

The impact of COVID-19 on emotional exhaustion: depersonalization and self-perceived low performance among hospital pharmacists in Brazil

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Abstract

Objective: To analyze the impact of the covid-19 pandemic on the dimensions of burnout Syndrome- emotional exhaustion (EE), depersonalization (DP), and reduced professional accomplishment (RP)- among hospital pharmacists (HP) in Brazil. The research compares data from 2011 and 2022, exploring the association between social organization profile and working environment with these burnout dimensions. **Method:** Conducted in analytical cross-sectional format, the study selected HP associated with the Brazilian Society of Hospital Pharmacy. Data were collected through a questionnaire, addressing socio-organizational profiles, as well as the Maslach burnout Scale. Statistical analyses, including frequency, chi-square test, and Cronbach's alpha validation, were employed to examine associations between variables and burnout dimensions. **Results:** A total of 174 HP participated in 2011, and 237 in 2022. Both periods revealed links between "job satisfaction" and "compensation" with the dimensions EE, DP, and RP, before and after the pandemic. The 2022 study also highlighted the lack of training encouragement as associated with burnout dimensions. Working hours maintained associations in both studies, except RP in the most recent research. Variables such as contract type and work environment profile did not show significant relationships. Education did not correlate with dimensions in the most recent study, whereas the number of children was associated with DP in 2022, compared to associations with EE and DP in the previous study. Marital status and gender showed a connection with RP in both studies, whereas age related to DP in the 2011 study and only with DP in the most recent study. The prevalence of burnout among HP increased after the pandemic, with 68.8% exhibiting the syndrome in 2022, compared to 44.0% in 2011. **Conclusion:** There was an impact of the covid-19 pandemic on the health of hospital pharmacists. The relationship between job satisfaction, compensation, and working hours with burnout dimensions highly highlight the need for policies and organizational practices to focus on the well-being of these professionals. The significant increase in burnout prevalence after the pandemic highlights the importance of strategies to support the mental and occupational HP health, requiring discussions and actions both within healthcare institutions and in governmental and professional realms.

Keywords: occupational burnout, burnout, pharmacist, covid-19, burnout Syndrome, occupational health.

Repercussões da pandemia de covid-19 no esgotamento emocional, despersonalização e sensação de baixa realização no trabalho de farmacêuticos hospitalares do Brasil

Resumo

Objetivo: Analisar o impacto da pandemia de covid-19 nas dimensões da síndrome de burnout- esgotamento emocional (EE), despersonalização (DP) e baixa realização pessoal com o trabalho (RP)- entre farmacêuticos hospitalares (FH) no Brasil. A pesquisa compara dados de 2011 e 2022, explorando a associação entre perfil sócio organizacional, meio laboral com essas dimensões de burnout. **Método:** Conduzido em formato transversal analítico, o estudo selecionou FH associados à Sociedade Brasileira de Farmácia Hospitalar. Foram coletados dados via questionário, abordando perfis sócio organizacionais, bem como a escala de Maslach burnout. Análises estatísticas, como frequência, teste qui-quadrado e validação alfa de Cronbach, foram empregadas para examinar as associações entre variáveis e dimensões de burnout. **Resultados:** Participaram 174 FH em 2011 e 237 em 2022. Ambos os períodos revelaram vínculos entre "satisfação com o trabalho" e "remuneração" com as dimensões EE, DP e RP, antes e depois da pandemia. O estudo de 2022 ainda destacou a falta de estímulo à capacitação como associada às dimensões de burnout. Horas de trabalho mantiveram associações em ambos os estudos, exceto RP na pesquisa mais recente. Variáveis como tipo de contrato e perfil do ambiente de trabalho não apresentaram relações significantes. Escolaridade não se correlacionou com as dimensões na pesquisa mais recente, enquanto o número de filhos associou-se à DP em 2022, em comparação com associações à EE e DP no



estudo anterior. Estado civil e gênero mostraram ligação com a RP em ambos os estudos, enquanto a idade se relacionou com a DP no estudo de 2011 e apenas com DP no estudo mais recente. A prevalência de burnout entre FH aumentou após a pandemia, com 68,8% manifestando a síndrome em 2022, em comparação com 44,0% em 2011. **Conclusão:** Houve impacto da pandemia de covid-19 na saúde dos farmacêuticos hospitalares. A relação entre satisfação no trabalho, remuneração e horas de trabalho com as dimensões de burnout destaca a necessidade de políticas e práticas organizacionais voltadas para o bem-estar desses profissionais. O aumento significativo da prevalência de burnout após a pandemia destaca a importância de estratégias de suporte à saúde mental e ocupacional dos FH, exigindo discussões e ações tanto nas instituições de saúde quanto nos âmbitos governamentais e profissionais.

Palavras-chave: esgotamento profissional, burnout, farmacêutico, covid-19, saúde ocupacional.

Introduction

Hospital pharmacists carrying out their clinical and care duties in a hospital environment and in health services can experience occupational stress in the form of burnout syndrome (BS). Burnout syndrome is characterized by three dimensions: emotional exhaustion (EE), depersonalization (DP) and a feeling of ineffectiveness or low accomplishment at work (RP)^{1,2}. In the health crisis caused by the covid-19 pandemic in 2020 and 2021, pharmacists provided highly relevant services in the management of pharmacies in hospitals aimed at combating covid-19, as well as in community pharmacies in the provision of patient, family and community care.

Nowadays, BS is considered to be a serious deterioration in workers' quality of life, given its implications for physical and mental health³. Burnout syndrome is a form of response to work-related stress, a state of chronic exhaustion, a condition in which the worker suffers severe physical and emotional exhaustion, which can affect their health and performance at work, and is considered a social problem of extreme relevance in several countries⁴.

For the Pan American Health Organization⁵, BS refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life.

Hospital pharmacists carry out professional activities in the areas of logistics, management, administration, clinical care, and teaching and research⁶. When these work activities are associated with unfavorable conditions, related to poor physical structure and a lack of human resources and materials, they can lead to job burnout.

Thus, pharmacists working in hospitals are a group of professionals exposed to a variety of adverse factors of different kinds, which can easily trigger occupational illnesses, making it a worrying reality, given that they can also compromise the quality of care provided to health service users.

It is understood that the workload of these professionals may have been aggravated by the pandemic, especially in the most critical periods, in view of the lack of medications and products for treating patients with covid-19, as these supplies are the responsibility of hospital pharmacy management⁷.

The interest in carrying out this study arose from the concern for the health of hospital pharmacists, considering the valuable expression of this worker in the health work process and in coping with the covid-19 pandemic in Brazil⁸.

It is understood that the information and conclusions resulting from this research could be useful for hospital pharmacists, contributing to the application of knowledge, especially in relation to quality of life and burnout syndrome.

It is considered that this study also has a managerial/practical justification, for example in the management of people in hospital pharmacies, and that it will allow for reflections on the construction of "health at work" programs for these professionals, who every day experience a race for production and, consequently, a devaluation of their quality of life.

Therefore, this study is relevant because it contributes to increasing knowledge and understanding of the difficulties pharmacists face in their working conditions, so that in the future it will be possible to formulate strategies to reduce the levels of stress that can lead to burnout syndrome and contribute to the development of public health policies for workers.

The purpose of this study was to analyze the possible impacts of the covid-19 pandemic on emotional exhaustion, depersonalization and feelings of low personal accomplishment at work, characterized as burnout syndrome, in hospital pharmacists in Brazil, considering the period before (2014) and after (2022) the pandemic.

Methods

The study was an analytical cross-sectional study, carried out with hospital pharmacists who work in the Pharmacy services of hospitals and other specialized health services in Brazil and who have assisted patients during the covid-19 pandemic. The invitation was sent to participants by means of a questionnaire, associated with the Free and Informed Consent Form (FICF) for members of the Brazilian Society of Hospital Pharmacy (Sociedade Brasileira de Farmácia Hospitalar, SBRAFH), in November 2011 and subsequently in February and March 2022.

The SBRAFH is a national scientific society, bringing together professionals in the hospital pharmacy specialty with the aim of integrating and encouraging the development of hospital pharmacy in health services and supporting scientific, cultural, research, advisory, improvement, professional training, and dissemination of pharmaceutical care activities⁹.

The research sample was selected for convenience, i.e. all registered participants and SBRAFH members who voluntarily agreed to take part in the research and answered the questionnaire were considered.

Data was collected through a virtual survey and the questionnaire was made available by SBRAFH to its members. Participants only had access to the questionnaire after signing the Informed Consent Form (ICF) and agreeing to take part in the research. The project was approved in 2011 by the Research Ethics Committee of the Federal District Health Department (protocol 0382.0.013.000-11 and in 2021 by the Research Ethics Committee of the Minas Gerais



State Servants' Pension Institute (CAAE: 53367721.7.000.5136) and approval letter 5.128.281) of November 2021.

The socio-organizational questionnaire (the first part of the questionnaire) consisted of 13 questions and aimed to analyze the following variables in the sample:

Demographics: age, gender, marital status (single, married, divorced, legally separated, widowed or other) and number of children.

Education: undergraduate, specialist, master's, doctoral and post-doctoral degrees were considered.

Work environment: the characteristics of the ownership of the Hospital or Health Services were considered to be Public and Private, with Private being classified as "for-profit" and "not-for-profit" (charitable or philanthropic). As for the care profile of the Hospital or Health Service, they were classified as: Basic clinical hospital, Emergency hospital, Specialized hospital, General hospital, University hospital and Teaching and research hospital. In terms of size, hospitals were classified according to their normal or operational capacity by number of beds: small refers to 50 beds; medium-sized, 51 to 150 beds; large-sized, 151 to 500 beds; and extra-capacity, those with 500 or more beds.

In relation to the "Employment contract" variable, 3 types were classified:

Celetista regime: type of employment for private services that is based on a set of laws, Labor Law Consolidation (Consolidação das Leis do Trabalho, CLT), which regulates labor relations, i.e. guarantees rights such as vacation, salary, leave in private services (Brazil- Federal Executive Branch, 1943).

Public celetista: type of employment contract for public services in which the employment contract is based on the Labor Law Consolidation (CLT)- which regulates labor relations, i.e. guarantees rights such as vacations, salary, leave in private services - but because it is a contract for direct and indirect administration public services, there must be a public selection process (public exams). Professionals hired in this form are called public employees.

Statutory public: type of employment of professionals in the public services under a statutory regime by means of a public exam. This type of system guarantees more security, due to the stability guaranteed after passing the probationary period. Professionals hired in this form are called civil servants¹⁰.

In relation to "Working Hours", the survey participants were presented with the options of 20, 30, 40 and more than 40 hours a week, as this is the most common workload pattern for pharmaceutical services in Brazil.

On the question of "Encouragement for training", the option "yes, I have encouragement" and the option "no, I don't have encouragement" were presented.

Regarding "Job satisfaction", the option "yes, I feel satisfied" and the option "no, I don't feel satisfied" were presented.

In relation to "Remuneration", the survey participants were asked if they were satisfied with their remuneration, or if they were not satisfied with their remuneration.

The first part of the questionnaire, on workers' socio-organizational issues, was adapted from the reference article for this work, Novaes et al (2014)¹¹. The question about occupation/function (management, supervision, and operation) was subtracted from

the reference questionnaire, given that during the pandemic period many activities were overlapped due to the health crisis, the other questions were kept. The variable of the worker's "type of contract" was added to this study's questionnaire.

The characteristics of "Worker experience", the second part of the questionnaire, are based on the three conceptual dimensions of Maslach and Jackson (1986): Emotional Exhaustion (EE), Depersonalization (DP), Personal accomplishment at work (RP). The Maslach burnout questionnaire was used. Semantic validation, translation, adaptation, and standardization for use in Brazil were carried out by the Laboratory of Work Psychology at the University of Brasilia, using the same questionnaire used in the reference article by Novaes et al (2014)¹¹.

The questionnaire consisted of 22 Likert-type questions, with scores for the answers ranging from 1 to 7: 1- Never; 2- Once a year or less; 3- Once a month or less; 4- A few times a month; 5- Once a week; 6- A few times a week; 7- Every day.

The Likert scale is a type of additive scale that corresponds to an ordinal level of measurement, i.e. it consists of a series of items or judgments in the form of statements, in which the reaction of the research participant/respondent is requested. The stimulus (item or judgment) that is presented to the respondent represents the property that the researcher is interested in measuring, and the answers are requested in terms of degrees of agreement or disagreement that the respondent has with the given phrase. The most commonly used numbers of response options are five and seven, where each category is assigned a numerical value that will lead the research participant / survey respondent to a total score that is the product of the scores of all the items. This final score indicates the research participant's/respondent's position on the scale¹².

The items or judgments in the form of statements about the three conceptual dimensions of Maslach burnout are listed below:

1. Emotional Exhaustion (EE)

- I feel exhausted at the end of a working day.
- I feel that clients blame me for some of their problems.
- I feel like I am at my limit.
- I feel emotionally exhausted by my work.
- I feel tired when I get up in the morning and have to face another day at work.
- I feel exhausted by my job.
- I feel like I am working too hard at my job.
- Working with people all day is a real effort for me.

2. Depersonalization (DE)

- I feel frustrated with my job.
- Working directly with people stresses me out.
- I feel that I treat some of my clients as if they were objects.
- I think I have become more insensitive towards people since I started this job.
- I think this job is hardening me emotionally.

3. Personal accomplishment at work (RP)

I feel full of energy.

I feel stimulated after working side by side with my clients.

In my work I deal with emotional problems very calmly.

I can easily create a calm atmosphere with my clients.

I feel that I am positively influencing other people's lives through my work.

I deal appropriately with my clients' problems.

I can easily understand how my clients feel about things.

I don't really care about some of my patients or clients.

I have accomplished many important things in this job.

The possible answers to the items or judgments presented above are:

- () 1- Never;
- () 2- At least once a year;
- () 3- At least once a month;
- () 4- A few times a month;
- () 5- Once a week;
- () 6- A few times a week;
- () 7- Every day.

The statistical analysis of the answers to the questionnaires was carried out as follows: initially, an analysis was made of the absolute (n) and relative (percentage) frequency distribution of the respondents for the variables relating to the socio-organizational characteristics of the first part of the questionnaire, i.e. demographic variables (with four questions), Education (with one question) and Work Environment (with 8 questions).

For the statistical analysis of the Maslach burnout scale dimensions, the answers for each type of dimension were added together and frequency tables were drawn up. We then created a new variable per dimension called: total- emotional exhaustion; total-depersonalization; and total- accomplishment to characterize the sum of the responses.

By associating the Maslach burnout dimension variables (Emotional Exhaustion (EE), Depersonalization (DE) and Personal Accomplishment at Work (RP) with the categorized variables describing the socio-organizational profile of the respondents, it was possible to observe the frequency distribution of the data.

The chi-square statistical test was applied to verify the association between the respondents' socio-organizational profile variables and the Maslach burnout dimensions (dependency relationship).

For the statistical analysis of the dimensions of the Maslach burnout scale, the answers for each type of dimension were added up, frequency tables were drawn up, the descriptive measures for the three dimensions were checked and the classes were defined.

The test of independence was used to check whether the variables were associated in each of the dimensions in the tables. Results

with a p-value greater than the significance level ($\alpha = 0.05$) suggest that there is no association between the variable and the dimension analyzed.

The Emotional Exhaustion, Depersonalization and Personal accomplishment at work dimensions were calculated from the answers to the 22 Maslach burnout questions.

As the answers to the questions are in the form of a Likert scale, the sum of the values for each question was used for each dimension.

Based on the dimensions divided into categories, these were defined using descriptive measures (mean, median, absolute, and relative frequency) of the dimensions themselves and related to the socio-organizational variables.

By associating the Maslach burnout dimension variables with the age variable, for example, which had already been categorized, it was possible to observe the distribution of the data.

The chi-square test was then applied to the other variables in the socio-organizational profile (demographics, education, working environment), in order to be certain of the association with the BS dimensions (dependency relationship).

The results of this study and the questionnaire used to assess the dimensions of Maslach burnout were validated using factor analysis to determine reliability using Cronbach's alpha, validity, and standardization of the resulting constructs.

The proportion of people with BS was calculated from the answers given for the dimensions with a symptom equal to or above 4 on the Likert scale in relation to the total number of individuals in the sample.

The comparison between the results of this study and the study by Novaes et al (2014)¹¹, was made by simple analysis of the presence or absence of an association between the socio-organizational variable and the work environment with the EE, DP, and RP dimensions.

The statistical analysis of the data was carried out using the R program, version 4.1¹³.

Results

In this study, the result was 68.8% of pharmacists with burnout syndrome. In the study by Novaes et al (2014)¹¹, the syndrome was present in 44.0% of pharmacists.

In the 2022 sample, the survey consisted of 237 participants. The vast majority of participants (81.86%) were aged between 25 and 44. They are women (83.12%). Married (51.90%). They have no children (49.79%). Pharmacists with an undergraduate degree represent (11.81%), the others have postgraduate degrees, distributed in specialists (60.76%), masters (22.78%) and (4.64%) in doctors and post-doctors.

Considering the characteristics of the work environment in this survey, (55.70%) of the respondents work in public hospitals, (45.15%) in hospitals with a general care profile and (73.67%) are workers in medium and large hospitals. They are salaried (57.81%), working 40 hours a week or more (83.54%) of the respondents. They report that their employers do not encourage them to train (53.59%), and they are dissatisfied with their pay (56.12%).

This study showed that there is a relationship between “Gender” and “Marital status” with the “Professional accomplishment” dimension of Maslach burnout. The number of children is related to BS in the “Depersonalization” dimension. The number of hours worked is associated with “emotional exhaustion” and “depersonalization”. Lack of incentive to train, dissatisfaction with work and dissatisfaction with pay are associated with the three dimensions that characterize the syndrome (Figure 1).

Figure 1. Association (chi-square test) between socio-organizational variables, education level and work environment with the Maslach burnout dimensions in Brazilian hospital pharmacists in 2022.

Maslach and Jackson dimensions in Brazilian hospital pharmacists in 2022.			
Variables	EE	DE	PF
Age			
Gender			√
Marital status			√
Number of children		√	
Education			
Hospital Property Regime			
Hospital Care Profile			
Hospital size			
Type of contract			
Weekly Work Hours	√	√	
Incentive to Training	√	√	√
Job Satisfaction	√	√	√
Remuneration	√	√	√

Note: EE – Emotional exhaustion; DP – Depersonalization; PF – Personal fulfillment.

As for the relationship between the variables and the dimensions of the syndrome in the study by Novaes et al (2014)¹¹, it was found that dissatisfaction with work and dissatisfaction with pay were associated with the three dimensions that characterize BS in both studies. The number of hours worked per week (40 or more) is related to “Emotional exhaustion” and “Depersonalization” in this study and also in the study by Novaes et al (2014)¹¹ (Figure 2).

Both studies present results that suggest that there is an association between the variables “job satisfaction” and “remuneration” with the dimensions analyzed (EE - Emotional exhaustion; DP - Depersonalization; RP- Professional accomplishment) both before and after the pandemic (Figure 2).

The stimulus to training was not evaluated in the study by Novaes et al (2014)¹¹, in the 2022 study the variable is related to the EE, DP and RP dimensions.

The variable “Weekly hours worked” is present in both studies and suggests that there is an association between it and the dimensions analyzed, both before and after the pandemic, except for the PR dimension, which in the current study showed results that do not indicate an association.

The type of contract was not assessed in the study by Novaes et al (2014)¹¹, and in the 2022 study it was not associated with EE, DP, and RP.

The variables ownership regime, care profile and hospital size are present in both studies and the results of both suggest that there

Figure 2. Association (chi-square test) between the demographic and socio-organizational variables of the workplace with the dimensions of Maslach burnout in 2011 (studies by Novaes et al, 2014) and in the year 2022, in Brazilian hospital pharmacists.

Variables	Maslach and Jackson dimensions in 2011 and 2022, in Brazilian hospital pharmacists.					
	Novaes et al (2014)			Survey data, 2022		
	EE	DE	PF	EE	DE	PF
Age		√	√			
Gender						√
marital status						√
Number of children	√	√			√	
Weekly Work Hours	√	√	√	√	√	
Incentive to Training				√	√	√
Job Satisfaction	√	√	√	√	√	√
Remuneration	√	√	√	√	√	√

Note: EE – Emotional exhaustion; DP – Depersonalization; PF – Personal fulfillment.

is no association between these variables and the dimensions analyzed both before and after the pandemic.

Education level was not assessed in the study by Novaes et al (2014)¹¹, and in the current study the variable was not associated with the dimensions. In the study by Novaes et al (2014)¹¹, the variable number of children showed values that suggest an association with the dimensions of emotional exhaustion and depersonalization, whereas in this study the association was only verified for the depersonalization dimension.

The variables marital status and gender showed the same behavior in the two studies, with a suggestion of association only for the professional fulfillment dimension. Age, a variable present in both studies, showed a suggestion of association only in the study by Novaes et al (2014)¹¹ for the depersonalization and professional accomplishment dimensions.

The results obtained in 2014 in the study by Novaes et al (2014)¹¹ with the results for 2022 can be seen in Figure 2.

The results of this study and the questionnaire used to assess the dimensions were validated using factor analysis, where reliability was determined using Cronbach's alpha.

The questions were renamed from Q1 to Q22 based on the answers to the 22 questions in the Maslach-burnout questionnaire, shown in Table 1, to make it easier to read the factor analysis.

The factor analysis of the dimensions EE - Emotional exhaustion; DP - Depersonalization; RP - Personal accomplishment at work of the Maslach-Burnout scale in Brazilian hospital pharmacists was conducted in the R program, using the psych package shown in Table 2.

In general, the first factor (Factor 1) is explained by the first eight questions (Q1 to Q8), due to the higher loadings in relation to the loadings of the other factors. Thus, it can be assumed that the first factor is formed by the Emotional Exhaustion dimension, i.e. emotion is an important factor in the questionnaire.

The second factor (Factor 2) is made up of the last nine questions (Q14 to Q22), forming a factor associated with the Professional Accomplishment dimension.

Table 1. Questions renamed Q1 to Q22 from the Maslach burnout questionnaire.

Renowned Question	Question
Q1	I feel exhausted at the end of a working day
Q2	I feel that clients blame me for some of their problems
Q3	I feel like I am at my limit
Q4	I feel emotionally exhausted by my work
Q5	I feel tired when I get up in the morning and have to face another day at work
Q6	I feel exhausted by my work
Q7	I feel like I am working too hard at my job
Q8	Working with people all day is a real effort for me
Q9	I feel frustrated with my job
Q10	Working directly with people stresses me out
Q11	I feel that I treat some of my clients as if they were objects
Q12	I think I have become more insensitive towards people since I started this job
Q13	I think this job is hardening me emotionally
Q14	I feel full of energy
Q15	I feel stimulated after working side by side with my clients
Q16	In my work I deal with emotional problems very calmly
Q17	I can easily create a relaxed atmosphere with my clients
Q18	I feel that I am positively influencing other people's lives through my work
Q19	I deal adequately with my clients' problems
Q20	I can easily understand how my clients feel about things
Q21	I do not actually care about some of my patients or clients
Q22	I have accomplished many important things in this job

Finally, the third factor (Factor 3) is made up of five questions (Q9 to Q13), characterizing a factor associated with the dimension of Depersonalization.

It's important to note that the higher the loading value in a given factor, the more important the question is for that particular factor. Therefore, we can see that in specific cases the question was fitted into a factor to make it easier to understand, even though the question did not have the highest loading in that factor. For example, question Q9 was classified within Factor 3 (assumed to be from the Depersonalization dimension), but the highest value was within Factor 1 (assumed to be from the Emotional Exhaustion dimension). We can therefore see that a particular question may be associated with another factor.

The eigenvalues are available in the SS loadings row; the variance is presented in Proportion Var, where we can see that more than half of the variance (~53%) of the data is explained by the first three factors (Table 2).

The Factor Distribution of the dimensions "Emotional exhaustion", "Depersonalization" and "Professional accomplishment" of the Maslach & Jackson Scale in Brazilian hospital pharmacists in 2021 is shown in Table 3. The mean factor distribution for emotional (standard deviation)- 36.62 (11.257); Mean for depersonalization (standard deviation)- 15.688 (7.054); Mean for accomplishment (standard deviation)- 43.013 (8.02). Cronbach's alpha for each dimension, which showed high values, suggests that the internal consistency of the questionnaire is quite satisfactory; for values greater than or equal to 0.7 it is common to consider that we have evidence that the survey questions measure the same ability; it should be noted that the Emotional Depersonalization

dimensions showed a high and positive correlation, which suggests a positive relationship between them; the other correlations were low and negative, which suggests a negative relationship between them.

Table 2. Factor analysis of the dimensions EE- Emotional exhaustion; DP - Depersonalization; RP - Personal accomplishment of the Maslach burnout scale in Brazilian hospital pharmacists in 2022

	Loadings		
	Factor1	Factor2	Factor3
Q1	0.78231	0.00071	0.13459
Q2	0.42592	-0.10750	0.34067
Q3	0.84068	-0.05234	0.21821
Q4	0.90073	-0.04297	0.18152
Q5	0.82026	-0.14113	0.02741
Q6	0.92015	-0.04244	0.19115
Q7	0.72679	0.04389	0.12742
Q8	0.61482	-0.32060	0.13768
Q9	0.65244	-0.24034	0.25124
Q10	0.56497	-0.23906	0.25495
Q11	0.22250	-0.31119	0.51033
Q12	0.21893	-0.11408	0.85561
Q13	0.36432	-0.06383	0.80392
Q14	-0.51161	0.40723	-0.01613
Q15	-0.41531	0.45797	-0.03435
Q16	-0.11320	0.56723	0.02874
Q17	-0.12677	0.64936	-0.15504
Q18	-0.16278	0.67598	-0.05321
Q19	-0.03647	0.66930	-0.19182
Q20	-0.03987	0.68176	-0.18011
Q21	0.03507	-0.19118	0.26751
Q22	0.04092	0.50460	-0.16247
SS loadings	6.20766	3.15130	2.25044
Proportion Var	0.28217	0.143254	0.10229
Cumulative Var	0.28217	0.42541	0.52770

Table 3. Factor distribution of the "Emotional exhaustion", "Depersonalization" and "Personal accomplishment" dimensions of the Maslach Scale in Brazilian hospital pharmacists in 2022.

Dimension	Mean	SD	Alpha	EE	DP	RP
EE	36.62	11.26	0.92	1	0.704	-.033
RP	15.69	7.05	0.82	0.704	1	-0.388
DE	43.01	8.02	0.71	-0.33	-0.388	1

Note: EE- Emotional exhaustion; DP- Depersonalization; RP- Professional accomplishment; SD- Standard deviation.

Discussion

Workers' health, guaranteed by the 1988 Federal Constitution, requires constant discussion and debate between government sectors and the dialog and social control bodies involved. It is noteworthy that the damage to the health of hospital pharmacists was accentuated by the pandemic, from 44% to 68.8%. However, the factors that most contributed to the syndrome were the same as before the pandemic, many related to the work environment. This signals the urgent need for a policy aimed at improving pharmacists' quality of life at work.



There is limited evidence available to assess the prevalence and interventions to reduce the syndrome in hospital pharmacists, given the lack of studies on this category. Studies on other professional categories such as physicians, nurses and nursing technicians, physiotherapists and psychologists have been carried out and have shown that these categories have also been affected by the mental health pandemic^{14,15,18}.

Most Brazilian hospital pharmacists are aged between 25 and 44, female, married and without children.

Considering the significant participation of women in the pharmaceutical profession, it is worth highlighting the need to promote critical reflection on the differences and inequalities in the professional scenario, and on the health needs of this specific social group¹⁹.

Lack of accomplishment at work (RP), one of the dimensions of burnout syndrome, is associated with pharmacists' gender and marital status.

It should be noted that the scenario produced by the process of the profession's feminization is reflected in the results of the "Pharmacist's profile in Brazil", studies^{15,16} which point to inequalities experienced between the social group of women and men and therefore need to be problematized and discussed in social work policies.

The feminization of the pharmaceutical profession should be studied and can be supported by feminist studies to understand the gender roles assigned to women and men in work processes²⁰, in terms of pay, number of hours worked, number of children and variables related to burnout syndrome.

As for the lack of incentives for training, a variable that was associated with the three BS dimensions, it could signal to scientific and professional institutions the need to invest in training in partnership with employers.

Dissatisfaction with work and dissatisfaction with the remuneration received by Brazilian pharmacists are associated with BS, identified both in a study before and after the covid-19 pandemic, and are significantly associated with the dimensions of emotional exhaustion, depersonalization, and lack of accomplishment at work.

The conceptions of job satisfaction that are most widely accepted and disseminated in scientific circles are those that include the importance of psychosocial aspects at work, in which the combination of events or circumstances at a given time determines job satisfaction²¹.

Job satisfaction or dissatisfaction reflects the measure of someone's gratification and fulfillment at work. Research shows that personal factors, such as needs and aspirations, together with organizational group factors, such as relationships with colleagues and supervisors, working conditions, work policies and remuneration, determine job satisfaction²².

Hours worked per week are significantly associated with BS in the "Emotional exhaustion" and "Depersonalization" dimensions, but without affecting "Professional accomplishment" in the post-pandemic period.

Burnout syndrome in Brazilian hospital pharmacists should be widely discussed in hospital institutions (employers), government bodies responsible for workers' health, scientific and professional associations, and unions.

Although the study has limitations, given that the respondents are exclusively SBRAFH members, the result of the work environment variables on the size of the employer institution raises an important point to be investigated: the pharmacists responding to the survey are mostly in medium and large hospitals, but in Brazil small hospitals are the majority, around 70%²³.

It is hoped that this study will contribute to the debate in academic and professional circles, with the aim of giving greater visibility to the problem of quality of life at work and remuneration for pharmaceutical workers.

Conclusion

The occupational health of hospital pharmacists has been extremely impacted by the covid-19 pandemic. Dissatisfaction with work, pay and weekly working hours are related to burnout syndrome. The significant increase in the prevalence of burnout syndrome highlights the importance of strategies to support the mental and occupational health of hospital pharmacists, thus requiring discussions and actions by government bodies, health institutions and professional associations.

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Collaborators

Conception and planning of the research project: H. M. M., M. R. N., C. M. Data acquisition, analysis, and interpretation: H. M. M., M. R. N. Drafting of the article: H. M. M. Critical revision: M. R. N., C. M.

Conflict of Interest Statement

The authors declare no conflict of interest regarding this article.

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