

ORIGINAL ARTICLE

Prevalence of burnout syndrome in the staff of a third-level hospital specialised in paediatrics

Ricardo A. Gálvez-Arévalo¹, Daniel Fernandez-Guzman², Joel P. Kirschbaum-Chrem³, Jose Cutimbo-Mendivil⁴, Gil Dávila-Espinoza⁴, Carlos F. Ugas-Charcape⁵, Augusto E. Racchumi-Vela⁶

¹ Universidad Peruana Cayetano Heredia, Lima, Perú

² Universidad Científica del Sur, Lima, Perú

³ Rutgers University, Nueva Jersey, United States

⁴ Universidad San Martín de Porres, Lima, Perú

⁵ Sociedad Latinoamericana de Radiología Pediátrica, Santiago, Chile

⁶ Pontificia Universidad Católica del Perú, Lima, Perú

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Corresponding author:


Ricardo A. Gálvez Arévalo
Address: Universidad Peruana Cayetano Heredia, Av. Honorio Delgado 430, San Martín de Porres 15102, Lima, Perú
Telephone: +51 998360655
E-mail: ricardo.galvez.a@upch.pe

ORCID iDs


Ricardo A. Gálvez-Arévalo

 <https://orcid.org/0000-0002-1006-1523>


Daniel Fernandez-Guzman

 <https://orcid.org/0000-0002-9441-1067>


Joel P. Kirschbaum-Chrem

 <https://orcid.org/0009-0007-2628-1372>


Augusto E. Racchumi-Vela

 <https://orcid.org/0000-0001-7695-1978>


Jose Cutimbo-Mendivil

 <https://orcid.org/0000-0002-9597-8065>

Gil Dávila-Espinoza

 <https://orcid.org/0009-0006-3951-1934>

Carlos F. Ugas-Charcape

 <http://orcid.org/0000-0002-8380-3276>

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ABSTRACT

Introduction: Worldwide, burnout syndrome has long been recognized as a major problem in pediatric hospital staff. However, previous research on this topic has limitations, such as the exclusion of non-healthcare personnel and the variability in assessment criteria.

Objective: To assess the prevalence of burnout syndrome in the staff of a pediatric hospital in Lima, Peru.

Methods: A cross-sectional study was carried out. A total of 328 staff members of a pediatric hospital participated, including healthcare (n=207) and non-healthcare (n=121) staff. Burnout syndrome was assessed through the Maslach Burnout Inventory, using the assessment criteria proposed by its authors.

Results: The prevalence of burnout syndrome in healthcare staff was 12.6%, and in non-healthcare staff was 16.5%. In addition, about 50% of the staff had at least one symptom of burnout syndrome. When comparing the mean scores of the MBI dimensions of the study staff and the global population, it was observed that the non-healthcare staff had higher levels of emotional exhaustion and cynicism (p-value < 0.001), while the healthcare staff showed equal or better scores in the achievement (p-value > 0.050) and depersonalization (p-value < 0.001) dimensions, compared to the global population.

Conclusion: The high prevalence of burnout syndrome symptoms and the divergent responses between healthcare and non-healthcare staff underline the importance of adopting individualized approaches to address this issue.

Keywords: Burnout; Professional Burnout; Occupational Health; Pediatric Hospitals; Health Personnel (Source: MeSH)

Prevalencia del síndrome de burnout en el personal de un hospital de tercer nivel de salud especializado en pediatría

RESUMEN

Introducción: A nivel mundial, se ha identificado que el síndrome de burnout resulta ser más común en el personal de hospitales pediátricos. Sin embargo, la investigación previa sobre este tema ha presentado limitaciones, como la exclusión del personal no asistencial y la variabilidad en los criterios de evaluación.

Objetivo: Evaluar la prevalencia del síndrome de burnout en el personal de un hospital pediátrico de Lima, Perú.

Métodos: Se realizó un estudio transversal. Participaron 328 miembros del personal de un hospital pediátrico, entre asistenciales (n=207) y no asistenciales (n=121). Se evaluó el síndrome de burnout mediante el Maslach Burnout Inventory, utilizando el criterio de evaluación propuesto por sus autores.

Resultados: La prevalencia del síndrome de burnout en el personal asistencial fue del 12,6% y en el personal no asistencial fue del 16,5%. Además, cerca del 50% del total del personal tuvieron por lo menos un síntoma del síndrome de burnout. Al comparar las medias de las dimensiones del MBI del personal de estudio y la población mundial, se observó que los no asistenciales tenían niveles más altos de agotamiento emocional y cinismo (valor de p < 0,001), mientras que los asistenciales mostraron igual

o mejores puntuaciones en las dimensiones de logro (valor de $p > 0,050$) y despersonalización (valor de $p < 0,001$), en comparación con la población mundial.

Conclusión: La alta prevalencia de síntomas del síndrome de burnout, junto con las divergentes respuestas entre el personal asistencial y no asistencial, subraya la importancia de adoptar enfoques individualizados para abordar esta problemática.

Palabras clave: Burnout; Agotamiento Profesional; Salud Laboral; Hospitales Pediátricos; Personal de Salud (Fuente: DeCS)

INTRODUCTION

Burnout syndrome is characterized by emotional exhaustion, depersonalization or cynicism, and lack of effectiveness or personal fulfillment (1), which affects the sufferer's well-being (2). This syndrome results from prolonged exposure to occupational stress, especially in helping or service professions (2). Although the eleventh revision of the International Classification of Diseases (ICD-11) does not identify burnout syndrome as a medical condition, it is considered an essential factor associated with all aspects of health status, including the bio-psycho-social (3,4).

Burnout is associated with the development of health problems such as hypercholesterolemia, type 2 diabetes mellitus, coronary heart disease, and musculoskeletal pain, among others (5). It is also related to insomnia, depressive symptoms, and hospitalization for mental disorders (5). Burnout also has occupational consequences, such as job dissatisfaction, absenteeism, demands, and poor job resources (5-7).

This syndrome is prevalent in health personnel, especially those working in more complex pediatric facilities (8-13). Worldwide, a higher prevalence of burnout syndrome has been observed among specialists, resident physicians, and nurses working in pediatric services (14-19) compared to personnel in other specialties or areas of work (20,21).

It is important to note that most previous studies assessing the prevalence of burnout in hospital or pediatric staff have not used evidence-based criteria to identify cases of burnout. On the other hand, research on burnout syndrome in people working with the pediatric population has focused on caregivers to the exclusion of non-caregivers (14-19).

In this context, it is essential to use an evidence-based methodology for the identification of burnout and that it is carried out for all health personnel, not only limited to health care personnel, to obtain a more accurate and complete understanding of the impact of this syndrome in the pediatric hospital setting. Considering this knowledge gap, the present study aimed to describe the prevalence of burnout syndrome in health care and non-healthcare personnel in a national reference hospital for pediatric care in Peru.

METHOD

Design

A cross-sectional observational research was carried out. This observational design was used to estimate the prevalence of

burnout. The study was conducted in Peru's national reference hospital for pediatric care.

Population and sample

The target population consisted of the staff of a national reference hospital for pediatric care in Peru, located in Lima, Peru. The target population included healthcare personnel such as physicians, nurses, nursing technicians, and medical technologists, among others, and non-healthcare personnel such as communicators, health science personnel with administrative tasks, biologists, lawyers, etc. Inclusion criteria included personnel with at least one month of work experience before the survey date, regardless of the type of contract under which they were employed. A minimum work period was considered because the instrument used to assess burnout syndrome, detailed later, collects information on burnout symptoms experienced in at least the last month. On the other hand, personnel who did not complete all the items of the questionnaire used to assess burnout were chosen as exclusion criteria since the lack of responses prevented an accurate scoring of the instrument, which could compromise the validity of the results obtained.

The total number of staff at the study site in 2022 was considered to determine the sample size, which was 2076 people (between care and non-care). Given the uncertainty in the expected prevalence of burnout due to inconsistencies in the methodology and findings found in previous studies, it was decided to use a more conservative expected prevalence, using 50% to calculate the sample size. Thus, with a confidence level of 95% and a precision (sampling error) of 0.05, the minimum sample size needed to meet the study's objective was 325 participants. It was decided to extend the invitations to participate by approximately 5% more than the previously calculated sample. This choice was based on considering possible exclusions of some personnel who did not complete all the items of the instrument used to assess burnout and the possibility of some refusal to participate in the study. For the sample selection, we chose to use a non-probabilistic consecutive sampling, requesting the participation of the personnel as they presented themselves at the hospital facilities until the necessary sample size was reached.

Variables

Burnout syndrome was assessed using the Maslach Burnout Inventory (MBI) (22). This instrument consists of a series of items that explore the different dimensions of burnout. This study used two inventory variants: the MBI Human Services Survey (MBI-HSS) and the MBI General Survey (MBI-GS). These instruments vary in occupational focus, with the former designed for individuals performing patient care services and the latter designed for a more diverse range of occupations.

The MBI-HSS, composed of 22 items, was used for healthcare personnel with direct contact with patients, such as physicians, nurses, and other healthcare professionals. The three dimensions of the MBI-HSS are 1) emotional exhaustion, 2) depersonalization, and 3) personal achievement. Likewise, the MBI-GS, which consists of 16 items, was used for non-healthcare personnel such as administrative personnel, communicators, health professionals who perform

administrative functions, engineers, etc. Similarly, the MBI-GS also has three dimensions, which are 1) burnout, 2) cynicism, and 3) professional efficacy.

The MBI - HSS and MBI - GS items are presented in Likert format, with response options ranging from 0 points ("Never") to 6 points ("Every day"). These instruments' results are interpreted according to the guidelines of the most updated MBI manual (22), as seen in Table 1. Using the cut-off points suggested by the aforementioned manual, the five MBI profiles were identified: commitment, ineffectiveness, overload, disengagement, and burnout. It is relevant to note that the profiles of inefficacy, overload, and disengagement indicate the presence of at least one symptom of burnout syndrome. In contrast, the last profile encompasses the totality of burnout symptoms.

For the present study, the Spanish-translated versions of the MBI-HSS and MBI-GS were used, which are the official editions provided by Mind Garden Inc. (22). MBI-General Survey licenses the translations: Copyright ©1996 Wilmar

B. Schaufeli, Michael P. Leiter, Michael P. Leiter, and Wilmar B. Schaufeli. Schaufeli, Michael P. Leiter, Christina Maslach & Susan E. Jackson, and MBI-Human Services Survey: Copyright © 1981 Christina Maslach & Susan E. Jackson. According to the review of evidence published in peer-reviewed journals for the present study, these instruments have not been subjected to systematic translation processes or exhaustive psychometric validation processes in Peru beyond construct validity by exploratory or confirmatory factor analysis.

On the other hand, information was collected on other vital variables, such as sex, age, and type of profession. These data were collected using a specially designed data collection form.

Procedures

The administration of the MBI was carried out in strict compliance with intellectual property rights. The necessary licenses were obtained from the legal owners of the instruments, following the guidelines established by Mind

Table 1. Classification of burnout profiles according to the MBI

Profile	Definition	First dimension ⁽¹⁾	Second dimension ⁽²⁾	Third dimension ⁽³⁾
Commitment	High energy, connection to work, and professional efficiency.	<= M + (DE * 0,50)	<= M + (DE * 1,25)	> M + (DE * 0,10)
Ineffective	It reflects a loss of confidence in one's own abilities as a result of a job that feels tedious or an environment that offers little recognition for a job well done.	<= M + (DE * 0,50)	<= M + (DE * 1,25)	<= M + (DE * 0,10)
Overloaded	Worker exhausted due to long work hours and interrupted recovery opportunities.	> M + (DE * 0,50)	<= M + (DE * 1,25)	No especificado
Unlinked	A person who experiences a lack of commitment, interest or sense of belonging in relation to his or her work environment.	<= M + (DE * 0,50)	> M + (DE * 1,25)	No especificado
Burnout	Strong sense of emotional exhaustion and cynicism or depersonalization.	> M + (DE * 0,50)	> M + (DE * 1,25)	No especificado

Note: ⁽¹⁾ "Emotional exhaustion" for the MBI-HSS and "burnout" for the MBI-GS. ⁽²⁾ "Depersonalization" for the MBI-HSS and "cynicism" for the MBI-GS. ⁽³⁾ "Personal achievement" for the MBI-HSS and "professional efficacy" for the MBI-GS. M = mean. SD = standard deviation.

Garden Inc. A data collection team was formed, composed of personnel duly trained in questionnaire administration and interaction with the participants. Data collection began on July 1, 2023, and lasted approximately 30 consecutive days. During this time, the collection team planned visits to the various units and work areas where the participants work. Coordinated schedules were established in advance to ensure the availability of personnel. During these visits, an invitation to participate in the study was extended to all personnel in the service. Care was taken to ensure that these activities did not disrupt the work routines of the participants while maintaining respect for their daily responsibilities.

Statistical analysis

Initially, the distribution of the burnout profiles was identified for both the healthcare and non-healthcare personnel. In addition, in an exploratory manner, the results were presented by type of profession through relative and absolute frequencies. Likewise, we compared the average of the results of emotional exhaustion, depersonalization, or cynicism and

the effectiveness or achievement of the personnel in our study versus the world reference average. The information on the world average and standard deviation of burnout is presented in the MBI manual. This manual specifies that these data come from databases compiled by several international academics between 1996 and 2015, covering more than 47,000 individuals from various regions of the world. To perform this analysis, the Student's t-test for one sample was used, and the p-value of less than 0.050 was considered as a threshold to consider a significant difference between the results of the present study's participants and that of the world population. All statistical analyses were performed using R statistical software, version 4.1.0 (R Foundation for Statistical Computing, Vienna, Austria).

Ethical aspects

The present study was conducted with strict adherence to ethical principles. Approval was obtained from a local ethics committee. Data collection was performed anonymously, guaranteeing the confidentiality of the information. The

wishes of those participants who did not wish to complete the entire instrument were respected. The completed questionnaires are kept in a safe place with access restricted exclusively to the research team. In addition, the database is stored in a password-protected laptop computer, ensuring that only authorized team members have access to it, thus respecting the confidentiality and privacy of the participants.

RESULTS

The responses provided by 338 participants were evaluated; however, 10 had to be excluded because they did not complete all the items of the MBI. Despite this, the sample

size calculated a priori was reached. Thus, the final sample consisted of 328 participants, of whom 207 had care functions and 121 had non-care functions.

Among the healthcare personnel (n = 207), the majority were women (72.5%), with an average age of 40.3 years. Within this group, the most commonly surveyed personnel were physicians (54.6%), followed by nursing technicians (15.0%) and nurses (10.6%) (Table 2). Regarding the group of non-care personnel (n = 121), the majority were also women (54.5%), with an average age of 37.7 years. Among the most common professions of the non-care personnel were administration (28.1%), health sciences such as medicine or nursing (14.9%), and engineering (9.9%).

Table 2. Characteristics of pediatric hospital staff (n=328)

			n (%)
Care personnel (n = 207)	Sex	Woman	150 (72,5%)
		Man	57 (27,5%)
	Age		40,3 (7,5)*
	Profession	Dental Surgeon	5 (2,4%)
		Nursing	22 (10,6%)
		Surgeon	113 (54,6%)
		Psychologist	6 (2,9%)
		Nursing Technician	31 (15,0%)
		Laboratory technician	10 (4,8%)
		Medical Technologist	13 (6,3%)
Social worker		7 (3,4%)	
Non-care personnel (n = 121)	Sex	Woman	66 (54,5%)
		Man	55 (45,5%)
	Age		37,7 (9,7) *
	Profession	Administration and Management	34 (28,1%)
		Biology and veterinary medicine	11 (9,1%)
		Technical careers (IT, secretarial, archiving)	17 (14,1)
		Health Sciences (medicine, nursing, psychology, etc.)	18 (14,9%)
		Communication and Marketing	6 (5,0%)
		Accounting and Economics	7 (5,8%)
		Law	10 (8,3%)
		Statistics	6 (5,0%)
		Engineering	12 (9,9%)

* **Average** (standard deviation)

Figure 1 shows the burnout profiles of the healthcare personnel. Of this group, 53.6% were committed to the hospital, 15.9% perceived their work to be ineffective, 13.5% perceived their work to be overloaded, 4.6% were disengaged or not committed to their work environment, and 12.6% were identified with burnout syndrome. Figure 1 shows the burnout profiles of non-care personnel. Of the total non-care personnel, 41.3% were identified as committed to hospital activities, 6.6% perceived their work as ineffective, 28.9% perceived that they were overloaded with work activities, 6.6% were disengaged or not committed to hospital activities,

and 16.5% of the care personnel were identified with burnout syndrome.

Within the healthcare personnel, medical technologists top the list of burnout prevalence with 23.1%, followed by physicians with 15.0%, and nurses with 13.6%. In the case of non-care personnel, the three professions with the highest prevalence of burnout syndrome were engineers, communications, and marketing professionals, 33.3% each, and those with technical training 23.5% (Figure 2).

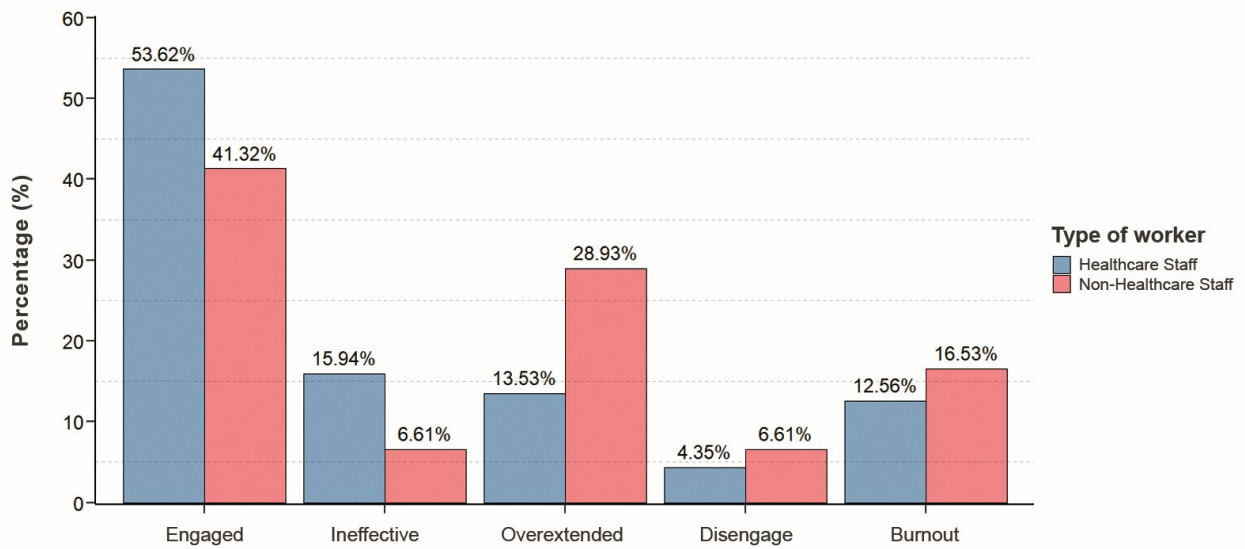


Figure 1. Burnout profiles of non-care and care personnel

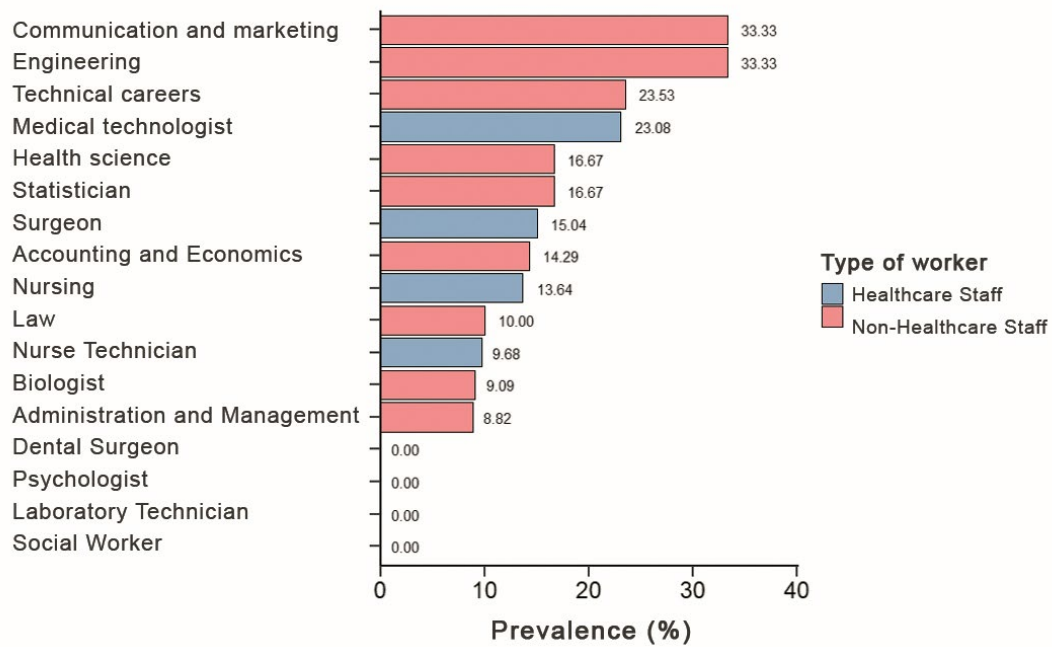


Figure 2. Prevalence of burnout by type of profession

On the other hand, the means of each dimension of the MBI of the personnel in the present study were compared with the means corresponding to the world population, evaluated by the authors of the MBI and described in their manual (Figure 3). The world average for the emotional exhaustion dimension is 2.3 (standard deviation [SD] = 1.5); for the depersonalization or cynicism dimension, it is 1.7 (SD = 1.4), and for the efficacy or achievement dimension, it is 4.3 (SD = 1.2).

Concerning the care staff, they had better scores in the perception of achievement (M = 4.8, SD = 0.9; Hedges' g = 0.42, p < 0.001) and depersonalization (M = 1.2, SD = 1.3; Hedges' g: 0.36, p < 0.001) than the world population, although they had the same perception of emotional exhaustion (M = 2.1, SD = 1.5; Hedges' g = 0.11, p = 0.17). For non-care staff, they were identified as having worse burnout (M = 2.7, SD = 1.5, Hedges' g = 0.29, p < 0.001) and cynicism (M = 2.0, SD = 1.1, Hedges' g = 0.21, p < 0.001) than that of the world population; although these types of personnel had better average efficacy (M = 4.8, SD = 1.0 Hedges' g = 0.42, p < 0.001).

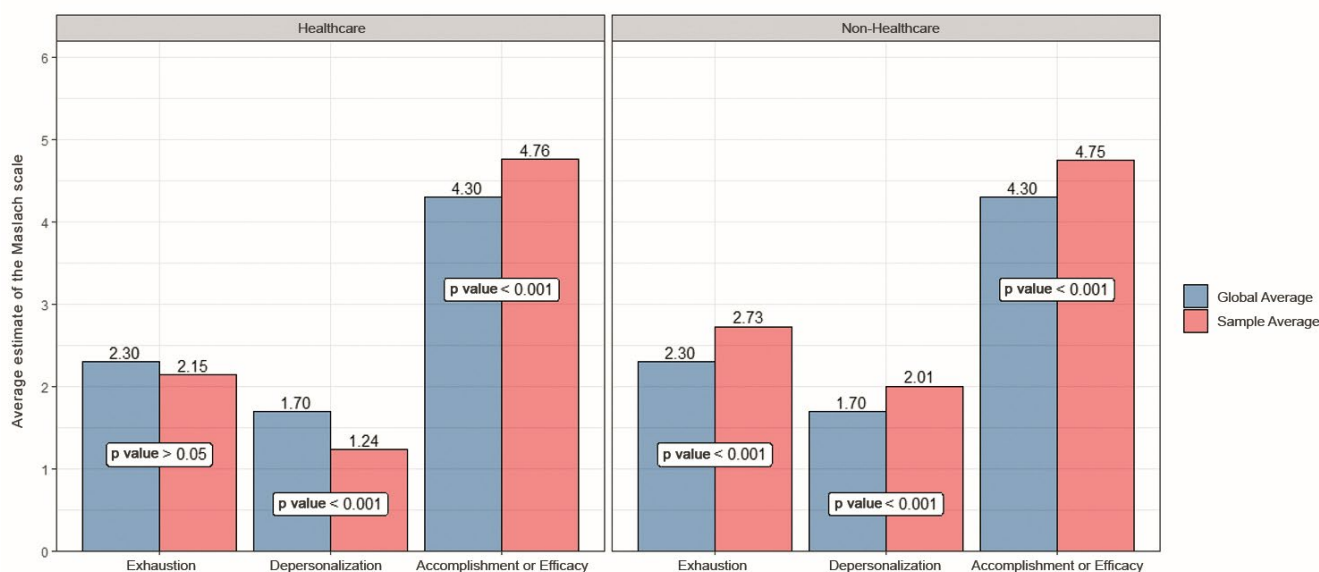


Figure 3. Comparison of the number of health care and non-health care personnel with the world population

DISCUSSION

Main findings

It was found that, for every 10 staff members in a tertiary pediatric hospital, 1 or 2 experienced burnout syndrome. Concerning the attending staff, better perceptions of achievement and depersonalization were recorded compared to the global population. For non-care personnel, it was observed that this group had a worse level of emotional exhaustion and cynicism than the world population. However, they were observed to have a better perception than the world population. We identified that, although the differences in averages are slight, they are statistically significant differences.

Interpretation and comparison of results

Worldwide, it is estimated that the prevalence of burnout syndrome can be as high as 70.0% among specialist physicians (23), resident physicians (15,18,19), and nurses working in pediatric services (24,25). Although these results are significantly higher than those reported in our study, they do not necessarily reflect the actual difference in the emotional

well-being of staff related to burnout syndrome.

The contradictory results of the prevalence of burnout syndrome in previous studies compared to those reported in the present study may be because these have used arbitrary classification criteria and simplified approaches that do not consider the complexity of this syndrome (14-19). In contrast, the present study employed the criteria established in the latest edition of the MBI manual, supported by a rigorous methodology (26,27). This discrepancy highlights the relevance of approaching burnout syndrome with an evidence-based methodology, which may substantially impact the interpretation and comparison of results in this area of research.

Using the criteria standardized by the MBI manual, our study compared the results of the MBI dimensions with the results of the world population. The global averages for the three dimensions are documented in the MBI manual and

were based on a study that compiled an extensive database covering more than 47,000 individuals from various regions of the world who completed both the MBI between 1996 and 2015 (22). A total of 16 countries participated in the aforementioned study; it is worth noting that most of the countries included in the sample correspond to high-income economies, except for Mexico, the only Latin American country that participated. As for the professions, the study considered a total of 41 categories, some of which coincide with the professions participating in this study, such as administrative roles, health sciences, and marketing.

Non-healthcare personnel who participated in the present study showed a higher prevalence of emotional exhaustion and cynicism than the global population. These personnel face pressures linked to efficient resource management and team coordination in a health system with limitations (28,29), the specific workload in the Peruvian healthcare setting, and the complexity of their responsibilities (30). In addition, historically, studies and care of mental health in hospitals have been focused on the care staff in critical areas such as emergency or intensive care units (31). However, non-care personnel have received comparatively less attention in this context (31).

It is essential to approach with caution the interpretation of the results obtained in our study, particularly concerning the differences identified between the means of our sample and the means of the world population in the dimensions of burnout. Although these differences were statistically significant, the magnitude of the differences, reflected in the small effect sizes, suggests a slight difference. This implies that, although there are discernible differences, they are not large and could be influenced by random variabilities or confounding variables associated with burnout, such as resilience, that were not accounted for in our analysis (32,33).

Public health implications

The results obtained in this study represent important implications for public health and human resource management in pediatric hospital settings. First, the disparity in the prevalence rates of burnout syndrome among different occupational activities within the healthcare setting underscores the importance of a differentiated approach. Identifying individuals with a higher prevalence of burnout, such as non-healthcare personnel, points to the need to implement specific prevention and management strategies for this group.

On the other hand, although a low prevalence of burnout syndrome was identified in healthcare personnel, this should not be interpreted in isolation since it does not necessarily reflect that they enjoy adequate emotional well-being. It was identified that approximately half of the staff have at least one symptom of burnout reflected in the perception of ineffectiveness in their work, excessive workload, or emotional disconnection with the hospital. These individuals are particularly interested because they are at greater risk of developing burnout syndrome at some point (34).

At least one symptom of burnout and lack of emotional well-being in any pediatric hospital worker poses a significant threat

to public health on multiple levels (1-3). From an occupational health perspective, this situation can lead to a deterioration of their physical and mental well-being, increasing the risk of deterioration in their quality of life (5). From the public management perspective, a staff with high levels of burnout can result in decreased productivity, increased absenteeism, and decreased quality of care provided to patients (6,7). In addition, the integrity and safety of patients treated in the hospital are also compromised, as an emotionally exhausted and disconnected staff can affect decision-making and the quality of medical care (5-7).

It is essential to consider implementing systematized activities for the early detection of burnout cases and creating institutional protocols for its management. This will not only enable the early identification of signs of emotional exhaustion and depersonalization but will also facilitate early and personalized intervention aimed at professionals at risk. Along these lines, the availability of active psychological support services emerges as an essential component in addressing the emotional and mental challenges that healthcare personnel face in their daily tasks. Consequently, the consideration of a minimum threshold of psychologists or psychiatrists per number of staff members in a pediatric hospital, aimed at providing psychological support, becomes of fundamental importance in the prevention of the syndrome and in the promotion of emotional well-being (35).

Finally, it is important to promote an accurate understanding of the term "burnout" in the medical community and in society in general. Proper and responsible use of this term avoids minimizing its implications and encourages early identification and effective management of symptoms. This awareness is especially important in a context where a tendency to confuse burnout with inaccurate criteria that may not measure the true prevalence of this syndrome has been identified.

Limitations and strengths

Several limitations of the present study stand out. First, the study was developed in a single national pediatric referral hospital in Peru, which could restrict the applicability of the results to other pediatric hospital settings. In addition, the selection of participants did not follow a randomization process. This lack of randomization could have introduced selection bias during participant recruitment. This bias could have arisen due to the inclination of certain individuals not to participate in the study, especially those who have reservations or refuse to openly discuss mental health-related issues. This could have led to an underrepresentation of staff with elevated levels of burnout syndrome who chose not to engage in mental health surveys.

Another limitation is related to the use of self-reported questionnaires related to mental health, which may have influenced the responses due to the presence of socially desirable responses. It is important to note that some participants may have provided socially acceptable responses rather than reflecting their actual experiences of burnout syndrome. To minimize this problem, measures were implemented, such as making the assessments anonymously and individually in the participants' work environments and

avoiding group exposure that could reveal responses to others. These measures fostered a climate of trust and sincerity in the responses. Despite these precautions, it is recognized that the influence of social desirability could persist as a potential limitation in interpreting the results.

An additional limitation lies in the lack of comprehensive validation studies of the MBI variants in the Peruvian context. Although there are nationally representative publications that explored the construct validity of the MBI through confirmatory factor analysis (36,37), to the knowledge of the authors of the present study, to date, there has not been a systematic process of translation, cultural adaptation, and validation that encompasses various dimensions of validity evidence of the instrument in question, published in peer-reviewed journals.

All these limitations highlight the possibility that some uncertainty has been introduced into the precise interpretation of the results achieved in our study. This uncertainty may, in turn, impact the complete representation of the diversity of burnout experiences in the group of personnel evaluated.

Despite these limitations, the results obtained in this study are considered to have significant implications for the field of health care and hospital management of pediatric centers. One of our study's significant strengths lies in using the burnout syndrome detection criteria proposed by the fourth version of the MBI, supported by standardized and evidence-based criteria. This strength represents an added value to the literature on the subject given that, to the knowledge of the authors of this study, to date, no study focused on pediatric center personnel that has employed this rigorous methodology has been published.

Conclusions

This study set out to address burnout syndrome in the public health setting, with a particular focus on health professionals who provide care to a highly vulnerable population, such as children with complex pathologies. By identifying the pediatric healthcare professionals most susceptible to experiencing burnout symptoms, specific mitigation and mental healthcare awareness strategies can be developed to improve these professionals' quality of life and well-being.

Our study found that approximately half of the staff, both care and non-care staff, present at least one symptom of burnout. In addition, it was found that non-care personnel show more pronounced levels of emotional exhaustion and cynicism, which are components of burnout, as opposed to the averages recorded in the world population. On the other hand, the care staff shows equal or even better results concerning these indicators compared to the world population. These results indicate the need for differentiated approaches to address burnout in different work groups.

According to information in peer-reviewed journals, this study represents the first attempt to identify the prevalence of burnout syndrome in pediatric hospital personnel in Latin America, covering both healthcare and non-healthcare personnel.

It is recommended that a comprehensive translation and validation project of the MBI be carried out for the Peruvian context, that the study be replicated using a methodology for the calculation of sample size and sampling that allows representative results for each profession, and that analytical studies be carried out to identify protective and risk factors for burnout syndrome in this population.

Authorship contributions: JCM, GDE, CFUC, and JPKC conceived the research idea. RAGA designed the study. CFUC and JKC collected data. RAGA and AERV analyzed and interpreted the data. RAGA and DFG wrote the first draft of the manuscript. All authors approved the version and finally submitted it. All authors are responsible for all aspects of the manuscript.

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Conflict of interest: RAGA, JPCK, and CFUC are members of the Editorial Committee of the journal *Investigación e Innovación Clínica y Quirúrgica Pediátrica* but declare that they have not participated in any stage of the editorial process after the submission of this article. The other authors declare that they have no conflicts of interest.

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