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Introduction

The World Federation of Occupational Therapists (WFOT) steers the development, use and practice of occupational therapy (OT) internationally through numerous operations including policy and research. In an effort to homogenise and advance OT training globally, the Federation has compiled and published the Minimum Standards for the Education of Occupational Therapists[1] that serves as a blueprint to both set the minimum standard for educational programmes in occupational therapy and to foster continuous quality assurance and professional development. In South Africa, the Professional Board for Occupational Therapy, Medical Orthotics and Prosthetics and Arts Therapy has incorporated these standards into the national policies and guidelines for occupational therapy training[2,3].

Consistent with international standards, one of the key outcomes highlighted in the national policies and guidelines is the graduate's knowledge of occupation. This key component is demonstrated by the "critical awareness of the 'Person-Occupation-Environment Relationship' relevant to the South African context" and is measured through 17 criteria. The criteria include the graduate's skills in selecting the appropriate principles, strategies and technologies, which compromise of assistive devices and therapeutic apparatus for promotive, preventative, palliative, therapeutic/care, rehabilitative interventions or programmes[1,3]. In light of the above, institutions offering occupational therapy training are required to select context appropriate technologies, to be referred to as therapeutic apparatus (TA) from here onwards, to fulfil the listed outcome.

With eight South African academic institutions offering training in OT, *viz.* University of Pretoria, Stellenbosch University, University of the Western Cape, University of the Free State, University of the Witwatersrand, University of KwaZulu–Natal, Sefako Makgatho Health Sciences University and the University of Cape Town, it is important to evaluate if the theoretical and practical training offered on TA is applicable in South African OT clinical practice. Consequently, the overall aim of this study was two-fold: first, to analyse and describe

the TA curriculum from the various institutions; second, to assess and describe, the availability, utilisation and relevance of TA in South African OT clinical practice.

Methods

This descriptive study was approved by the Stellenbosch University Undergraduate Research Ethics and Health Research Ethics Committees. The study consisted of two phases. In phase one the researchers contacted all eight academic institutions that offer OT training and requested the TA course outline from either the OT undergraduate coordinators or lecturers who were responsible for teaching the TA content. The TA course outline was analysed and arranged into a comparative table. Institutions that did not respond or required the researchers to apply for ethical approval at their institution were excluded due to time constraints.

In the second phase of the study, Checkbox, an online Stellenbosch University survey platform, was used to design and distribute a survey to all Health Professions Council of South Africa (HPCSA) registered occupational therapists throughout South Africa. The survey consisted of a synopsis of the study, a consent form, and closed and open-ended questions that evaluated whether participants had received practical and theoretical training of TA, as well as the primary sources of their knowledge about, and exposure to, TA. Furthermore, the survey queried the availability, utilisation and relevance of TA in the practitioners' current practice settings. To recruit all eligible participants, the survey was marketed through several social media platforms, including the Occupational Therapy Association of South Africa (OTASA) newsletter, Facebook and OT related networks. All the data and records received were anonymised and handled according to HPCSA guidelines for good practices[4]. The data was recorded, cleaned and analysed using SPSS for various measures of central tendency.

Results

Phase 1:

Five (N=5) out of eight (62%) OT training institutions participated in the study. To derive a TA definition and classification system, the TA course outline was categorized according to four groupings namely, the *definition of TA and the source of the definition*, the *type of training offered on TA*, the *classification of TA content*, and the *TA included in training* (See Table 1). Two out of five institutions specified an informal (i.e. it had no academic reference/s) definition and source for TA as well as an informal classification system for the TA content. Four out of five institutions specified that they offered both theoretical and practical training and listed all the TA that they include in their academic training. Three out of five institutions had an average of six apparatus included in their TA course outline, with one institution of the three having ten apparatus and one institution of the three specifying none. TA that was frequently included in curricula of institutions (from highest to lowest frequency) included the Overhead Balance (OB) Help Arm (N=4), Mobile Arm Support (N=3), Tilt Table (N=3), Electronic Cycle (N=2), Motivational Therapeutic Apparatus (N=2), Adjustable Tables (N=2) and Standing Frame (N=2).

Phase 2:

The survey was sent to 4473 occupational therapists registered with the HPCSA, 949 (21%) responses were recorded and 784 (n=784) of these responses were valid and included in this analysis. Five hundred and sixty nine (72%) participants had between 3 to 20 years' clinical experience with 220 (28%) providing services in physical health and 117 (15%) providing services in mental health. Four hundred and forty seven (57%) participants provided either a combination of services or provided services in community, work or medico legal settings. Six hundred and fifty eight (84%) participants indicated that they received theoretical training about TA while 635 (81%) indicated they received practical training. The three primary platforms (from highest to lowest frequency) where both practical and theoretical training were obtained included during undergraduate training (45% for both practical and theoretical), through workshops or courses (25% and 29% for practical and theoretical, respectively) and through manuals (13% and 14% for practical and theoretical, respectively). Almost all

participants (768; 98%) considered TA to be beneficial for client treatment, however only 580 (74%) found it applicable to their current setting. Finally, only 470 (60%) had access to TA that was in working order in their setting of which 395 (84%) utilised it; 698 (89%) of participants indicated that they would use TA if they had access.

Discussion

Phase one of the study was dedicated to deriving a comprehensive definition for TA using contributions from all eight South African institutions that offer OT. Five institutions participated in the study and while all of them, except one, specified that they provided both theoretical and practical training on TA, only two institutions specified an informal definition and informal classification system in both instances. Surprisingly, all the institutions had a comprehensive list of TA they included in their curriculum. Institutions that had an informal classification system used it to inform the type of TA that was taught during OT training.

The findings of phase one indicate that there is a need for a universal definition and classification system for TA. The lack thereof leaves the definitions and classification systems subject to development by the institution or the educator. This not only results in institutional variations in terms of the type and amount of TA content that is being taught, but also provides graduates with limited resources for further investigation on the topic. Consequently, the lack of formal definitions and classification system may hamper the growth of graduates' knowledge of TA. Furthermore, with the principle of patient autonomy becoming increasingly customary in patient healthcare, the paucity of formal references leaves occupational therapists with inadequate resources for evidence and reference when patients or health professionals query the purpose, function and curative value of an apparatus.

The process through which institutions select their TA of choice for academic training could benefit from consistency amongst within and amongst institutions. Consequently, the question arises of what should inform the type of TA included in the OT TA outline? Should it be policy, the global or national burden of disease, evidence of quality practices or the variety of clinical

settings where OTs offer their services? Or all of the above? In addition, training institutions need to establish how many TA items should be included during academic training to cultivate a well-rounded perspective in graduates. Institutions that developed an informal definition and/or classification system, had identified which apparatus is appropriate for inclusion according to their definition and/or classification system. This classification demonstrates the potential value of having structured or semi-structured definitions and/or classification systems.

Phase two of the study aimed to assess the relevance of TA in South African clinical practice. A large number of participants indicated that TA is beneficial and they would use it if they had access to it. TA is thus relevant in South African OT clinical practice and there may be a need to upscale access to context specific TA that is in working order. The results of this study show that there is potentially great value in developing and investing in TA for OT clinical practice. Collaborative research between institutions and various OT networks can serve as a possible solution to advancing the use of TA in both academic and clinical settings.

One limitation of the study is that the scope of the project did not allow for a formal systematic review of the literature on international practices in the use of TA, this would been valuable for comparison to this study.

References

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2. Health Professions Council of South Africa. Professional Boards - HPCSA. (2018). Available at: http://www.hpcsa.co.za/PBOccupational/Guidelines. (Accessed: 17th July 2018)
3. Health Professions Council of South Africa. *Professional Board for Occupational Therapy, Medical Orthotics/Prosthetics and Arts Therapy*. (2006).
4. Health Professions Council of South Africa. *Confidentiality: Protecting and Providing Information*. (2008).

Table I: Comparative table of institutional course outlines

Institution	Definition of TA and Source of Definition	Type of training offered on TA	Classification of TA content	TA included in training
A	Not Specified	Theoretical and Practical Training	Not Specified	ITS200M Electronic Cycle OB Help Arm Mobile Arm Support Therapeutic Furniture e.g. Hot Box Tilt table
B	Not Specified	Theoretical and Practical Training	**1. Movement and Exercise Apparatus: Electrontic vs. Mechanical** **2. Equipement**	**1. Movement and exercise apparatus:** **a) Electronic** MTAS Electronic Cycle [Oliver] **b) Mechanical** Wire Twister FEPS Lathe **2. Equipment** OB Help Arm Standing Equipment Tables with adjustable height Mobile Arm Support Standing Mirror Other
C	" Apparatus that are used in an occupational section for treatment purposes" – Lecture's Opinion	Not Specified	Not Specified	OB Help Arm Tilt Table Standing Frame MTA Adjustable table/ plinths Hoist
D	Not Specified	Theoretical and Practical Training	Not Specified	Not Specified
E	"Therapeutic apparatus are used together with activities to provide meaning and purpose to treatment, thus making the treatment session therapeutic for the client. Therapeutic apparatus have a variety of treatment applications in the treatment of sensorimotor problems." - Informal Institutional definition	Theoretical and Practical Training	**1. Suspension and Related Apparatus** **2. Mechanical Apparatus** **3. Electrical Apparatus**	**1. Suspension & related apparatus** - Sling suspension - OB help arm - Mobile arm support **2. Mechanical apparatus** - Standing frame - Tilt table **3. Electrical apparatus** - Tilt table - Standing frame

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