proposes a three-factor model made up of the factors of Emotional Exhaustion, Lack of Personal Accomplishment, and Depersonalization. Also, the results of this study demonstrate an adequate factorial structure and reliability of the MBI-HSS questionnaire, demonstrating that it is a useful tool for evaluating academic burnout in university students in health careers.

Key words: burnout, Maslach Burnout Inventory, stress, university students

Responsible Author rglaria@udec.cl

^aDepartment of Speech and Language Therapy, School of Medicine, Universidad de Concepción, Concepción, Chile

Third floor, School of Medicine, Chacabuco corner Janequeo s/n, Universidad de Concepción, Concepción, Chile

^bDepartment of Medical Education, School of Medicine, Universidad de Concepción, Concepción, Chile.

Fifth floor, School of Medicine, Chacabuco corner Janequeo s/n, Universidad de Concepción, Concepción, Chile.

^cDepartment of Kinesiology, School of Medicine, Universidad de Concepción, Concepción, Chile

Third floor, School of Medicine, Chacabuco corner Janequeo s/n, Universidad de Concepción, Concepción, Chile

^dDepartment of Chemistry and Pharmacy, Pharmacy Faculty, Concepción, Chile.

^eDepartment of Speech and Language Therapy, School of Medicine, Universidad de Concepción, Concepción, Chile.

Third floor Chacabuco corner Janequeo s/n, School of Medicine, Concepción, Chile

INTRODUCTION

Currently, there is consensus that burnout is a psychosocial syndrome made up of three dimensions, known as emotional exhaustion, depersonalization, and lack of personal accomplishment (Ilaja & Reyes, 2016; Pérez et al., 2012). Emotional exhaustion is characterized by the wear and tear of emotional resources; depersonalization or cynicism is understood as the cold posture of uprooting and loss of contact capacity. Finally, the lack of personal accomplishment corresponds to the lack of professional skills and efficiency (Glaría-López et al.,

2016).

This syndrome was initially described in health professionals; a population where the syndrome has been measured using the MBI-Human Survey Inventory (MBI.HSS). This inventory, through its 22 items has been commonly used in this population to evaluate exhaustion, depersonalization, and lack of personal accomplishment (Maslach & Jackson, 1981; Hederich-Martínez & Caballero-Domínguez, 2016; Pérez et al., 2012). Over time, the field of study of burnout has expanded to other populations including the university student population (Pérez et al., 2012, Glaría-López et al., 2016, Ornelas-Contreras et al., 2020). To evaluate the discomfort and interpersonal burnout in university students, there is the MBI-HSS, which has been rephrased to adapt it to the student's reality, replacing the work mentions with study mentions and the patients mentions with peers mentions or others in general. (Pérez et al., 2012) Due to the scarce information about the psychometric properties of the latter instrument, this study, as part of the Associative VRID Project N° 214.083.032-1.0 titled "Academic well-being in students of health careers of Concepción and their relation with the characteristics of the formative process" aims to evaluate the factorial structure and the reliability of the MBI-HSS in Chilean university students in the area of health to confirm or refute the original three-factor model.

LITERATURE REVIEW

Entering and pursuing higher education is one of the most significant stages in a person's life (Estrada et al., 2018). This is why university institutions must ensure both academic success and psychological well-being (Merhi et al., 2018). In this sense, in recent years, there has been interest in studying academic burnout, a phenomenon that would affect students (Glaría et al., 2016, Merhi et al., 2018, Pérez et al., 2012) and that would bring negative consequences during their time at the university (Estrada et al., 2018). An educational institution that is concerned about the psychological well-being of its students must ensure the absence of burnout, considering that its absence would cause in the students' feelings of energy, desire to make an effort, greater enthusiasm and involvement with studies, which would lead to positive mental health (Marenco-Escuderos et al., 2017).

Academic burnout has been understood as a consequence and response to the permanent stress linked to the role, the activity, and academic

environment of an insidious character and malignant consequences that may affect the development, the understanding, and the satisfaction of students with their formation and academic life (Estrada et al., 2018). In this group, the emotional exhaustion dimension is characterized by feeling exhausted in the face of study. On the other hand, depersonalization is understood as the indifference or distanced attitude towards study. Finally, the lack of personal accomplishment is related to the perception of not feeling competent as students (Glaría et al., 2016, Vizoso-Gómez & Arias-Gundín, 2016).

It has been observed that the presence of burnout is associated with a greater perception of academic duties, which causes anguish in students (Merhi et al., 2018), a decrease of the academic commitment, lower satisfaction and expectations with studies, lower performance, and greater tendency to give up studies (Pérez et al., 2012, Martínez-Martínez & Marques-Pinto, 2005). Also, loneliness, depression, isolation, lack of ability to relate to peers, and feelings of apathy and depersonalization have been seen to be related to academic burnout (Obregon et al., 2020).

Exams, work overload, execution of mandatory tasks, and little time to deliver them are the factors most mentioned by students as causing stress (Vizoso-Gómez & Arias-Gundín, 2016).

In the students belonging to health careers, several studies have found high levels of burnout (Alfaro-Tolosa et al., 2013, Hinrichs et al., 2016; Glaría et al., 2016). The prevalence of Burnout in Latin America is around 10% in university health science students (Correa-López et al., 2019). In Peru, prevalences ranging from 10% to 40% have been found in medical, nursing, and dental students (Correa-López et al., 2019), whereas in Colombia, prevalence values of emotional exhaustion ranging from 4.9% to 27.9%, and low efficacy ranging from 4.9% and 48.6% have been reported (Marenco-Escuderos et al., 2017). A latest study published in 2020 conducted on Brazilian medical students found a prevalence of Burnout Syndrome of 3.3%, occurring mainly in men (63.6%), sedentary (81.8%), from the 5th to the 8th period (54.4%) (Guimarães-Nágime et al., 2020).

In studies where the association between academic burnout and academic variables has been evaluated, such as the one carried out on health sciences students in Porto Alegre, it has been shown that there is a relationship between emotional exhaustion and semester studied, number of subjects, and year of entry to the course.

In this way, the more advanced the semester, the more subjects are taken, and the more recent the entry to the course, the greater the feeling of emotional exhaustion. In the case of depersonalization, it was shown that the more recent the entry to the course, the lower the feeling of depersonalization (Carlotto & Gonçalves-Camara, 2008).

In the same line, a study in Chilean speech therapy students found similar results in identifying higher levels of emotional exhaustion and depersonalization in the final years of study (Glaría et al., 2016).

To study academic burnout, there is the Maslach Burnout Inventory-Student Survey (MBI-SS) questionnaire developed by Schaufeli et al. (2002). Such an instrument assesses the feeling of not giving more of oneself both physically and psychically, the presence of a negative attitude of devaluation and loss of interest in studying, and the existence of doubts about the capacity to perform academic tasks (Hederich-Martínez & Caballero-Domínguez, 2016). The instrument psychometric properties were evaluated by its creator in a sample of 1,661 students from Spain, Portugal, and the Netherlands, where it was found that the three-factor structure of the model composed of emotional exhaustion, depersonalization, and Personal Efficacy adjusted reasonably well in all three samples. (Schaufeli et al., 2002(b); Ornelas-Contreras et al., 2020)

When evaluating the psychometric properties of this questionnaire in Brazilian, Colombian, Portuguese, and Iranian students, the results are consistent with the original proposal composed of 3 factors (Carlotto & Gonçalves-Camara, 2006, Hederich-Martínez & Caballero-Domínguez, 2016, Rostami et al., 2013). Recent studies have once again demonstrated that the three-factor structure turns out to be viable and adequate (Ornelas-Contreras et al., 2020; Puranitee et al., 2019) and useful tool to measure academic burnout in students. (Obregon et al., 2020; Shi et al., 2019; Puranitee et al., 2019)

Although the MBI-SS has been recognized for its great utility in evaluating the phenomenon, numerous authors have emphasized that the difficulties that arise in the university cannot be exclusively attributed to academic activities (Beck et al., 2003; Dyson & Renk, 2006), but also social variables would influence, which should not be extracted within the educational context (Pérez et al., 2012). From this point of view, Pérez et al., 2012

mention the importance of having an instrument that allows for the evaluation of interpersonal discomfort and burnout in university students. To this end, they proposed using a version of the MBI-SS called MBI-HSS was proposed. This is an instrument where a social dimension is considered within the educational process and in which the mentions of the work were rephrased by mentions of the studies and the references to the patient were replaced by mentions of the peers or others in general. When evaluating the psychometric properties of this tool, the authors found the presence of three factors, close to those proposed by Maslach.

METHODOLOGY

The present quantitative study of relational analytical scope was carried out through a cross-sectional, non-experimental design by means of a survey.

Participants

The study population corresponded to university students from undergraduate health sciences programs.

Through non-probabilistic quota sampling, a sample of 426 students from four undergraduate health programs was obtained: Medicine, Kinesiology, Chemistry and Pharmacy, and Speech Therapy, using the career course by the students as a segmentation criterion. We used quota sampling because the difficulties of access to the population did not make random sampling feasible. Among the non-probability sampling strategies, we choose quota sampling because it allows a better representation of the population's heterogeneity.

In the sample, 249 participants were women (58.5%), with a mean of 21.31 years of age. Most of them studied Chemistry and Pharmacy (37.6%) and fourth year of studies (20.7%) (Table 1).

Instruments

The students responded to a version of the Maslach Burnout Inventory (MBI), specifically of the MBI-HSS, which was rephrased to adapt it to the reality of the students. In this version, the items that in the original version referred to the work were replaced by items allusive to the studies. On the other hand, those referred to patients were replaced by references to peers or others in general (Pérez et al., 2012).

The version used is made up of 22 items that represent descriptions of behaviors, thoughts, and affections to which the subjects must respond

according to the frequency with which they have experienced them. For this, a scale in Likert format of six alternatives should be used (= Never; 1= A few times a year or less; 2= Once a month or less; 3= A few times a month; 4= Once a week; 5= A few times a week; 6= Everyday).

The 22 items are grouped in the 3 subscales consistent with Maslach's trifactorial theoretical model: Emotional Exhaustion, Depersonalization, and Lack of Personal Accomplishment (Maslach & Jackson, 1981; Aguayo et al., 2011).

In previous research in Chilean university students, the reliability of MBI-HSS was $\alpha=0.77$ for Emotional Exhaustion, was $\alpha=0.80$ for Depersonalization, and was $\alpha=0.68$ for Lack of Personal Accomplishment (Pérez et al., 2012).

Besides, a sociodemographic questionnaire was applied, in which the subjects informed their gender, age, type of school from which they graduated, current career, years in the career, and previous university studies.

Procedure

The modified version of the MBI plus the sociodemographic questionnaire were part of a battery of instruments applied in the context of a larger study. The application was performed by those responsible of this research before starting the theoretical class. Before the application, each participant had to read and sign an informed consent in which, the following aspects were indicated: general objective of the study, names and institution of the performing team, and requirements associated with their collaboration. Additionally, participants were guaranteed the confidentiality and voluntary nature of their participation.

For data processing, the STATA 11 SE statistical package was used.

Analysis plan

To obtain evidence of the construct validity of the MBI, an Exploratory Factor Analysis was performed, using the Main Axis Analysis extraction method (MAA). This is the most suitable for processing composed scales such as MBI (Hair et al., 2006; Tabachnick & Fidell, 2001).

Subsequently, to estimate the internal consistency of the identified factors, the Cronbach's Alpha reliability coefficient of each item was calculated. In addition to evaluating the discriminant capacity of the items, the correlation of each item with the corrected total score of its factor was calculated.

RESULTS

First, before to the factor analysis, its pertinence was evaluated by calculating the Kaiser-Meyer-Olkin (KMO) sample adequacy statistic, which turned out to be 0.82. Likewise, Bartlett's sphericity test was statistically significant $\chi^2(231) = 2,813.58$; $p<0.001$. Both criteria show that the factor analysis is pertinent.

Subsequently, the number of factors of the scale was estimated. For this, three criteria were estimated: 1) The Kaiser-Guttman or latent root criterion; 2) the fall contrast criterion or screetest, which is usually used for this purpose (Hair et al., 2006), to which the following was added: 3) Horn's Parallel Analysis, which constitutes a more suitable tool for these purposes (Martínez et al., 2006).

The first criterion, Kaiser-Guttman or latent root criterion (Hair et al., 2006) identified three factors with eigenvalues greater than 1.0, being these of 4.94, 2.02, and 1.72, which would explain the 44.01% of the total variance of the items.

The second criterion, fall contrast or screetest, equally showed the presence of three factors through the sedimentation graph (Figure 1).

Finally, Horn's Parallel Analysis based on 100 random samples was aimed at the existence of three factors that present eigenvalues (4.94 for the first, 3.02 for the second, and 1.72 for the third) higher than the eigenvalues obtained in the 95% of the random samples (1.49, 1.41, and 1.34) (Figure 2).

Given the agreement of all the criteria around the three-factor solution, it was decided to evaluate the organization of the items in this factorial structure by calculating the configuration coefficients for each factor, using MAA applying Oblimin oblique rotation (Table 2).

The factor loads exhibited in Table 2 show that only 21 items present at least one configuration coefficient over $|0.30|$, which is the minimum value suggested as a threshold to accept a factor load as adequate (Hair et al., 2006). In the case of item 22 ("I think that people in my academic environment blame me for some of their problems"), the highest load was 0.273 in factor III, so it had to be eliminated, repeating the analysis with the remaining 21 items.

For this set, the KMO was 0.83 and Bartlett's sphericity test was statistically significant $\chi^2(210) = 2,739.30$; $p<0,001$, matching both criteria in the pertinence of AFE.

Subsequently. The Kaiser-Guttman or latent root criterion (Hair et al., 2006) identified three factors with eigenvalues greater than 1.0, being

these of 4.88, 3.02, and 12.68. These would explain 45.66% of the total variance of the items.

The second criterion, called fall contrast or scree test also showed the presence of these factors through the sedimentation graph (Figure 3).

Finally, Horn Parallel Analysis, based on 100 random samples, pointed to the existence of three factors that present eigenvalues (4.88, 3.02, and 1.68) higher than the own values obtained in 95% random samples (1.48, 1.40, and 1.33) (Figure 4).

Given the agreement of all criteria around the three-factor solution, it was decided to evaluate the organization of the items in this factorial structure, calculating the configuration coefficients for each factor through MAA, applying Oblimin oblique rotation (Table 3).

Table 3 shows that all items present configuration coefficients over $|0.30|$ in at least one factor. Only item 12 presented significant loads in two factors simultaneously (cross-loadings). Therefore, its assignment considered results and conceptual analysis at the same time.

Thus, the factors were configured as follows:

- Factor I: Made up by items 1, 8, 3, 2, 20 and, 13. It considers six of the nine items that Maslach & Jackson (1981) included in the *Emotional exhaustion* factor. The items presented reliability of $\alpha = 0.856$, with correlations between the items and a corrected total of $r = 0.608$ (item 13) and $r = 0.719$ (item 1).
- Factor II: Includes items 19, 18, 17, 7, 9, 12, 4, 21, and 14, and corresponds to the *Lack of Personal Accomplishment* of Maslach & Jackson (1981), except for the fact that item 14 is added. Its reliability was $\alpha = 0.710$, with correlations between items, and the total corrected ranged from $r = 0.179$ (item 14) to $r = 0.54$ (item 19).
- Factor III: Made up of items 5, 6, 10, 11, 15, and 16, and corresponds in five of its seven items to the *Depersonalization* factor identified by Maslach & Jackson (1981). When analyzing the internal consistency of the scale, a Cronbach's alpha coefficient of $\alpha = 0.707$ was obtained, with correlations between items and total corrected that ranged from $r = 0.377$ (item 15) to $r = 0.509$ (item 10).

Given that the three factors presented suitable reliability, their percentage was calculated by adding the responses of the subjects to their items. From the resulting scores, the association between the factors was evaluated by the Spearman correlation coefficient through a one-sided contrast. In this case, direct correlations between the three factors were found (Table 4).

DISCUSSION

The results of this study are consistent with the original proposal by Maslach et al., 1981, which proposes a three-factor model made up of the factors of Emotional Exhaustion, Depersonalization, and Lack of Personal Accomplishment. In this way, the concordance between the empirical performance of the questionnaire and the theoretical model in which it is based has been verified in different countries such as Italy (Loera et al., 2014), Sweden, Finland, Holland, and Spain (Schaufeli et al., 2002(b), as well as in Iranian (Rostami et al., 2013), Brazilian (Carlotto & Câmara, 2006), Colombian (Hederich-Martínez & Caballero-Domínguez, 2016) and Chilean university students (Pérez et al., 2012).

However, when analyzing the distribution of the items with more detail it was found that the Emotional Exhaustion factor is only composed of six of the nine original items (Maslach et al., 1981). These were also found in the seven-item version for this factor, identified by Pérez et al. (2012). Both the results of the present study and those found by Pérez do not include in this factor the items 6 ("Being all day with people is an effort") and 16 ("Working directly with people is causing me stress"). In both studies, these were assigned to the Depersonalization factor.

Items belonging to the Lack of Personal Accomplishment factor found by Maslach and Pérez are similar, leaving the factor made up of eight items. However, in the present study, although the factor includes the same eight items, item 14 is also added ("I think I am studying too much"). This item is referred to the original proposal to the fatigue that the student may experience. However, the excess workload can also lead to feelings of Lack of Personal Accomplishment, which is why higher education entities have started to ensure not only by providing theoretical and technical knowledge but also by the occupation of free time leisure. This is explained because, for the correct conciliation between the personal and the academic, it is necessary to intersperse the periods of activity and rest (Sandoval, 2017). To this end, universities offer spaces for activities such as reading, sports, and art to allow the enjoyment of free time (Sandoval, 2017) and thus promote the formation of integral people, where in addition to learning knowledge (Marrero et al., 2018), they can develop skills, physical abilities, cognitive and moral abilities (Bauzá-Díaz et al., 2020).

In this sense, "studying too much" presents

certain ambiguity, and may refer to “overcoming personal abilities”, which would indicate exhaustion, as well as “overcoming the time”, which is considered suitable in competition with other activities. This could derive from the feeling of Lack of Personal Accomplishment and that seems to have affected the response of the students involved in this situation. University students should organize their study and leisure times since, for them, leisure time is one of the most relevant dimensions (Sandoval, 2017), which supports the migration of this item to the Lack of Personal Accomplishment factor.

The Depersonalization factor was made up of six items, of which four are similar to Maslach’s original proposal. In this case, this case, item 6 (“Being all day with people is an effort”) and item 16 (“Studying with people causes me stress”) are added. This is consistent with the original definition of depersonalization, which is referred to the cold attitude of uprooting and loss of contact (Glaría et al., 2016).

Despite these discrepancies in the specific distribution of the items, the factors presented an acceptable alpha (>0.70) in two factors, and good (>0.80) in one of them (George & Mallery, 2003). Although these results are slightly lower than the original validation, results indicate that the identified structure allows an accurate measurement of three constructs (Martínez et al., 2006).

On the other hand, the factors show a statistically significant direct correlation between all factors, a low intensity (low effect size) between Depersonalization and the other two factors; and moderate between Emotional Exhaustion and Lack of Personal Accomplishment. This is to be expected, given that the three dimensions report to the same construct; burnout. Also, the low intensity of the correlations shows that the three scores allow measuring separately the three manifestations of this phenomenon.

In this way, the results of this study demonstrate an adequate factorial structure and reliability of the MBI-HSS questionnaire, demonstrating that it is a useful tool for evaluating academic burnout in university students in health careers.

In a context where the well-being of university students is becoming increasingly important as both a necessary factor and a desirable consequence of a successful educational process (Gómez et al., 2015; Pérez et al., 2011), having psychometric evidence to support the validity and reliability of burnout measurements facilitates their

timely diagnosis, continuous research and that institutions have the information to carry out preventive measures, and programs to reduce the levels of burnout in their students.

Regarding the limitations of the study, although the sample is large and represents the diversity of health training programs, it is recommended to continue the psychometric study of the scale by incorporating other universities from other geographical areas of the country and Latin America. Similarly, it is also relevant to incorporate other areas of knowledge, in which even fewer studies have been carried out on this subject. Finally, another limitation is the use of non-probability sampling, which is due to the difficulties of access to the population. In this sense, it is recommended that subsequent studies be carried out using probability sampling to overcome these difficulties, such as cluster sampling.

Within future lines of research, given that the phenomenon of academic well-being is multidimensional, it is recommended to continue its study not only focusing on burnout but also including variables from a positive psychology approach, such as engagement (Gómez et al., 2015), self-esteem, optimism, etc. (Pérez et al., 2011). And finally, not to stay in the diagnosis, but to advance in the development and evaluation of intervention processes.

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Tables and Figures

Table 1. Description of the sample of health students surveyed.

Variable	Results	
Gender	Men	n=177; 41.5%
	Females	n=249; 58.5%
Age	M=21.31; SD=2.42; Min=17; Max=34	
Career	Speech Therapy	n=94; 22.1%
	Kinesiology	n=37; 8.7%
	Medicine	n=135; 31.7%
	Chemistry and Pharmacy	n=160; 37.6%
Level achieved	First year	n=85; 20.0%
	Second year	n=85; 20.0%
	Third year	n=75; 17.6%
	Fourth year	n=88; 20.7%
	Fifth year	n=81; 19.0%
	Sixth year	n=11; 2.6%
	Not informed	n=1; 0.2%

N=426

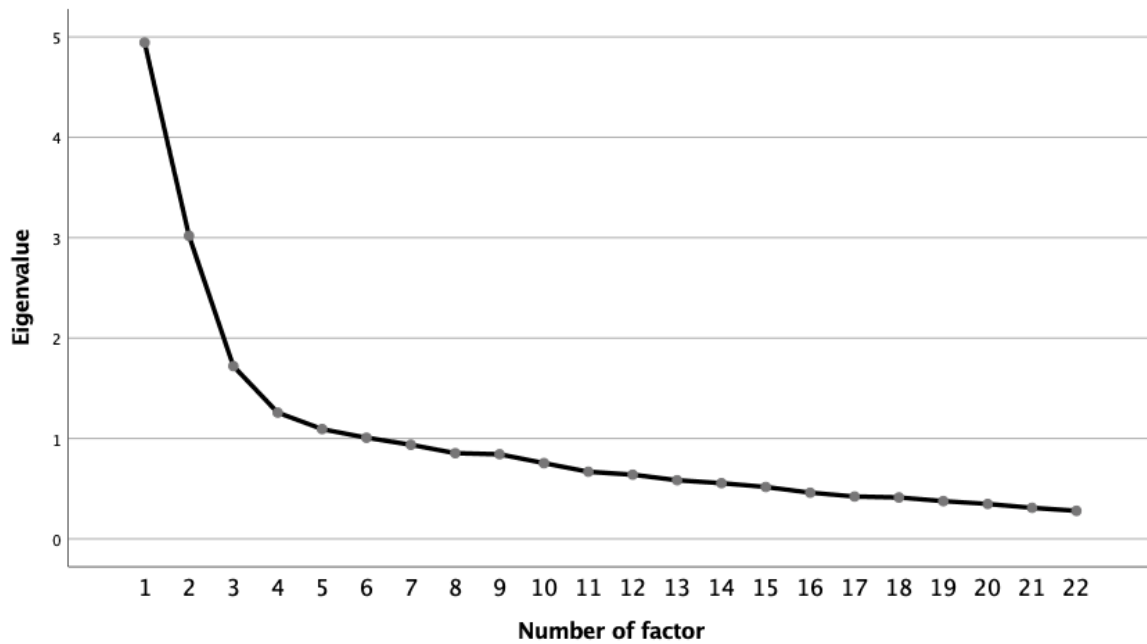


Figure 1. Sedimentation graph of the Maslach Burnout Inventory in university students from the health area.

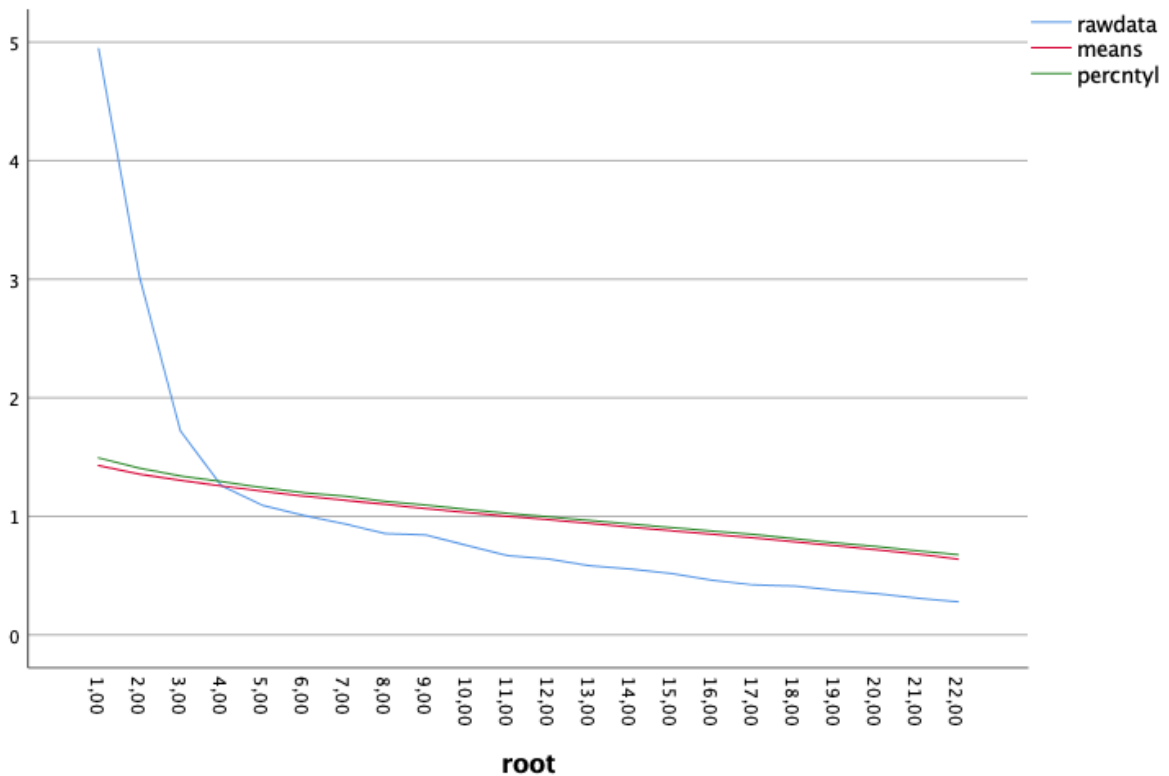


Figure 2. Horn's Parallel Analysis graph of the Maslach Burnout Inventory in university students from the health area.

Table 2. Configuration matrix of the Maslach Burnout Inventory in university students from the health area obtained by Principal Axis Analysis with Oblimene oblique rotation.

Item	Factor I	Factor II	Factor III
1. I feel emotionally exhausted by my studies	0.784	0.050	0.052
2. I feel tired at the end of the study day	0.664	0.123	0.050
3. I feel fatigued when I wake up in the morning and I have to face another study day	0.705	0.053	0.053
4. I easily understand how people feel (i)	0.214	0.441	-0.113
5. I think I treat some people as if they were impersonal objects	-0.027	-0.101	0.526
6. Being with other people all day is an effort	0.151	-0.149	0.396
7. I treat people's problems very effectively (i)	0.081	0.513	-0.020
8. I feel "burned" by my academic work	0.746	0.019	0.083
9. I think I am positively influencing my studies on the lives of others (i)	0.001	0.486	-0.088
10. I have become more insensitive to people since I study this career	0.042	0.042	0.622
11. I am concerned that studying this career is hardening me emotionally	0.096	0.173	0.561
12. I feel continually active (i)	-0.419	0.477	0.173
13. I feel frustrated in my studies	0.589	-0.080	0.138
14. I think I am studying too much	0.269	0.314	0.176
15. I am not really concerned about what happens to some people I must interact with	-0.047	-0.051	0.482
16. Working directly with people is causing me stress	0.090	-0.245	0.459
17. I can easily create a relaxed atmosphere with the people I study with (i)	0.040	0.577	-0.084
18. I feel stimulated after studying in contact with people (i)	-0.023	0.609	-0.104
19. I have achieved many useful things in my career (i)	-0.082	0.630	0.000
20. I feel finished	0.606	-0.122	0.115
21. In my studies I try the problems very calmly (i)	-0.213	0.343	0.027
22. I think that people in my academic environment blame me for some of their problems	0.033	-0.003	0.273

an Italics indicate loads greater than 0.30.

(i) Indicates that the item is encoded in reverse.

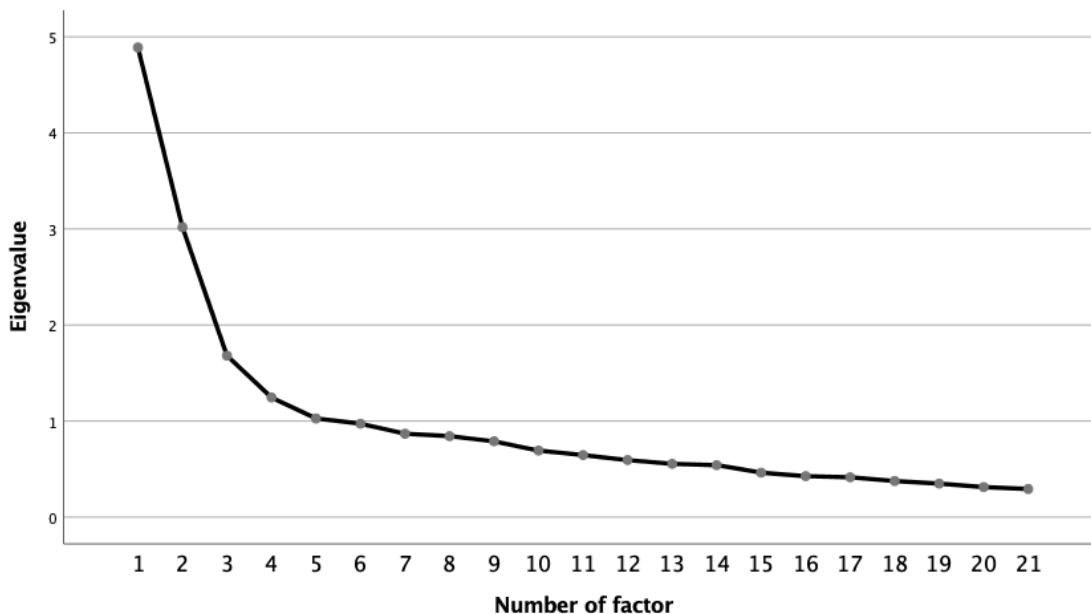


Figure 3. Sedimentation graph of the Maslach Burnout Inventory in university students from the health area.

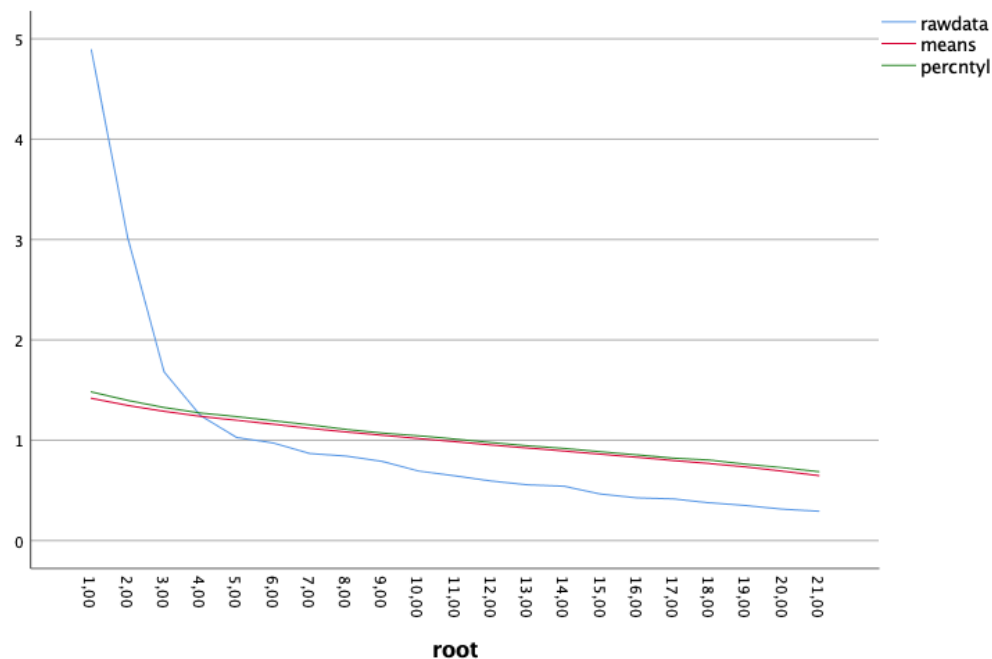


Figure 4 Horn's Parallel Analysis graph of the Maslach Burnout Inventory in university students from the health area (without item 22).

Table 3. Configuration matrix of the Maslach burnout Inventory in university students of the health area, obtained through Main Axis Analysis with Oblimene rotation (without item 22).

Ítem	Factor I	Factor II	Factor III
1. I feel emotionally exhausted by my studies	0.784	0.052	0.052
2. I feel tired at the end of the study day	0.662	0.125	0.057
3. I feel fatigued when I wake up in the morning and I have to face another study day	0.708	0.053	0.049
4. I easily understand how people feel (i)	0.220	0.439	-0.128
5. I think I treat some people as if they were impersonal objects	-0.004	-0.109	0.492
6. Being with other people all day is an effort	0.158	-0.150	0.396
7. I treat people's problems very effectively (i)	0.080	0.514	-0.014
8. I feel "burned" by my academic work	0.754	0.016	0.069
9. I think I am positively influencing my studies on the lives of others (i)	-0.007	0.490	-0.072
10. I have become more insensitive to people since I study this career	0.042	0.046	0.649
11. I am concerned that studying this career is hardening me emotionally	0.107	0.171	0.556
12. I feel continually active (i)	-0.413	0.474	0.167
13. I feel frustrated in my studies	0.592	-0.080	0.139
14. I think I am studying too much	0.267	0.318	0.193
15. I am not really concerned about what happens to some people I must interact with	-0.032	-0.056	0.465
16. Working directly with people is causing me stress	0.102	-0.248	0.446
17. I can easily create a relaxed atmosphere with the people I study with (i)	0.046	0.574	-0.099
18. I feel stimulated after studying in contact with people (i)	-0.018	0.606	-0.117
19. I have achieved many useful things in my career (i)	-0.085	0.632	0.009
20. I feel finished	0.615	-0.125	0.096
21. In my studies I try the problems very calmly (i)	-0.214	0.344	0.033

a Italics indicate loads greater than 0.30.

(i) Indicates that the item is encoded in reverse.

Table 4. Pearson correlation between the factors of the Maslach Burnout Inventory in university students of the health area.

	1	2	3
1. MBI-S – Personal exhaustion	0.856 ^a		
2. MBI-S – Depersonalization	0.083*	0.710 ^a	
3. MBI-S – Lack of personal fulfillment	0.416***	0.19***	0.707 ^a

N=426; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

^aCronbach's Alpha correlation coefficient