


National scientific production on Burnout Syndrome in ICU nurses and physicians: a bibliometric study


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SUMMARY

OBJECTIVE: *To analyze the scientific production on Burnout Syndrome in physicians and nurses of ICU in Brazil.*

METHOD: *Bibliometric study, documentary, with quantitative approach. We selected articles published in Brazil on Burnout Syndrome in the ICUs, in the VHL and Portal Capes, from 2000 to 2018.*

RESULTS: *40 articles were identified, predominantly from the Southeast. Prevalence of those published in the Brazilian Journal of Intensive Care and in the Journal of Nursing UFPE online. The B2 Qualis periodical is the most prominent. The most prevalent descriptors were: Intensive Care Units, Burnout Syndrome, Burnout and Professional Exhaustion.*

CONCLUSIONS: *Nurses are more interested in publishing this issue. Burnout Syndrome studied in intensive physicians would contribute to identifying its prevalence in these professionals.*

KEYWORDS: *Burnout, Professional. Physicians. Nurses. Intensive Care Units.*

INTRODUCTION

Burnout Syndrome is characterized as a process of responding to an overload caused by the work environment, resulting in exhaustion of the worker. The deterioration of the fundamental relationship that the individual has with their work negatively affects the job performance, interpersonal relationships, and organizational commitment, posing a risk

to their health.^{1,2} It is the stress caused by the work activity, which involves negative behavior in relation to users, customers, and work organization and causes emotional and practical damage to the worker and the organization. These negative conducts and attitudes imply directly in a loss of enthusiasm for the work activity. Whereas traditional stress is a per-

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sonal depletion interfering in the life of the individual but is not necessarily related to work^{3,4}.

The Ministry of Health considers Burnout Syndrome, or Syndrome of Professional Exhaustion, a disease whose etiologic agent would be a prolonged response to chronic stress that arises from work, and this is the description found in the list of International Statistical Classification of Diseases and Related Health Problems (ICD-10)³.

The burnout phenomenon was mentioned for the first time in the United States in the 1970s, in the Freudenberger studies, whose findings showed the harmful physical and mental situation of workers of a Detox Clinic, which included symptoms such as exhaustion, irritation, and cynicism towards patients⁴. In addition, it is also possible to mention Maslach and Jackson⁵, who classified the syndrome in three dimensions: *Emotional Exhaustion*, *Depersonalization* and *Low Personal Fulfillment*.

Thus, some instruments are used to evaluate Burnout Syndrome, among them, the MBI (Maslach Burnout Inventory), drawn up by Christina Maslach and Susan Jackson, which is the most used for the measurement of the syndrome. Another instrument employed is the Cesqt (Síndrome de Quemarse por el Trabajo), developed by Gil-Monte et al.⁶, which adds the study of guilt, not previously investigated in the MBI.

Burnout Syndrome is defined as a response to chronic stress associated with work and consists of four dimensions: *Work Illusion*, *Psychic Wear*, *Indolence* and *Guilt*, thereby establishing two profiles⁶. Profile 1 represents a moderate form of malaise; profile 2 represents the harmed state due to the syndrome, with the addition of a guilt feeling.

The subject of burnout has been the object of research in various countries and is considered a global problem. Therefore, the frequency and distribution of Burnout Syndrome have become something of global concern, which is why it has been the object of research. In Brazil, according to surveys by the Isma-BR (International Stress Management Association in Brazil)⁷. 32% of workers suffer from Burnout Syndrome (devastating level of stress), with similar proportions to the United Kingdom. It should also be pointed out that in Germany, even with a reduced workload among the developed countries, 8% of the workforce shows signs of burnout. In this context, mental illnesses associated with work rank third among the reasons why Brazilian workers receive disability insurance from INSS⁸.

In the context of Brazil, in 1987, the cardiologist Hudson Hubner France published a paper on Burnout Syndrome, the subject started to be discussed⁹. Accordingly, research showed the prevalence of the syndrome among physicians and nurses¹⁰⁻¹², among whom the presence of this phenomenon is critical, being observed in 23.1% of doctors, with a score of high degree.

Health professionals, due to their need of keeping direct contact with their clients, are more vulnerable to exhaustion through work¹³. Other studies^{14,15} add that nurses in Intensive Care Units (ICU), due to the tense and exhausting nature of their work activities, are in a position of vulnerability to occupational stress. Moreover, they also point out that the professional intensivists tend to suffer from stressors linked to the environment, the number of work hours, and the high degree of demands related to their skills and abilities, all of which can cause physical and/or psychological illness.

Thus, it should be noted that the hospital environment constitutes a peculiar site to the occurrence of burnout, in view of its very nature, which heightens occupational stressors¹⁶. ICU is no different, especially for professionals who work there.

In this context, this study sought to answer the following question: what scientific productions available in online journals address Burnout Syndrome in physicians and nurses in Intensive Care Units in the national context? In this perspective, this research has the objective to analyze the scientific production on the Burnout Syndrome in physicians and nurses in Intensive Care Units in Brazil.

METHODS

This is a bibliometric study with a quantitative and documental approach. The bibliometric method is defended for its functionality in the analysis of science universally, and the long period of time it investigates, by means of databases of citations, allows for a multidisciplinary investigation of the social and cognitive changes in science¹⁷, with the possibility to pinpoint indicators of scientific production in different areas and themes.

For the preparation of this study, we selected articles that focused primarily on the phenomenon of Burnout Syndrome in Intensive Care Units, on the following online libraries: *Biblioteca Virtual de Saúde* and Capes Portal. The data collection took place in July 2018.

The search for articles in the databases was performed using the health care terminology available in the Medical Subject Headings (MeSH), and the terms discussed among the keyword in Health Sciences (DeCS) were subsequently consulted, with the keywords: *Burnout*, *Professional*; *Physicians*; *Nurses*; and *Intensive Care Units* combined with the Boolean operator “and” to improve the search and select the studies in accordance with objective of this research.

To select the sample, we adopted the following inclusion criteria: publications in the form of articles, with free-access full texts, available online, from 2000 to 2018, which addressed Burnout Syndrome in doctors and nurses from Care Units in Brazil. In the initial stage, we retrieved 48 publications; then eight studies were excluded because only their abstracts were available. The study sample consisted of 40 articles, organized according to the databases in which they were located.

The timeline established for the study was justified for two reasons: firstly, it is subsequent to the inclusion of burnout in the ICD 10 list and, consequently, subsequent to its recognition in Brazil as a labor disease by the Decree-Law 6.042/2007 of Social Security in 1999. The second reason relates to the meager number of studies available from earlier periods; therefore, their inclusion would not be meaningful to the results of this research.

In the next step, the data were organized according to the desired variables: year of publication, region, periodical, *Qualis Periodical*, and keywords. The data were analyzed using descriptive statistical analysis, through the calculation of simple frequency in absolute numbers and percentage of variables, using Microsoft Excel® 2010.

A concept map (CM) was prepared from the descriptors of the publications selected and the thematic classes that emerged after the selection of keywords, without hierarchy, and considering only the conceptual thematic affinity between them¹⁸. Based on this understanding, the conceptual maps are extremely valid as graphic organizers that reproduce knowledge, helping in the learning process, and is of especially high relevance for presenting the keywords of the articles.

RESULTS

Between 2000 and 2018, 40 articles were found that focused on Burnout Syndrome in ICU physi-

cians and nurses and met the predetermined criteria. Of these, 15% (6 articles) were published in 2017, followed by 12.5% (5 articles) in 2011 and 2013, indicating the years of higher production. Then come the years of 2009 and 2014, each with 10% (4 articles). The years 2010, 2015 and 2016 had, each, 7.5% (3 articles); and 2008, 2012, and 2018 produced 5% of publications (each with two articles). In 2004, there was only one publication (2.5%). In the years 2000, 2001, 2002, 2003, 2005, 2006 and 2007, there were no records of publications related to the study.

As for the region where the studies were carried out, it appears that the Southeastern region, with 22 (55.0%) studies, represents a significant predominance in relation to other regions, whose representations of regional publications were: Northeast, with 12 (30.0%); South, three (7.5%), Central-West, two (5.0%), and North, one (2.5%). It is noteworthy that

TABLE 1 - DISTRIBUTION OF SCIENTIFIC PRODUCTION ON BURNOUT SYNDROME IN ICUS PHYSICIANS AND NURSES, PER PERIODICALS, BRAZIL, 2000 TO 2018 (N=40). AUTHOR: KELY C. C. AZEVEDO

Periodical	N	%
Journal of Nursing UFPE on-line	05	12.5
Revista Brasileira de Terapia Intensiva	05	12.5
Revista Latino-Americana de Enfermagem	03	7.5
Revista de Pesquisa: cuidado é fundamental	02	5
Revista da Escola de Enfermagem da USP	02	5
Revista Brasileira de Enfermagem	02	5
Acta Paulista de Enfermagem	02	5
Trends in Psychology	01	2.5
São Paulo Medical Journal	01	2.5
Revista Texto & Contexto Enfermagem	01	2.5
Revista Psicologia: Ciência e Profissão	01	2.5
Revista Gaúcha de Enfermagem	01	2.5
Revista de Psicologia	01	2.5
Revista de Enfermagem da UFSM	01	2.5
Revista de Enfermagem Centro Oeste Mineiro	01	2.5
Revista da Universidade Vale do Rio Verde	01	2.5
Revista da Spagesp	01	2.5
Revista da Rede de Enfermagem do Nordeste	01	2.5
Brazilian Medical Association Periodical	01	2.5
Revista Ciências em Saúde	01	2.5
Revista Ciência, Cuidado e Saúde	01	2.5
Revista Brasileira de Educação Médica	01	2.5
Online Brazilian Journal of Nursing	01	2.5
Enfermería Global	01	2.5
Ciência & Saúde Coletiva	01	2.5
Caderno de Saúde Pública do Rio de Janeiro	01	2.5
Total	40	100

one of the studies addressed five capital cities located in five regions of the country; however, the amount of research on the theme from the North and Central-West regions are still meager.

With respect to the periodicals involved in publications, we found that the *Revista Brasileira de Terapia Intensiva* and the *Revista de Enfermagem da UFPE on-line* are the most representative, with 12.5% (n=5) of publications each, followed by the *Revista Latino-Americana*, with three publications 7.5% (n=3). The heterogeneity of different journals involved is imperative. Thus, we obtained only one study per journal (see Table 1).

In relation to the *Qualis Periodical*, in accordance with the classifications of journals from the quadrennium 2013-2016, in the area of nursing, we identified that they are distributed in strata, ranging from the highest, A1 with only one publication (3.8%), to B4, with two publications (7.7%), respectively, in the following journals: *Revista Latino-Americana*, *Revista*

Ciências em Saúde, and *Revista da Universidade Vale do Rio Verde*. However, it is worth pointing out that the B2 stratum was the most prominent, corresponding to nine studies (34.6%).

In Table 2 it is possible to verify that, regarding the classification of journals in the area of medicine, the periodical entitled *Cadernos de Saúde Pública* stood out: its *Qualis B2* corresponded to the largest stratum of evaluation among the 26 journals listed in this study.

In relation to the keywords, we observed that the ones used most often in the articles were: Intensive Care Units, Burnout Syndrome, Burnout, and Professional Burnout. From the recognition of the keywords, the concept map was developed (Figure 1).

DISCUSSION

Considering the scientific production on Burnout Syndrome in various areas of knowledge is in a clear

TABLE 2 – SYNTHESIS OF SCIENTIFIC PRODUCTION ON BURNOUT SYNDROME IN ICUS PHYSICIANS AND NURSES, PER QUALI PERIODICALS IN MEDICINE AND NURSING, BRAZIL, 2000 TO 2018 (N=40). AUTHOR: KELLY C. C. AZEVEDO

Qualis Periodicals	Medicine	Nursing
Journal of Nursing UFPE on-line	-	B2
Revista Brasileira de Terapia Intensiva	B3 (I, II, III)	B2
Revista Latino-Americana de Enfermagem	B3 (II, III)	A1
Revista de Pesquisa: cuidado é fundamental	B4 (II)	B2
Revista da Escola de Enfermagem da USP	B4 (II, III)	A2
Revista Brasileira de Enfermagem	B3 (II, III)	A2
Acta Paulista de Enfermagem	B3 (II, III); B5 (I)	A2
Temas em Psicologia	-	B2
São Paulo Medical Journal	B3 (I, II, III)	B1
Texto & Contexto Enfermagem	B3 (II); B4 (I)	A2
Revista Psicologia: Ciência e Profissão	B4 (II)	B2
Revista Gaúcha de Enfermagem	B3 (III); B4 (I, II)	B1
Revista de Psicologia: teoria e prática	B5 (I, II)	B3
Revista de Enfermagem da UFSM	-	B2
Revista de Enfermagem Centro Oeste Mineiro (Recom)	-	B2
Revista da Universidade Vale do Rio Verde	B5 (II)	B4
Revista da Spagesp	-	B3
Revista da Rede de Enfermagem do Nordeste	B4 (II); B5 (III)	B1
Brazilian Medical Association Periodical	B3 (I, II, III)	B1
Revista Ciências em Saúde	-	B4
Ciência, Cuidado e Saúde	B5 (II)	B2
Revista Brasileira de Educação Médica	B4 (II, III); B5 (I)	B2
Online Brazilian Journal of Nursing	B4 (I, II)	B1
Enfermería Global	B4 (I, II)	B1
Ciência & Saúde Coletiva	B3 (I, II, III)	B1
Cadernos de Saúde Pública	B2 (I, III); B3 (II)	B1
Total	26	100

expansion, it is noteworthy that, when the study is directed at ICU professionals, the numbers are still small, a phenomenon that has been occurring for nearly two decades (2000 to 2018), the period chosen for this study.

In relation to the year of publication of articles, the data obtained from the analysis of this indicator shows that from 2008, there was publication in every subsequent year. However, the growth curve is inconsistent — at times, the number of published articles increases, other times, it decreases, and we could not find an even pace for its expansion, especially concerning the years 2017, 2013 and 2011.

A study conducted by Silva et al.¹⁹ showed the prevalence of burnout syndrome in 55.3% of ICU nurses. Corroborating this finding, in the nursing team that works in the ICU of a school hospital of Minas Gerais, the presence of occupational stress was observed in half the team, as well as in intensivists that showed proportions of burnout near or above 50%²⁰²¹. Although the investigations indicate the presence of the phenomenon in health professionals, the timeline reveals a still unimpressive number of national studies that focus on the scenario of the ICU.

On this matter, it is important to mention a national study²² whose evidence indicated a reduced amount of research on burnout in health professionals and identified the need for studies that emphasize preventive and therapeutic measures directed at this problem.

According to the Brazilian geographic regions in which health professionals were investigated, we found that the Southeast region is the one that stands out the most, followed by the Northeast region. On the other hand, the North and Midwest regions have little representation, which could be explained by the poor distribution of ICU beds in Brazil. In this perspective, an analysis of the Federal Council of Medicine²³, which mapped the distribution of ICU beds per states and capitals, revealed that the Southeast region alone concentrates 54% of the ICUS in the country; whereas the North region has the lowest proportion, with only 5% of all ICU beds.

The 40 studies found on this topic are distributed in various journals, and the ones that presented the greatest number of scientific publications were: *Revista Brasileira de Terapia Intensiva* and *Journal of Nursing - UFPE on-line*. Then there is the representativeness of the *Revista Latino-Americana de Enfermagem*.

The larger number of articles published in these journals enabled us to identify that the *Revista Brasileira de Terapia Intensiva* focuses its studies on research based on discussion, distribution, and promotion of information in this area of knowledge, which is aimed at intensivists. In particular, the name of the magazine already makes it inviting for investigations in Intensive Therapy.

In relation to the journal entitled *Journal of Nursing - UFPE online*, it is understood that it is an international scientific journal of master's and doctoral programs in Nursing, of the Federal University of Pernambuco. Although it is an *online* journal, it is located in the Northeast region of Brazil, which ranks in second among the studies selected studies, thus catching our attention to the scientific publications in this journal, in addition to focusing on research aimed at nursing and its team.

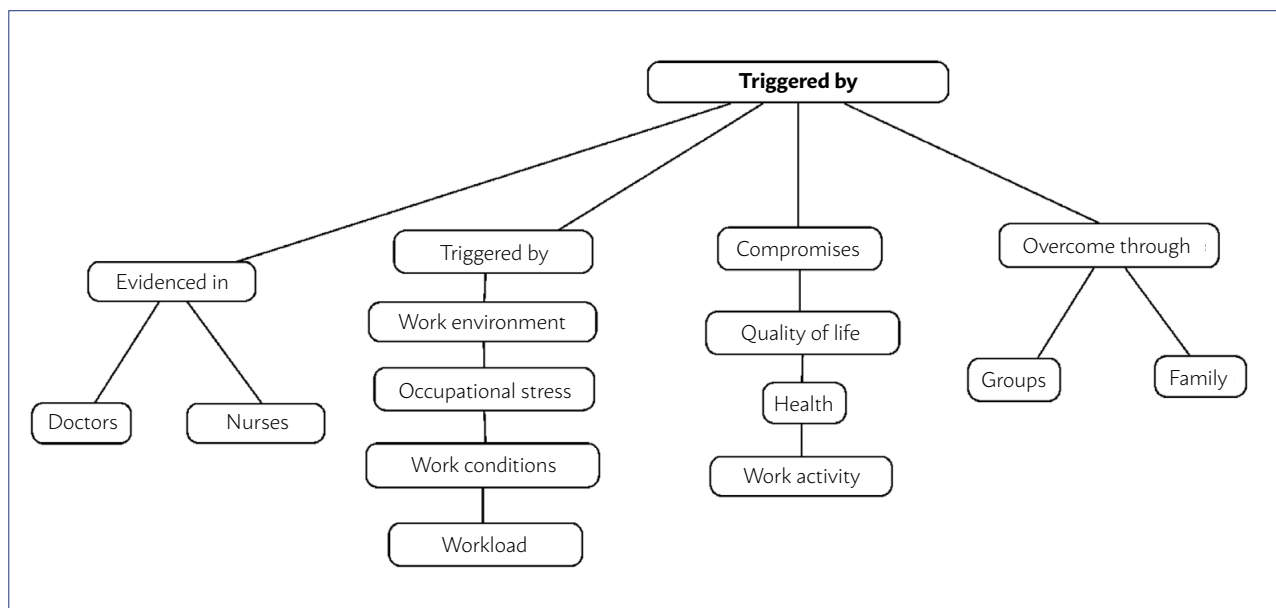
The dynamics of the variable analysis of the *Qualis Periodical* has its great value by projecting and giving visibility to quality scientific production. *Qualis* grades the quality of articles and other types of production based on the analysis of the quality of the means of publication, i.e., scientific journals, classifying them into eight categories: A1, A2, B1, B2, B3, B4, B5, and C²⁴.

According to the *Qualis Periodical*, based on the assessment of the Nursing area, it appears that there was a greater representativity of scientific production in journals classified in category B2; the second *Qualis* of higher expression was A2. Thus, we can see that the scientific production in this great area of Nursing presents a positive trend of publications in *Qualis* A, either A1 or A2, although some indicators demonstrate certain known difficulties in publishing in upper strata of *Qualis*. A survey²⁵ confirms the challenges faced by professional nurses to publish in periodicals of quality, affirming that it is necessary not just to conduct research, to develop quality knowledge.

In general, publications on Burnout Syndrome in medical journals indicate a limitation related to quantitative studies and the low level of classification of scientific production from Brazilian postgraduate programs published in journals.

It is important to highlight the variety and similarity of terms when consulting DeCs in relation to the theme Burnout Syndrome. They range from *Burnout*, *Professional Burnout*, *Professional Wear*, *Professional Stress*, *Occupational Stress*, *Emotional and*

FIGURE 1: CONCEPTUAL MAP PRODUCED FROM THE KEYWORDS OF THE ARTICLES AND THE THEMATIC CLASSES ON BURNOUT SYNDROME IN NURSES AND DOCTORS OF INTENSIVE CARE UNITS (N=40). AUTHOR: KELY C. C. AZEVEDO



Physical exhaustion, which makes it evident that this issue is in the process of construction. The concept map illustrated in Figure 1 is a graphical representation of concepts that organize themselves, establishing relationships between them and allowing us to reflect on its content²⁶.

From the conceptual map, it was possible to identify four thematic groups: professionals affected by the syndrome, factors related to its development, aspects of the professional life that are compromised, and ways to overcome the pathology.

As for the group of professionals affected by Burnout Syndrome, the publications presented the following keywords: *health professionals*, *physicians*, *nurses*, and *nursing team*. Based on these keywords, studies^{27,28,29} indicate that the nursing work in ICUs faces stressful processes worldwide since the hospital environment is crucial for treating people increasingly diseased and senile³⁰. In addition, it has been found that the prevalence of *burnout* in pediatricians of a public hospital in the South of Brazil was 53.7%³¹. This result is similar to that of another study that identifies the presence of the syndrome in intensivists of the state of Sergipe, which found that over 40% of participants were affected by it³².

As for the factors related to the development of Burnout Syndrome in these professionals, the publications used the following keywords: *occupational stress*, *work conditions*, and *work environment*. Cat-

egorically, these keywords refer to elements of the organizational model of work. However, the causes of Burnout Syndrome occur at three different levels: individual, organizational, and social. On this subject, studies^{33,34} indicate that burnout is determined by inadequate work organization, which causes an overload, lack of autonomy and support for carrying out tasks. In addition, negative factors in the work environment, such as the lack of structural resources, work organization, and conflicting interpersonal relationships increase the risk of undesirable consequences for health professionals, such as burnout.

In relation to the commitment of some aspects of the professional life of the individual, the following descriptors stood out: *quality of life*, *work activity*, and *health*. The quality of life at work is determined by individual situations, as well as those which emerge from the working environment itself. In addition, authors^{35,36} argue that work is where people seek excellence in service due to feeling well, in a healthy environment, to accomplish their tasks. It is inferred that the compromise on the quality of life is reached when individuals are expected to reach scores of productivity and primacy, with harmful effects on the body and the mind of public servers.

Quality of life has been the object of research in various areas, especially in the context of health when associated with work. Studies^{37,38} on nurses who work on surgical centers suggest that, in terms

of health-related quality of life, the physical, emotional and pain domains are the aspects most seriously compromised.

The fourth group of keywords used to portray the ways of tackling Burnout Syndrome in health workers were: *groups* and *family*. In this sense, it is necessary to contemplate a definition³⁹ that says that effective interventions are those that act positively, causing changes in the individual by following these steps: overcoming the resistance to change and preparing for it to occur; transitioning to a different position and remaining in this the newly changed state. In this context, it is vital to mention a research⁴⁰ that presented an intervention based on group meetings with professional ICU nurses of a university hospital, whose results revealed that groups could help the co-existence of professionals in the work environment. In terms of interpersonal relations, the support of family members is fundamental to mitigate the risk of developing Burnout syndrome in the work environment, since strained relations and conflict are reflected on work. In this context, there are some strategies for intervention, which are grouped into three categories: individual, group, and organizational strategies.

CONCLUSION

From the bibliometric perspective, the analysis of the scientific production on the Burnout Syndrome in ICU nurses and physicians, based on the databases investigated, showed that nurse researchers have a greater interest in publishing on this theme, in comparison to physicians. Thus, there are some concerns that arise, since studying Burnout Syndrome

in intensivists would help to identify their prevalence in these professionals, in addition to being an important indicator of quality in the context of work in health organizations.

It is a fact that the scientific production on Burnout Syndrome in Intensive Care Units has advanced. However, it is considered that there is a low number of publications by medical professionals, hindering the dissemination of knowledge among the medical class. This aspect is relevant to point out the need to develop new studies addressing this phenomenon, especially because it is a major occurrence in the context of mental health.

We found that the Southeast region plays an important role by being the greatest publisher of information in the scientific community, regarding the number of articles published with a focus on *burnout* in ICU. In addition, the choice of the journal that will feature each discovery is understood to be of great value.

Therefore, considering the vast number of journals available, those who stood out had a thought out approach, especially in regards of the scope of the subject (intensive care), with greater visibility in the universe of nursing. However, although the theme studied focuses on the psychosocial nature of the impacts caused, in respect to the *Qualis Periodical*, the discussions are often not able to be published in journals of greater prominence.

The contribution of this study suggests an attention to the development of more complex research on Burnout Syndrome in the context of Intensive Care Units, which has affected comprehensively Brazilian health workers, especially nurses and intensivists.

RESUMO

OBJETIVO: Analisar a produção científica sobre a Síndrome de Burnout em médicos e enfermeiros de UTI no Brasil.

MÉTODO: Estudo bibliométrico, documental, com abordagem quantitativa. Foram selecionados artigos publicados no Brasil sobre a Síndrome de Burnout nas UTIs, na BVS e Portal Capes, entre 2000 e 2018. Foi elaborado um mapa conceitual de modo a organizar o eixo temático.

RESULTADOS: Foram identificados 40 artigos, predominantemente do Sudeste. Prevaleceram os publicados na Revista Brasileira de Terapia Intensiva e na Revista de Enfermagem UFPE on-line. O Qualis periódico B2 é o de maior destaque. Os descritores encontrados com maior prevalência foram: Unidades de Terapia Intensiva, Síndrome de Burnout, Burnout e Esgotamento Profissional.

CONCLUSÕES: Enfermeiros apresentam maior interesse em publicar nessa temática. A Síndrome de Burnout estudada em médicos intensivistas contribuiria para identificar a sua prevalência nesses profissionais.

PALAVRAS-CHAVE: Esgotamento profissional. Médicos. Enfermeiras e enfermeiros. Unidades de Terapia Intensiva.

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