

History of Occupational Therapy in Brazil: Inequalities, Advances, and Challenges

Adriana de França Drummond, PhD; and Daniel Marinho Cezar da Cruz, PhD

ABSTRACT

Introduction: Since the development of the occupational therapy profession in 1917 in the United States, the field has extended to several countries. The first undergraduate occupational therapy program in Brazil started in 1956 in Rio de Janeiro.

Objective: We describe the history of occupational therapy in Brazil, from historical events that facilitated the early development of the profession until the present time.

Methods: This is a descriptive and historical overview of occupational therapy in Brazil.

Results: The training of occupational therapists occurred unevenly across different regions of Brazil, with a higher concentration of professionals in the southeastern region, in São Paulo, which has the highest income per capita. After implementation of the Unified Health System in 1988, the role of the occupational therapist has expanded to health promotion and primary prevention. In Brazil, there are currently 16,611 practicing occupational therapists, and the first postgraduate program in occupational therapy started in Brazil in 2010 at the Federal University of São Carlos.

Conclusion: Challenges and expectations for professional training, research, and practice in occupational therapy in Brazil are greatly dependent on the planning and execution of government legislation and policies that prioritize health and education. [*Annals of International Occupational Therapy*. 2018; 1(2):103-112.]

Analysis of the historical process of any area of knowledge must consider social, political, economic, and cultural contexts.

THE BRAZILIAN CONTEXT: DIVERSITY AND INEQUALITY

According to data from the most recent census conducted by the Brazilian Institute of Geography and Sta-

tistics (Brazilian Institute of Geography and Statistics, 2010), the Brazilian territory includes 27 states, an area of 8,515,767,049 km², and a population of 200,000,700 inhabitants. The population is distributed unevenly among five distinct geographical regions: south, southeast, midwest, north, and northeast. The territory is very diverse and contains highly urbanized and industrialized cities, rural areas, and uninhabited areas.

Dr. Drummond is Professor, Department of Occupational Therapy, School of Physical Education, Physical Therapy, and Occupational Therapy, Universidade Federal de Minas Gerais-UFMG, Pampulha, Belo Horizonte, Minas Gerais State, Brazil. Dr. Cezar da Cruz is Professor, Department of Occupational Therapy and Occupational Therapy Postgraduate Program, Universidade Federal de São Carlos-UFSCar, São Carlos, São Paulo, Brazil.

The authors have no relevant financial relationships to disclose.

Address correspondence to Daniel Marinho Cezar da Cruz, PhD, Professor, Department of Occupational Therapy and Occupational Therapy Postgraduate Program, Universidade Federal de São Carlos-UFSCar, Rodovia Washington Luís km 235, SP-310, Monjolinho 13565-905, São Carlos, São Paulo, Brazil; e-mail: danielcruz@ufscar.br.

Received: July 31, 2017; Accepted: December 27, 2017.

doi:10.3928/24761222-20180409-01

Social inequality is high in Brazil, especially in the northern and northeastern regions, which have the lowest incomes per capita. The mixed ethnicity in Brazil is a result of the mix of different groups, including native indigenous populations, African people brought into Brazil by slavery, and the Portuguese groups that arrived on discovery of the continent. The ethnic composition varies widely in each Brazilian region. White, Black, and mixed populations prevail in the southeastern region. Mixed, Black, and indigenous populations are concentrated in the northeast. Indigenous populations are prevalent in the northern and midwestern regions, and the White population is concentrated in the southern region (Brazilian Institute of Geography and Statistics, 2010). The population of Brazil has different epidemiological profiles, from chronic degenerative diseases that are common in developed countries to infectious diseases and malnutrition that are common in developing countries. Progress in education has been slow in Brazil in the past 140 years (Brazilian Institute of Geography and Statistics, 2010). The percentage of literate individuals increased from 18.6% and 0.1% of the free and slave populations, respectively, in 1872, to 82.6% of the total population in 2010. This improvement was partially the result of the implementation of public action focused on education in the past decade (Brazilian Institute of Geography and Statistics, 2010).

The number of persons with disabilities who are usually assisted by occupational therapy services was estimated at 45,623,910 individuals, corresponding to 23.9% of the total Brazilian population (Brazilian Institute of Geography and Statistics, 2010). Health care services provided to persons with disabilities are concentrated in the major urban centers of the southeastern region.

DEVELOPMENT OF OCCUPATIONAL THERAPY IN BRAZIL

The history of occupational therapy in Brazil was influenced by the moral treatment provided in large nursing homes in the 19th and early 20th centuries, similar to other countries (Soares, 1991). Vocational activities conducted in large psychiatric hospitals were consistent with the economic industries found in rural areas of Brazil in that period, such as agriculture, including the growth of sugarcane and coffee.

In the 1940s and 1960s, some Brazilian psychiatrists acknowledged the value of therapeutic activities used in the treatment of psychiatric conditions and proposed dif-

ferent approaches to treatment. In 1946, the psychiatrist Nise da Silveira was a pioneer in the creation of the division of occupational therapy at the Psychiatric Center of Rio de Janeiro and the Museum of Images of the Unconscious (Leal, 1994). Therapeutic activities were initiated in patients with tuberculosis in the states of Rio de Janeiro and São Paulo. In that period, Brazil had a poliomyelitis epidemic, and specialized care for these patients was critical. However, professionals with training in rehabilitation were not available (Ferrari, 2013). Therefore, there was a demand for the creation of rehabilitation, vocational rehabilitation, and psychiatric services to meet the epidemiological demands and strengthen the labor force during the period of economic development that occurred in the 1950s.

In 1951, health care workers at the Clinics Hospital of the University of São Paulo went to the United States to specialize in different areas of rehabilitation. Among these professionals, nurse and social worker Neyde Tosetti Hauck studied occupational therapy at New York University. She was the director of three departments of occupational therapy at the Clinics Hospital of the University of São Paulo and also was one of the first occupational therapists graduated by the same university (Soares, 1991).

The first occupational therapy course in Brazil, a 3-year vocational course, was offered in 1956 at the School of Rehabilitation of the Brazilian Beneficent Association for Rehabilitation in Rio de Janeiro (Barros, 2008). Just a year later, in 1957, an occupational therapy course was introduced in São Paulo. This course initially involved technical training. The 60th anniversary of occupational therapy in São Paulo was celebrated in 2017 (Emmel, Cruz, & Figueiredo, 2015).

The International Rehabilitation Movement implemented by the United Nations in 1940 extended training and rehabilitation services in Brazil and created the Institute of Physical Medicine and Rehabilitation at the University of São Paulo (Ferrari, 2013). The city of São Paulo was chosen to host this institute because it was the largest urban and industrialized center in Latin America (Soares, 1991).

Occupational therapy was also taught by the North American educator Elizabeth Eagles, who conducted a brief course on the fundamentals of the profession at the Institute of Physical Medicine and Rehabilitation of the Clinics Hospital of the University of São Paulo (Ferrari, 2013).

In the 1960s, occupational therapy training was provided in other Brazilian states by foreign professionals. In

the city of Belo Horizonte, Minas Gerais, the students in the first occupational therapy course were initially supervised by medical doctors and, at the end of the 1960s, by occupational therapists. The first occupational therapists who worked as supervisors were Deborah Wood from the United States and Johanna Noordhoek from the Netherlands (Soares, 1991).

In 1964, a military dictatorship severely limited citizenship and rights in Brazil, with exploitation of the country by multinational corporations and the Brazilian government. However, this situation eventually mobilized civil society to question the national dependence on foreign capital. In 1969, occupational therapy and physical therapy courses were legally recognized as undergraduate courses, whereas they had been considered vocational courses previously (Emmel et al., 2015; Lopes & Hahn, 2004).

This process for recognition of the profession at the undergraduate level was started by professionals through the Associação Brasileira de Fisioterapia (Brazilian Association of Occupational Therapy) and Conselho Federal de Fisioterapia e Terapia Ocupacional-COFFITO (Federal Council of Physical Therapy and Occupational Therapy). The claim was further assisted and supported because the President of Brazil at the time, Costa e Silva, received post-stroke rehabilitation by physical and occupational therapists (Monteiro de Barros, 2011).

At the end of the 1980s, the fight for freedom, rights, and a return to democracy occurred in Brazil, accompanied by the need to train specialized professionals to oppose the current political regime. In this remarkable moment in Brazilian history, the National Constitution was promulgated in 1988 and established health as an obligation of the state and a right of all citizens. Since then, Brazilian health care and education policies have advanced considerably with the introduction of the unified health system (Elias & Cohn, 2003; Pontes, Oliveira, & Gomes, 2014).

Until then, no public health system was available in Brazil. The Sistema Único de Saúde (SUS) develops strategies and actions for public health care and has played a vital role in the training of occupational therapists and the establishment of different professional practices. The principles of universality, equality, and comprehensiveness of care proposed by the SUS are addressed at three levels of complexity: primary, secondary, and tertiary care. This brief history describes the challenges experienced by occupational therapists in Brazil. Together with other professionals, occupational therapists participated in the fight for approval of the SUS; establishment of psychosocial reha-

bilitation policies for individuals with mental disorders; creation of the Statute for Children, Adolescents, and the Elderly; formation of social support networks for socially excluded individuals; inclusion of children with disabilities in school; and inclusion of individuals with disabilities in the labor market (Soares, 2007). Recently, the federal government program “Living Without Limits” included occupational therapists in the development of health care guidelines for persons with disabilities, including those with cerebral palsy (Brazil, 2013b), stroke (Brazil, 2013e), traumatic brain injury (Brazil, 2013d), spinal cord injury (Brazil, 2013c), and amputations (Brazil, 2013a).

The inclusion of occupational therapy in the SUS by the Ministries of Health and Education involved the implementation of preventive, educational, and health care services through funding of policies intended to increase the training of professionals in the past decade (Pan & Lopes, 2016). The curricula of undergraduate occupational therapy courses in Brazil were restructured to comply with SUS directives and guidelines.

OVERVIEW OF TRAINING IN OCCUPATIONAL THERAPY IN BRAZIL

Since the 1960s, several courses have been created in different regions of Brazil. In 1980, only 13 higher education courses were available (Soares, 1991). In 2007, this increased to 32 courses (Cruz & Pfeifer, 2007). In 2013, this number almost doubled, reaching 63 (Pan & Lopes, 2016). This steady increase started in the 2000s and was the result of a bold policy implemented at federal universities by national democratic governments since 2003. This strategy allowed an increase in the number of vacancies at universities and the creation of new campuses and new undergraduate courses (Pan & Lopes, 2016). As a result, the number of teachers, students, and occupational therapist practitioners increased. According to the Federal Council of Physical Therapy and Occupational Therapy-Conselho Federal de Fisioterapia e Terapia Ocupacional-COFFITO, currently, there are more than 16,611 occupational therapists in Brazil.

All undergraduate courses in Brazil are regulated by national curriculum guidelines established for each specific course by the Ministry of Education and Culture. Each institution of higher education also imposes requirements for the training of faculty members (Ministry of Education, 2017; Ministry of Education/National Council of Education, 2001).

TABLE 1

Distribution of Public and Private Occupational Therapy Courses by Brazilian Region (N = 40)

| Region | Public | | Private | |
|--------------|--------|-----|---------|-----|
| | n | % | n | % |
| Central-west | 1 | 5 | 1 | 5 |
| North | 2 | 10 | 4 | 20 |
| Northeast | 4 | 20 | 4 | 20 |
| South | 3 | 15 | 4 | 20 |
| Southeast | 10 | 50 | 7 | 35 |
| Total | 20 | 100 | 20 | 100 |

Note. Data from the Ministry of Education (2017).

Currently, Brazil has only seven entry-level educational programs that are approved by the World Federation of Occupational Therapists, and all of these are bachelor's degree programs in occupational therapy. These programs include the Universidade Federal de São Carlos, São Paulo; Universidade Federal de Minas Gerais, Belo Horizonte; Pontifícia Universidade Católica de Campinas, Campinas; Universidade de São Paulo, São Paulo; Universidade de São Paulo, Ribeirão Preto; Universidade Federal do Paraná, Curitiba; and Universidade Federal do Rio de Janeiro, Rio de Janeiro (World Federation of Occupational Therapists, 2017).

Table 1 shows the inequality in the regional distribution of occupational therapy programs in Brazil.

Public universities in Brazil have a more qualified teaching staff, with master's degrees and doctorates, compared with private universities and also have better conditions for research and development in postgraduate programs. **Table 2** shows that most public courses are federal ($n = 16$) and only four courses are state-based. The oldest course was offered at the University of São Paulo, whereas newer courses were offered in the north and northeast regions.

CLINICAL PRACTICE OF OCCUPATIONAL THERAPISTS IN BRAZIL

The clinical practice of occupational therapists in Brazil includes rehabilitation, health promotion, health education, and prevention of health problems. Occupational therapists provide care for individuals of all ages.

In mental health and psychiatry, the movement toward deinstitutionalization that has occurred in Brazil since 1980 enabled occupational therapists to provide services in day hospitals, outpatient clinics, social centers, psychosocial care centers, cooperatives, and companion services, and has replaced the services previously provided in mental health clinics (Mângia & Nicácio, 2001). Recent practices include the prevention of mental health problems by identifying risk factors and protecting school age children (Silva, Matsukura, Cid, & Minatel, 2015). Another strategy focused on the generation of income from technological incubators of popular cooperatives, with the participation of mental health service users (Lussi, Matsukura, & Hahn, 2010; Lussi, Tessarini, & Morato, 2015). Technological incubators of popular cooperatives (Incubadoras Tecnológicas de Cooperativas Populares) are organizations that are linked to universities and that play an important role in the development of the solidarity economy, with the aim of generating income for vulnerable population groups, for example, using vocational workshops (Lussi et al., 2015). Using group and individual treatment in mental health, together with different theoretical and practical approaches, including psychosocial, psychoanalytical, systemic, ecological, and cognitive, occupational therapists assist patients with various diagnoses in public and private networks. These services are regulated by Brazilian mental health legislation that guarantees care and citizenship to users of mental health services (Brazil, 2004).

Occupational therapists also provide treatment for adults with physical disabilities as a result of cerebrovascular and locomotor diseases and disabilities caused by car accidents and violence, and this has been part of their role since the creation of the occupational therapy profession in Brazil. The mortality rate as a result of stroke in Brazil is the highest in Latin America (Lotufo, 2005). In 2013, the National Health Survey determined the incidence and prevalence of stroke and related disabilities in Brazil. An estimated 2,231,000 individuals were affected by stroke, and 568,000 had severe disabilities (Bensenor et al., 2015).

In large rehabilitation centers, there is clearly a need for occupational therapists who have specialized knowledge in many areas, including neurology, traumatology, and orthopedics. In large hospitals in São Paulo, occupational therapists are also responsible for out-of-hospital services, such as home visits, and these services allow patients to adapt to different environments and occupational routines after hospital discharge. In hospitals, occupational therapists have started to provide interdisciplinary care in wards,

TABLE 2

Public Federal and State Occupational Therapy Courses by Geographical Region, Year of Creation, and Number of Vacancies for Each Course (N = 20)

| Acronym | Public university | State | City | Region | Year of creation | Number of vacancies |
|---------|--|-------------------|----------------|--------------|------------------|---------------------|
| USP | University of São Paulo | São Paulo | São Paulo | Southeast | 1957 | 25 |
| UFPE | Federal University of Pernambuco | Pernambuco | Recife | Northeast | 1968 | 36 |
| UFSCar | Federal University of São Carlos | São Paulo | São Carlos | Southeast | 1978 | 40 |
| UFMG | Federal University of Minas Gerais | Minas Gerais | Belo Horizonte | Southeast | 1979 | 66 |
| UEPa | Pará State University | Pará | Belém | North | 1985 | 40 |
| UNCISAL | Alagoas State University of Health Sciences | Alagoas | Maceió | Northeast | 1997 | 40 |
| UFPR | Federal University of Paraná | Paraná | Curitiba | South | 2001 | 120 |
| USP | University of São Paulo | São Paulo | Ribeirão Preto | Southeast | 2002 | 20 |
| UNESP | Júlio de Mesquita Filho São Paulo State University | São Paulo | Marília | Southeast | 2003 | 40 |
| UNIFESP | Federal University of São Paulo | São Paulo | Santos | Southeast | 2006 | 40 |
| UFTM | Federal University of Triângulo Mineiro | Minas Gerais | Uberaba | Southeast | 2006 | 60 |
| UNB | University of Brasília | Distrito Federal | Brasília | Central-west | 2008 | 100 |
| UFPB | Federal University of Paraíba | Paraíba | João Pessoa | Northeast | 2009 | 60 |
| UFES | Federal University of Espírito Santo | Espírito Santo | Vitória | Southeast | 2009 | 62 |
| UFRJ | Federal University of Rio de Janeiro | Rio de Janeiro | Rio de Janeiro | Southeast | 2009 | 60 |
| IFRJ | Rio de Janeiro Federal Institute of Education, Science, and Technology | Rio de Janeiro | Rio de Janeiro | Southeast | 2009 | 40 |
| UFSM | Federal University of Santa Maria | Rio Grande do Sul | Santa Maria | South | 2009 | 70 |
| UFPEL | Federal University of Pelotas | Rio Grande do Sul | Pelotas | South | 2010 | 40 |
| UFS | Federal University of Sergipe | Sergipe | Lagarto | Northeast | 2011 | 50 |
| UFPA | Federal University of Pará | Pará | Belém | North | 2011 | 33 |

intensive care units, specialized care units, waiting rooms, and playrooms, in addition to palliative care (Bombarda, Lanza, Santos, & Joaquim, 2016; Costa & Othero, 2012;

Faria & De Carlo, 2015; Idemori & Martinez, 2016; Sposito et al., 2016). In the state of São Paulo, 15 health units from the Lucy Montoro Rehabilitation Network hired occupa-

tional therapists and assisted more than 100,000 patients per month (Government of São Paulo State, 2017).

Regarding assistive technology, in 1993, the Brazilian government granted the SUS access to orthoses, prostheses, and colostomy bags, allowing occupational therapists to prescribe wheelchairs, canes, walkers, crutches, hearing aids, and other adaptive tools designed to improve the functionality of those with a disability (Cruz, Emmel, Manzini, & Braga Mendes, 2016; Souza, Cruz, Alves, & Agostini, 2010). However, the provision of this equipment is still limited by lack of knowledge of the population about individual rights, delayed delivery, lack of follow-up services, and poor adaptation to the equipment (Caro, Faria, Bombarda, Ferrigno, & Palhares, 2014; Mello, 2008). In many low- and middle-income countries, including Brazil, only 5% to 15% of the population has access to assistive technology resources (Marasinghe, Lapitan, & Ross, 2015). Occupational therapists have helped target populations to guarantee their rights by developing low-cost, customized devices made with special material, and thus have expanded the use of this equipment.

Many strategies need to be adopted in the care of children and adolescents because of the high number of cases of delayed neuropsychomotor development and disability as a result of infections, congenital and hereditary diseases, poor health care services, and social problems. Recent cases of Zika virus associated with microcephaly, Guillain-Barré syndrome, and meningoencephalitis (Broutet et al., 2016) were declared public health problems by the World Health Organization (Bueno & Grunspun, 2016). Occupational therapists in Brazil have participated in the creation of guidelines for early stimulation programs for children with developmental delays (Brazil, 2016; Mancini, Almeida, Brandão, Drummond, & Amaral, 2017) and follow-up of children with developmental problems as a result of infection with the Zika virus. In addition, occupational therapists are gradually entering the school environment to monitor children, guide teams, and propose the use of assistive technology resources that allow advancements and/or minimize difficulties. The comprehensive education program was established in Brazil by the Federal Constitution of 1988 and culminated in the elaboration of guidelines and laws to address the inclusion of persons with disabilities in regular education classes (Munguba, 2007). A survey of 172 Brazilian occupational therapists found that the interventions used by these professionals to include children with disabilities in the school environment included adaptations of the physical space and

pedagogical material and the use of assistive technology. In addition, a previous study indicated that teachers need to be trained in how to work more effectively with occupational therapists (Cardoso & Matsukura, 2012).

The number of elderly individuals in Brazil has increased, which is consistent with the gradual aging of the world population. The rate of increase of the elderly population in Brazil is higher than that of other age groups (Brazilian Institute of Geography and Statistics, 2010). It is estimated that, in 2050, the elderly population will reach 24% of the total population (Brazilian Institute of Geography and Statistics, 2010, 2013). Aging can be experienced as a healthy process, but many elderly people have a decline in health status, with severe disabilities and higher demand for care (World Health Organization, 2015). Therefore, Brazilian occupational therapists work in residential institutions, day and home care centers, and health promotion programs.

The effect of social inequalities, such as unemployment, inequalities in income distribution, poverty, and an increase in homelessness, encouraged the development of social occupational therapy beginning in the late 1970s. Occupational therapists work with homeless individuals, adolescents in conflict with the law, drug users, transvestites, and women who experience violence, and these social groups reflect the social, cultural, and economic inequalities in Brazil (Galheigo, 2003; Malfitano, Lopes, Magalhães, & Townsend, 2014; Silva et al., 2017). Through their work with these populations, occupational therapists contribute to the development of activities that cover different life dimensions and allow the formation of social bonds and networks that help the target populations to experience new work relationships.

Occupational therapists also address health and vocational issues in other settings, such as factories, workplaces, and civil aviation companies (e.g., in the design of aerial cabins for persons with disabilities) (Campese, Silva, Silva, Figueiredo, & Menegon, 2016), and these target groups can be included in the labor market through analysis of industrial tasks (Simonelli & Camarotto, 2008, 2011). In general, occupational therapists apply the principles of ergonomics, work psychodynamics, and other psychological and social indicators.

Occupational therapists work at the National Social Security Institute (Instituto Nacional do Seguro Social), which is responsible for granting work retirement benefits and professional rehabilitation to persons with partial or total disability (Bregalda & Lopes, 2016). Occupational therapists use psychodynamic and mental health indica-

tors to perform interventions based on an understanding of the correlation between work and psychological illnesses of workers, and in this way, they contribute to prevention, treatment, and rehabilitation (Lancman, 2007).

Occupational therapists participate in home visits, creation of intervention groups in the community, establishment of guidelines and technologies, and referral of health service users to reference health care teams.

In addition, an increased number of occupational therapists have assumed leadership positions in the management of health care teams and the creation of institutional projects in public service (Cruz, Souza, & Emmel, 2014).

GRADUATE STUDIES, RESEARCH, AND JOURNALS

The number of faculty members in occupational therapy who participate in postgraduate programs has increased significantly since the end of the 1990s (Emmel & Lancman, 1998, 2003). At that time, there were no master's or doctorate programs in occupational therapy, only programs for related professions (Drummond, 1999). Most occupational therapists completed their graduate studies in Brazil, whereas other professionals finished their studies in Australia, Canada, Spain, the United States, France, England, and Italy.

For this reason, the national scientific production was considered low until the first half of the 1980s. Occupational therapy instructors began to improve their skills because of the need to develop research, consolidate the field of work, and meet the demands of institutions of higher education. Brazil was experiencing political restrictions because of the military dictatorship, a lack of public policies for health and education, and an intensification of social contradictions, such as limited civil rights to protest against the imposed policy, at that time. As a result, Brazilian professionals began to reflect on the social role of their practice, training, and production of knowledge (Drummond, 2007).

The 2000s saw the creation of postgraduate programs in occupational therapy and related fields, including rehabilitation sciences (through a partnership between the occupational therapy and physical therapy faculty members at the Federal University of Minas Gerais, in Belo Horizonte) and similarly in the rehabilitation sciences program at the University of São Paulo, in São Paulo.

In 2010, the first master's program in occupational therapy was created at the Federal University of São Carlos (Malfitano, Matsukura, Martinez, Emmel, & Lopes, 2013).

This program focused on intervention processes in occupational therapy and was divided into two lines of research: "promotion of human development in daily life activities" and "social networks and vulnerability" (Malfitano et al., 2013). Further, in 2015, Brazil and other countries in South America created the first doctorate program in occupational therapy (Emmel, 2017). Brazil has two major federal research agencies that finance research activities: the Coordination for the Improvement of Higher Education Personnel (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) and the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico).

Occupational therapy lecturers in Brazil have been working to promote the two oldest journals in the field—*Revista de Terapia Ocupacional da Universidade de São Paulo* and the *Cadernos de Terapia Ocupacional da UFSCar*—both launched in 1990. The latter was recently renamed the *Brazilian Journal of Occupational Therapy* (Malfitano, Cruz, & Lopes, 2017). In 2017, another journal—*Revista Interinstitucional Brasileira de Terapia Ocupacional (Brazilian Inter-Institutional Journal of Occupational Therapy)* was launched. All journals are open access. An initiative is underway for these journals to become bilingual (Portuguese and English) to promote discussion with the international occupational therapy community.

FINAL CONSIDERATIONS: CHALLENGES AND PERSPECTIVES

Health care improved in Brazil after the implementation of the SUS, which was a development of great historical significance.

However, several problems remain, including social inequality, poverty, violence, unemployment, limited access to public health services, and low rates of education, and these lead to unfavorable health conditions. In view of these social inequalities, most patients who receive care by occupational therapists have a limited guarantee of the right to work, study, rest, play, and participate in self-care.

The multiplicity of health conditions and the need for the development of therapeutic activities through public policies on education and health provide occupational therapists with a comprehensive view of health and disease processes.

This reality challenges occupational therapists to fight for improvement in quality of life by increasing research, education, intervention, and health policy management. The diverse demands on occupational therapists in Brazil

have led to several intervention strategies, including disease and disability prevention, education and health promotion, clinical and outpatient care rehabilitation, and projects focused on improving the quality of life, health, and overall well-being.

Current challenges include expansion of occupational therapy services to different regions of Brazil to increase the number of professionals working in services provided by private and public networks, development of low-cost assistive technology to increase access for individuals with low purchasing power, expansion of prevention and health promotion activities, and strengthening of graduate programs to consolidate research in occupational therapy in Brazil.

REFERENCES

- Barros, F. B. M. (2008). Poliomyelitis, philanthropy and physiotherapy: The birth of the career of physiotherapist in Rio de Janeiro in the 1950s. *Ciência & Saúde Coletiva*, 13(3), 941-954. doi:10.1590/S1413-81232008000300016
- Bensenor, I. M., Goulart, A. C., Szwarcwald, C. L., Vieira, M. L., Malta, D. C., & Lotufo, P. A. (2015). Prevalence of stroke and associated disability in Brazil: National Health Survey—2013. *Arquivos de Neuro-Psiquiatria*, 73(9), 746-750. doi:10.1590/0004-282X20150115
- Bombarda, T. B., Lanza, A. L., Santos, C. A. V., & Joaquim, R. H. V. T. (2016). The occupational therapy in adult intensive care unit (ICU) and team perceptions. *Cadernos de Terapia Ocupacional da UFSCar*, 24(4), 827-835. doi:10.4322/0104-4931.ctoRE0861
- Brazil. (2004). *Mental health legislation: 1990-2004*. Brasília: Ministry of Health. Retrieved from http://bvsmms.saude.gov.br/bvs/publicacoes/legislacao_saude_mental_1990_2004_5ed.pdf
- Brazil. (2013a). Ministry of Health. Secretary of Healthcare. Department of Strategic Programmatic Actions. *Guidelines for care to the amputated person*. Brasília: Ministry of Health. Retrieved from http://bvsmms.saude.gov.br/bvs/publicacoes/diretrizes_atencao_pessoa_amputada.pdf
- Brazil. (2013b). Ministry of Health. Secretary of Healthcare. Department of Strategic Programmatic Actions. *Guidelines for care to the person with cerebral palsy*. Brasília: Ministry of Health. Retrieved from http://bvsmms.saude.gov.br/bvs/publicacoes/diretrizes_atencao_paralisia_cerebral.pdf
- Brazil. (2013c). Ministry of Health. Secretary of Healthcare. Department of Strategic Programmatic Actions. *Guidelines for care to the person with spinal cord injury*. Brasília: Ministry of Health. Retrieved from [http://www.pessoacomdeficiencia.gov.br/app/sites/default/files/arquivos/\[field_generico_imagens-filefield-description\]_68.pdf](http://www.pessoacomdeficiencia.gov.br/app/sites/default/files/arquivos/[field_generico_imagens-filefield-description]_68.pdf)
- Brazil. (2013d). Ministry of Health. Secretary of Healthcare. Department of Strategic Programmatic Actions. *Guidelines for rehabilitation of people with traumatic brain injury*. Brasília: Ministry of Health. Retrieved from http://bvsmms.saude.gov.br/bvs/publicacoes/diretrizes_atencao_reabilitacao_pessoa_traumatico_cranioencefalico.pdf
- Brazil. (2013e). Ministry of Health. Secretary of Healthcare. Department of Strategic Programmatic Actions. *Guidelines for rehabilitation of the person with a stroke*. Brasília: Ministry of Health. Retrieved from http://bvsmms.saude.gov.br/bvs/publicacoes/diretrizes_atencao_reabilitacao_acidente_vascular_cerebral.pdf
- Brazil. (2016). Ministry of Health. Secretary of Healthcare. *Guidelines for early stimulation: Children from 0 to 3 years old with delayed neuropsychomotor development*. Brasília: Ministry of Health. Retrieved from <http://portalarquivos.saude.gov.br/images/pdf/2016/janeiro/13/Diretrizes-de-Estimulacao-Precoce.pdf>
- Brazilian Institute of Geography and Statistics. (2010). *Demographic census atlas of 2010*. Retrieved from <http://censo2010.ibge.gov.br/apps/atlas>
- Brazilian Institute of Geography and Statistics. (2013). *Projection of the Brazilian population by gender and age from 2000 to 2060—review 2013*. Rio de Janeiro: IBGE.
- Bregalda, M. M., & Lopes, R. E. (2016). Vocational rehabilitation at the National Social Security Institute: Paths of occupational therapy. *Saúde e Sociedade*, 25(2), 479-493. doi:10.1590/S0104-12902016150784
- Broutet, N., Krauer, F., Riesen, M., Khalakdina, A., Almiron, M., Aldighieri, S., . . . Dye, C. (2016). Zika virus as a cause of neurologic disorders. *New England Journal of Medicine*, 374, 1506-1509. doi:10.1056/NEJMp1602708
- Bueno, M. A. S., & Grunspun, H. (2016). Bioethical considerations at times of Zika virus. *Einstein (São Paulo)*, 14(2), 13-18. doi:10.1590/S1679-45082016ED3725
- Campese, C., Silva, T. N. R., Silva, L. L. G., Figueiredo, J. P., & Menegon, N. L. (2016). Assistive technology and passengers with special assistance needs in air transport: Contributions to cabin design. *Production*, 26(2), 303-312. doi:10.1590/0103-6513.182914
- Cardoso, P. T., & Matsukura, T. S. (2012). Practice and perspectives of school-based occupational therapy. *Revista de Terapia Ocupacional da Universidade de São Paulo*, 23(1), 7-15.
- Caro, C. C., Faria, P. S. P., Bombarda, T. B., Ferrigno, I. S. V., & Palhares, M. S. (2014). Orthotics, prosthesis and mobility aids (OPM) dispensation in the Regional Health Department of the 3rd Region. *Cadernos de Terapia Ocupacional da UFSCar*, 22(3), 521-529. doi:10.4322/cto.2014.073
- Costa, A., & Othero, M. (2012). Palliative care, terminal illness, and the model of human occupation. *Physical & Occupational Therapy in Geriatrics*, 30(4), 316-327. doi:10.3109/02703181.2012.743205
- Cruz, D. M. C., Emmel, M. L. G., Manzini, M. G., & Braga Mendes, P. V. (2016). Assistive technology accessibility and abandonment: Challenges for occupational therapists. *Open Journal of Occupational Therapy*, 4(1), 1-9. doi:10.15453/2168-6408.1166
- Cruz, D. M. C., & Pfeifer, L. I. (2007). Research contributions in occupational therapy training: What think the occupational therapy students? *Revista Chilena de Terapia Ocupacional*, 7, 13-21. doi:10.5354/0717-6767.2007.72
- Cruz, D. M. C., Souza, F., & Emmel, M. L. G. (2014). Occupational therapy formation for management. *Revista de Terapia Ocupacional da Universidade de São Paulo*, 25(3), 309-316. doi:10.11606/issn.2238-6149.v25i3p309-316
- Drummond, A. F. (1999). *The initial training of the occupational therapist: Studies of the curricula of the occupational therapy of Universidade Federal de Minas Gerais* (Unpublished master's dissertation). Universidade Federal de Minas Gerais, Belo Horizonte.
- Drummond, A. F. (2007). Foundations of occupational therapy. In A. Cavalcanti & C. Galvão (Eds.), *Occupational therapy: Foundations and practice* (pp. 10-17). Rio de Janeiro, Brazil: Guanabara Koogan.

- Elias, P. E. M., & Cohn, A. (2003). Health reform in Brazil: Lessons to consider. *American Journal of Public Health*, 93(1), 44-48.
- Emmel, M. L. G. (2017). Tracked ways and contributions for the development of occupational therapy in Brazil. *Cadernos de Terapia Ocupacional da UFSCar*, 25(1), 235-242. doi:10.4322/0104-4931.ctoEN0876
- Emmel, M. L. G., Cruz, D. M. C., & Figueiredo, M. O. (2015). An historical overview of the development of occupational therapy educational institutions in Brazil. *South African Journal of Occupational Therapy*, 45(2), 63-67. doi:10.17159/2310-3833/2015/V45N2A10
- Emmel, M. L. G., & Lancman, S. (1998). Who are our masters and doctorates? The advancement of teacher training in occupational therapy in Brazil. *Cadernos de Terapia Ocupacional da UFSCar*, 7(1), 29-38.
- Emmel, M. L. G., & Lancman, S. (2003). La recherche en ergothérapie: Développement de la formation des enseignants au Brésil. *Canadian Journal of Occupational Therapy*, 70(2), 97-102. doi:10.1177/000841740307000205
- Faria, N. C., & De Carlo, M. M. R. P. (2015). Role of occupational therapy to women with breast cancer in palliative care. *Revista de Terapia Ocupacional da Universidade de São Paulo*, 26(3), 418-427. doi:10.11606/issn.2238-6149.v26i3p418-427
- Ferrari, M. A. C. (2013). A light at the end of the tunnel of knowledge: The arrival of occupational therapy in the city of Sao Paulo. *Cadernos de Terapia Ocupacional da UFSCar*, 21(3), 663-670. doi:10.4322/cto.2013.069
- Galheigo, S. M. (2003). The concept of daily life in occupational therapy: Culture, subjectivity and the social and historical context. *Revista de Terapia Ocupacional da Universidade de São Paulo*, 14(3), 104-109.
- Government of São Paulo State. (2017). *Secretary for the rights of people with disabilities*. Retrieved from <http://www.saopaulo.sp.gov.br>
- Idemori, T. C., & Martinez, C. M. S. (2016). Occupational therapy and the pediatric division of bone marrow transplantation. *Cadernos de Terapia Ocupacional da UFSCar*, 24(2), 275-285. doi:10.4322/0104-4931.ctoAO0615
- Lancman, S. (2007). Psychodynamics of work. In A. Cavalcanti & C. Galvão (Eds.), *Occupational therapy: Foundations and practice* (pp. 271-277). Rio de Janeiro, Brazil: Guanabara Koogan.
- Leal, L. G. P. (1994). An interview with Nise da Silveira. *Psicologia: Ciência e Profissão*, 14(1-3), 22-27. doi:10.1590/S1414-98931994000100005
- Lopes, R. E., Hahn, M. S. (2004). The education of occupational therapists in Brazil: History and perspectives. *World Federation of Occupational Therapists Bulletin*, 49(1), 24-32. doi:10.1179/otb.2004.49.1.007
- Lotufo, P. A. (2005). Stroke in Brazil: A neglected disease. *São Paulo Medical Journal*, 123(1), 3-4. doi:10.1590/S1516-31802005000100001
- Lussi, I. A. O., Matsukura, T. S., & Hahn, M. S. (2010). Psychosocial rehabilitation: Income generating workshop in the mental health context. *O Mundo da Saúde*, 34(2), 284-290.
- Lussi, I. A. O., Tessarini, L. A., & Morato, G. (2015). Technological incubators of popular cooperatives: Reality of the incubation of solidarity economy enterprises with the participation of users of mental health services. *Revista de Terapia Ocupacional da Universidade de São Paulo*, 26(3), 345-354. doi:10.11606/issn.2238-6149.v26i3p345-354
- Malfitano, A. P. S., Cruz, D. M. C., & Lopes, R. E. (2017). Brazilian Journal of Occupational Therapy: Changing to stay and move forward. *Cadernos Brasileiros de Terapia Ocupacional*, 25(2), 243-244. doi:10.4322/0104-4931.ctoED2502
- Malfitano, A. P. S., Lopes, R. E., Magalhães, L., & Townsend, E. A. (2014). Social occupational therapy: Conversations about a Brazilian experience. *Canadian Journal of Occupational Therapy*, 81(5), 298-307. doi:10.1177/0008417414536712
- Malfitano, A. P. S., Matsukura, T. S., Martinez, C. M. S., Emmel, M. L. G., & Lopes, R. E. (2013). Stricto sensu postgraduate program in occupational therapy: Strengthening and expanding production of knowledge in the field. *Revista Brasileira de Atividade Física & Saúde*, 18(1), 105-111. doi:10.12820/2317-1634.2013v18n1p105
- Mancini, M. C., Almeida, K., Brandão, M., Drummond, A. F., & Amaral, M. F. (2017). Evaluation of child development: Use of standardized tests. In J. C. Miranda, R. Brasil, & J. Amaral (Eds.), *Child development disorders in a multidisciplinary approach* (pp. 158-199). Fortaleza, Brazil: NUTEP.
- Mângia, E. F., & Nicácio, M. F. (2001). Occupational therapy in mental health: Main trends and contemporary challenges. In M. M. De Carlo & C. C. Bartalotti (Eds.), *Occupational therapy in Brazil: Foundations and perspectives* (pp. 63-80). São Paulo, Brazil: Plexos.
- Marasinghe, K. M., Lapitan, J. M., & Ross, A. (2015). Assistive technologies for ageing populations in six low-income and middle-income countries: A systematic review. *BMJ Innovations*, 1(4), 182-195. doi:10.1136/bmjinnov-2015-000065
- Mello, M. A. F. (2008). Assistive technology in Brazil. In A. I. A. Oliveira, J. M. Q. Lourenço, & M. G. F. Lourenço (Eds.), *Perspectives of assistive technology in Brazil: Research and practice* (pp. 7-14). Belém, Brazil: UEPA.
- Ministry of Education. (2017). *Institutes of higher education and registered courses*. Retrieved from <http://emec.mec.gov.br>
- Ministry of Education/National Council of Education. (2001). Opinion No. CNE/CES 583/2001. Retrieved from <http://portal.mec.gov.br/cne/arquivos/pdf/CES0583.pdf>
- Monteiro de Barros, F. B. (2011). *Profession physiotherapy: Social history, legislation, problems and challenges*. Rio de Janeiro, Brazil: Agbook.
- Munguba, M. C. (2007). School inclusion. In A. Cavalcanti & C. Galvão (Eds.), *Occupational therapy: Foundations and practice* (pp. 519-525). Rio de Janeiro, Brazil: Guanabara Koogan.
- Pan, L. C., & Lopes, R. E. (2016). Higher education politics and the graduation in occupational therapy at the Federal Institutions of Higher Education in Brazil. *Cadernos de Terapia Ocupacional da UFSCar*, 24(3), 457-468. doi:10.4322/0104-4931.ctoAO0704
- Pontes, A. P. M., Oliveira, D. C., & Gomes, A. M. T. (2014). The principles of the Brazilian Unified Health System, studied based on similitude analysis. *Revista Latino-Americana de Enfermagem*, 22(1), 59-67. doi:10.1590/0104-1169.2925.2395
- Silva, C. R., Cardinalli, I., Silvestrini, M. S., Farias, A. Z., Almeida Prado, A. C. S., Ambrosio, L., . . . de Paula, B. M. (2017). Occupational therapy and culture: Perspectives towards social transformation. *Revista Chilena de Terapia Ocupacional*, 17(1), 109-117. doi:10.5354/0717-5346.2017.46383
- Silva, M. D. P., Matsukura, T. S., Cid, M. F. B., & Minatel, M. M. (2015). Young offenders in Brazil: Mental health and factors of risk and protection. *Journal of Human Growth and Development*, 25(2), 162-169. doi:10.7322/jhgd.102999
- Simonelli, A. P., & Camarotto, J. A. (2008). Analysis of industrial tasks as a tool for the inclusion of people with disabilities in the work market. *Occupational Therapy International*, 15(3), 150-164.

doi:10.1002/oti.249

- Simonelli, A. P., & Camarotto, J. A. (2011). Activity analysis for inclusion of disability people at work: A proposition model. *Gestão & Produção, 18*(1), 13-26. doi:10.1590/S0104-530X2011000100002
- Soares, L. B. T. (1991). *Occupational therapy: Logic of capital or work?* São Paulo, Brazil: Hucitec.
- Soares, L. B. T. (2007). History of occupational therapy. In A. Cavalcanti & C. Galvão (Eds.), *Occupational therapy: Foundations and practice* (pp. 3-9). Rio de Janeiro, Brazil: Guanabara Koogan.
- Souza, A. C. A., Cruz, D. M. C., Alves, A. C. J., & Agostini, R. (2010). Assistive technology in Brazil: Reflections. *Tog (A Coruña), 7*(12), 1-12.
- Sposito, A. M. P., de Montigny, F., Sparapani, V. C., Lima, R. A. G., Silva-Rodrigues, F. M., Pfeifer, L. I., & Nascimento, L. C. (2016). Puppets as a strategy for communication with Brazilian children with cancer. *Nursing & Health Sciences, 18*(1), 30-37. doi: 10.1111/nhs.12222
- World Federation of Occupational Therapists. (2017). *Entry level educational programmes WFOT approved*. Retrieved from <http://www.wfot.org/Education/EntrylevelEducationalProgrammesWFOTApproved.aspx>
- World Health Organization. (2015). *World report on ageing and health 2015*. Retrieved from <http://www.who.int/ageing/events/world-report-2015-launch/en>