Research Article

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Latin American Scientific Production on Burnout in Scopus, 2010 - 2020

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Abstract

This research aimed to characterize the Latin American scientific literature production on burnout between 2010 and 2020. A descriptive study was carried out with Latin American publications in journals indexed in the Scopus database as the unit of analysis. The variables studied were document frequency, scientific production by country, number of authors, institutional affiliation and scientific production by descriptor on burnout. The documentary type that appears the most is research papers with 85.03%. Out of a total of 154 authors affiliated to 163 Latin American institutions, the trend of scientific production by country shows that Brazil leads with 52.51% of the production in Latin America. The journals with the largest production were Revista da Escola de Enfermagem (n= 8), Revista Brasileira de Medicina do Trabalho and Revista Latino Americana de Enfermagem, with 22 documents each. Scientific production studies on an area of knowledge guide the research work. Thus, knowing what publications have been made on burnout will allow us to establish a Latin American research policy that will benefit the psychological discipline. However, it is necessary to increase the number of studies on burnout in Latin America in order to consolidate authorship collaboration and the literature on the subject.

Keywords: *Scientific production; Burnout; Latin America; Scopus*

1. Introduction

In 2000, the World Health Organization listed burnout as an occupational risk factor, due to its potential to affect life quality and mental health (Saborio & Hidalgo, 2015). Consequently, it is considered a negative individual experience consisting of physical, emotional and mental fatigue, which can lead to a lack of interest in work, dehumanization and a low level of personal fulfillment

caused by a continuous demand of energy and personal resources from an person (Kulakova et al., 2017).

Scientific literature accounts that this construct encourages one of the most common research topics in occupational health psychology (Bakker & Costa, 2014), with greater impacts on organizations and work (Park et al., 2020), for example in areas such as education —specifically in university professors (Cabellos et al., 2020) and elementary education teachers (Tabares-Díaz et al., 2020)—, as well as impacts on the healthcare field and healthcare professionals —such as physicians and nurses (Khamisa et al., 2017) and medical residents and students (Ovejas-López et al., 2020).

Based on research evidence, it is assumed that Burnout syndrome can affect people's health (Bethea et al., 2020), causing both physical and psychosomatic problems (Suñer-Soler et al., 2014). Thus, those who experience chronic burnout may develop depression, anxiety , low self-esteem, feelings of guilt and low frustration tolerance (Woo et al., 2020; Salvagioni et al., 2017). Therefore, it has become evident that in Latin America there is a need for intervention through strategies and programs aimed at improving coping styles in order to mitigate the consequences (Rosas-Santiago, 2019).

Taking into account the importance of the topic, it is necessary to determine the existing and systematized knowledge so far in the Latin American region. Accordingly, researchers such as Mejia et al. (2019) have studied stress among self-employed workers in Venezuela, Colombia, Peru, Honduras, Ecuador and Panama, finding that the country with the highest stress rate was Venezuela (63%), followed by Ecuador and Panama. Previously, Diaz and Gómez (2016) carried out a systematic review in order to create an overview of Burnout studies conducted between 2000 and 2010. In their study, Diaz and Gómez found a tendency towards the use of the conceptual approaches and instruments developed by Maslach and Jackson, correlational and descriptive research designs and validation of instruments, mostly for healthcare professions.

Similarly, between 2010 and 2017, Casallas et al. (2017) conducted a theoretical review on the current state of research on Burnout syndrome among Latin American teachers and concluded that the countries with the highest number of papers on the subject are Colombia and Mexico. Moreover, they observed a higher percentage of quantitative, correlational and non-experimental design studies, confirming that the most widely used instrument was Maslach's Burnout Inventory. More recently, Buitrago et al. (2020) conducted a review of Burnout syndrome among Latin American from 2010 to 2020, revealing a prevalence and factors associated with the development of this syndrome. This situation is corroborated in the current health emergency context, as Vinueza et al. (2020) concluded that during the COVID-19 pandemic, more than 90% of Ecuadorian medical and nursing personnel experienced moderate to severe burnout.

Although the importance of the study of Burnout is evident, the reports found so far do not provide a clear picture of the quality and characteristics of the scientific production generated. Therefore, the analysis and identification of scientific papers from a bibliometric perspective are a major need in the systematization of the knowledge acquired, especially for the development of strategies, programs and interventions to safeguard workers' mental health in this region (Solís-Cóndor et al., 2017), since —as observed presently— the COVID-19 pandemic is prompting changes in labor relations, demanding a great capacity for adaptation from not only health workers, but also educational workers and similar (Moreira & Lucca, 2020).

Reviewing the characteristics of Latin American papers will provide information on the type of documents published, the production growth evolution, authorship and affiliation institutions, and the main journals in which these papers have been published. Hence, the purpose of this study was to characterize the Latin American scientific production on burnout.

2. Methods

For this retrospective-descriptive study, the unit of analysis was the papers on burnout published in journals indexed on Scopus from 2010 to 2020, authors of which are affiliated with Latin American

institutions. The Scopus database indexes more than 40,804 science, technology, social sciences, arts, humanities and medicine journals. Therefore, it was decided to use this database due to the large number of journals indexed and its rigorous journal selection process, which allows the collection of the most relevant studies on the subject. The search included all published and indexed papers, using the criteria Paper Title, Abstracts, and Keywords. The search terms used were "burnout", "work burn syndrome", "burnout syndrome", "occupational burnout syndrome", "burn worker syndrome", and "burnout professional". Then, a database was built in Microsoft Excel with the extracted documents, which included the following data: authors' names, paper title, type of paper, authors' institutions of affiliation, and journal and country where the paper was published. Finally, with the support of the VOSviewer software, a network was created with the main themes associated with the papers' key words.

3. Results

According to the results, a total of 975 papers, authors of which are affiliated with Latin American institutions, were published and indexed on Scopus. Nine types of publishable documents were included in the analysis. Most of the documents (85.03%) were research papers (table 1).

Table 1: Types of Burnout publication documents

Type of document	No.	%
Papers	829	85.03
Reviews	55	5.64
Letters to the Editor	33	3.38
Conference papers	31	3.18
Book chapters	10	1.03
Notes	9	0.92
Editorials	6	0.62
Short surveys	1	0.10
Errata	1	0.10

Brazil is the most prolific Latin American country in terms of scientific production on burnout, contributing 48.31% of the Latin American production, followed by Mexico, Chile, Colombia, Argentina and Peru, countries that exceed 5.00% of the Latin American production. Two Latin American countries (Bolivia and Costa Rica) have at least one publication during the period studied (Table 2).

Table 2: Latin American countries with scientific production on Burnout

Country	No.	%
Brazil	512	52.51
Mexico	153	15.69
Chile	96	9.85
Colombia	77	7.90
Argentina	58	5.95
Peru	57	5.85
Ecuador	14	1.44
Cuba	9	0.92
Venezuela	7	0.72
Dominican Republic	6	0.62
Jamaica	6	0.62
Uruguay	6	0.62

Country	No.	%
Paraguay	5	0.51
Guatemala	3	0.31
Puerto Rico	3	0.31
Panama	2	0.21
Bolivia	1	0.10
Costa Rica	1	0.10

In terms of productivity by institution, 163 international institutions have participated in the Latin American production on burnout. Below is a list of the top 10, among which the institutions of Brazil, Peru and Chile stand out. Only one of these is a non-university institution, and 80% are located within the first 100 institutions of the SIR Iber 2020 (SCImago Institutions Ranking).

Table 3: Latin American institutions taking part in the research on burnout

Institution	SIR Iber 2020	Country	No.
Universidade de São Paulo (USP)	1	Brazil	93
Universidade Federal de São Paulo	24	Brazil	36
Universidade Federal do Rio Grande do Sul	11	Brazil	31
Universidade Estadual de Campinas	7	Brazil	31
Universidade Estadual Paulista (UNESP)	4	Brazil	29
Universidade do Estado do Rio de Janeiro	51	Brazil	24
Universidad de San Martín de Porres	364	Peru	23
Universidade Federal de Santa Maria	43	Brazil	22
Fundação Oswaldo Cruz	-	Brazil	21
Pontificia Universidad Católica de Chile	25	Chile	19

Table 4 provides a list of the 10 most prolific journals, among which Revista Da Escola De Enfermagem, Revista Brasileira De Medicina Do Trabalho, and Revista Latino Americana De Enfermagem stand out (with publications of more than 20 documents). These journals are located in quartile 2 and quartile 4 of the SJR (SCImago Journal Ranking). The thematic areas of these 10 journals are environmental science, multidisciplinary sciences, medicine and nursing. Scientific production is focused on Latin American journals, which shows that researchers from this region prefer to conduct and publicize their research in their own milieu.

Table 4: Journals with the highest number of publications on burnout

Journal	Country	Quartile	SJR	Thematic Area	Documents
Revista Da Escola De Enfermagem	Brazil	Q2	0.31	Nursing	28
Revista Brasileira De Medicina Do Trabalho	Brazil	Q4	0.2	Medicine	22
Revista Latino Americana De Enfermagem	Brazil	Q2	0.41	Nursing	22
International Journal of Environmental Research and Public Health	Switzerland	Q2	0.74	Environmental Science; Nursing	19
PLOS ONE	USA	Q1	1.02	Multidisciplinary	19
Ciencia E Saude Coletiva	Brazil	Q2	0.58	Medicine	17
Acta Paulista De Enfermagem	Brazil	Q2	0.21	Nursing	14
Educación Médica	Spain	Q3	0.28	Medicine and Social Sciences	13
Revista Enfermagem	Brazil	Q3	0.22	Nursing	12
Universitas Psychologica	Colombia	Q3	0.23	Psychology	12

Table 5 below lists the authors who have submitted the largest number of studies on burnout to date. Of the 154 authors of the 975 papers analyzed, those who have contributed more than five papers to date include researchers such as Carlotto, Mary Sandra; Merino-Soto, César; Barlem, Edison Luiz Devos; and Campos, Juliana Álvares Duarte Bonini, with more than 10 published papers. Among these top 10 authors are researchers from Brazil, Peru and Argentina.

Table 5: Latin American authors with the most research papers on burnout

Authors	Institution	Country	Index H	Documents Published
Carlotto, Mary Sandra	Universidade do Vale do Rio dos Sinos	Brazil	10	22
Merino-Soto, César	Universidad San Martín de Porres	Peru	9	13
Barlem, Edison Luiz Devos	Universidade Federal do Rio Grande	Brazil	12	11
Campos, Juliana Álvares Duarte Bonini	Universidade Estadual Paulista (UNESP)	Brazil	20	11
Dalmolin, Graziele Lima	Universidade Federal de Santa Maria	Brazil	6	10
Fernández-Arata, Manuel	Universidad San Martín de Porres	Peru	5	8
Medrano, Leonardo Adrian	Universidad Empresarial Siglo 21	Argentina	11	7
Pires, Daniel Alvarez	Universidade Federal do Para	Brazil	4	7
Tomaschewski-Barlem, Jamila Geri	Universidade Federal do Rio Grande	Brazil	7	7
Câmara, Sheila Gonçalves	Universidade Federal de Ciencias da Saúde de Porto Alegre	Brazil	7	6

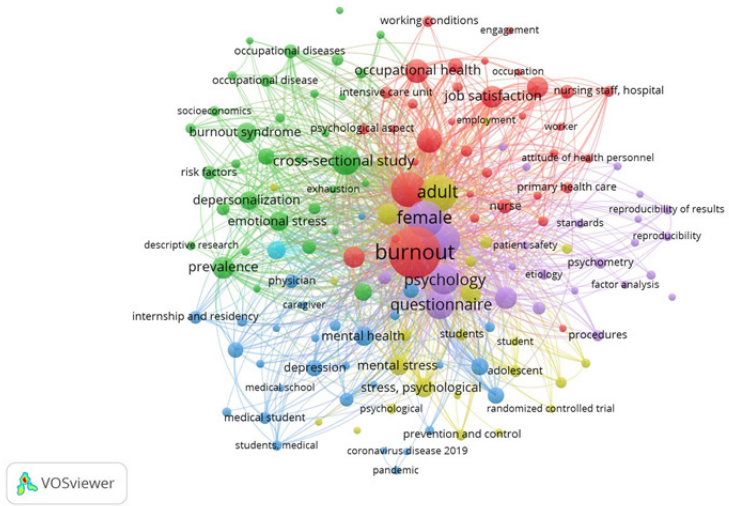

Figure 1: Visualization map of keyword occurrence

Figure 1 shows that the most frequent descriptor is burnout with 148 occurrences. In this case, the number of two-word co-occurrences represents the number of publications in which both words appear in the list of keywords from the selected documents. The colors indicate clusters of keywords that are relatively correlated based on the association strength determined by VOSviewer. The colors also indicate the visual difference of the clusters.

Using the 148 descriptors out of a total of 7099 recorded in the 975 retrieved documents and the six clusters, the thematic focus of each grouping was analyzed. Cluster 1 (red) includes the words

burnout and its research in the field of health professionals and its implication for public health. Cluster 2 (green) shows the different methodological studies that have been used to study burnout. Cluster 3 (blue) analyzes the research on burnout that has been developed in health sciences students, showing evidence of the first studies on burnout during the COVID-19 pandemic. Cluster 4 (yellow) indicates the relationship between burnout and mental health. Cluster 5 (purple) represents the psychometric research that has been conducted on burnout, with the aim of having reliable and valid instruments. Finally, cluster 6 (light blue) represents the epidemiological description and prevalence factors of burnout.

4. Discussion

The topic of occupational burnout emerged as a concept in the United States in the 1970s and spread to Latin America in the 1990s (Schaufeli et al., 2009), showing a sustained growth in Latin American research (Tabares-Díaz et al., 2020) and gaining special prominence among health professionals (Perniciotti, 2019; Suñer-Soler et al., 2014) especially in relation to COVID-19 as reported in Argentina (Ibar et al., 2021), Brazil (Salvador et al., 2021) and Mexico (Robles et al., 2020). In light of this, this research aimed at analyzing the Latin American scientific research papers on burnout in Scopus from 2010 to 2020.

The results obtained reveal that of the 975 papers found, the majority of documents were research papers with 85.3%, which is consistent with what has been reported by different studies (Coimbra et al., 2019; Gonzales-Saldaña et al., 2018; Gonzalez-Argote et al., 2016). Brazil is the country that has contributed the most with 48.31%.This result is in line with the data shown in studies on burnout syndrome among Latin American teachers (Tabares-Díaz et al., 2020) and physicians (Buitrago et al., 2020). This is also interesting because Brazil is one of the countries most affected by COVID-19 (Salvador et al., 2021) and, therefore, Brazilian workers have suffered a greater blow due to the pandemic (Moreira & Lucca, 2020).

Another important datum obtained from this study is related to productivity by institution, which shows Brazil among the top 10 countries, a country that also has one of the leading Latin American journals in the area, the Revista da Escola de Enfermagem da USP (Azevedo et al., 2019). This datum is similar to the results obtained by Hernández et al. (2020) who reports that USP leads in the area of technological education, environment (Bonjardim et al., 2018) and other disciplines (Castro-Rodríguez et al., 2019; Gonzalez-Argote, 2019). It is important to note the presence of a Peruvian institution among the 10 Latin American institutions with the highest scientific production, the Universidad de San Martín de Porres, which is also included in the SCImago Institutions Ranking 2020 (Sotomayor-Beltran & Zarate Segura, 2021), which coheres with that reported by Mayta-Tristán et al. (2019), who reports that the growth of this Peruvian university is related to its production in the area of medicine, and at the student level (Huaraca-Hilario et al., 2017). As for Chile, the Pontificia Universidad Católica de Chile is one of the most important institutions in science and technology research (de Filippo & Levin, 2017) and has an important presence in electronic scientific production (Gonzalez-Argote, 2019).

Among the most productive journals in the area of burnout for Latin America, there are several Brazilian journals, which suggests that Latin American researchers prefer to publish in a regional journal. This is similar to what Azevedo et al. (2019) reported, that is that these studies were mainly published in local journals, similar to other studies (Woo et al., 2020). This data is consistent with the findings of Martín et al. (2020), who show that the growth of scientific production is partly related to the increase in scientific journals. This research also reveals that Latin American production is not disseminated in Q1 quartile journals, which means that there is a distance in mainstream journals and is consistent with the analysis made by Aguado-López et al. (2014), who state the lack of representativeness in the Latin American mainstream science indexes.

The results of this research show the presence of Brazilian researchers with a production rate ranging from 6 to 22 papers per author. These findings demonstrate the leadership of a core group of

researchers, which echoes those reported by Bordons and Ángeles Zulueta (1999) who emphasize that the productivity of authors differs according to the areas and that the distribution of papers per author is not uniform and follows Lotka's law (Lotka, 1926). In addition, this research reports that authors are linked to a university institution which is consistent with previous studies that show that more than half of academic papers are related to universities and academic institutions (Bonjardim et al., 2018).

Another important research result is related to the keyword clusters. Cluster 1 (red) showed associations between burnout, health professionals and their public health implications. This result is consistent with the findings reported by Suñer-Soler et al. (2014), who stated that health professionals are the most affected by burnout and that many of them quit their profession (Grau et al., 2009), along with its financial impact (Bethea et al., 2020), strongly accentuated by COVID-19 (Salvador et al., 2021). Cluster 2 (green) shows the methodological studies on burnout at a Latin American level and which is in line with what Salvagioni reported, who specifies that studies on burnout are developed based on different quantitative (Tabares-Díaz et al., 2020) and qualitative (Kulakova et al., 2017) methodologies and tools used to measure burnout (Salvagioni et al., 2017).

For cluster 3 (blue), burnout is analyzed in relation to health sciences students and has gained a strong prevalence in recent years. According to recent reports, students are the most affected by stress (Corrales-Reyes, 2018), and these studies have not been thoroughly studied in other parts of the world (Salvagioni et al., 2017), although researchers report that 50% of students suffer some type of burnout (Dyrbye et al., 2010; Ovejas-López et al., 2,020). Cluster 4 (yellow) shows the relationship between burnout and mental health. This cluster has been evidenced in Latin American studies especially in mental health service workers who face high burnout situations (Moreira & Lucca, 2020) and also in parents who have remained isolated due to the COVID-19 pandemic (Guercovich et al., 2021). Cluster 5 (purple) addresses psychometric research especially linked to the construct developed by Maslach and colleagues (Schaufeli et al., 2009), showing a variety of studies and versions with the different occupations based on the MBI (Maslash Burnout Inventory) (Díaz Bambula & Gómez, 2016), which generally validates the psychometric properties (Kulakova et al., 2017). Lastly, cluster 6 (light blue) evidences the relationship of burnout and its epidemiological description along with prevalence factors. This theme is among the most important (Woo et al., 2020), due to the high prevalence of burnout among health professionals (West et al., 2016).

It is important to mention that this study has some limitations. Although the Scopus database is more comprehensive, there is little or practically no inclusion of various low-impact sources. Therefore, it is important to carry out studies that increase the Latin American contribution by including regional databases such as SCIelo and Redalyc. Moreover, this study did not include the WoS database, so it is likely that some papers were missing.

From this study, we conclude that the Latin American production on burnout from 2010 to 2020 was 975 papers in journals indexed on Scopus, of which the majority were research papers (85.3%) mainly from Brazil, Mexico and Chile. The outstanding institution is the Universidade de Sao Paulo (USP), followed by the Universidad de San Martin de Porres (Peru) and the Pontificia Universidad Católica de Chile (Chile). The most prolific journal was Revista Da Escola De Enfermagem Q2 and the most productive authors were Brazilian, Peruvian and Argentinean. The most representative topics were burnout and its implication for public health, burnout and methodological studies, burnout among students, burnout and mental health, burnout and psychometric research and finally burnout and epidemiological studies.

5. Conclusion

Analyses on the indicators of the dynamics and evolution of scientific information on Burnout in the Scopus database between 2010-2020 showed that there are knowledge gaps on this topic. These gaps are diversified. Likewise, there is a need to build knowledge networks within this field that allow more studies that are able to contribute to the improvement of evidence related to coping with this

malady through programs and intercentions. Likewise, we highlight the importance of this type of studies to generate precise knowledge about the impact of Burnout from the Latin American perspective, with the purpose of generating new research proposals related to this topic and becoming an important document for those who wish to start researching on the subject of burnout.
In this work we opted for a statistical study of data from the bibliographic database Scopus for the subject of Burnout, which highlights the sustained growth of scientific production on Burnout in Latin America. The scientific contribution of researchers from Brazil and Peru showed that Peruvian and Brazilian researchers have a greater interest in publishing on this topic, compared to other countries. Finally, the volume of publications on burnout from Latin America shows the importance of studying this topic for the world scientific community.

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