

# Occupational Therapy and workers' health: an overview of the bibliographic production

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**Abstract:** Introduction: Occupational therapy has presented an increasing growth in the health and occupational field, with interventions in rehabilitation, prevention, promotion and surveillance in occupational health. Objective: The study aimed to analyze occupational therapy scientific publications in the period from 2000 to 2013, based on the level of evidence. Method: A bibliographical research on the production of papers from the two main journals in the field of occupational therapy in Brazil was developed: *Revista de Terapia Ocupacional* from USP and *Cadernos de Terapia Ocupacional* from UFSCar, using as key words, in Portuguese, corresponding to “workers’ health”, “ergonomics”, “work accidents”, “worker”, “RSI (Repetitive Strain Injuries)”, “professional rehabilitation”, and “people with disabilities”. Results: The data were grouped and organized as: (a) production by types of work analyzed according to the level of evidence; (b) production by years of publications; and (c) publication in accordance with the object of study. The sample consisted of 30 papers, with 90% (n=27) with level of evidence six, 34% (n=10) of publications between the years 2011 to 2012 and regarding the first author affiliation, 90% (n=27) was affiliated to the educational institution. On the object of study 27% was RSI, 23% (n=7) was ergonomics, 17% (n=5) was mental health and work and 13% (n=4) people with disabilities. Conclusion: It was concluded that publications included in this research point to a predominance of publishing approach. The failure to find other studies showed the need for further research based on different methodological approaches.

**Keywords:** *Occupational Therapy, Health Workers, Ergonomics, Review.*

## A Terapia Ocupacional e a saúde do trabalhador: panorama de produção bibliográfica

**Resumo:** Introdução: A terapia ocupacional vem apresentando uma crescente atuação na área de saúde e trabalho com intervenções na reabilitação, promoção e vigilância em saúde do trabalhador. Objetivo: O objetivo foi analisar as produções científicas da terapia ocupacional na área de saúde do trabalhador no período de 2000 a 2013, com base no nível de evidência. Método: Realizou-se um levantamento bibliográfico das produções de artigos dos dois principais periódicos da área de terapia ocupacional no Brasil: a Revista de Terapia Ocupacional da USP e os Cadernos de Terapia Ocupacional da UFSCar, utilizando-se como descritores os termos “saúde do trabalhador”, “ergonomia”, “acidentes de trabalho”, “trabalhador”, “LER (Lesões por Esforços Repetitivos)”, “reabilitação profissional” e “pessoas com deficiência”. Resultados: Os dados foram organizados a partir de: (a) produção por tipo de trabalho, que foram analisados de acordo com o nível de evidência; (b) produção por ano de publicações; e (c) publicação segundo objeto de estudo. A amostra foi constituída de 30 artigos, com 90% (n=27) de nível de evidência seis; 34% (n=10) das publicações entre os anos de 2011 e 2012 e com relação à origem do primeiro autor; 90% (n=27) vinculados à instituição de ensino. Sobre o objeto de estudo, 27% (n=8) foram LER; 23% (n=7), ergonomia; 17% (n=5), saúde mental e trabalho; e 13% (n=4), pessoas com deficiência. Conclusão: Concluiu-se que os artigos incluídos nesta pesquisa apontaram para uma predominância de abordagem de publicação. O fato de não se encontrarem outros tipos de estudos revelou a necessidade de novas pesquisas com base em outras abordagens metodológicas.

**Palavras-chave:** *Terapia Ocupacional, Saúde do Trabalhador, Ergonomia, Revisão.*

## 1 Introduction

The Occupational Health area (OH) is a practice field and interdisciplinary knowledge aimed at physical, emotional and social workers. Currently, interventions in the area are guided by the National Health Policy of Workers - PNSTT (BRASIL, 2012), aimed at the integral health care of workers.

In Brazil in 1950, the OH actions in occupational therapy were focused on rehabilitation of individuals, such as workers, creating several recovery, habilitation, and professional rehabilitation centers. However, the service was only for taxpayers' worker of the Social Security, and also, the reintegration into the labor market was not possible (LAMONATO et al., 2007).

In the Professional Rehabilitation Centre (PRC) of the National Social Security Institute (INPS), in the 1980s, the care model was developed by multidisciplinary teams of doctors, social workers, psychologists, physiotherapists, occupational therapists, nurses, speech therapists, pedagogues, and sociologists. All the necessary therapeutic resources were inside the service. The occupational therapist assisted the customer service, the workers amputated by occupational accidents in professional rehabilitation program aiming to return or reintegrate to work (TAKAHASHI; IGUTI, 2008).

According to Soares (1991), the OT intervene in the work and health and, from the author as a fundamental basis, it assumes, the subjective nature/purpose of the work as a performance of human capacity and integration of the individual into their reality material.

Watanabe and Nicolau (2001) show that Brazilian occupational therapists have developed several studies on workers' health area, playing different roles (employees, consultant, advisor, service provider, partner and contributor to research and intervention) and acting, basically on rehabilitation, disease prevention, health promotion and social development, but also in research work activities, conditions, positions, organization and labor relationship to prevent occupational diseases and accidents at work.

In public health services, such as the Worker's Health Reference Centers (Cerest), the OT actions are articulated with other health activities in multidisciplinary teams (LANCMAN; GHIRARDI, 2002), carrying out assistance activities to sickened or injured workers at work, with an individual or group care plan; health surveillance of workers,

the environment and working conditions using resources such as the ergonomics of the activity; and health education and work, with training actions with the area to assist in supervision to notification of the work accident victims in emergency units of the municipal territories.

It is highlighted that OT becomes part of the scene not only of workers' health as well as the Occupational Health Surveillance (Visat), developing key actions in research, analysis and intervention related to work for the promotion of health as well as prevention of injuries related to accidents and occupational diseases (DALDON; LANCMAN, 2013a).

Lancman and Ghirardi (2002) affirm the importance of the role of occupational therapists in the health care workers, being a professional highly qualified to treat and prevent diseases with man-labor relationships closely linked since the dawn of humanity to the contemporary.

Therefore, the OT practice on the worker's health scenario should include actions seeking to prevent disease and injury from work activities, rehabilitation of individuals already sickened, with special attention to the man and the issues permeating his health, since the conditions and the way work is organized are important factors in determining the illness, allowing the worker to carry out an awareness and knowledge about his practice, enabling the performance of changes in his relationship with his work (LANCMAN, 2004).

Considering the performance of OT expanded when inserted in the occupational health area, this study sought to synthesize and highlight, professional insertion point of view in the area, existing scientific publications on OT interventions in services related to the health of workers and academic research focused on the health and work. Thus, the objective was to analyze the scientific production of occupational therapy in worker's health from 2000 to 2013, based on the level of evidence and, specifically, it was sought to identify the years of publications and the object of study that supported the evidence-based practice in the area during the selected period.

## 2 Method

The study is based on the literature method, aiming to perform a rescue of existing publications on occupational therapy (OT) in occupational health (OH), between 2000 and 2013. The time frame

of the research is justified by the achievements of the area during the period, such as the creation of the National Network of Integral Worker's Health Care – Renast (REDE..., 2014) in 2002, triggering actions in Primary Care network in the Worker's Health Reference Centers (Cerest), which allowed the input occupational therapists in this field of activity.

For Lakatos and Marconi (2003), the literature aimed at putting the researcher in direct contact with what has been written said or filmed on a particular subject.

A review was carried out to find the insertion of the OT in the workers' health field. The research was published in two scientific journals of occupational therapy area in Brazil: *Occupational Revista de Terapia Ocupacional* of the University of São Paulo (USP) and *Cadernos de Terapia Ocupacional* of the Federal University of São Carlos (UFSCar). As a procedure for the literature, the access in the journals platform was performed. It was chosen both journals for presenting indexes in online databases, such as the Latin American and Caribbean Health Sciences – Lilacs, one of the main bases of health, which allows access electronically and enables the dissemination of the scientific knowledge in occupational therapy area.

It is also highlighted that the journals analyzed have no impact factor. However, they are currently the two main national Occupational Therapy journals, characterized as an important source for searching for scientific evidence and dissemination of knowledge production and intervention in the area.

The keywords used were *occupational health, ergonomics, rehabilitation, accident at work, RSI, people with disabilities, occupational therapy*. All keywords were combined with the term occupational therapy. Table 1 shows the combinations.

The inclusion criteria were publications in a scientific article, in Portuguese and having an occupational therapist among the authors. It was proceeded to read the abstracts to identify

data for the insertion of OT on worker's health. When necessary, the reading of the full articles was performed. Publications as summaries of dissertations or theses, editorial, and articles that had no relation to the object established in this research were excluded from the scope of this study. In all, 155 publications were found in both journals of occupational therapy. Of them, it was considered a sample of 30 articles that met all the selection criteria.

Data were organized quantitatively in the form of graphs by categories: a) Production by type of study, analyzed according to the strength of evidence, classified into seven levels, as proposed by Melnyk and Fineout-Overholt (2005) in which the lower the number, the greater the strength of evidence in the study; b) Production of publications per year; and c) Publications as an object of study. Table 2 shows the seven levels of evidence.

### 3 Results

The sample used in this study was 30 articles, distributed between the *Cadernos de Terapia Ocupacional* of the Federal University of São Carlos (UFSCar) and *Revista de Terapia Ocupacional* of the University of São Paulo (USP), n=9 and n=21, respectively. The data were described as shown below to organize better

- a) Production by type of study and strength of evidence

After reading the summaries, from the analysis of the data, there were 93% (n=28) articles found classified as research and 7% (n=2) as theoretical articles (Table 3). The types of design of studies among research articles were a literature review, retrospective descriptive, exploratory descriptive, case study, and experience report.

It was possible to classify the sample of 30 publications by the level of evidence, according

**Table 1.** Combination of the keywords and the occupational therapy term.

Keywords		Term
Occupational Health (ST)	and	Occupational Therapy
Ergonomics	and	Occupational Therapy
Professional Rehabilitations (PR)	and	Occupational Therapy
Work accident (AT)	and	Occupational Therapy
RSI	and	Occupational Therapy
People with disabilities (PWD)	and	Occupational Therapy

**Table 2.** Level of Evidence according to Melnyk and Fineout-Overholt (2005).

NÍVEL	STRENGTH OF EVIDENCE
1	Evidence from the Systematic Reviews and Meta-analysis of all relevant randomized controlled clinical trials or derived from clinical guidelines based on Systematic Reviews of randomized controlled clinical trials.
2	Evidence derived from at least one randomized controlled and well-designed clinical trial.
3	Evidence obtained from well delineated clinical trials without randomization.
4	Evidence from well-designed cohort studies and case-control.
5	Evidence from the Systematic Review of descriptive and qualitative studies.
6	Evidence derived from a single descriptive or qualitative study.
7	Evidence from authorities opinion and/or expert committees report

**Table 3.** Production by title, author/year, type of work and identification of the journals on occupational therapy worker's health area in 2000-2013.

Journal: Cad. de Terapia Ocup. UFSCar				
Nº	Title of Publication	Author/Year	Type of study	Strength of evidence
1	Study Symptoms Characteristic of RSI / MSDs in a Public University	Ueno and Toyoda (2002)	Descriptive, Exploratory	6
2	Ergonomic intervention in a Footwear Component Industry	Silva et al. (2006)	Descriptive	6
3	Characterization of physically challenged people of working age and mapping of active care institutions in the municipality of São Carlos	Rodrigues et al. (2009)	Descriptive	6
4	work activities and musculoskeletal disorders of workers in a nursing institution	Montezor and Alencar (2011)	Descriptive, exploratory	6
5	Work Accident prevalence with a Upper Limb Injury in a University of the Interior's State of São Paulo	Rossi, Ferrigno and Cruz (2011)	Descriptive, retrospective	6
6	The Professional Rehabilitation Program INSS: initial notes from an experience	Bregalda and Lopes (2011)	Experience report	6
7	The use of ergonomic analysis of work as an occupational therapist tool in the study of hairdressing work activity	Rocha and Simonelli (2012)	Exploratory study	6
8	Working conditions in an industrial kitchen and musculoskeletal disorders workers	Alencar, Cavalcanti and Montezor (2013)	Experience report	6
9	A retrospective study of traumatic injuries of the hand related to work	Oliveira et al. (2013)	Descriptive, prospective	6
Journal: Rev. de Terapia Ocup. USP				
10	The ergonomic approach in the study of work position: the case of a jewelry factory	Alves, Assunção and Luz (2002)	Descriptive	6
11	Thinking about new practices in occupational therapy, health, and work	Lancman and Ghirardi (2002)	Theoretical	7
12	Subjectivity study contributions in the analysis and intervention at work	Lancman et al. (2002)	Descriptive, qualitative	6
13	Informing and reflecting: an occupational therapy experience in the prevention of risks to workers' health	Lancman et al. (2004)	Descriptive	6
14	The impact of work organization on mental health: a study in psychodynamic work	Lancman and Jardim (2004)	Descriptive	6
15	The work of traffic agents in São Paulo: an ergonomic analysis	Gonçalves et al. (2005)	Study case	6
16	Work and disability: cooperatives as social inclusion strategy	Ghirardi (2004)	Experience report	6

Table 3. Continued...

Journal: Rev. de Terapia Ocup. UFSCar				
Nº	Title of Publication	Author/Year	Type of study	Strength of evidence
17	Analysis method of industrial tasks as a tool for the inclusion of people with disabilities at work	Simonelli and Camarotto (2005)	Study case	6
18	Psychic and aging suffering at work: a study with traffic agents	Lancman et al. (2006)	Descriptive, Exploratory qualitative	6
19	Aspects related to the return to work process of individuals with musculoskeletal disorders of the upper limb: an annotated bibliography	Silva, Guimarães and Rodrigues (2007)	Literature Review, descriptive and qualitative studies	5
20	The professionalization of people with disabilities in Campinas: weaknesses and prospects	Toldra and Sá (2008)	Theoretical	7
21	Musculoskeletal disorders and work activities in a recycling company: a focus on physical aspects	Alencar (2009)	Study case	6
22	Working conditions and symptoms related to the health of waste pickers in Curitiba	Alencar et al. (2009)	Descriptive, exploratory	6
23	Work organization aspects and musculoskeletal disorders: a study with workers in long-term nursing institutions	Alencar and Montezor (2010)	Descriptive, exploratory	6
24	Challenges for inclusion in the labor market of people with intellectual disabilities: experiences in construction	Toldra, De Marque and Brunello (2010)	Exploratory, qualitative	6
25	Interdisciplinary work in CAPS and the specificity of the occupational therapist job	Juns and Lancman (2011)	Qualitative, Descriptive	6
26	The sick leave for RSI/MSDs: repercussions on mental health	Alencar and Ota (2011)	Descriptive, exploratory	6
27	Occupational therapy in worker health surveillance	Daldon and Lancman (2013a)	Descriptive	6
28	Relationships between conditions and work organization and the dockworkers transport sick leave	Alencar and Biz (2013)	Study case	6
29	The sick leave for low back disorders: impact on the daily lives of individuals	Alencar and Terada (2012)	Descriptive, exploratory	6
30	Work organization, conflict and aggression in an emergency hospital in the city of São Paulo, Brazil	Lancman, Gonçalves and Mângia (2012)	Study case	6

Melnyk and Fineout-Overholt (2005) showing a distribution of 90% (n=27) strength of evidence 6 (derived from descriptive or qualitative study); 7% (n=2) strength of evidence 7 (derived from opinion); and 3% (n=1) strength of evidence 5 (originating from systematic review of descriptive and qualitative studies) (Table 2).

It is observed that most of the research included in this study were qualitative and/or descriptive studies, without any randomized clinical trial, about the intervention of occupational therapy in worker's health. For Escosteguy (1999), the randomized

studies are used as a reference standard of research methods, being the best source of scientific evidence and the best source for determining the efficacy of an intervention.

On the first author's home institution, 90% (n=27) are linked to the educational institution, as teachers or as students, especially from the University of São Paulo – USP (27%, n=8); Federal University of São Paulo – Unifesp (27%, n=8); Federal University of São Carlos – UFSCar (17%, n=5); Federal University of Minas Gerais – UFMG (7%, n=2); Pontifical Catholic University of Campinas – PUC



(7%, n=2); Federal University of Paraná – UFPR and Claretian University Center – Ceuclar, both with 3% (n=1). Only 10% (n=3) of the articles are related to care services to workers' health, such as the Worker's Health Reference Center – Cerest and 3% (n=1) of the National Institute of Social Security (INSS).

The largest quantity of scientific articles of occupational therapy in worker's health was found in *Revista de Terapia Ocupacional* of USP, with 70% (n=21) of publications.

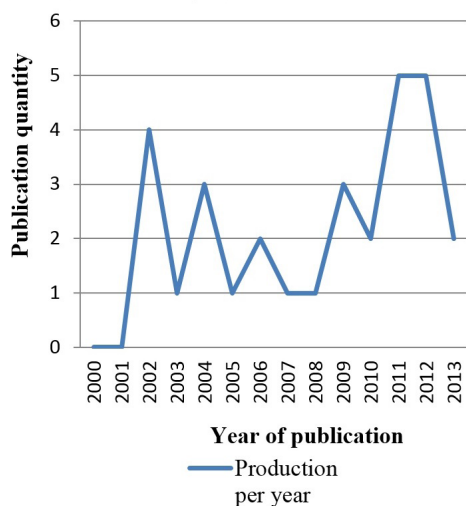
#### b) Production of publications per year

Considering the period from 2000 to 2013 of the 30 articles selected, there were n=4 (13%) articles in 2002, n=1 (3%) article in 2003, n=3 (10%) articles in 2004, n=1 (3%) articles in 2005, n=2 (7%) articles in 2006, n=1 (3%) articles in 2007, n=1 (3%) articles in 2008, n=3 (10%) articles in 2009, n=2 (7%) articles in 2010, n=5 (17%) articles in 2011, n=5 (17%) articles in 2012 and n=2 (7%) articles in 2013. It is noteworthy that in 2000 and 2001 there were not publication, considering both journals, as shown in Figure 1 below.

#### c) Publications as an object of study

Regarding the quantity of the productions according to the study objectives, the majority of studies were about Repetitive Strain Injuries – RSI (n=8) and ergonomics (n=7) followed by Mental and Work health (n=5) and People with Disabilities (n=4) as shown in Figure 2.

**Distribution of publications from 2000 to 2013**



**Figure 1.** Distribution of scientific publications carried out by occupational therapy worker's health.

Although studies on accidents at work and professional rehabilitation are not among the most studied objectives in occupational therapy, n=2, and n=1 articles respectively, both represent a major intervention area of Occupational Health.

## 4 Discussion

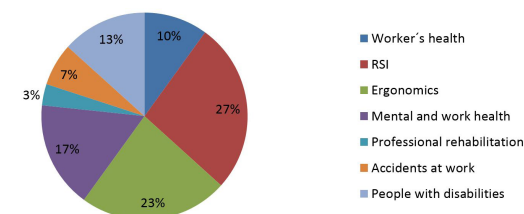
The data revealed that occupational therapy has been inserting the worker's health, presenting significant publications over the highlighted period. In a study published by Bezerra and Neves (2010) to create the profile of the scientific literature to workers' health, in the period between January 2001 and March 2008, examining 170 studies, it was found that, out of the 124 articles published in southeastern Brazil, the state of São Paulo had 33.71% of all scientific publication.

The findings of this study also showed a greater quantity of publications for the Southeast Region with 83%. According to the e-MEC (BRASIL, 2015), the State of São Paulo has 17 higher education institutions recognized with occupational therapy course as well as the highest number of professionals in Brazil.

As to the number of scientific articles and their respective years of publication, there were two peak times: 2002 and 2011/2012.

In 2002, for example, Lancman and Ghirardi (2002) brought a discussion of new practices of occupational therapy in the health and work area. When reporting on these practices, the same authors emphasized the participation of occupational therapist on the staff of the Worker's Health Reference Centers, which allowed the expansion of activity as an intervention in the workplace, individual and group assistance to workers, bringing the occupational therapists the challenge of seeking theoretical basis in areas where the debate was more

**Production according to the study objectives from 2000 to 2013**



**Figure 2.** Production according to study objectives, from 2000 to 2013, carried out by occupational therapy.

advanced. It is estimated that this discussion may have driven publications of that period.

In 2005, there was a defining moment for the area with, the 3<sup>rd</sup> National Conference on Occupational Health (CNST), entitled “Working, yes! Getting sick, no!”, representing the participation of three ministries (Health, Labor, Social Security) to discuss the world of work, its impacts on health and inter-institutional relationships (NOBRE, 2013). These reflections influenced the research and discussions in the area in subsequent years.

In another scenario, in 2011, the National Policy on Health and Safety at Work – PNSST (BRASIL, 2011) was approved, seeking to propose an articulation between the Ministries of Health, Social Security, and Labor and Employment. In 2012, there was another important moment for worker’s health: the publication of the National Policy on Workers’ Health (PNSTT).

According to Nobre (2013), the PNSTT highlights a major review and reconfiguration of functions and roles of the National Network of an Integral Care for Worker’s Health – Renast (REDE..., 2014) and Reference Centers in Occupational Health (Cerest), to raise the need for inclusion of occupational health actions at all levels of care of the Unified Health System (SUS). The Renast is no longer restricted to the reference center. The Cerest remains fundamental, and now with the specialized technical support for the entire network and technical and expert support, it assists for health surveillances, present in every municipality in the country.

Later, Daldon and Lancman (2013b) discuss the directions and uncertainties of surveillance in workers’ health on the various work processes and mechanisms used in interventions in the workplace on the diversity of needs of each service aimed at OH.

On the other hand, in 2008 and 2010, the National Social Security Institute (INSS) has hired more than 183 occupational therapists to compose its staff based on recent professional rehabilitation revitalization proposal of this institution (BREGALDA; LOPES, 2013).

Also, the Program of Support to the Restructuring and Expansion of Federal Universities (Reuni) enabled the creation of new Occupational Therapy courses and the composition of a faculty of several areas of this professional, such as the worker’s health.

Thus, all the contexts mentioned above may have contributed to the development of practical

knowledge production based on evidence of occupational therapy in worker’s health.

In this perspective, regarding the object of study, it is emphasized in this research the Repetitive Strain Injury – RSI, ergonomics and Mental and Work Health.

For Maeno and Wunsch Filho (2010), the increase of these injuries can be explained by changes in work and companies, whose organization has been characterized by setting goals and productivity, considering its needs, particularly the quality of products and services and increased market competitiveness, without concerning on the workers and their physical and psychosocial limits.

Considering the current data from the Occupational Health General Coordination (REDE..., 2014), linked to Renas on the number of reporting injuries and work-related diseases in the Notifiable Diseases Information System (Sinan), RSI predominate with 74% of notifications, also characterized as the most prevalent disease in the world of work.

Concerning to ergonomic studies, the findings revealed research for Ergonomic analysis of work – AET (GUÉRIN et al., 2001). Ergonomics for the International Ergonomics Association (2015) is the subject related to the understanding of the interactions between human beings and work systems. Through its theories, methods, and principles, it seeks to better adaptation of work to the physiological and psychological characteristics of human beings.

In this sense, Ergonomics becomes an essential resource for the worker’s health to understand the conditions and working relationships through the most detailed analysis of situations or jobs, to disease prevention, welfare, and worker safety.

On the other hand, for Leão and Minayo Gomes (2014), there is an eminent need for discussion of mental suffering at work and the importance of responding to this demand, which increasingly becomes explicit in the surveillance area on worker’s health. In this context, the study of Lima et al. (2014) reveals the growing demand on the topic of bullying at work, which has been widely discussed in the academic field and society in general.

From the analysis of thirty publications found, there was a prevalence of studies with strength evidence 6, that is, qualitative descriptive studies, with the characterization of works of an area or field, possibly because the worker’s health is still a new area of action for occupational therapy. For Gil (2002), descriptive studies provide information

on the population and on the understanding of a certain reality, interpretation of the facts of the researched field without the researcher interference, enabling the knowledge of the phenomenon studied.

Despite the professional's actions in the Professional Rehabilitation Centers in the 80s and according to Maeno and Carmo (2005), the inclusion of workers' health on the agenda of the Brazilian Health Reform, presenting a broader concept of health with creation of the Unified Health System (SUS), Constitution of 1988, it is still a knowledge construction field.

In line with these data, the study of Galheigo and Antunes (2008) identifies most of the published literature of occupational therapy in hospital practice as experience or qualitative research reports, also because it is an area under construction.

Therefore, the panorama of the studies found was qualitative or descriptive researches that support the identification and understanding of the scenario and this recognition process within a practice area.

## 5 Conclusions

The publications included in this research highlighted to a predominance of the level of evidence. This fact demonstrates the need for further research based on other methodological approaches, essential for the expansion of the construction of knowledge and understanding of the occupational therapy field action on workers' health.

The literature review only in occupational therapy journals is highlighted as a limitation of this study, being important new research advancing this review considering other journals in the field, as the worker's health is an interdisciplinary area and interfaces in public health, collective health, epidemiology, among others.

It is concluded that it is essential that occupational therapists aim to expand disclosure of their actions related to programs and services related to worker's health, education and research for the area to consolidate and advance prospects for knowledge as this professional has a vast field of intervention.

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## Author's Contributions

Fabiana Magalhães Nunes Silva was responsible for the design and writing of the text, sources organization and/or analysis, data collection and processing. Daniela da Silve Rodrigues collaborated in the study design, in its analysis, the critical article review and guidance of this work. Letícia Meda Ventrúsculo-Fangel collaborated in the critical review of the article. All authors approved the final version of the text.