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## *GLOBAL VIEWS & PERSPECTIVES BEYOND BORDERS*

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### **Pediatric Occupational Therapy in Taiwan: Education, Service Provision, and Ongoing Development**

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#### **Introduction**

Taiwan is an island country located in East Asia between Japan and the Philippines, off the coast of Mainland China. It is a developed, industrialized country built upon a democratic political system. Taiwanese and Mandarin are the two most commonly used languages. Taiwan is small in geographical area but large in population, with 23 million people. The majority of the population in Taiwan are adolescents and adults, and 17% are children and 11% are older than 65 years of age (Taiwan Department of Statistics, 2009). Primary education is compulsory, with about 35% of Taiwanese citizens having tertiary-level education qualifications.

In this article, we will briefly discuss the initial development of occupational therapy in Taiwan as a profession and then focus on the current situation of pediatric occupational therapy, in terms of education, service provision, and ongoing development. We will conclude with our future vision for Taiwanese pediatric occupational therapy practice. This information will provide an international context for understanding of pediatric occupational therapy practice in Taiwan as well as promote a means for Taiwanese occupational therapy to continue to grow and prosper in the future.

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## Development of the Occupational Therapy Profession in Taiwan

The initial development of occupational therapy in Taiwan can be traced back to 1956 when the World Women's Club provided financial assistance for occupational therapy consultants to visit the National Taiwan University Hospital (NTUH) in Taipei. These consultants assisted in establishing occupational therapy services for people with psychiatric illnesses. Following that, more occupational therapy services were established in different hospital settings and were made available to children and adults with physical conditions. However, during that period, a very limited number of occupational therapy practitioners were trained by those consultants as well as other healthcare professionals.

Formal occupational therapy education programs in Taiwan were first established in 1970 and, today, occupational therapists are educated at seven universities and occupational therapy assistants are trained at one college. Every year about 250 occupational therapists and 200 occupational assistants graduate, providing a consistent workforce for occupational therapy services in Taiwan. In addition, the Taiwan Occupational Therapy Association (TOTA) was established in 1982 and has been accredited as a full member of the World Federation of Occupational Therapists (WFOT) since 1986. Five Taiwanese occupational therapy education programs are WFOT accredited: Chang Gung University, Chung Shan Medical University, Kaohsiung Medical University, National Cheng Kung University, and National Taiwan University. Two other newly established occupational therapy programs, at the I-Shou University and Fu Jen Catholic University, are currently applying for WFOT accreditation.

The Occupational Therapists Act was passed by the Taiwanese government in 1997 to regulate, facilitate, and ensure service quality of the clinical practice of occupational therapy in Taiwan (The Gazette of the Office of the President, 1997). According to the Act, Taiwanese occupational therapy students are required to pass a national certification exam prior to registration as an occupational therapist or occupational therapy assistant. After passing the certification exam, new graduates are then able to get a license as well as perform clinical practice. The national occupational therapy certification examination is given twice a year, usually in February and July.

A series of national surveys conducted by Lo, Wu, and Chu (2004) indicated that there are currently more than 1,600 certified occupational therapists and 200 certified occupational therapy assistants in Taiwan. Of Lo et al.'s (2001) respondents, more than 90% worked in hospitals or rehabilitation clinics. Hospital-based occupational therapists provide services mainly for clients with physical disabilities, secondly for people with mental health problems, and finally for children with special needs (Lo & Chu, 2003). In Taiwan, there are approximately one million people who have some type of disability or disorder (Taiwan Department of Statistics, 2009) who could be potentially referred to occupational therapy for service and follow-up. This means that there is approximately one occupational therapy practitioner per 550 people with physical or mental disabilities in Taiwan.

## Pediatric Occupational Therapy in Taiwan

### *Education of Occupational Therapy Students*

Before becoming a qualified occupational therapist who works with children in Taiwan, students need to complete a 4-year undergraduate occupational therapy degree at a university. In university program curricula, Pediatric Occupational Therapy is a stand-alone advanced course taken after second-year students acquire basic knowledge about occupational therapy, psychology, anatomy, medical conditions, kinesiology, biomechanics,

human development, pediatrics, and general therapeutic skills. Sensory integration (SI) theory and techniques and neurodevelopmental treatment (NDT) for children are taught in a separate course called Occupational Therapy Skills and Techniques. The instructional approaches used with students for teaching about pediatric occupational therapy include lectures, case studies, practical demonstrations, clinical practice, and group discussion.

*Occupational Therapy for Children* (Case-Smith, 2005) and *Frames of Reference for Pediatric Occupational Therapy* (Kramer & Hinojosa, 1999) are the two primary pediatric occupational therapy textbooks used in Taiwan. *Pediatric Occupational Therapy and Early Intervention* (Case-Smith, 1998), *Sensory Integration: Theory and Practice* (Bundy, Lane, & Murray, 2002), and *Sensory Integration and the Child* (Ayres, 1979) are also popular references. A range of client diagnostic groups are included as part of the curriculum taught to students: cerebral palsy, spinal bifida, sensory integration dysfunction, autism spectrum disorder, developmental coordination disorder, learning disability, attention deficit disorder, affective disorder, and developmental disability.

During the first 3 years of occupational therapy undergraduate education in Taiwan, students develop and refine their professional skills by being taught relevant theoretical models, assessments, and intervention considerations, principles, and techniques related to children. Using the occupational therapy education program offered at the National Taiwan University as an example, the theoretical models that are taught to students include the Model of Human Occupation (MOHO), Playfulness, SI, NDT, Developmental, Coping, Acquisitional, and Biomechanical frames of reference.

In terms of assessment tools and tests, a top-down, holistic model of evaluation and clinical analysis techniques are first introduced to the students. Pediatric assessment tools that are commonly taught to students in the undergraduate education programs include the *Beery-Buktenica Developmental Test of Visual Motor Integration* (VMI), *Sensory Integration and Praxis Tests*, *Test of Sensory Function in Infants*, *Sensory Profile*, *Chinese Children Developmental Inventory* (CCDI), *Peabody Developmental Motor Scales—2nd edition*, *Bruininks-Oseretsky Test of Motor Proficiency—2nd edition* (BOT-2), *Movement Assessment Battery for Children—2nd edition* (MABC-2), and *Pediatric Evaluation of Disability Inventory*. Intervention strategies taught to students may include SI and NDT techniques, behavioral adaption, teaching and learning principles, positioning, school-based skills, play-based occupational therapy, compensatory techniques, and environmental modification.

During the final year of the education programs, occupational therapy students are required to complete 36 to 39 weeks of clinical fieldwork education placements, one third of which (e.g., 12–13 weeks) is dedicated to pediatric occupational therapy in hospitals, clinics, or developmental centers. School-based occupational therapy practice is also currently arranged as one of the fieldwork education components in some universities. During the final year, students also have to take two seminars and/or clinical reasoning or evidence-based occupational therapy courses. These courses are designed to facilitate the students' clinical reasoning skills and basic evidence-based research abilities, such as searching for, understanding, critiquing, and integrating relevant empirical findings from journals and references into professional practice.

Four Taiwanese currently universities offer master's programs, where occupational therapy graduates can enroll in a variety of advanced lectures or classes and develop and refine their research skills through the design and implementation of an independent thesis study. Doctoral programs in occupational therapy in Taiwan have also commenced at two of the universities since 2002. To ensure high-quality occupational therapy education in Taiwan, university programs that offer both undergraduate and graduate degrees are required to have a minimum of 11 full-time academic staff members.

### **Service Provision**

Pediatric occupational therapy practice in Taiwan is an emerging service area. About 25% of all Taiwanese occupational therapists work with children as part or all of their professional practice (Lo & Chu, 2003). The majority (e.g., 80%) of the pediatric occupational therapists work at public/private hospitals or clinics (Chen, Pan, & Tseng, 2001). Approximately two thirds of the therapists only work part-time in the provision of pediatric services. This means that, in any typical day, occupational therapists provide services for children half of the time and for adult cases (with diagnoses such as people with stroke or spinal cord injury) the other half of the time. In some hospitals/clinics, working hours of occupational therapists can be switched to the evening or weekend, which is handy and flexible for parents who are employed outside the home. The average number of years of work experience for pediatric occupational therapists in Taiwan is about 3 years (Chen et al.). The shortage of senior occupational therapists with extensive experience in the pediatric field indicates that it is an emerging area of practice in Taiwan, when compared to occupational therapy services provided in the mental health and physical disability fields.

Children with special needs or physical conditions are normally referred by physicians and then enrolled in an occupational therapy service mostly in rehabilitation departments in hospitals or clinics in communities. According to Lo, Mao, and Wu (2005), children with developmental delay are the most frequent diagnostic group that receives pediatric occupational therapy services in Taiwan. The second most common diagnosis is sensory integration dysfunction and the third most frequent group is children with cerebral palsy. Most children receiving occupational therapy service are less than 6 years of age. The typical number of children seen by a full-time pediatric occupational therapist in a day is approximately 12 clients or more in Taiwan (based on the authors' consultations with practitioners and experience working clinically in Taiwan).

Regarding the funding/reimbursement models used, pediatric occupational therapy service provided by health care systems is supported/reimbursed by the Bureau of National Health Insurance in Taiwan. The typical cost for an occupational therapy assessment is about US\$7–17 and US\$7–27 for one treatment session, depending on the category of service providers and the severity of the disabilities the children present with. In terms of space, an independent pediatric clinic is suggested in the accreditation criteria for occupational therapy by both the central Department of Health and the local Public Health Bureau in Taiwan. However, often there are limited clinical spaces (Lo et al., 2005). This also may be attributable to the brief history of pediatric occupational therapy existing in Taiwan.

Although a range of assessment and treatment methods is taught in the occupational therapy educational programs in Taiwan, there is an inconsistency between what undergraduate students are taught and what services qualified therapists provide in clinical practice. Lin and Tseng (2001) found that Taiwanese occupational therapists rarely assess their clients using standardized instruments (such as the BOT-2 and MABC-2) even though the therapists learned about them during their undergraduate education. This may be due to the problems of certain tests being time consuming to complete, receiving low levels of reimbursement for conducting assessments, or having access to few assessment tools to use in their workplace. As well, only a few children's assessment tools have been translated from American versions and then validated for use within Taiwanese contexts.

The VMI and CCDI, however, have been reported as two of the most frequently used assessment tools in Taiwan, in accordance with the teaching of assessment tools. The SI, NDT, and Development frame of reference are also commonly used as theoretical models

that guide occupational therapy intervention, based on Chang and Tseng's survey (2002). The MOHO and client-centered practice model were not included in their survey because the two models were rarely utilized in Taiwanese clinical settings at the time when the survey was conducted.

At present, there are no data available regarding which intervention strategies and methods are frequently used in pediatric occupational therapy practice in Taiwan. Therefore, the National Taiwan University Hospital (NTUH), which is the most prestigious and historic hospital in Taiwan, will be used as an example of what pediatric occupational therapy interventions are included and the process are involved. Direct service is mostly used and transdisciplinary models of practice have just recently been introduced to the NTUH pediatric occupational therapy practice. Pediatric occupational therapists work collaboratively with other team members and focus on improving children's fundamental abilities (e.g., sensory integration, visual perception, hand skills, or development) as well as self-care, learning, or play performances. Frequently used treatment methods are SI techniques, NDT, positioning, facilitation techniques, and play therapy, whereas less often used approaches include parental education, environmental modifications, and counseling therapy for the clients and parents.

Prior to an intervention being provided, a parental interview is usually conducted so that therapists get a full understanding of the family's needs and the child's abilities. The child will then receive individual- or group-based intervention. Usually a child is allocated one 30- to 50-minute treatment session per week accordingly. Interventions are generally carried out in the context of play environments in hospital-based therapy rooms. The course of intervention for a child typically lasts for a minimum of 3 to 6 months.

### ***Ongoing Development***

Besides hospital-based practice, occupational therapy service has recently been extended to include children attending mainstream schools in Taiwan. The service delivery model of school-based occupational therapy was developed in reference to service guidelines developed by the American Occupational Therapy Association. The school-based occupational therapy services have also been implemented under the requirements dictated by the Individuals with Disabilities Education Act legislation in Taiwan (Taiwan Ministry of Education, 2001). Approximately 8% to 14% of all full- or part-time pediatric occupational therapists are now practicing in the school-based service delivery system (Chen et al., 2001). According to Lo and Yeung (1999), monitoring was the most frequently used service delivery model, and SI and NDT were the two main frames of reference being used at that time in school-based therapy contexts. Since that time, a client-centered holistic approach using the person-occupation-environment model has been formulated and promoted by the TOTA. Workshops related to the continuing professional development needs of occupational therapists in school-based practice contexts as well as increasing the awareness of education professionals about the role of pediatric occupational therapists are progressing. These will promote significance of the school-based occupational therapy service delivery model throughout Taiwan.

The TOTA has commenced a continuing education credit (CEC) and a clinical career structure with the goal of ensuring practitioners' professional competency since 1999. In this program, occupational therapy practitioners are required to attend a minimum of 25 hours of continuing education courses, participate in research-related activities, or publish scholarly papers in peer-reviewed journals each year. The clinical career structure system divides the competency levels of Taiwanese occupational therapists into three levels: junior, intermediate, and advanced occupational therapists. The classification criteria are

based on the professional degrees awarded, the years of experience in practice, and the CECs earned. It is reported that these ongoing CEC and clinical career structure systems promote the development of pediatric occupational therapists' professional knowledge and offer further assurance of the quality of occupational therapy services provided to clients. In 2008, the Taiwanese government created a new certification renewal policy whereby all clinical practitioners including occupational therapists are now required to earn 150 CECs every 6 years so their professional licenses to practice can be renewed.

Pediatric occupational therapy research in Taiwan is also prospering together with the recent establishment of several master's and doctoral programs. Two Taiwanese occupational therapy journals have been launched to provide opportunities for graduate students, clinicians, educators, and researchers to publish their research findings. One is the *Journal of Taiwan Occupational Therapy Association* published by TOTA since 1983, and the other is the *Journal of Taiwan Occupational Therapy Research and Practice* published by the Occupational Therapy Union, R. O. C., since 2005. In these two journals, the majority of manuscripts are published mainly in Chinese, but articles written in English are accepted for publication as well. Additionally, a number of studies are currently being implemented to encourage or support evidence-based occupational therapy practice in Taiwan. These studies involve developing psychometrically sound assessment tools that are culturally appropriate for use in verifying the effectiveness of occupational therapy interventions (e.g., sensory integration and constrained-induced movement therapy) when adapted for use with Taiwanese children.

## Future Visions

Pediatric occupational therapy education and practice have been around in Taiwan for the last several decades, but there is more room for future advancement and expansion. We suggest four future areas of development that may enhance the continued growth of Taiwanese pediatric occupational therapy. The potential suggestions are made to facilitate the actions needed to implement and move towards achieving those visions.

Firstly, the range of services provided for children needs to be broadened for the continued development of the profession. Currently, the majority of pediatric occupational therapists are centralized in hospital-based services, with an additional few working in school- or community-based systems. Centralization of pediatric occupational therapy in hospitals in Taiwan is one notable difference compared to the diverse environments of service provision in other developed countries such as the United States, Canada, or Australia. This may result in uneven allocation of scarce rehabilitation resources as well as limit the delivery of occupational therapy services to children with long-term conditions (e.g., cerebral palsy) or those with minor developmental or learning problems but still impacting on the children's life participation. It is thus suggested that the academic education and fieldwork education regarding school- and community-based practice models be incorporated into all the undergraduate occupational therapy university programs in Taiwan.

Secondly, because pediatric occupational therapy has a relatively brief history in Taiwan, there are not many full-time or senior occupational therapists working with children. Continuing education opportunities provided by TOTA could target the practice needs of junior therapists and foster their ongoing professional competence. Furthermore, a higher rate of reimbursement for pediatric occupational therapy services should be negotiated at the policy level to ensure that a balance between the quality and level of payment for service provision are more aligned. Working with children, unlike adults, may require more attention and time from occupational therapists during the assessment or intervention phases of service provision, because it requires working together with the children as

well as their parents. Therefore, with fair and equitable payments for pediatric occupational therapy services, the service quality can be ensured and Taiwanese therapists will be more apt to pursue full-time senior therapist positions working with children and their families.

Thirdly, the general public in Taiwan has little understanding and knowledge of the importance of occupation at present. The medical model of patient care continues to be the dominant approach to clinical practice in Taiwan. Thus, instead of targeting the enhancement of clients' life participation, health promotion, and well-being, the medical model tries to treat the disease in its acute phase. On the other hand, the principles of an occupation-centered practice approach that occupational therapists use do not always fit with the medical model tradition. In the future, TOTA could publish readable pamphlets and other media about occupation and the role of occupational therapy to increase awareness among the general public of what occupational therapy has to offer.

Finally, Taiwanese pediatric occupational therapists are encouraged to regularly participate in and contribute to international organizations and activities. Ms. Louisa Shing-Ru Shih and Dr. Chin-Yu Wu, both from Taiwan, have both participated in WFOT as the *WFOT Bulletin* editor and/or vice president. The 2nd Asia Pacific Occupational Therapy Congress was held in Taiwan in 1999. Occasionally, educational workshops given by international experts have been organized so that Taiwanese occupational therapists can be knowledgeable about new and innovative assessment and intervention concepts/techniques. However, such opportunities for continuing professional development by international educators do not occur on a regular basis.

Thus, we hope that, in the future, an exchange system for students can be established that allows occupational therapy students from Taiwan to complete a portion of their clinical placements in overseas locations. International occupational therapy scholars could also visit Taiwan periodically to deliver their unique cultural experiences and knowledge for local undergraduate and postgraduate students. In addition, Taiwanese pediatric occupational therapists can visit other countries such as Mainland China to assist in the education and service setup of occupational therapy services by sharing the expertise and knowledge of Taiwanese therapists.

## Conclusion

In summary, we attempted to provide an overview of pediatric occupational therapy education, service provision, and ongoing development in Taiwan. Some suggestions for the future development of pediatric occupational therapy were also provided in this article. It is hoped that the information provided in this article opens a window for international colleagues to have a glance at the field of pediatric occupational therapy situation within Taiwan and also encourage the exchange of unique perspectives, thoughts, insights, and feedback about occupational therapists working with children and families in Taiwan, via a professional dialogue in the "Global Views & Perspectives Beyond Borders" column of the *JOTSEI*.

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