

doi: <https://doi.org/10.15446/rcp.v31n1.82590>

Factor Validity of Measurement for Burnout in Chilean Prison Officers

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How to Cite this Article: Álvarez-Cabrera, P., López-Reyes, K., Chacón, F. y Sánchez-Moreno, E. (2022). Factor validity of measurement for burnout in Chilean Prison Officers *Revista Colombiana de Psicología*, 31 (1), 23-34. <https://doi.org/10.15446/rcp.v31n1.82590>

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SCIENTIFIC RESEARCH ARTICLE

RECEIVED: OCTOBER 1ST - 2019 - ACCEPTED: JULY 19TH - 2021

Abstract

The objective of this research was to perform the factorial validity of the Maslach Burnout Inventory Human Services (MBIHSS) in prison officers in Chile through a first-order factor analysis and a confirmatory analysis. The sample was constituted by all the prison officers in the Region of Arica and Parinacota ($N=334$). Of these, 44 did not participate in the study, since they were in a medical leave, vacation or special permit, transfer in progress, or similar situation. Therefore, the final number of participants was 290 subjects. The Burnout Syndrome (BS) was estimated through the adaptation to Spanish (Gil-Monte, 2005) of the Maslach Burnout Inventory, in its version for human services professionals (MBI-HSS) (Maslach & Jackson, 1986), validated in Chile (Olivares, 2009). By way of conclusion, the present investigation found similarities in the MBI-HSS in terms of dimensionality and reliability analysis, and despite the international observations of the instrument, an adjusted proposal (standardization and validation) of the MBI-HSS is provided for contexts Prisoners with 18 items, since in Chile there is no validation of the MBI-HSS in prison officers;

Keywords: Burnout Syndrome, factorial analysis, prisons, validation

Medida de Validez Factorial para el *Burnout* en Oficiales de Prisiones Chilenas

Resumen

El objetivo de esta investigación fue realizar la validez factorial de Maslach Burnout Inventory Human Services (MBIHSS) en funcionarios de prisiones en Chile a través de un análisis factorial de primer orden y un análisis confirmatorio. La muestra estuvo constituida por todos los funcionarios penitenciarios de la Región de Arica y Parinacota ($N=334$). De estos, 44 no participaron en el estudio, ya que se encontraban en un permiso médico, vacaciones o permiso especial, transferencia en curso o situación similar. El número final de participantes, por lo tanto, fue de 290 sujetos. El Síndrome de Burnout (BS) se estimó mediante la adaptación al español (Gil-Monte, 2005) del Maslach Burnout Inventory, en su versión para profesionales de servicios humanos (MBI-HSS) (Maslach & Jackson, 1986), validado en Chile (Olivares, 2009). A modo de conclusión, la presente investigación encontró similitudes en el MBI-HSS en términos de análisis de dimensionalidad y confiabilidad, y a pesar de las observaciones internacionales del instrumento, se proporciona una propuesta ajustada (estandarización y validación) del MBI-HSS para contextos Prisioneros con 18 ítems, ya que en Chile no hay validación del MBI-HSS en los funcionarios de prisiones

Palabras claves: análisis factorial, gendarmes, prisiones, Síndrome de Burnout, validación.

THE “*SYNDROME de Quemarse por el Trabajo*” [syndrome of burnout because of work] or Burnout Syndrome (BS) Burnout syndrome corresponds to the process of psychosociological deterioration experienced by workers who work daily with people who need help or special attention, in this case, inmates or persons deprived of liberty, that generate a high demand for time (Maslach & Jackson, 1982; Maslach, 1976). Burnout syndrome is not considered as a particular form of work-related stress, but rather as a response to chronic work-related stress (Gil-Monte, 2003; Gil-Monte & Peiró, 1997). The study of Burnout syndrome in prison workers is relevant due to the general lack of knowledge about these professionals at a social level and the characteristics of the work environment that make it especially stressful in Chile (Bringas-Molleda et al. 2015; Merino-Plaza et al. 2018). In addition, the prison officer works every day in an environment of high complexity, inherently stressful and involves physical, emotional, and social wear, an environment that requires testing all your personal resources against work stress and human relationship management (Wang, Chen, Li & Gao, 2017; Álvarez-Cabrera et al. 2019; Viljoen & Claassen, 2017; Aronsson et al. 2017). Burnout syndrome causes prisoner problems in their quality of life (deterioration of their personal and social life (Gil-Monte et al. 2009), absenteeism, job rotation, increase in medical leave and decrease in the quality of work (Maslach et al. 2001; Blanco-Álvarez & Thoem, 2017), and the professional achievement of employees (Useche et al. 2019).

Measuring burnout is performed through the MBI-HSS, which is composed of three dimensions: the personal accomplishment (PA) in the work is defined as the tendency of practitioners to negatively assess themselves, which affects the ability to perform work and relationships with the people you serve. Workers feel unhappy with themselves and dissatisfied with their work results (Maslach & Jackson, 1981). Emotional exhaustion (EE) means the situation where workers feel that they can no longer give of themselves at the

emotional level. It is a situation of energy depletion, a feeling of being emotionally exhausted due to daily and maintained contact with people to be treated as a work object (Maslach & Jackson, 1981). Depersonalization (PD) can be defined as the development of negative attitudes and feelings, as cynicism towards the people targeted by work (Maslach & Jackson, 1981). The progress of the BS occurs when a low level of personal fulfillment, a high level of emotional exhaustion, and a high level of depersonalization coexist simultaneously (Maslach, 2003). To evaluate the BS, one of the most used instruments is the Maslach Burnout Inventory–Human Services Survey (MBI-HSS). This questionnaire, that arises from the pioneering works of Maslach (1976), that uses the scale to evaluate the psychometric properties in the three dimensions involved. This instrument has been validated both in samples of professionals and in cross-cultural studies, however, it lacks validation and standardization in Chile and South America in criminal and / or similar populations as prison officers, prison police, prison guards, etc. This is the importance of adjusting this instrument to the context of prisons (Olivares, 2009; Olivares-Faúndez et al., 2014). The MBI-HSS enjoys wide international acceptance, and has been widely used in most countries of Latin America, the European Union, and in the United States (Álvarez-Cabrera et al. 2016; Álvarez-Cabrera et al. 2019; Barra & Sotelo, 2016; Bringas-Molleda et al. 2015; Hu et al. 2015; López et al. 2015; Montoya, 2015; Velázquez et al. 2015; Oliveira-Velez et al. 2016; Wang, Liu, & Wang, 2015). However, the MBI-HSS also has disadvantages and limitations (Olivares & Gil-Monte, 2009), mainly in the measurements of psychometric properties, and these weaknesses are accentuated when the questionnaire is adapted to different languages and contexts (Olmedo et al. 2001; Peeters & Rutte, 2005). Also, their reliability has been questioned, especially in different professional groups (Bakker et al. 2014; Halbesleben & Buckley, 2004), and the validity of their factor structure (Kristensen

et al. 2005). These weaknesses of the MBI-HSS have generated confusion in the implementation of their measurements and little certainty about the parameters reported by the questionnaire.

The factorial structure of the MBI-HSS is particularly relevant, as mentioned above, that is, difficulties in adapting said questionnaire in different contexts, therefore, the importance of making adjustments relevant to the prison context.

Although many authors have found that the factor structure can be adjusted with three factors (Boles et al. 2000; Gorter et al. 1999; Schaufeli, et al. 2001), as proposed by Maslach and Jackson (1981, 1986), other studies have reported structures with fewer factors, (Abu-Hilal & Salameh, 1992; Digman et al. 1986; Drake & Yadama, 1995; Garcia, Llor, & Saéz, 1994; Gil-Monte & Peiró, 1999). These different amounts of reported factors have led to a strong question of the stability of the MBI-HSS factor structure (Manso-Pinto, 2006) as a method of evaluating the BS in general, the above could be resolved by adjusting the questionnaire to each context.

The prison officers and correctional officers are a population highly prone to develop BS. The prison officers work directly with persons deprived of liberty, and who, therefore, require special help and attention. In addition, in their work environment there are multiple dimensions of organizational and labor factors that can become labor stressors (Lambert, Hogan & Allen, 2006), among which are: insufficient staff, high workload, supervision requirements, shift work (frequently subject to modifications), conflict and role ambiguity, relationship with the leadership, and constant variation in the composition of the internal population (Pizarro, 2008).

For the population of prison officers in Chile, there are no published studies exploring the factor structure of the MBI-HSS. We set out to test the factor structure of MBI-HSS in a population of prison officers in Chile, to improve the implementation of MBI-HSS, and the diagnosis of BS in Chile.

Method

Participants and Procedure

To carry out this study, all prison officers of the different criminal units of Arica, Chile ($N=334$) were invited to participate. Of these, 44 did not participate in the study, being in a situation of medical leave, vacation or special permission, transfer in progress, or the like. The total number of participants included in the study was 290 subjects. All participants signed the informed consent.

Of the total participants, 243 were men (83.8%) and 47 women (16.2%). Regarding the educational level, 139 subjects (47.9%) had full secondary education, 27 (9.3%), higher technical education, and 124 subjects (42.8%) with higher education studies. The age distribution shows that 38 subjects were between 18 and 26 years old (13.1%), 126 between 27 and 35 years old, (43.4%), and 126 subjects over 36 years old (43.4%). According to marital status, 98 subjects were single (33.3%), 137 married (46.6%), 14 divorced (4.8%) and 45 actually lived together (15.3%). 64.5% have worked in the same position and / or function, and 35.2% have worked in more than one section or department of the institution. The amount of time working for between 6 months to 5 years (11.7%), five years to 10 years (16.9%), with more than ten years (71.4%) participants. Finally, 232 subjects had children at the time of the study (80%).

The study was approved by the Research and Ethics Commission of the National Directorate of Prison Officers of Chile. For data collection, we gave each participant the questionnaire, which was answered by self-administered, in the workplace, under the supervision of a psychologist experienced in managing surveys. The time to answer the survey was approximately 15 minutes. Anonymity was assured and respected in the responses of all participants.

MBI-HSS. The BS was evaluated through the Spanish adaptation of the Maslach Burnout Inventory questionnaire (Gil-Monte, 2005), in its version for human services professionals (MBI-HSS) (Maslach & Jackson, 1986), that has been

previously validated for the Chilean population (Olivares, 2009).

The questionnaire has 22 items that are distributed on three scales called “Emotional exhaustion”, “Depersonalization”, and “Personal accomplishment”. In all of them the contents and the frequency of the feelings described in their items were assessed on a scale of 7 points (From 0 or *Never* to 6 or *Everyday*). The emotional exhaustion (EA) scale

consists of 9 items ($\alpha=.83$) that describe feelings of being overwhelmed and emotionally exhausted by work. The depersonalization scale (DP) is made up of 5 items that describe an impersonal response and the lack of feelings towards the subjects under attention ($\alpha=.64$). Finally, the scale of Personal accomplishment (PA) is composed of 8 items that describe feelings of competence and successful accomplishment in the work towards others ($\alpha=.74$).

Results

Table 1
Internal Consistency of MBI-HSS in Different Countries

Country	Authors	Cronbach's Alpha		
		EA	DP	PA
United States	Maslach & Jackson, 1986	.90	.70	.71
Spain	Gil-Monte & Peiró (2005)	.85	.58	.71
Chile	Olivares (2009)	.87	.69	.80
Colombia	Rodríguez-Amaya (2014)	.86	.70	.79
Chile	The present research	.83	.64	.74

* EA: emotional exhaustion; DP: depersonalization ; PA: personal accomplishment.
Sources: Maslach & Jackson, 1986; Gil-Monte & Peiró, 2005; Olivares, 2009; Rodríguez Amaya, 2014.

The dimensionality of the MBI-HSS was checked through a factor analysis (Table 2), finding three factors, and similar, to that proposed by the original authors (Maslach & Jackson, 1986).

Table 2
Rotated Factor Matrix of MBI-HSS

Ítem	Factor		
	1	2	3
Ítem 3	0.833		
Ítem 8	0.742		
Ítem 2	0.741		
Ítem 1	0.734		
Ítem 14	0.705		
Ítem 13	0.700		
Ítem 11	0.417		0.409
Ítem 10	0.361		0.346
Ítem 6	0.339		

Ítem 9		0.628	
Ítem 19		0.609	
Ítem 7		0.516	
Ítem 17		0.506	
Ítem 4		0.487	
Ítem 18		0.482	
Ítem 12	-0.382	0.471	
Ítem 21		0.435	
Ítem 22			0.710
Ítem 20	0.366		0.617
Ítem 16	0.346		0.545
Ítem 5			0.438
Ítem 15			0.334
Percent Variance	36.62	10.92	6.83
Total Variance (%)	53.37		

Note. The values marked in bold correspond to the items that match those of the MBI-HSS. Source: Own Elaboration.

Based on the results obtained in the Kaiser-Meyer-Olkin (κ_{MO}) test for Sampling Adequacy (.801) and Bartlett's sphericity test ($p=.00$), factors were extracted, according to the maximum likelihood method with Varimax rotation with Kaiser, according to the proposal of Maslach and Jackson (1986). In addition, those factors with eigenvalues greater than 1.00 were retained and those items that presented factor loads equal to or greater than 0.30 were included in each factor.

From the conformation obtained from the factor analysis, three factors were generated with high concordance with the theoretical base model of the instrument. Thus, the first factor, that explained 36.92% of the variance, composed of items 3, 8, 2, 1, 14, 13 and 6 (emotional exhaustion factor), however, there were two items that were loaded in another dimension, so it was eliminated (items 10: I feel that I have become harder with the inmates, and 11: I worry that this work is hardening me emotionally).

The second factor that was obtained was made up of items 9, 19, 7, 17, 4, 18, 12, 21, as proposed by the original instrument, and contributed 10.92% of the variance (Personal accomplishment Factor).

Finally, the third factor was made up of items 22, 5 and 15, contributing 6.83% of the variance (Depersonalization factor). Items 20 (I feel as if I were at the limit of my possibilities), and 16 (I feel that working in direct contact with inmates get tired of me) were eliminated because they loaded on factor 1. Although items 10, 11, 16, and 20 have acceptable levels in their factor loads, the elimination applies, as they are not grouped in the factor proposed by the original authors.

The three factors (Emotional Exhaustion, Personal accomplishment and Depersonalization) in sum explain 53.37% of the total variance, which is considered correct because it is placed on the minimum criterion of 30% (Table 2).

To confirm the validity of the three-factor MBI-HSS model obtained, a factor analysis was carried out using the maximum likelihood method (Figure 1). To estimate the quality of fit to the model

were calculated: Index Comparative Adjustment (ICA), the index Goodness of Fit (IGF), the index Goodness Fixed Set (AFFI), the approximation error of the mean square deviation (RMS-EA), and chi-square (χ^2) divided by degrees of freedom (GL), minimum test for confirmatory analysis. Positive results were obtained in the indicators, with the exception of chi-square divided by degrees of freedom (Table 3)

Figure 1. Structural equation for MBI-HSS (Confirmatory Factor Analysis). Source: Owner Elaboration.

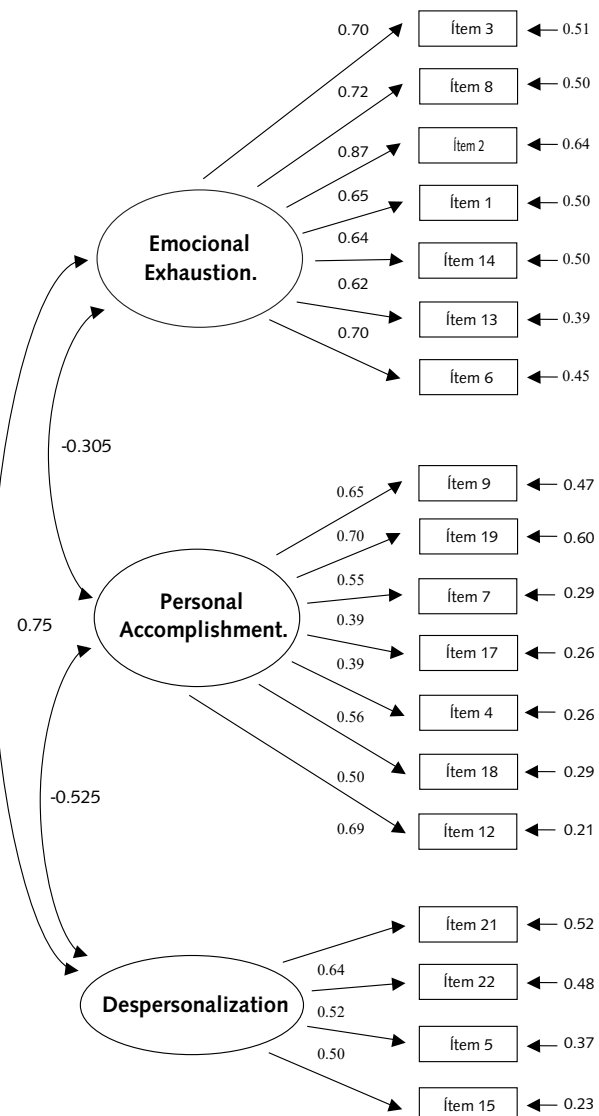


Table 3
Goodness-of-Fit Indices.

Indices	χ^2/df	GFI	AGFI	CFI	RMS-SEA
Criteria	Less than 4	$\geq .9$	$\geq .9$	$\geq .9$	Between .05 y .08
Value obtained	4.61	.90	.93	.93	.058

Source: Owner Elaboration.

There is an empirical relationship between the variables that was expected. In addition, once the model was formed and ratified, we proceeded with the study of the metric quality of the items; that is, estimate their discrimination capacity, using the corrected item-total correlation for the three factors (Table 4). Values over .31 (Discrimination Index) were considered adequate, finding that the items obtained an adequate discrimination

capacity (D). Therefore, a reliability analysis was performed, using the Cronbach's alpha index (α), both for the total scale and for the dimensions. The results indicate adequate internal consistency values (González & Pazmiño, 2015) for the total scale and for the total of its subscales, increasing these levels of internal consistency by eliminating items 11, 10, 16, and 20 (Table 4).

Table 4
Internal Consistency Indices through Cronbach's Alpha (Discrimination Index)

	Items	Alpha	Factor	Total Alpha
3	Cuando me levanto por la mañana y me enfrento a otra jornada de trabajo me siento agotado.	.68		
8	Siento que mi trabajo me está desgastando	.72		
2	Cuando termino mi jornada de trabajo me siento agotado	.64		
1	Me siento emocionalmente defraudado en mi trabajo	.71	EA	.92
14	Siento que estoy demasiado tiempo en mi trabajo	.60		
13	Me siento frustrado por el trabajo	.55		
6	Siento que trabajar todo el día con el interno me cansa	.61		
9	Siento que estoy influyendo positivamente en las vidas de otras personas a través de mi trabajo	.56		
19	Creo que consigo muchas cosas valiosas en este trabajo	.52		
7	Siento que trato con mucha efectividad los problemas de los internos a los que tengo que resguardar.	.48		
17	Siento que puedo crear con facilidad un clima agradable en mi trabajo	.42	PA	.70
4	Siento que puedo entender fácilmente a los internos que tengo que atender	.41		
18	Me siento estimulado después de haber trabajado íntimamente con quienes tengo que trabajar (internos)	.54		
12	Me siento muy enérgico en mi trabajo	.53		
21	Siento que en mi trabajo los problemas emocionales son tratados de forma adecuada	.41		
22	Me parece que los beneficiarios de mi trabajo me culpan de algunos problemas	.47		
5	Siento que estoy tratando a algunos internos, como si fuesen objetos impersonales	.41	DP	.84
15	Siento que realmente no me importa lo que les ocurra a los internos a los que tengo que atender profesionalmente	.43		

Source: Owner Elaboration.

It is important to mention that the elimination of items 10, 11, 16, and 20, has generated a new proposal of the MBI-HSS in prison contexts, in addition there was an improvement in the levels of internal consistency of each dimension, in Emotional Exhaustion of .83 increase to .92, for Personal accomplishment of .64 increase to .70, and for Depersonalization of .74 increase to .84.

Discussion

Regarding the analysis of internal consistency measured through Cronbach's alpha, the values obtained were very similar to those of other investigations, both from the original authors (Maslach & Jackson, 1986), and from the validation and adaptation to Spanish by Gil-Monte y Peiró (2000), the adaptation in Chile of Olivares (2009), and the application in groups similar to that of this research in South America (Rodríguez Amaya, 2014).

According to the results delivered by the first order factor analysis and the confirmatory analysis, it was determined that the factor structure of the present investigation is similar to that proposed by Maslach and Jackson (1986), where a large part of the items were grouped into some of the three dimensions: Emotional Exhaustion, Depersonalization, and Personal Accomplishment. However, at the levels of internal consistency measured, through Cronbach's alpha, similar or somewhat lower results could be found than the original instrument proposal, as in other investigations (Olmedo et al. 2001; Peeters & Rutte, 2005; Kristensen et al. 2005; Bakker et al. 2014; Gil-Monte, 2005), leaving the possibility that to some extent the dimensions do not necessarily measure and adjust according to the Proposal by the original authors, so carrying out this type of analysis, allows the adaptation of the BS to each context and population. In addition, Gil-Monte (2003) mentions that before applying the MBI-HSS, an adjustment, standardization and validation of the instrument must be made to each group

of people, since there are psychometric problems that can affect the results of the research that applies this instrument. So, this research is part of such suggestions, the first scientific paper that adjusts the MBI-HSS to the prison context.

Regarding the dimensionality of the instrument, three factors are effectively generated as the original proposal of the authors Maslach and Jackson (1986), and in large part of the research related to this theme there are three dimensions. But there are discrepancies with respect to the aforementioned, since in some factor analyzes they yield up to four dimensions, generating a change in the original proposal, a situation that led Gil-Monte, for example, to create the SQT (*Síndrome de Quemarse por el Trabajo* questionnaire) with four dimensions. In the present investigation, although the grouping of an item is given in three dimensions, there are items that do not fit the original proposal, specifically in the Emotional Exhaustion dimension, there were two items that were loaded in another dimension, so we proceeded to its elimination items (10: *Siento que me he hecho más duro con los internos*, and 11: *Me preocupa que este trabajo me está endureciendo emocionalmente*). In addition, in the Depersonalization dimension, item 20 (*Me siento como si estuviera al límite de mis posibilidades*), and 16 (*Siento que trabajar en contacto directo con los internos me cansa*) loaded in dimension 1, so we proceeded to its removal too, but the Personal Realization factor adjusted to the original proposal (item charged in the same factor), providing a new proposal of the MBI-HSS in prison officers, with 18 items grouped into three dimensions.

To corroborate the three-factor model obtained, a confirmatory factor analysis was applied, excluding the four items that were charged contrary to Maslach and Jackson's original proposal. It was estimated through the maximum likelihood method and positive results were obtained in the indicators, it can also be noted that apart from not having a considerable sample of subjects for statistical analyzes, the maximum value proposed

as a criterion exceeds the minimum. On the other hand, the empirical relationship between the variables was as expected, and once the model was formed and ratified, the metric quality study was carried out, finding that the items obtained an adequate capacity for discrimination. Therefore, a final reliability analysis was performed for the new dimensions, without the items removed, adequate internal consistency values were found for the total scale and for the total of its subscales.

In summary, the questionnaire applied in the research presented acceptable levels in terms of its internal consistency, this indicates that its psychometric properties are adjusted to the application and prison context, in addition, other publications agree with the results (Maslach & Jackson, 1986; Gil-Monte, 2005; Olivares, 2009; Hernández-Martín et al. 2006). However, the elimination of the four items improved the reliability of the subscales. The present investigation confirmed the three-dimensional structure of the MBI-HSS, with results similar to that of other investigations (Maslach and Jackson, 1986; Hernández-Martín et al. 2006; Gil-Monte & Peiró, 2000; Gil-Monte, 1994; Menezes de Lucena, 2000; Ramos, 2001; Harizanova et al. 2018). In addition, Olivares & Gil-Monte (2009), state that the strengths of the MBI are of great international acceptance, the empirical support of the factor structure, the evidence of concurrent and divergent validity, is evident. On the other hand, the weaknesses of the questionnaire are in the conceptual scope, way of operationalizing the concept, the reduced clarity of the symptoms, somewhat confusing and unclear the grammatical composition of the translations, lack of discriminant validity and diagnostic norms of a clinical nature.

However, it is important not to forget the limitations described for the MBI (Olivares & Gil-Monte, 2009). Some psychometric problems are especially relevant (factor structure, ambiguity of the factors, and low reliability), and conceptual problems (excessive dependence on the original model of Maslach and Jackson, which implies a low cognitive and behavioral content of the measurement).

As suggestions for future research, it would be appropriate to apply these adjusted proposals of the MBI-HSS instrument for prison contexts in national or regional samples, and in some international measure, to perform other types of data analysis. In addition, it would be correct to generate data scaling investigations with this new instrument proposal. New cut-off points and scoring system with the adjusted and standardized scale in prison officers should be raised. In view of the results the MBI-HSS is a good instrument for measuring Burnout Syndrome, but it is necessary and advisable to make adjustments according to each group of persons in which it is intended to work or measure. Given the limited research of MBI-HSS in prison contexts in South America, these results are expected to allow greater use of MBI-HSS.

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