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International Strategies for Addressing the Needs of Children with Disabilities: Comparing pediatric therapy services in Italy and the United States

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International Strategies for Addressing the Needs of Children with Disabilities: Comparing pediatric therapy services in Italy and the United States

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Abstract
This paper introduces and compares the professions of Neuro and Psychomotor Therapist of Developmental Age and pediatric physical therapy. Although pediatric physical therapy practice is prevalent in the United States, Italy utilizes another profession which encompasses many features of physical therapy, but also incorporates neuropsychological factors, specifically for children.

Introduction

In the United States, pediatric physical therapy is a profession central to intervention teams serving children and families to promote health and wellness, especially those with movement challenges. However, the scope of practice and preparation for the profession in the United States varies from other countries. During a recent study abroad trip to Italy, Duquesne students and their professor visited multiple facilities serving children, and learned about another discipline that functions in many ways like pediatric physical therapists in the US, called Terapista della Neuro e Psicomotricità dell'Età Evolutiva (TNPEE); translated to English, this is Neuro and Psychomotor Therapist of Developmental Age, or Neurodevelopmental Disorders Therapist; see https://www.neuropsicomotricista.it/home.html[1] Interestingly, this discipline exists only in Italy.

This brief paper describes each profession, and the similarities and differences when comparing the two professions in their respective history, professional preparation, and practice settings.

Brief history of physical therapy and TNPEE

Physical therapy, as a health profession, originated from the reconstruction aids who helped wounded soldiers during WW1.[2] With the knowledge gained from treating the wounded soldiers, the reconstruction aids had a foundation to treat people such as post-op patients from orthopedic surgeons. As such, Mary McMillan and other fellow reconstruction aids helped form the American Women's Physical Therapeutic Association (AWPTA) which eventually became the American Physical Therapy Association (APTA).[3] As the APTA grew, specializations for different fields for physical therapy formed. One of these fields focused on pediatrics, providing rehabilitation services for children. By 1973, the pediatrics specialization was recognized by the APTA House of Delegates and the Section on Pediatrics was formed.[3] With its formation, the goals of pediatric physical therapy include advocating for children with special needs, promoting and educating for professional growth and development, and elevating best practice with research. The Section on Pediatrics evolved to be currently named the Academy for Pediatric Physical Therapy, which houses multiple practice specialties.

For TNPEE, it originated with pioneers of child psychiatry and neuropsychiatry that includes Sante De Sanctis (February 7, 1862- February 1935), Giuseppe Ferruccio Montesano (October 1868 – August 1961), Dr. Maria Montessori (August 31, 1870-May 6, 1952), and Giovanni Bollea (December 1913 – February 2011) in Italy.[4] Sante De Sanctis proposed separating child psychiatry from adult psychiatry which helped to promote care and education for children with mental disabilities.[5] His method investigated the relationship between the nervous system development and its relationship with the psyche of the child. He also worked to differentiate neuropsychiatric conditions in children by classifying mental disabilities. Meanwhile, Dr. Maria Montessori and Giuseppe Ferruccio Montesano proposed a pedagogical approach to teaching children. Montessori's principles encouraged independence of the child while providing them with an environment that afforded exploration and self-directed learning. Stemming from the pedagogical approach, Giovanni Bollea helped to found Italian child neuropsychiatry and provide guidelines between psychotherapy and pedagogical rehab to pave the way to create the field of TNPEE. By 1980, the school for TNPEE was born and by 2001, the degree for TNPEE was established.[6]

What is TNPEE?

TNPEE is an acronym in Italian which translates to Neuro Psychomotor Therapist of the Evolutionary age in English. TNPEEs are therapists that work with individuals aged 0-18 years affected by neurological, sensory and neuromotor disorders (cerebral palsy, dystrophies, obstetric palsy, etc.), motor coordination disorders (developmental dyspraxia), autism spectrum disorders, psychomotor and cognitive delays, attention disorders, specific language and learning disorders (dyslexia, dysorthography, dyscalculia, dysgraphia) and genetic syndromes. They perform prevention activities, enabling activities and rehabilitation activities. The therapists focus on the global picture of the children and their disabilities. They integrate motor tasks with mental, communicative, and behavioral tasks and prioritize function and participation. It is important that therapists understand the relationships between the various systems of the body, as well as understand many different physical and mental disorders and how they affect child development.[7]

TNPEEs work with other healthcare professionals such as physicians and nurses. The therapists work to improve emotional and motor skills of their patients, while doing so in a way that is fun and engaging for the child so that the child can provide their best performance. TNPEEs must have a relationship with the patient's family to promote successful rehabilitation. They focus on autonomy for the child with room to explore and learn from mistakes. The goal of the therapist's work is to promote function, generalization of newly acquired skills, and social integration for the child.

What is pediatric physical therapy?

In the United States, pediatric physical therapy generally includes children from 0-21 years of age. Like all physical therapists, pediatric therapists work with a range of problems that follow from injury or varying developmental delays or dysfunction in the musculoskeletal,

neurological, integumentary or cardiopulmonary systems. However, knowledge of development and differences between children and adults is stressed for a PT practicing in a pediatric setting, with the assumption that children are not simply small adults.

Settings in which pediatric physical therapists practice include hospitals, neonatal intensive care units, early intervention, schools, special school settings for specific disabilities, long-term care facilities, home health, and a variety of outpatient clinics. The website of the Academy of Pediatric Physical Therapy, a component of the American Physical Therapy Association, at https://pediatricapta.org/fact-sheets/ houses many resources which explain the diversity of care and settings of the pediatric physical therapist.

Like the TNPEE professionals, pediatric PTs work primarily within teams with other professionals including physicians, occupational therapists, speech therapists, psychologists, teachers, nurses and others. However, PT's in the US are licensed to practice on their own and may be an entry point into healthcare, depending on the laws and regulations of each state regarding direct access (https://www.apta.org/advocacy/issues/direct-access-advocacy/direct-access-by-state). Additionally, PTs in the US work within our healthcare system, which is dependent on third party payers (insurance, Medicaid, other) and thus usually must acquire a referral from a physician to be reimbursed for their services by a third party payer. The system is very different in Italy because they have a national health care system under which everyone receives health care without the necessity of insurance. Thus, in the US, pediatric PTs may practice completely independently in their own practice, without being officially associated with a larger healthcare institution. In Italy, the TNPEE professional is licensed to work privately in their own practice, but also functions with other healthcare professionals depending on the needs of the patient and family. The payment for their services is covered through the national healthcare program. Both PTs and TNPEEs do not prescribe medications.

Entry level education differences between peds PT and TNPEE

In order to become a physical therapist in the United States, a Doctor of Physical Therapy (DPT) degree is required.[8] Some programs offer a 3 year + 3 year degree, while most are 4 years undergraduate and 3 years graduate study. Some programs offer freshman entry while others accept students post undergraduate education. Anyone graduating with a Doctor of Physical Therapy degree can practice in a pediatric setting. In addition, a certification of specialty in pediatric practice is available through experience in a pediatric clinical setting and passing of an advanced practice exam.[9] The pediatric board-certified designation must be re-certified every 10 years.

In order to become a TNPEE in Italy, a 3 year bachelor's degree must be obtained. There is a set number of available seats set by the law determined by staffing, facilities etc. An admission test is required to get into the program. The TNPEE program is specific to rehabilitation for children ages 0-18 years. The students study courses such as anatomy, physiology, child neuropsychiatry and psychology to obtain a well-rounded education to work with children with a variety of different conditions.

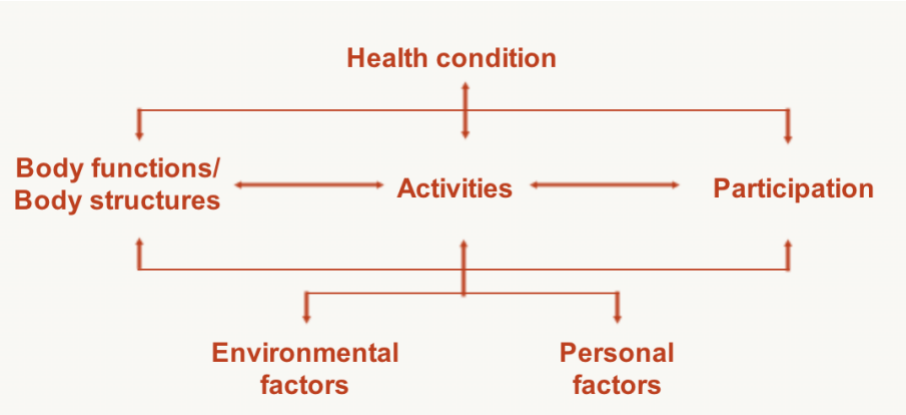
Over-arching principles for each discipline

TNPEE draws from the principles of Montessori to formulate a treatment plan for children. Montessori's principles respect the child's competence and their interaction with the environment and other people. Play is an important tool in the hands of the TNPEE to help children learn and to grow. In addition, the environment should be conducive for learning and therefore it will have to be child friendly, promote order, immerse the child, and encourage their talents. The combination of play and the environment allows the child to experiment with movement and tasks to achieve their goals. The care and the choice of the setting and of the toys/objects utilized is considered by the TNPEE, who is also part of the re/hablitation setting with his own body and emotional participation. The TNPEE operates within the bio-psycho-social model of disability suggested by the World Health Organization within the ICF. This suggests the use of an holistic approach where a global perspective prevails. Additionally, the TNPEE assists in creating a customized rehabilitation program where the management of all intervention is

unified and the professionals involved take joint actions directed toward resolution of the individual and family's needs.

Both pediatric physical therapy and TNPEE utilize developmental guidelines as well as the International Classification of Functioning, Disability and Health for Children and Youth (Figure 1) to address problems of children with delays or disabilities. As such, guiding principles include addressing any structural problems the child might have, such as musculoskeletal limitations or specific movement constraints, or behavioral and health limitations that relate to motor skills. Function is also addressed, with goals set in concert with the family and with environmental considerations in mind, as well as the child's personal factors. Finally, participation within the family and community settings may be addressed.

Figure 1. The International Classification of Function (ICF) Model



Similarities

Both disciplines serve on multidisciplinary teams and consider the perspective of other professionals within their overall intervention approach. Thus, both generally think in terms of functional skills for goal-setting, and would likely set goals within the team of family and other health or education professionals.

Both PTs and TNPEEs use standard evaluations during assessment; these may be condition-specific, e.g., standard developmental assessments or a specific assessment for children with

Spinal Muscle Atrophy to track progress and effects of new medications. Both disciplines are trained to measure and track range of motion and movement. Both monitor and recommend equipment and modifications. And both want the child to have a rewarding time in therapy and to consider the whole child and environment during any plan of care. There are also differences, listed in Table 1 below.

	TNPEE	Pediatric PT
Origin	Based on the philosophy and writings of Dr. Maria Montessori Integrating the skills of the first physical therapists for adults with a new approach based on a more conscious and gentle way to consider the child and his rehabilitation needs.	Based on reconstruction aides (adult PT from military) to military physicians Also based on treatment for polio, which focused on strengthening and stretching. Then modified for child focus and intervention
Perspective	Driven with overall developmental model and psychology/psychiatry perspective as well as the ICF model	Driven by impairment model (ICF) and specifically impairments stemming from musculoskeletal diagnoses
Starting point/initial focus	Always starts with developmental focus and where child is mentally and physically for their developmental age	Often starts with motor impairment with secondary consideration of developmental age/stage
Interpretation of the abbreviation "NDT"	Considers neurodevelopmental (NDT) model in a generic sense	NDT for pediatric PTs indicates neurodevelopmental treatment as originated from the Bobaths, a way of intervention for children with cerebral palsy
Training	Trained to work with children with psychological difficulties, for example children with autism and also other aspects including sensory integration, communication and cognitive difficulties	Generally would work with the motor component or movement referral for a child with a primary psychiatric, intellectual, or psychological problem

Education	3 years focused on developmental theory, assessment and behavioral intervention as well as the motor, sensory, communicative and cognitive aspects of development. Also available: a +2 masters degree on rehabilitation sciences for health professionals, a common path with other rehabilitation professionals (but not required for licensure)	6+ years for general physical therapy degree with limited introductory pediatric material in some programs, then specialize through clinical experience and continuing education. May take additional coursework and sit for the specialization certification in pediatric physical therapy.[9]

There are pediatric physical therapists in Italy. Because the entry-level PT degree is a 3-year program in Italy, pediatrics is not included. A PT in Italy would take an additional master's degree program focused on pediatrics, and then get experience in a pediatric setting. There is no pediatric specialization/certification in Italy that is equivalent to the specialist exam and certification process in the US.

Summary

Clearly the pediatric physical therapist as functioning professionals in the US have much in common with TNPEE professionals in Italy. During our visit we observed TNPEE therapists in a hospital setting who looked very much the same as pediatric physical therapists might look in the US. The important finding from our study is that children with disabilities and their families are being served fully in both countries, although the systems and training differ.

References

1. Terapia della neuro e psicomotricita' dell'eta' evolutiva | Università degli Studi di Milano Statale. (n.d.). https://neuropsicomotricita.cdl.unimi.it/it
2. Elson M. First Mary McMillan Lecture: The Legacy of Mary McMillan. Presented at: Forty-First annual conference of American Physical Therapy Association; December 1964.

3. APTA Pediatrics - History of APTA Pediatrics. PediatricAPTA.org. https://pediatricapta.org/about-pediatric-physical-therapy/APTA-Pediatrics-History.cfm
4. Rampoldi, P. (2006). The origins of Rehabilitation: The First Neuro and Psicomotricity Rehabilitator's Narratives. *Medicina nei secoli: Journal of history of medicine and medical humanities*, *18*(2), 539-549.
5. Morgese G, Lombardo GP. "Dementia praecocissima": the Sante De Sanctis model of mental disorder in child psychiatry in the 20th century. *History of Psychiatry*. Published online February 28, 2019:0957154X1983277. doi:https://doi.org/10.1177/0957154x19832776
6. Fanelli L. Neuropsychomotricity. Presented at: Physical Therapy World Summit; May 19, 2023, Rome Italy.
7. Converti, A. C. C. A. C. (n.d.). *Core Competence del Terapista della Neuro e Psicomotricità dell'Età Evolutiva (TNPEE)*. www.neuropsicomotricista.it. https://www.neuropsicomotricista.it/terapista-della-neuro-e-psicomotricita-delleta-evolutiva-tnpee/core-competence-del-terapista-della-neuro-e-psicomotricita-delleta-evolutiva-tnpee.html#gsc.tab=0
8. Becoming a physical therapist. APTA. (n.d.). https://www.apta.org/your-career/careers-in-physical-therapy/becoming-a-pt
9. *APTA Specialist Certification - governed by abpts*. APTA Specialist Certification - Governed by ABPTS. (n.d.). https://specialization.apta.org/?_ga=2.68786200.8878098.1686098745-2079300633.1686098745