

A scoping review of learning theories used for experienced occupational therapy and physiotherapy professionals to develop skills in clinical practice and clinical reasoning.

Louise Howe, Assistant Professor Vicky Booth, Professor Pip Logan and Professor Rowan Harwood

Introduction

Our population of older adults is growing and more people are living with comorbid conditions that affect their function, quality of life and increase the need for complex healthcare (Ryan et al. 2015, Marengoni et al. 2011). This is often delivered by occupational therapists (OTs) and physiotherapists (PTs). As a result, there is an increasing need to develop evidence-based, cost effective interventions and test them through high quality research programmes.

Many complex intervention trials use a form of training to facilitate the implementation of the intervention and ensure fidelity with the manual for example, Wenborn et al. (2016). Within the literature for complex intervention trials, there is under-reporting of the training packages used for the staff delivering the interventions. What is reported is inconsistent, in terms of what is included in the report, and what is carried out varies greatly across studies.

This scoping review aimed to explore learning theories that are used for experienced OT and PT professionals when delivering complex interventions. The scoping review was the first step in a realist evaluation of a training programme for a complex rehabilitation intervention. It was hoped to identify potential mechanisms from the learning theories that may be at play through the training programme that results in therapists delivering the intervention to a high level of fidelity to a manual as part of a research trial.



Method

A scoping review was chosen as the literature being considered encompassed a wide heterogeneous area and aimed to examine the extent and type of literature available (Grant and Booth 2009).

Eligibility Criteria

Studies were included that

- involved OT, PT and associated unregistered therapy support staff
- stated a learning theory was utilised
- resulted in development of clinical, practice skills or clinical reasoning skills
- included any practice setting
- presented primary research

Search Selection

The search was conducted using the following databases,

- MEDLINE
- EMBASE
- AMED
- Cumulative Index to Nursing and Allied Health Literature (CINAHL)
- PsycINFO
- Cochrane library
- Educational Resources and Information Center (ERIC)

The search was completed in three phases, the first phase to screen titles and abstracts, the second phase was a full text screen completed by two reviewers and the third phase was a reference screen of all included papers.

Data extraction and analysis

Data from the included publications were extracted into an excel table. An assessment of quality was carried out. A sample of 20% were replicated by a second reviewer to verify that the data was extracted and assessed correctly. The extracted data was combined in a narrative synthesis and implications for the further study were considered.

Results

Once the data searches from the different databases were combined and duplicates were removed, 2841 citations were identified for the initial screening. Using the title and abstract 2775 were ineligible for inclusion in the scoping review. This left 66 articles for the second round of screening. On reading the full articles 3 were excluded because the outcomes reported were not based on practice or clinical reasoning skills and 56 were excluded as no learning theories were identified. Seven articles were included in the data extraction phase, see Figure 1. Table 1 summarises the results in the included articles

Figure 1: PRISMA Diagram demonstrating article selection.

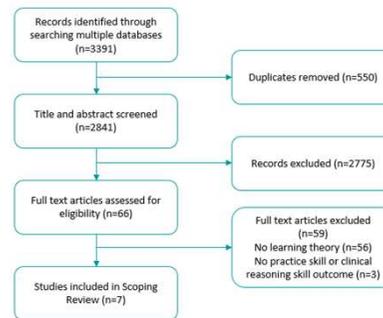


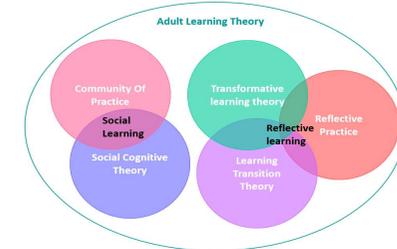
Table 1: Results

Study	Population	Concept	Type of study	Outcome
Camden et al 2017	41 PTs, paediatric rehabilitation	Community of practice	Explanatory sequential mixed methods	Increase in self perceived knowledge, skills and confidence
Vachon et al 2015	8 OTs, work rehabilitation for persistent pain	Reflective practice	Qualitative collaborative research	Improvement in critical thinking and problem solving
Alden and Toth-Cohen 2015	6 OTs, older adults	Transformative learning theory	Mixed methods longitudinal design	Increase in self perceived knowledge and skills
Dunleavy 2015	22 OTs and 2 OT Assistants, paediatrics	Adult learning and social cognitive theory	Quantitative longitudinal design	Slight increase in skill and increased confidence
Petty et al 2010	11 PTs, neuromusculo-skeletal	Learning transition theory	Qualitative naturalistic enquiry	Describes a process of learning in and from practice
Tilson et al 2016	16 PTs, all backgrounds	Adult learning and social cognitive theory	Quantitative longitudinal design	Increase in self perceived behaviour and implementation
McClusky and Lovarini 2005	114 OTs, all backgrounds	Adult learning and social cognitive theory	Quantitative longitudinal design	Increase in self perceived skills and confidence

Narrative Review

The studies included in this scoping review utilised a number of different learning theories in different ways to support the therapists in developing practical, clinical reasoning skills and the implementation of evidence based practice. The learning theories identified in this scoping review and how they have been implemented with the included publications have some similarities. They all include a degree of social involvement, the learning was carried out within a group context, and reflection was used as a tool within these groups to progress learning and integrate theory into practice. Diagram 1: illustrates the relationship between the learning theories identified.

Diagram 1: The relationship between the identified learning theories



Implications for further study

A number of the learning theories included an element of social learning, for example sharing knowledge, observing and modelling and learning from other learners (Camden et al. 2017, Dunleavy 2015, Tilson et al. 2016 and McClusky and Lovarini 2005). The realist evaluation could consider, which therapists valued these learning activities and whether their social context effected their engagement and learning.

A second recurring theme within the scoping review is the use of reflection. Vachon et al. 2010 used reflective practice as its theoretical base and Petty et al. (2011) and Alden and Toth-Cohen (2015) also use theoretical models that are rooted in reflection of critical incidents. Combined with this, Tilson et al. (2016) identified that the physiotherapists' knowledge and skills showed improvement at a 6 month follow up, which indicated that some learning may be happening following the course, this could be a result of the therapists utilising, reflecting, and integrating their new knowledge. Dunleavy (2015) identified that their OTs would have benefitted from a refresher training event following their course to enable therapists to problem solve difficult cases, further highlighting the possible use of reflective practice to enhance learning.

Following this scoping review the realist evaluation will include the exploration of social learning and reflective practice as potential causal mechanisms that are occurring in the delivery of the training programme under investigation.

Limitations

There were a number of limitations including

- the learning theories were not searched for individually
- authors of studies that were not included were not approached to identify whether learning theories had been used
- a brief generic measure of quality appraisal was utilised rather than comprehensive assessments for each study type

References

Alden, J., & Toth-Cohen, S. (2015). Impact of an Educational Module on Occupational Therapists' Use of Heterospeak and Attitudes Toward Older Adults. *Physical & Occupational Therapy in Geriatrics*, 30(1), 1-6. <https://doi.org/10.1080/07073813.2014.970864>

Camden, C., Rivard, L. M., Hurtubise, K., Heagy, L., & Barbat, L. (2017). Can a Community of Practice Improve Physical Therapists' Self-Perceived Practice in Developmental Coordination Disorder? *Physical Therapy*, 97(7), 746-755. <https://doi.org/10.1093/ptj/ptw004>

Dunleavy, L. (2015). Evaluation of a continuing education course for occupational therapy practitioners on the use of applied behavior analysis. *Occupational Therapy in Health Care*, 29(1), 39-43. <https://doi.org/10.1080/07073813.2014.960784>

Grant, M. J., and Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, Vol. 26, pp. 91-108. <https://doi.org/10.1111/j.1471-1842.2009.00988.x>

McClusky, A., & Lovarini, M. (2005). Promoting education on evidence-based practice improves knowledge but did not change behaviour: a before and after study. *BMC Medical Education*, 5, 40. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1485411/>

Petty, N. J., Scholke, J., & Ellis, L. (2011). Master's level study: learning transitions towards clinical expertise in physiotherapy. *Physiotherapy*, 97(3), 218-225. <https://doi.org/10.1016/j.phys.2010.11.007>

Ryan, A., Wallace, E., O'Hara, P., & Smith, S. M. (2015). Multimorbidity and functional decline in community-dwelling adults: a systematic review. *Health and Quality of Life Outcomes*, 13(1), 168. <https://doi.org/10.1186/s12916-015-0355-9>

Tilson, J. (2016). *Physical Therapy in Health Care: Part 3: Long Term Disability Assessment of the PFA program*. BMC Medical Education, 16, 164.

Vachon, B., Durand, M.-J., & LeBlanc, J. (2015). Empowering occupational therapists to become evidence-based work rehabilitation practitioners. *Work (Reading, Mass.)*, 51(1), 119-134. <https://doi.org/10.1080/07073813.2014.960784>

Wenborn, J., Hayes, S., Moore-Cook, E., Moorhead, C., Pickett, E., King, M., ... Orrell, M. (2016). Community occupational therapy for people with dementia and family carers (COTID-UK) versus treatment as usual (Valuing Active Life in Dementia [VALID] programme): Study protocol for a randomised controlled trial. <https://doi.org/10.1186/s13063-015-1150-y>