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EMRAN: Theories of learning for occupational therapy and physiotherapy

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

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ABSTRACT

Introduction

There is a global growing population of older people who require complex interventions to meet their multiple health and social care needs. These interventions, often carried out by physiotherapists (PT) and occupational therapists (OT), should be evidence-based from quality research studies. In order for rigorous, high quality testing, it is imperative that the intervention is delivered with fidelity within the study, a novel concept and context to many therapists, who in clinical practice will usually adapt therapy to the circumstances of the individual. Little is known about how to train therapists to deliver complex interventions for research trials. Therefore, this scoping review aims to identify theories of learning used when training experienced PTs and OTs to develop clinical skills and deliver focused repeatable complex interventions at research standards.

Method

The scoping review protocol was developed using guidelines (from the Joanna Briggs Institute). Studies will be included that involve training of qualified PT and OT staff and experienced unqualified therapy support staff. Studies that refer to theoretical approaches to learning and education in the development of clinical reasoning or therapy practice skills will be included. Searches will be completed using the following databases MEDLINE, EMBASE, AMED, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, Cochrane library and Educational Resources and Information Center (ERIC) and a citation search of all selected studies. Data will then be extracted systematically by two reviewers before being compared and synthesised.

Discussion

A scoping review method was chosen to accommodate the anticipated heterogeneity of the literature in this area. Scoping reviews allow for synthesis of evidence from different types of studies to map the literature and identify gaps in research knowledge. However, scoping reviews can lack the methodological rigour of other types of literature synthesises. In order to improve the rigour of this review, the literature will be subject to a quality appraisal and will be reported using PRISMA guidelines.

INTRODUCTION

Rationale

The NHS has a finite amount of funds and these need to be spent prudently to ensure a quality service providing interventions that are cost effective and deliver high patient benefit [1]. The NHS long term plan highlights the need for evidence-based intervention [2]. Our population of older adults is growing [3] and more people are living with comorbid conditions that affect their function, quality of life and increase the need for complex healthcare [4, 5], which may be delivered by Occupational Therapists (OTs) and Physiotherapists (PTs). As a result, there is a need to develop evidence-based, cost effective interventions and test them through high quality research programmes. To meet this need the Medical Research Council (MRC) published guidelines to developing and evaluating complex interventions [6].

Many complex intervention trials use a form of training to facilitate the implementation of the intervention and ensure fidelity with a therapy or intervention manual [7, 8, 9, 10, 11, 12, 13, 14]. This varies greatly across studies. For most an initial training session is provided, prior to delivering the intervention. These vary in length. Some studies required a period of learning on the job [8, 9], others utilised refresher training days [10] or ongoing support [8, 10, 11, 12, 13]. There is no guidance within the MRC framework around what training methods should be used.

Within the literature for complex intervention trials for Allied Health Professionals (AHPs), there is under-reporting of the training 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 [9, 10, 12, 14, 15, 16, 17, 18]. This is problematic as it prevents learning from the experiences of other trials and reduces the opportunity to develop a consistent method or guidance for training delivery staff in RCTs.

This scoping review aims to be the first step in a realist evaluation of a training programme to enable experienced therapists to implement a complex rehabilitation intervention in a research setting. A realist evaluation is a form of theory-based evaluation [19] that aims to develop an underlying 'programme theory' to explain what mechanisms are at work, under which circumstances, to create certain outcomes. Initial programme theories can be generated through exploratory research, a systematic

literature review or through stakeholder consultation [20]. These are then tested and refined through empirical research.

There are currently no literature reviews of this nature reported on or in progress according to the Prospero database. A review of current literature identified a scoping review of educational approaches and learning strategies in occupational therapy [21] and a protocol for a systematic review of learning activities in physiotherapy [22]. These studies are of limited value as the former was restricted to undergraduate therapists and both are profession specific and exclude unregistered therapy staff. A protocol has been published for a scoping review of teaching theory and methods in post graduate health education [23], which includes OT and PT but not as the specific population. Therefore this study is likely to be wider and encompass a wider range of learning models which are less relevant to the delivery of complex therapy interventions.

Objectives / Review Question

The aim of this scoping review is to map relevant literature that explores the learning theory that enables experienced OT and PT staff to develop practical and clinical reasoning skills. The research question has been developed using the Population, Concept, Context model [24]. The research question is:

What theories of learning are used for occupational therapy and physiotherapy professionals to develop skills in practice and clinical reasoning?

METHODS

A scoping review was chosen as the literature being considered encompassed a wide heterogeneous area, and it will aim to examine the extent and type of literature available [25]. Scoping reviews allow available literature to be mapped across a broad area and encompass different study designs [26]. They aim to identify what research exists for a given topic and subsequent gaps in the evidence base. For this study the protocol has been developed using the guidelines from the Joanna Briggs Institute [24] and will be reported using PRISMA guidelines for scoping reviews [27].

Eligibility Criteria

Types of population

Studies will be included that involve learning theories used with OT, PT and associated unregistered therapy support staff (for example, therapy assistants, technical instructors or rehabilitation support workers). These may include examples of learning theories used in practice or evaluations of training programmes. Papers that report on multidisciplinary groups will be included if they include any of the 15 AHPs listed by the Health and Care Professions Council [28] or medical or nursing colleagues. This is because OTs and PT staff often work in multidisciplinary groups and may receive post graduate training relating to a specialist area of work [23], rather than profession specific training. Studies reporting on training newly qualified staff will be excluded.

Types of concepts

Studies will be included that refer to theoretical approaches to learning and education that have contributed to the development of clinical skills, how these have been implemented and the impact these have had on the learners' professional practice. The use of theoretical approaches will be identified through a statement in the paper that identifies that a theoretical approach has been used, for example, action learning or adult learning.

Types of contexts

Although the review is particularly interested in learning theories relating to experienced therapists working within healthcare, it will also review literature from other practice settings. There will be no restrictions on the contexts of the included papers as there may be relevant literature in these areas that can contribute to understanding how professional skills are developed.

Types of Outcomes

This review is interested in studies that report on the use of learning theory that has resulted in the population described developing practical therapy skills and clinical reasoning skills, for example has resulted in the therapists implementing a new intervention or incorporating new knowledge into their existing practice.

Types of studies

All published studies will be reviewed including systematic reviews, meta-analysis, randomised controlled trials, non-randomised controlled trials, quasi-experimental studies, before and after studies, prospective and retrospective cohort studies, case-control studies, analytical cross-sectional studies, case series, individual case reports, descriptive cross-sectional studies, phenomenology, grounded theory, ethnography, action research and discourse analysis.

Literature in the form of opinion pieces, commentaries, books and editorials will be excluded. Grey literature will also be excluded. This is because it lacks the scientific rigorous review that published literature is subject to [29], and, as the scoping review does not allow for assessment of quality [30], it will be difficult to determine the value of grey literature within this review. The review will be limited to studies published in the English language

Search Strategy

The search will be conducted using the following databases, MEDLINE, EMBASE, AMED, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, Cochrane library and Educational Resources and Information Center (ERIC). Keywords based on the review question will be used for the search terms alongside synonyms, broader, related and alternative terms, as well as citation searches of relevant articles to ensure all relevant studies will be discovered. The search strategy was developed with support from an experienced librarian (Appendix 1).

Study selection

The search will be undertaken in 3 phases. The first phase will be an initial search to test and refine the search terms, the second phase will be a full search of the databases detailed above and the third phase will be a search of the reference lists on all publications that pass the initial screening.

The studies will be initially screened by title and abstract by one reviewer (LH). Those that meet the inclusion criteria will be subject to a full text screening by two reviewers (LH and AL) using predetermined criteria (Appendix 2, part one). Any disagreements will be discussed and settled with a third party (VB). Only papers that meet eligibility criteria will be included in the study.

Data Extraction

Data will be extracted using a proforma (Appendix 2, part two) to detail specific information about the study population, concept, context and outcomes relevant to the study question. A sample of 20% will be replicated by a second reviewer (AL) to verify that the data is being extracted correctly [24].

Data will be stored on an excel spreadsheet

Assessment of Quality

Originally scoping reviews did not include assessment of quality [30] however as the methodology has progressed the need for to apply quality criteria has been established [26, 31]. During the data extraction process, it is important to be clearly identify any issues of bias or poor methodology. Within scoping reviews that aim to review a wide variation in study types, using a single quality assessment checklist can be problematic [32]. Dixon Woods et al [32] identified a set of 5 questions for determining whether a study presented as 'fatally flawed' (Table 1). Any studies not meeting this criteria will be excluded due to poor methodological quality.

Table 1: 'Fatal Flaws' appraisal criteria [32]

Criteria	Yes	No
Are the aims and objectives of the research clearly stated?		
Is the research design clearly specified and appropriate for the aims and objectives of the research?		
Do the researchers provide a clear account of the process by which their findings we reproduced		
Do the researchers display enough data to support their interpretations and conclusions?		
Is the method of analysis appropriate and adequately explicated?		

Data Analysis

The data will be presented in descriptive tables, which will enable the data to be viewed as a whole. As data synthesis is not appropriate for scoping reviews [24], data will be analysed using thematic analysis as recommended by and Daudt et al. [31] and Levac et al. [33]. Following this the data will be reported in the form of a narrative account. This will allow for the identification of learning theories that are key in the development of professional practice skills.

DISCUSSION

This scoping review will identify potential mechanisms from the learning theories that may be at play through the training programme that result in the therapists delivering the intervention at a high level of fidelity. These mechanisms will contribute towards the initial programme theories that will be explored in future studies.

Scoping reviews provide the opportunity to do a preliminary search to determine the range of research for a given topic [25], allow synthesis of evidence from different types of studies and identify gaps in the available evidence [26]. Scoping reviews can also be utilised to identify key concepts and areas for further investigation [34]. Scoping reviews, however, are limited as they can lack the methodological quality of other systematic reviews, the terminology is still developing and there is mixed opinion on whether studies included in scoping reviews should be assessed for quality [26]. This may limit the strength of findings from scoping reviews and the ability to use them to influence policy or clinical practice [27].

Scoping reviews are a relatively new method of systematic review and frameworks for completing them should be utilised to improve the strength of the methodology and to ensure it adds to the current body of knowledge [35]. This type of review has not been done before for this topic and will advance the evidence-base as well as determine the preliminary 'programme theory' for the subsequent realist evaluation. In order to improve the evidence base for complex interventions designed for older adults, it is important that these interventions are delivered in a consistent way, which will be the ultimate outcome of the realist evaluation.

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Appendix 1: Search Strategy - Medline

(Occupational therapist [MESH] OR Physical therapist [MESH] OR (Physiotherap* OR (Physical therap*) OR (Occupational therap*) OR (rehabilitation support worker) OR (therapy assistant) OR (Physiotherapy assistant))) AND (Learning [MESH] OR (Continuing Education [MESH]) OR ((Adult learn*) OR (Adult educat*) OR (continu* educat*) OR (lifelong learn*)))

Appendix 2: Scoping Review Data Extraction Tool

Part One

General

Date	
Reviewer initials	

Study Details

Authors	
Date	
Citation	
Country of study	

Eligibility Criteria

Criteria	Yes	No	Unclear
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Does the study include physiotherapists, occupational therapists of associated support staff?			
Does the study include the use of a theory of learning?			
Does the study report outcomes in practical therapy skills or clinical reasoning skills?			
Is the study a primary research study?			
Is the study in English?			
Is the inclusion criteria met?			
Reason for exclusion if relevant			
Notes			

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Only proceed to Part Two - data extraction if inclusion criteria are met

Part Two

Data Extraction

What is the aim of the study?	
What is the study context?	(healthcare, Social care, post graduate/under graduate etc)
What learning theory is involved?	
What is the study design?	
What is the sample size?	

How is learning theory utilised?			
What are the main outcomes?			
Quality appraisal (Dixon-Woods et al. 2006)	Criteria	Yes	No
	Are the aims and objectives of the research clearly stated?		
	Is the research design clearly specified and appropriate for the aims and objectives of the research?		
	Do the researchers provide a clear account of the process by which their findings were reproduced?		
	Do the researchers display enough data to support their interpretations and conclusions?		
	Is the method of analysis appropriate and adequately explicated?		

Are there any potential mechanism?	
Notes	