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Clinical Education and Training Queensland

Clinical Education and Training for Health Assistants: A systematic review to support an external evaluation of clinical education and training for allied health assistants

Report to Queensland Health

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Copyright Statement

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Further information

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Executive Summary

Recent healthcare redesign in Australia has necessarily been directed at providing more equitable, accessible, efficient and effective patient care. In alignment with these aims, allied health assistants have increasingly been introduced into models of care across a range of professions. Concomitant with the increase of assistants in the workplace has been the national introduction and endorsement of vocational training programs for allied health assistants.

A review of the literature was commissioned by Queensland Health to inform current and future program development in relation to the education and training of allied health assistants. In particular, the review planned to address the following questions:

1. What are effective/appropriate strategies to increase/promote recruitment and retention of health assistants in vocational training programs?
2. What are effective/appropriate strategies to establish the health assistant role as a recognised delegated clinical role and promote their inclusion in models of care?
3. What are effective/appropriate strategies to promote consistency and standardisation of vocational training delivered to health assistants
4. What are effective/appropriate strategies to adapt vocational training programs to local context in healthcare?
5. What are effective/appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and health assistants?

For each question, a systematic review was conducted, which included a structured search of the literature over a range of databases and critical appraisal of studies that met the inclusion criteria. Due to the lack of high methodological quality research studies, a narrative literature review was also conducted to inform each question.

In total, 18 studies were included in the systematic component of this review. The majority of these studies related to question 2. No studies were identified for inclusion in questions 1 or 4. Two studies were included in question 3, and 1 included in question 5. A qualitative meta-synthesis was able to be conducted for question 2.

For question 1, there was some evidence, albeit limited, regarding motivations and barriers to the uptake of training programs identified in the literature review component. Common barriers to recruitment were noted, which included prohibitive costs of training, lack of time, issues of travelling and distance and a lack of recognition of training. Common barriers to retaining students included perceived overly 'academic' course content and the fast pace of training. Motivating factors for both undertaking and persevering with training included the desire to progress professionally, guarantee of employment following training, introduction of key skills from the beginning of the program, the ability to earn and learn, courses that offered flexible times and further options to progress to professional training. Although the information presented did not discuss strategies as such, it can be used to inform strategies to increase/promote recruitment and retention of health assistants in vocational training programs.

For question 2, a number of studies were included in both the systematic review and the literature review components of this project. In the systematic review, strategies to promote assistant inclusion in models of care included creation of empowered work teams, implementing models of collaborative learning, analysing and redesigning the assistant role and use of educational courses/workshops. Analysis of the included qualitative studies resulted in four meta-synthesised findings. These meta-syntheses addressed the relationship between assistants and professionals, what affects the assistant's role and how it is perceived, training programs for assistants and professionals, and accountability and supervision concerns. The literature review identified other issues of importance, such as delegation, barriers to inclusion, and educational needs of assistants and professionals. Together, these findings can be used to provide guidance when educating assistants and health professionals, and when preparing to incorporate assistants in models of care.

For question 3, there was widespread agreement regarding the need to promote consistency and standardisation of vocational training delivered to health assistants. Despite this, there was a lack of literature focusing specifically on strategies to achieve consistent or standardised training. Literature pertinent to the question highlighted different organisations creating guidelines, standards and accreditation processes for assistant training courses, and the two studies included in the systematic review expounded on how standards could be developed and tested, or generated from practice. These findings may be used to provide guidance when conducting strategies to promote consistency and standardisation of vocational training for health assistants.

For question 4, there was limited evidence supporting the need for appropriate and effective strategies to adapt vocational training programs to local contexts in healthcare. Review of the minimal literature available related to this question suggests that training does need to be contextualised at times for local contexts, and this may need to take into account (depending on the setting) population spread and rural health, cultural issues, developing countries, and local healthcare shortages.

For question 5, different strategies or points relating to increasing the relevance of vocational training amongst allied health professionals and assistants were identified in the literature. These included use of adult learning techniques, ensuring relevance to future work, surveying entry level practice and designing training based on this, collaborative learning, and continuing professional development. The one study included in the systematic review highlighted components of a training program that were either well received or not. These findings may be able to provide guidance to increase the relevance and understanding of vocational training amongst allied health professionals and assistants.

Amongst the Australian and international literature, there is currently a paucity of evidence regarding strategies to promote and retain health assistant students in vocational education and training programs and to maximise their potential in the assistant role across the health workforce. This lack of research is particularly noticeable when considering allied health assistants specifically, and much of the research literature that is directly relevant to these issues is of low methodological quality. However, pertinent information was identified that informed the review questions and that can provide insight for future developments in education and training of allied health assistants within Australia.

1. Introduction

Clinical Education and Training Queensland (ClinEdQ) identified a need for a comprehensive review of the Australian and International literature to inform current and future program development in relation to the education and training of allied health assistants undertaken with partnering Technical and Further Education institutions (TAFE). This monograph documents the findings of this review undertaken for Queensland Health by the Joanna Briggs Institute.

2. Review objectives

This review aimed to both identify and evaluate Australian and international strategies implemented to improve multiple facets of clinical education and training for health assistants (HA) in allied health and other health disciplines. To this end, in line with the outcomes sought by the Clinical Education and Training for Allied Health Assistants in Queensland Health Project, this review addressed the following questions:

- Question 1: What are effective/appropriate strategies to increase/promote recruitment and retention of HAs in vocational training programs?
- Question 2: What are effective/appropriate strategies to establish the HA role as a recognised delegated clinical role and promote their inclusion in models of care?
- Question 3: What are effective/appropriate strategies to promote consistency and standardisation of vocational training delivered to HAs?
- Question 4: What are effective/appropriate strategies to adapt vocational training programs to local context in healthcare?
- Question 5: What are effective/appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and HAs?

3. Background to the review

Assistants have been utilised for many years worldwide in healthcare as a means to ensure the provision of adequate and efficient healthcare in the midst of increased pressures on health services. This is because of a number of factors including:

- the increased prevalence of people presenting with chronic or complex disease
- ageing of the population
- challenges in the recruitment and retention of qualified staff
- increased expectations of health care personnel and
- expectations from patients that they be actively involved in their care.[1-3]

It is strongly argued across all sectors of healthcare that health assistants are able to provide effective care, [4, 5] and there are moves to change models of care to ensure that tasks are carried out by staff with the right level of skill, experience and competency.[6] There has been a long history of assistants providing care in nursing, and the role of assistants is seen as essential in the modern healthcare system, even being described as the backbone of the health system.[3,7] This assistant level of worker has spread amongst the health professions, and there now exist a significant number of support workers for the varied health disciplines.[8]

Health assistants can be defined as those who provide assistance and support to health professionals by whom they are directly or indirectly supervised. Health assistants can have varied roles, and may work within professions or across them. The nomenclature for allied health assistants is diverse,[9] and includes aides, support workers, support personnel, attendants, paraprofessionals, or unlicensed staff.[10] For this review, health assistants will be the generic term used to describe this role, allied health assistants will be used when it relates particularly to an allied health profession. Nursing assistants will be the term used when relating specifically to nursing.

In Australia and internationally, the recruitment and retention of allied health professionals including but not limited to physiotherapists, occupational therapists and speech therapists is increasingly challenging because of demographic changes in the number of appropriately qualified applicants to professional preparation programs and increases in workforce mobility.[1, 11] The development of the allied health assistant role is one strategy to alleviate the shortage of qualified health professionals, a feature of most modern health systems in advanced economies.[1, 12] This has led to role redesign where allied health assistants may be delegated direct patient care activities, allowing health professionals to spend more time focused on complex patient care activities.[1, 13]

Although assistants have been utilised in healthcare for some time now, and despite the widely recognised need for them, the role they play and relationships between traditional health professionals and support workers is still seen as ill defined,[13, 14] and at times, controversial.[14, 15] A systematic review by Lizarondo et al. (2010)[1] was conducted to determine the level of evidence surrounding the roles and responsibilities of allied health assistants, in addition to their utilisation and the barriers to their use in healthcare settings. The authors included ten studies in their review, and found that allied health assistants perform a range of both clinical and non-clinical duties. The role of assistants varied significantly in the literature. Some of the clinical duties performed by allied health assistants included patient education, assisting allied health personnel and assisting with mobility and gait of the patient.[1] Non-clinical duties reported included administrative duties, preparation/maintenance of environments, recording of data and housekeeping.[1] The authors also found benefits resulting from the use of allied health assistants, including improved outcomes, additional time for allied health personnel, increased patient satisfaction and the provision of higher level services. However, barriers to their introduction were also identified, including lack of clarity regarding the role of allied health assistants, confusion regarding tasks, and difficulties of health professionals letting go of their work.[1] To ensure efficiency, productivity and cost containment, a team approach is essential, which requires assistants and health professional to work in collaborative models of care.[13]

The increased number of assistants has given rise to a number of strategies to accommodate this level of worker within the healthcare team, and to maximise their potential to improve patient care. Wide variations in their level of training are reported in the literature, ranging from short in service training sessions, to on the job training, vocational programs and degree programs. In addition, programs designed to support, retain and increase competencies have varied effects.[7, 11, 13.] Within Australia, formal training is neither mandatory nor often required of allied health assistants and they may have either minimal or no experience, or plenty of experience but with no formal qualifications receiving only 'on the job' training from the supervising health professional.[9, 14, 16]

However, formal qualifications for allied health assistants are available through the vocational education and training sector, and are based on the achievement of competencies, delivered via registered training organisations such as Technical and Further Education (TAFE) institutions, which offer a Certificate III and Certificate IV in Allied Health Assistance. These VET qualifications in Australia have been specifically developed to comply with the National Qualifications Framework[17] and are delivered by registered training organisations (RTOs). In addition, recent government strategies targeted towards addressing workforce needs, skills shortages and productivity[9] have seen an increased investment and availability of places within these programs. The Australian Physiotherapy Council[10] recommend that physiotherapy assistants are trained at 'Certificate IV level or equivalent training in the vocational education and training sector,[10] whilst physiotherapy aides should be trained 'at Certificate III level in the vocational education and training sector, or equivalent qualifications and workplace experience.[10]

It has been acknowledged that there is a need for consistency in the training and education of persons at the assistant level, and also a need to evaluate the benefits of models of care utilising assistants.[14] Despite a growing body of literature in this area, no comprehensive review has been identified in searches of the bibliographic databases. Therefore, identifying and synthesising the existing research evidence will inform policy and practice related to building an effective allied health workforce that includes allied health assistants as an integral part of the healthcare team.

4. Review methods

This project consisted of a systematic review which was conducted according to the methods outlined in the Joanna Briggs Institute Reviewer's Manual.[18] To address issues that arose from papers not included in the systematic component of this review, a non-systematic literature review was also carried out and is presented following the systematic component of this review.

Inclusion Criteria

Occupational groups considered

This review considered allied health assistants or assistants in other health disciplines, including but not limited to physiotherapy assistants, occupational therapy assistants, podiatry assistants, speech pathologist assistants, dietician assistants, dental assistants and nursing assistants. These health assistants may or may not have undertaken formal training, or have received formal qualifications.

Due to the expected lack of literature focusing on strategies targeting only allied health assistants, strategies addressing assistants from other professions, such as nursing, were also included. Some components of this review also included allied health professionals and professionals from other health disciplines, particularly the question surrounding effective/appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and allied health assistants. Literature that focused exclusively on physician's assistants was excluded as these roles are well developed and highly regulated and so are quite different from allied health assistants in Australia.

Types of intervention

This review considered studies that included interventions to improve clinical education and training for health assistants. This included strategies to promote recruitment and retention, differing education frameworks, pathways and models, strategies to promote consistency/standardisation of vocational training, strategies to adapt vocational training programs, and strategies to increase the relevance and understanding of vocational training amongst allied health professionals and health assistants.

The different educational frameworks, pathways and models included in the review were:

- standardised training and/or assessment for health assistants
- training that begins immediately on the job
- formal and informal training
- design and/or definition of the health assistant role as a recognised delegated clinical role
- specific inclusion of the health assistant role in models of care and clinical pathways
- modifying training to allow qualifications in multiple streams
- contextualising training program/materials and
- implementing resources to support clinical supervisors and allied health professionals.

Types of outcomes

Outcomes for this review included factors related to health assistants and allied health professionals training and practice. These included, but were not limited to:

- recruitment rates of health assistants into vocational training programs
- retention rates of health assistants in vocational training programs
- health assistant inclusion in models of care
- standardised training programs for health assistants and
- increased relevance/understanding of vocational training amongst health assistants and allied health professionals.

Types of studies

The effectiveness component of the review considered any randomised controlled trials (RCT). In the absence of RCTs other research designs, such as non-randomised controlled trials, cohort studies, cross-sectional and before and after studies, were considered for inclusion in a narrative summary.

The appropriateness (qualitative) component of this review considered interpretive study designs that focused on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research. Cross-sectional studies and surveys were also considered in this component. Only studies published in English were included.

As was envisaged, much of the literature informing this topic took the form of expert opinion as opposed to research. In an effort to comprehensively cover the issues involved, this literature was reviewed as a subsection of this report.

Search strategy

The search strategy aimed to find both published and unpublished studies. A three-step search strategy was utilised in each component of this review. An initial limited search of MEDLINE and CINAHL was undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. A second search using all identified keywords and index terms was undertaken across all included databases. Thirdly, the reference lists of all identified reports and articles were searched for additional studies.

The databases searched included:

- Medline
- Cochrane Library
- JBI Library of Systematic Reviews
- AMED
- CINAHL
- EMBASE
- PEDRO
- OTseeker
- Web of Science
- ERIC
- BEME.

The search for unpublished studies included:

- Mednar
- Google Scholar
- Current Contents
- Dissertation Abstracts (digital dissertations).

Initial keywords used were:

Allied health assistants, support workers, assistants in nursing, physiotherapy assistants, health assistants, helpers, nurse aides, competency, standardised assessment, education promotion, student retention, enrolment, vocation, vocational, training, clinical training, clinical learning, local context, contextual, applied learning, training, instruction, teaching, curriculum, curricula, role redesign, models of care.

Additionally, a hand search of two relevant journals (Journal of Allied Health, Internet Journal of Allied Health Sciences and Practice) was also conducted, as these were highlighted as journals of particular interest.

Detailed Search Strategy:

The search strategy used in Medline is detailed in Appendix 1.

Applicable MeSH headings used were Nurses' Aides, Dental Assistants, Pharmacists' aides, Community health aides and the logic grid below was utilised in the search.

Allied health	Aide	Curricula
Audiologist	Assistant	Curriculum
Audiology	Assistants in nursing	Education
Chiropodist	Community health aides	Enrolment
Dentist	Delegation	Instruction
Dentistry	Dental assistants	Learning
Dietetics	Health worker	Model of care
Dietician	Helper	Pathway
Nurse	Nurses' aide	Role development
Nursing	Support worker	Role redesign
Nutritionist		Teaching
Occupational therapist		Training
Occupational Therapy		Vocation
Orthotists		
Pharmacists		
Pharmacy		
Physical therapist		
Physical therapy		
Physiotherapist		
Physiotherapy		
Podiatrist		
Podiatry		
Prosthetist		
Radiation therapy		
Radiographer		
Speech pathologist		
Speech pathology		

Assessment of methodological quality

Qualitative and quantitative papers selected for retrieval were assessed by two independent reviewers for methodological quality prior to inclusion in the review using standardised critical appraisal instruments from the Joanna Briggs Institute (Qualitative Assessment and Review Instrument [JBI-QARI] and Meta Analysis of Statistics Assessment and Review Instrument [JBI-MAStARI]) (Appendix 2). No disagreements arose between the reviewers, but if they did, they were to be resolved through discussion, or with a third reviewer.

Data collection

Qualitative data was extracted from papers included in the review using the standardised data extraction tool from the Joanna Briggs Institute Qualitative Assessment and Review Instrument JBI-QARI (Appendix 3). Quantitative data was extracted from papers included in the review using the standardised data extraction tool from JBI-MAStARI (Appendix 3). The data extracted included specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives.

Data synthesis

Qualitative research findings were, where possible, pooled using the Qualitative Assessment and Review Instrument (JBI-QARI). This involved the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings (Level 1 findings) rated according to their quality, and categorising these findings on the basis of similarity in meaning (Level 2 findings). These categories were then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesised findings (Level 3 findings) that can be used as a basis for evidence-based practice.[18]

Included papers were read and re-read multiple times closely before findings were extracted. Supporting text for each finding was also extracted, and each finding was assigned a level of credibility according to the QARI analytical module. These levels are:[18]

1. Unequivocal (U) – relates to evidence beyond reasonable doubt which may include findings that are matter of fact, directly reported/observed and not open to challenge.
2. Credible (C) – those that are, albeit interpretations, plausible in light of data and theoretical framework. They can be logically inferred from the data. Because the findings are interpretive they can be challenged.
3. Not Supported (NS) – when 1 or 2 does not apply and when most notably findings are not supported by the data.

Due to the heterogeneity of included quantitative studies, and the differences in reporting, study design, outcomes and interventions, meta-analysis was not performed. As statistical pooling was not possible, the findings are presented in narrative form.

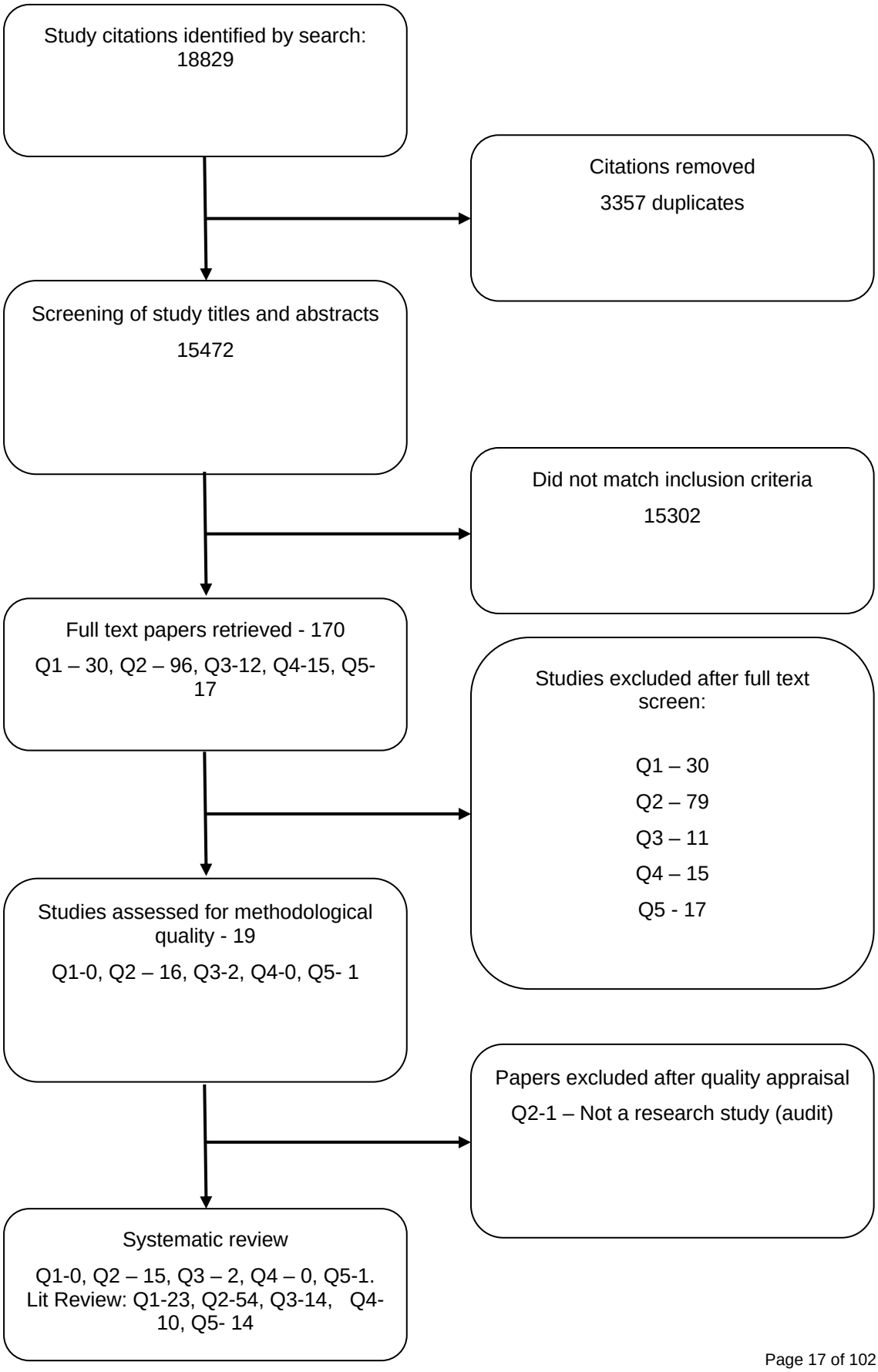
Description of included studies

During the period 14th of April to 13th of May 2011, the structured search strategy was implemented as previously described using a range of databases. Results of the searches were combined into an Endnote library for further screening. All results were screened by two authors to determine the relevance based on the study title and abstract. Results of this process are presented in Figure 1.

Following a scan of the literature in Endnote, there were only a small number of research studies relating to each of the five questions of this review, with the majority of the literature consisting of expert opinion articles or commentaries. All the articles were screened for inclusion based on their study titles and abstracts.

In total, 18 studies were included in the systematic component of this review. The majority of these studies were related to question 2. No studies were identified for inclusion in questions 1 or 4. Two studies were included in question 3, and 1 included in question 5. One study that was initially deemed for inclusion was excluded following critical appraisal, as it was not a research study. The studies are described in more detail under each question.

Figure 1. Flow diagram detailing results of literature search, study selection and assessment of methodological quality.



5. Systematic Review Findings related to Question 1: Effective/appropriate strategies to increase/promote recruitment and retention of health assistants in vocational training programs

During the initial search, a number of studies were identified as potentially relevant to this question. However, after retrieving the full text, no studies met the inclusion criteria, and so a narrative summary was produced. A discussion surrounding this question is presented in the narrative literature review section of this report.

6. Systematic Review Findings related to Question 2: Effective/appropriate strategies to establish the health assistant role as a recognised delegated clinical role and promote their inclusion in models of care

During the search related to this question, a substantial amount of literature was deemed as potentially relevant to the question. After retrieving full text versions of the studies, 15 were deemed appropriate for inclusion in this systematic review. One study that was critically appraised was not deemed suitable for inclusion as it was an audit.[19] The studies were of varied design: Table 1 describes the included qualitative studies, and Table 2 describes the quantitative studies. None of the qualitative studies stated the use of a specific qualitative methodology (such as grounded theory, phenomenology, etc). The last column in Table 1 states whether or not the study presented illustrations, which were defined as direct quotes from study participants.

Table 1: Qualitative studies included

Study	Methods	Participants	Strategy	Results	Illustrations
Fronek et al. 2009[20]	Questionnaire with open-ended questions	109 interdisciplinary practitioners including allied health professionals such as dieticians and speech therapists	Inter-professional training	A combination of intensive training in professional boundaries and opportunities for ongoing professional development are important for all health practitioners	Good illustrations
Hancock et al. 2005[21]	Semi-structured interviews	Health care assistants and patients	Health care assistants development programme	Health care assistants development programme positively influenced the role of the health care assistants; there was a need to invest more into preparation for the restructuring of roles	Low quality illustrations
Hauxwell 2002[22]	Structured interviews	Operating department assistants and nurses	Participants' perspective on teaching, learning, and safe practice as well as working relationships	Implementation of the national vocational qualification has brought an improvement in the relationship between the two major non-medical staff groups in the two units involved in the study	Good illustrations
Jelley et al. 2010[13]	Journals; pre- and post-placement interviews	Three third-year physiotherapy students, three second-year physiotherapy assistance students and three physiotherapists as clinical instructors	A paired 5-week clinical placement	The shared model of learning in clinical placements gave the students involved an effective means to improve competencies in collaborative practice	Good illustrations

Johnson et al. 2004[23]	Structured non-participant observation; semi-structured interviews;	Senior health care support workers	Evaluation of the introduction of support workers with advanced skills into intensive care units	There remains a great need to clarify the nature and lines of accountability for the work done	Good illustrations
Jung et al. 2008[24]	Student reflective journals; students post-placement focus group discussion; student questionnaire; tutors reflective journals; preceptors post-placement focus group	Seven pairs of occupational therapy students and occupation therapy assistants, tutors and student preceptors	Combined collaborative fieldwork placement	Intra-professional learning experiences prior to graduation can help prepare occupational therapy and occupational therapy assistant students for future collaborative practice	Good illustrations
Jung et al. 2002[25]	Journals kept by the students throughout the placement; the students also completed a post placement questionnaire	Eight senior occupational therapy students and eight senior occupational therapy assistant students	Learning together in fieldwork settings	It is essential that students are prepared to have the knowledge, skills and professional attitudes to enter into the partnership relationship	Good illustrations
Nancarrow et al 2005[26]	Focus group interviews	Occupational therapy service users and providers of North Staffordshire Combined Healthcare NHS Trust	Introduction and evaluation of an occupational therapy assistant practitioner	There is a need to clarify career structures and ensure that appropriate training is available to support staff in their new roles	Good illustrations

Plack et al. 2006[15]	Focus groups semi-structured interviews with open-ended questions	34 first year physical therapy students and 21 second year physical therapy assistant students. Also included for comparison were 24 second and 22 third year physical therapy assistants, who did not partake in the same collaborative course with assistants as the first year students. Two focus groups consisting of 6 assistants and 5 physical therapists respectively	Collaborative learning instructional model	The instructional model described is effective in teaching the physical therapy assistant role and provides a mechanism to foster the development of the preferred relationship between physical therapist and assistants.	Good illustrations
Potter et al. 2004[27]	Focus sessions (interviews)	13 registered nurses; 9 unlicensed assistive personnel	Characteristics of registered nurse and unlicensed assistive personnel working relationships and the care delivery practices that influence those relationships	Successful registered nurse and unlicensed assistive personnel partnering allows staff to share a common patient care focus	Good illustrations

Table 2: Quantitative studies included

Study	Methods	Participants	Intervention A	Intervention B	Notes
Bergin 2009[28]	Pilot before and after study	Podiatry assistant and Podiatrist	Introduction of a podiatry assistant	No comparison group	The study displays how a podiatry assistant can be incorporated into models of care with positive outcomes.
Chow et al. 2010[29]	Before and after survey	Nursing staff	Pre-introduction of assistants.	Post-introduction of assistants.	This study describes the introduction of a new model of care and staff reactions to it, which can help inform future projects.
Clayworth1997[30]	Before and after questionnaire	79 Nurses	Expand our skills workshop	No comparison group	A workshop such as the one described in this article may be useful to facilitate the inclusion of assistants in models of care, and improve

					reception of the introduction of assistants by professional staff.
Fronek et al. 2009[20]	Training evaluation (questionnaire with open ended questions)	109 health care professionals and support workers	Inter-professional course	No comparison group	Courses such as this may help define boundaries between assistants and professionals, and improve collaboration in models of care.
Gould et al. 1996[31]	Survey	Registered Nurses and Nurse Assistants	Introduction of a redesigned role	No comparison group	By analysing and redesigning the role of the assistant, a more effective model of care may be able to be developed.
Plack et al. 2006[15]	Mixed methods study, pre-test/post-test questionnaires, focus groups	34 first year physical therapy students and 21 second year physical therapy assistant students. Also included for comparison were 24 second and 22 third year physical therapist assistants, who did not partake in the same collaborative course with assistants as the first year students. Two focus groups consisting of 6 assistants and 5 physical therapists respectively	Collaborative learning instructional model	No comparison group	The strategy of using classroom sessions to teach physical therapists regarding assistants, and then to have them collaborate in a session whilst still learning, can be considered an effective and appropriate strategy to establish the health assistant role as a recognised delegated clinical role and promote their inclusion in models of care.
Yeatts et al. 2007[32]	Multi-method, pre-test/post-test design with comparison group and qualitative data.	Certified Nursing Assistants in 10 nursing homes (5 experimental, 5 comparison)	Empowered work teams	Control group	A study that evaluates empowered work teams in nursing homes.

Methodological quality

All studies met the inclusion criteria and were deemed of sufficient methodological quality. Despite this, the majority of the quantitative studies were of low quality, with qualitative studies generally of higher quality. Some of the studies were appraised twice as they were mixed-methods – once for their quantitative component, and once for their qualitative. Table 3 presents the appraisal results for the quantitative studies, and Table 4 for the results of the qualitative studies. The questions referred to in these tables are listed in Appendix 2.

Table 3: Critical appraisal using the MAStARI Appraisal Instrument ***(Appendix 2)***

Randomised Control Trial / Pseudo-randomised Trial

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Yeatts, 2007[32]	N/A	N/A	N/A	N/A	N/A	Y	U	Y	Y	Y

Descriptive / Case Series Studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Plack 2006[15]	U	U	U	Y	Y	U	U	Y	Y
Gould 1996[31]	U	U	U	Y	Y	Y	U	Y	Y
Fronek 2009[20]	U	U	U	Y	Y	U	U	Y	Y
Clayworth 1997[30]	U	U	U	Y	Y	U	U	Y	Y
Chow 2010[29]	U	U	U	Y	Y	U	U	Y	Y
Bergin 2009[28]	U	U	U	Y	Y	U	U	Y	Y

Y=Yes, N=No, N/A= Not Applicable, U= Unclear

Table 4: Critical appraisal using the QARI Appraisal Instrument ***(Appendix 2)***

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Plack et al. 2006[15]	N	N	Y	Y	Y	N	N	Y	Y	Y
Hauxwell 2002[22]	N	Y	Y	Y	Y	N	Y	Y	U	Y
Jung et al. 2008[24]	N	Y	Y	Y	Y	N	N	Y	Y	Y
Jelley et al. 2010[13]	N	Y	Y	Y	Y	N	N	Y	Y	Y
Jung et al. 2002[25]	N	Y	Y	Y	Y	N	N	Y	U	Y
Potter et al. 2004[27]	N	Y	Y	Y	Y	N	N	Y	U	Y
Nancarrow et al. 2005[26]	N	Y	Y	Y	Y	N	N	Y	Y	Y
Fronek et al. 2009[20]	N	Y	Y	Y	Y	Y	N	Y	U	Y
Johnson et al. 2004[23]	N	Y	Y	Y	Y	N	N	Y	Y	Y
Hancock et al. 2005[21]	N/A	N/A	N/A	N/A	N/A	Y	U	Y	Y	Y

Quantitative results

Although seven of the studies were deemed to meet the inclusion criteria, these studies were of low quality, and due to differences in study design, outcomes, populations, and interventions, the findings could not be pooled in statistical meta-analysis. Instead, a narrative summary of the studies was constructed (Appendix 4). There is also a component of the literature review focusing on this question.

Qualitative results

From the 10 studies included in the qualitative component of this review, 66 findings were extracted. A summary of the studies and their findings were created for each of the 10 included qualitative studies (Appendix 5).

Meta-Synthesis of the findings extracted from included studies

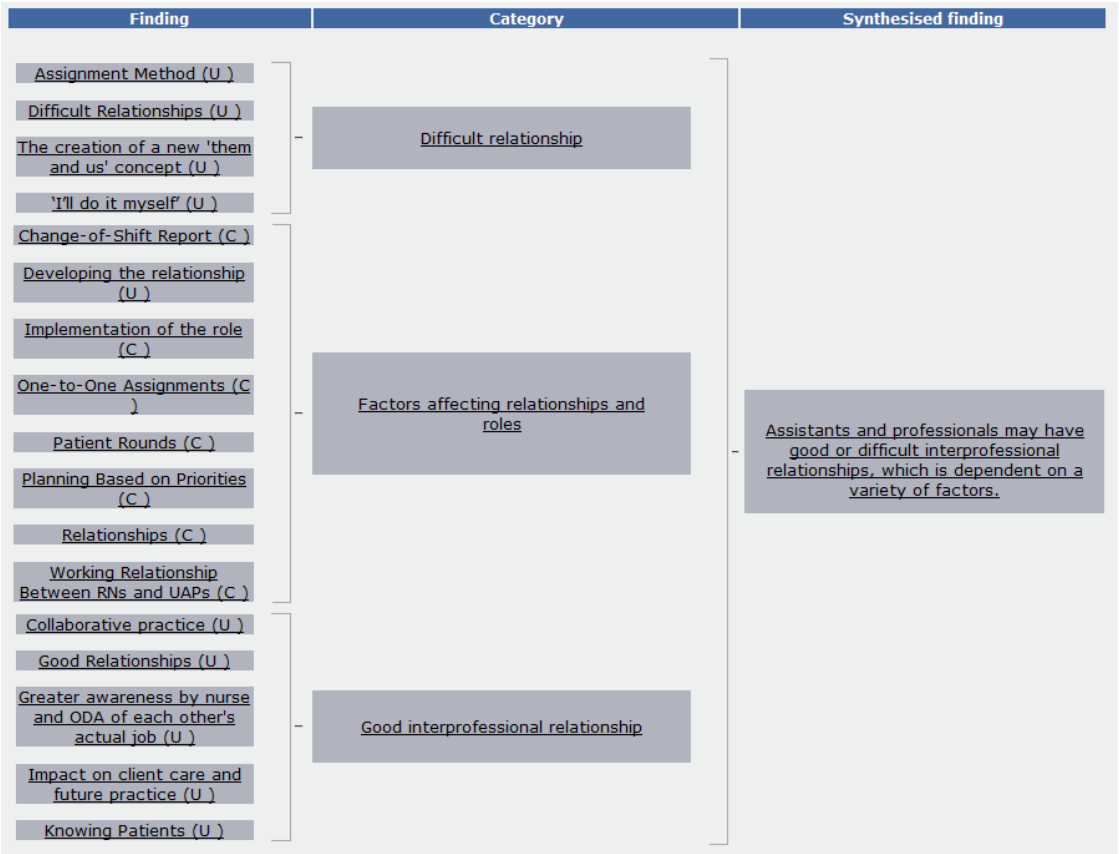
Categorisation and synthesis of findings

Once the 66 findings were extracted from the included studies, they were collated to form user-defined categories based on identified similarities.[18] This moves from a focus on individual studies to consideration of all findings for all studies included in the review. A total of 11 categories were created on the basis of similarities in meaning. From these 11 categories, four synthesised findings (meta-syntheses) were produced.

Meta-synthesis 1: Assistants and professionals may have good or difficult inter-professional relationships, which is dependent on a variety of factors.

This meta-synthesis derives from 17 findings and is formed into three categories (refer to Figure 2). This synthesised finding highlights the different types of relationships that exist between the assistants and health professionals. These relationships can be tense or stressed, or may be functional and effective, characterised by collaborative practice. Different factors can influence the relationships, such as different staffing models, how the role was implemented, and how they interact and work together.

Figure 2: Meta-synthesis 1

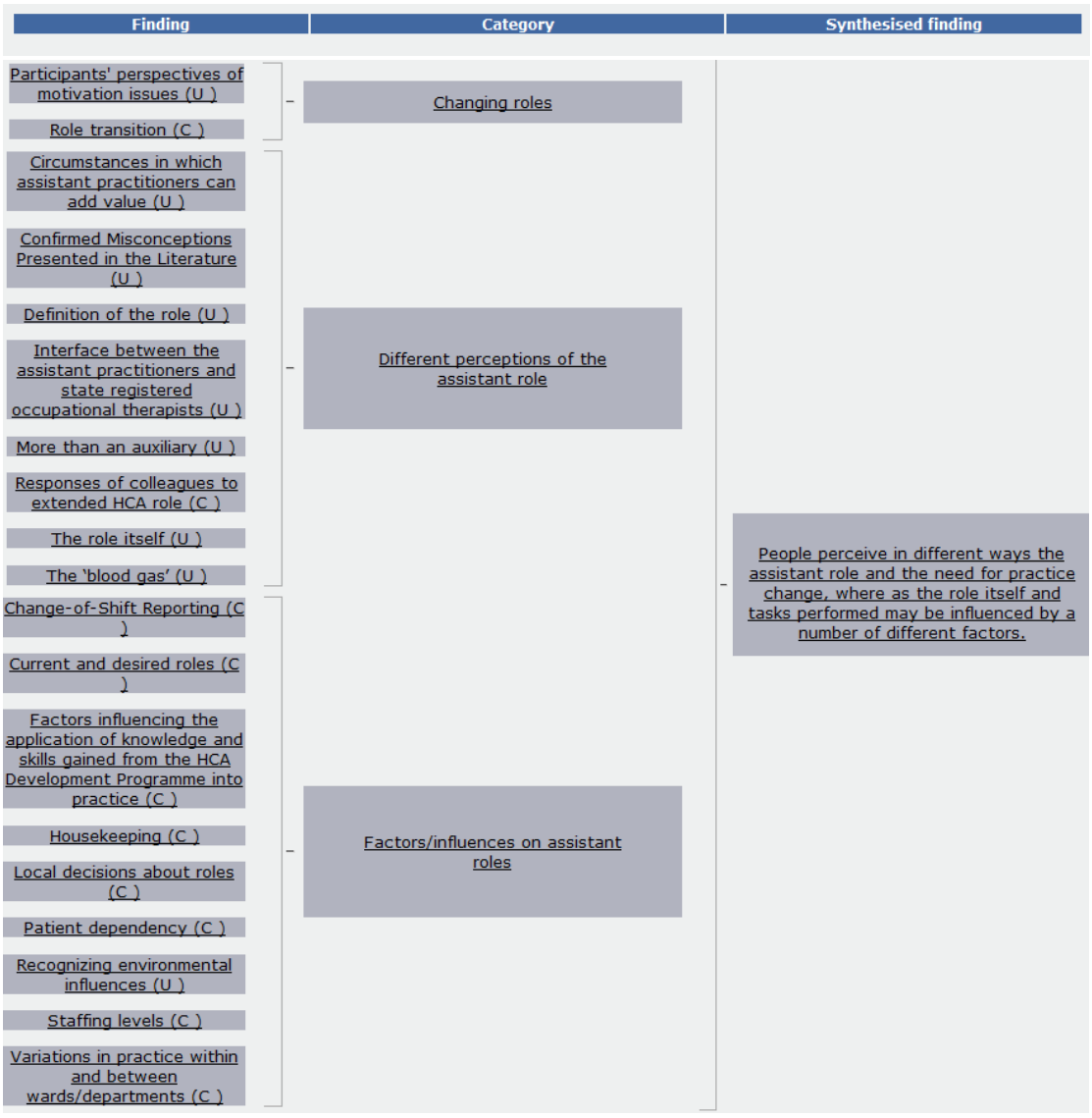


U=Unequivocal finding, C= Credible finding

Meta-synthesis 2: People perceive in different ways the assistant role and the need for practice change, whereas the role itself and tasks performed may be influenced by a number of different factors.

This meta-synthesis derives from 19 findings and is formed into three categories (refer to Figure 3). This synthesised finding highlights the different ways that people perceive the role of the assistant, both from professionals and assistants themselves, and their role in changing practice. The role itself, and the tasks performed by the assistants, is dependent on a number of factors, including the local context and environmental issues, patient dependency, and staff levels.

Figure 3: Meta-synthesis 2

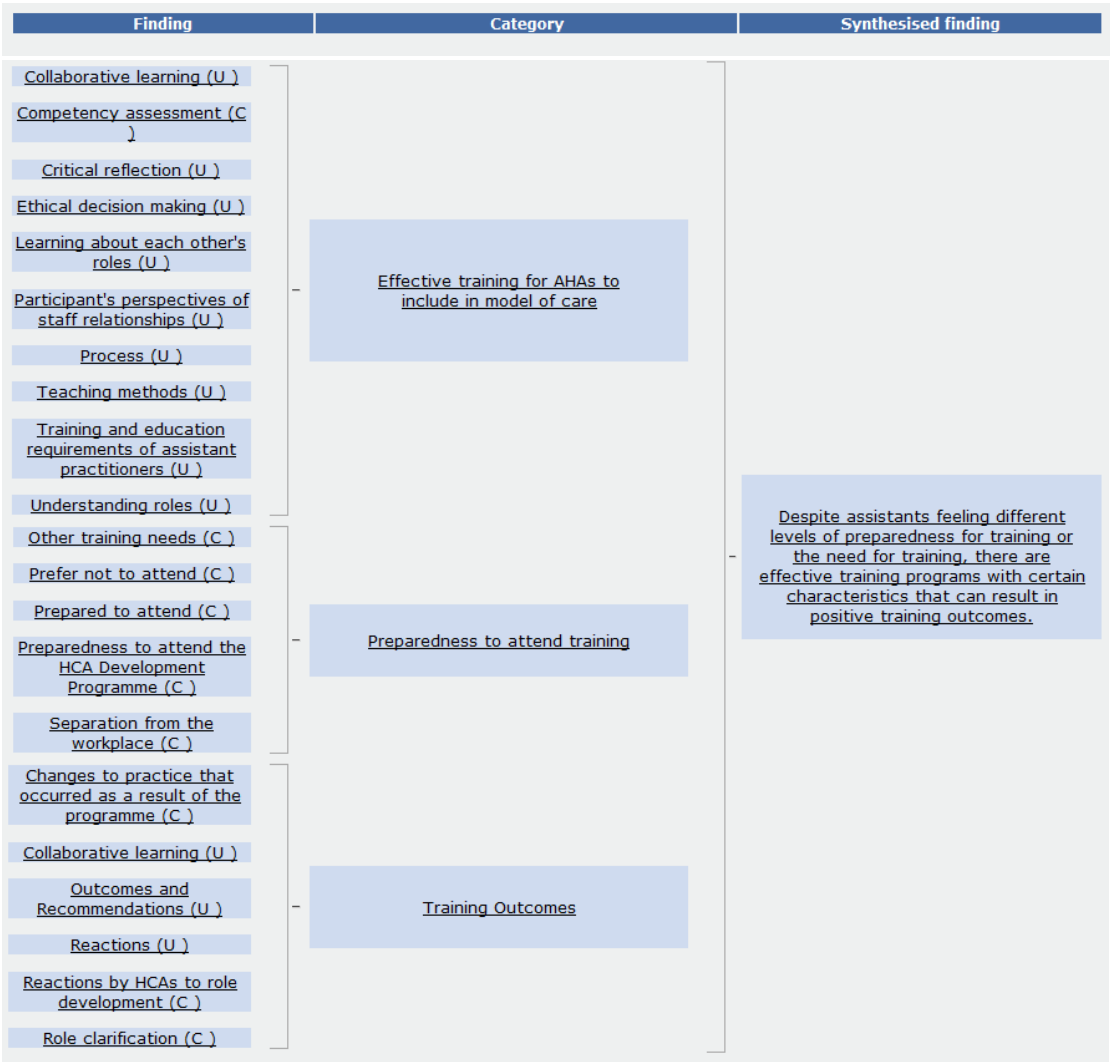


**U=Unequivocal finding, C= Credible finding*

Meta-synthesis 3: Despite assistants feeling different levels of preparedness for training or the need for training, there are effective training programs with certain characteristics that can result in positive training outcomes.

This meta-synthesis derives from 21 findings and is formed into three categories (refer to Figure 4). This synthesis highlights the assistants may or may not feel a need for training, and they may have different levels of preparedness for training programs. However, training programs can be effective in producing positive results; these training programs are characterised by collaborative learning, providing opportunity to learn about each other's roles, assessment of competencies, and certain teaching methods, such as hands on and practical activities, and having intimate learning groups.

Figure 4: Meta-synthesis 3

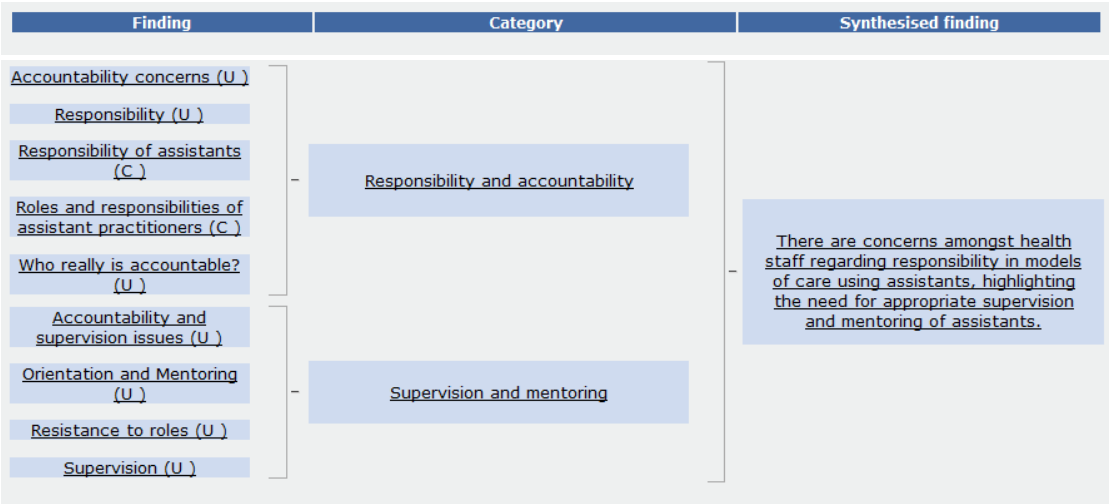


**U=Unequivocal finding, C= Credible finding*

Meta-synthesis 4: There are concerns amongst health staff regarding responsibility in models of care using assistants, highlighting the need for appropriate supervision and mentoring of assistants.

This meta-synthesis derives from 9 findings and is formed into 2 categories (refer to Figure 5). This synthesised finding highlights concerns amongst both assistants and professionals regarding the responsibility and accountability when models of care include assistants. Adequate supervision and mentoring of assistants by professionals, with clear responsibility and accountability for roles, is required.

Figure 5: Meta-synthesis 4



*U=Unequivocal finding, C= Credible finding

Discussion

For this question, 15 studies were deemed suitable for inclusion in the systematic component of this review. These were a mix of qualitative and quantitative designs. The results of the quantitative studies included in this question and the meta-syntheses address the review question on strategies to establish the health assistant role as a recognised delegated clinical role and to promote their inclusion in models of care. From the included seven quantitative studies, strategies such as empowered work teams, collaborative learning, analysing and redesigning the assistant role and educational courses/workshops have been used to facilitate the inclusion of assistants in models of care. Other studies described how introductions of new models of care were incorporated into practice, and these experiences may be able to help inform those wishing to pursue such a model.

Analysis of the included qualitative studies resulted in four meta-synthesised findings. These meta-syntheses address the relationship between assistants and professionals, what affects the assistant's role and how it is perceived, training programs for assistants and professionals, and accountability and supervision concerns.

The first synthesised finding, 'assistants and professionals may have good or difficult inter-professional relationships, which is dependent on a variety of factors,' provides information regarding the influencing factors that contribute to successful relationships between assistants and professionals, and can thereby help inform how to promote good working relationships for models of care including assistants and professionals.

The second synthesised finding, 'people perceive in different ways the assistant role and the need for practice change, whereas the role itself and tasks performed may be influenced by a number of different factors,' highlights the various ways (both positive and negative) that the assistant role is perceived, and describes the factors that may influence the role the assistant performs in models of care.

The third synthesised finding, 'despite assistants feeling different levels of preparedness for training or the need for training, there are effective training programs with certain characteristics that can result in positive training outcomes,' highlights the need for effective educational and training programs for assistants, whilst stressing the importance of preparing assistants for such training. If educational programs are to be used as a strategy to incorporate assistants in models of care, the characteristics of effective training programs should be considered.

The final synthesised finding, 'there are concerns amongst health staff regarding responsibility in models of care using assistants, highlighting the need for appropriate supervision and mentoring of assistants,' details the concerns that exist within models of care using assistants, and provides guidance on the need to clearly outline accountability, responsibility, supervision and mentoring issues.

Together, these synthesised findings can be used to provide guidance on the education of assistants and health professionals, and when preparing to incorporate assistants in models of care.

Recommendations for practice

From the included studies in the systematic component of this review for question 2, the following recommendations have been made, all of which are assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6). Grade A recommendations have 'strong support that merits application,' whilst Grade B recommendations have moderate support that warrants consideration of application. Summaries of the studies are reported in Appendices 4 and 5.

- Where possible, undergraduate allied health professionals and allied health assistants in training should have the opportunity to interact with each other, either in the classroom or in the clinical setting, as this has been shown to result in collaborative relationships. (Level 3) (Grade B)
- Educational courses/workshops for assistants and professionals regarding working with assistants have been shown to improve collaboration and may be recommended. (Level 3) (Grade B)
- Empowered assistant work teams are one strategy that has resulted in improved practice for nursing assistants, and may be considered. (Level 3) (Grade B)
- Prior to introducing assistants, it may be useful to analyse and design their role in the setting, in consultation with staff, as this has been shown to result in positive outcomes in nursing assistant roles. (Level 3) (Grade B)
- Relationships between assistants and professionals are dependent on a range of factors, all of which need to be considered when incorporating assistants in models of care. (Level 1) (Grade A)
- A number of different factors influence the assistant role, and policymakers need to be aware that people perceive the role and need for practice change differently. (Level 1) (Grade A)
- The preparedness of assistants to undertake training programs needs to be considered when running training courses; as do the characteristics of effective training programs. (Level 1) (Grade A)
- Due to the concerns of health professionals regarding responsibility in models of care using assistants, there is a need for appropriate supervision and mentoring of assistants in these models. (Level 1) (Grade A)

7. Systematic Review Findings related to Question 3: Effective/appropriate strategies to promote consistency and standardisation of vocational training delivered to health assistants

During the systematic search, a number of studies were deemed as potentially relevant to this question. However, after retrieving the full text, only two studies met the inclusion criteria. Table 5 contains a description of the included studies.

Although these were deemed to meet the inclusion criteria, these studies were of low quality. Table 6 contains the results of the critical appraisal. Due to differences in study design, outcomes, populations, and interventions, the findings could not be pooled using a meta-analysis. Instead, a narrative review of the studies was conducted (Appendix 7). There is also a component of the literature review focusing on question 3.

Quantitative results

Table 5: Quantitative Included studies

Study	Methods	Participants	Intervention A	Intervention B	Notes
Barr et al. 1982[33]	Descriptive survey	909 participants; 134 Academic Coordinators of Clinical Education, 708 Centre Coordinators of Clinical Education, 15 Clinical instructors, and 52 physical therapist or physical therapy assistance students	Standards and evaluation forms for physical therapy clinical education	N/A	This study provided an example of how standards could be systematically developed and tested for clinical education in physical therapy.
Crist et al. 2007[34]	Descriptive survey	479 Entry level Occupational Therapists and 168 Occupational Therapy Assistants	No intervention - survey	N/A	A descriptive survey with implications for fieldwork educators.

Table 6: Critical appraisal using the MAStARI Appraisal Instrument ***(Appendix 2)***

Descriptive / Case Series Studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Barr 1982[33]	U	U	U	Y	Y	U	U	Y	Y
Crist 2007[34]	U	U	U	Y	Y	U	U	Y	Y

Y=Yes, N=No, N/A= Not Applicable, U= Unclear

Discussion

For this question, only two studies were included in the systematic component of this review. These two studies addressed consistency and standardisation of vocational training for health assistants. One of the papers provided an example of how standards could be developed and tested[33], whilst the other provided an analysis of current entry level practice to inform fieldwork[34]. These two studies may be used to provide guidance when developing strategies to promote consistency and standardisation of vocational training for health assistants. However, due to the low quality of the included studies, and the limited literature available for inclusion in this review, caution is advisable if using this research to guide policy.

Recommendations for practice

From the included studies in the systematic component of this review for question 3, the following recommendation has been made, which is assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- There is an acknowledged need for consistency and standardisation of vocational training programs nationally for health assistants, and programs should be designed as such. (Level 4) (Grade B)

8. Systematic Review Findings related to Question 4: Effective/appropriate strategies to adapt vocational training programs to local context in healthcare

During the systematic search, a number of studies were deemed as potentially relevant to this question. However, after retrieving the full text, no studies met the inclusion criteria. Due to this, a narrative summary was produced to discuss effective/appropriate strategies to increase/promote recruitment and retention of health assistants in vocational training programs.

9. Systematic Review Findings related to Question 5: Effective/appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and health assistants

During the systematic search, a number of studies were deemed as potentially relevant to this question. However, after retrieving the full text, only one study met the inclusion criteria.

Table 6 contains a description of the included study.

Table 7 contains the results of the critical appraisal.

Quantitative results

Table 6: Quantitative included studies

Study	Methods	Participants	Intervention A	Intervention B	Notes
Lin et al. 2003[35]	Descriptive survey	The sample was randomly selected from 20 facilities, with 165 nursing aides completing the questionnaires	Structured and semi-structured questionnaires	N/A	The findings from this study may assist educators in increasing the relevance of training amongst health assistants.

Table 7: Critical appraisal using the MAStARI Appraisal Instrument ***(Appendix 2)***

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Lin et al. 2003[35]	Y	U	U	Y	Y	U	U	Y	Y

Y=Yes, N=No, N/A= Not Applicable, U= Unclear

Although one study was deemed to meet the inclusion criteria, it was of low quality.
A narrative review of the study is included in Appendix 8. There is also a component of the literature review focusing on question 5.

Discussion

The one study included in this review highlighted components of a training program that were either well received or not. These findings may be able to provide guidance to increase the relevance and understanding of vocational training amongst allied health professionals and health assistants. However, due to the low quality of the included study, and the limited literature available for inclusion in this review, caution is advisable if using this research to guide policy.

Recommendations for practice

From the included studies in the systematic component of this review for question 5, the following recommendation has been made, which is assigned a grade and a level of evidence

according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- Different characteristics of training may be preferred or be more relevant for health assistants in training. Training should be designed in order to be as relevant as possible for health assistants. (Level 3) (Grade B)

10. Literature Review on Question 1: Effective/appropriate strategies to increase/promote recruitment and retention of health assistants in vocational training programs

Introduction

In the systematic review component of this project, no studies were identified that directly addressed this point. With the introduction of nationally endorsed VET programs offering formal qualifications in allied health assistance, there is a need to adopt strategies to increase and promote recruitment and retention of allied health assistants into these training courses. Considering the acknowledged importance of allied health assistants in healthcare and a recognised need and desire for further education amongst health assistants in the literature,[36,37,38] it is surprising that readily identifiable strategies aimed at increasing the recruitment and retention of health assistants in vocational training programs were scarce in the Australian and International literature. No studies were identified that directly addressed the effectiveness or appropriateness of recruitment and retention strategies to existing programs. Nevertheless, the available international literature reveals a range of factors that appear to both motivate and inhibit participation of health assistants in formal training that may be considered in the Australian context.

Education and training is required for assistants in healthcare as they develop in their role.[36,37,38] Despite the continued expansion of the role of health assistants and the significant impact they have on patient care, they often receive less training or opportunities for education than qualified staff.[39, 40] It has been shown that when vocational programs exist for health assistants, demand often exceeds positions available.[39] Many assistants would appreciate the opportunity for further training, formal or informal,[41] whether to continue development in their assistant role or to progress further into a professional role (eg become a physiotherapist rather than a physiotherapy assistant). For example, it was identified that a third of nursing assistants aspire to become qualified nurses, which highlights the need for career pathways to enable this.[42] Similarly, another survey found that 84% of nursing assistants wanted to become registered nurses, but the lack of opportunities deterred them.[43]

Even the perception of the availability of training has been linked to positive outcomes.[44] In a cross-sectional survey of 359 certified nursing assistants in nursing homes, the perception that training was available if required, was positively associated with information exchange, procedures used for residents, and satisfaction/commitment and feelings of empowerment.[44] There are moral and practical obligations of health systems to enable staff who have the potential or talents to progress with options to do so.[42]

Motivators and barriers

By understanding the factors that either motivate or dissuade people to undertake vocational training, recruitment and retention strategies can be developed to take these into account. Much of the identified literature focused on the barriers to uptake of these courses.

Finances

An article noted that if students have a monetary investment in their course, they are more likely to complete the course than those who undergo it at no charge. Therefore, a small charge was enacted for their course.[45] More commonly, however, costs were identified as a barrier to training. In a training system for physiotherapy assistants, there were access difficulties due to costs and insufficient supervisors/assessors.[41] A survey found many health assistants were unable to undergo formal nurse training due to domestic and financial constraints.[46] There was also a perception that health assistants who did undertake further training were inadequately recognised. This recognition could come in the form of pay incentives and increased responsibility.[37] The barriers to recruitment for a certified nursing assistant program were identified as: reluctance to resign from current position to begin a class with no guarantees, reluctance to enter a course with a ‘signed on’ agreement, loss of income during the course, and inability to afford the course.[47]

These barriers were addressed in one setting by paying students to attend class which covered course costs, to offer employment following successful course completion, and by not linking course completion with a time commitment to serve at the organisation conducting the training.[47]

Occupational therapy

A descriptive study was performed to determine the factors which motivate occupational therapy assistants to seek further education to become a registered occupational therapist. The two major factors were identified: professional advancement and cognitive interest.[48] Other factors included educational preparation, communication improvement, social contact and family togetherness. Additional themes raised included the need for career mobility and opportunity, independence, lack of recognition and respect for assistants from therapists and those outside the field of occupational therapy, financial reasons, lack of communication, the need for others to understand assistant and therapist roles and relationships, and the need for the educational background and competency levels of the assistant to be recognised by the therapist and those outside the field of occupational therapy. To meet the needs of assistants and others wishing to undertake further training to become full registered professionals, educational programs may need to consider non-traditional programs.[48]

A pilot study was performed to determine the factors that influence occupational therapy assistants to pursue further education to become a registered occupational therapist. The most influential motivators were to expand employment options, to improve professional skills, develop professional knowledge, and increase professional autonomy. Stressors were also identified, the major ones being; school assignments, lack of leisure, time management, and financial strains. Resources and supports were determined, with a supportive spouse or significant others, personal commitment to career development, assistant skills and knowledge and feedback and support from faculty members rated as the most important when pursuing professional education.[49] Desirable program characteristics included availability of weekend classes (allowing assistants to continue working) and accessibility.[49]

Indigenous health workers

An exploratory study in Northwest Queensland identified the following barriers to advanced education for indigenous health workers: desire to remain in the indigenous health sector, support barriers, family ties, and negative perceptions of workplace environments, infrastructure barriers, lack of knowledge and awareness of the course, and lack of belief that they can successfully complete the education.[50]

Programs for training

Due to difficulties with recruiting and retaining staff in certain areas and other health pressures in the UK,[51] individual hospitals have been encouraged to develop their own recruitment and retention strategies, and be flexible in regards to developing the health workforce.[39, 51] Some hospitals have taken the initiative to provide further training to health assistants.[39, 51] One article described the use of a foundation apprenticeship scheme at a hospital in Sheffield, which was developed due to added benefits over other schemes, and suited the local context. Following successful completion of the apprenticeship, the health assistant is guaranteed a job position.[39] Benefits of the scheme include supporting recruitment and retention by offering an alternative mode of career progression, having inclusive entry criteria, cost effective, work-based education and training, develops flexible practitioners, provides vocational education and training opportunities, and opportunities for qualified nurses to develop assessment and training skills. As the areas surrounding the hospital are disadvantaged socioeconomically, the scheme also offers employment opportunities to young people who may struggle to find employment.[39] Many of the people aiming to undertake foundation degrees may be currently working. In this way, the foundation degree provides flexibility to those who may not have considered higher education for

professional development, enabling them to 'earn and learn'.[52] Although a degree in their own right, they can also be used to fast track to a professional qualification.

Recruitment

There are only a small number of papers that addressed the issue of recruitment of health assistants in vocational training programs. Recognition of prior learning, current competencies and prior learning fees are all strategies that may increase/promote recruitment of assistants in vocational training programs.[9] The issues that surfaced in these papers and a summary of their content is described below.

In the United States, physical therapist and physical therapy assistant recruitment has been difficult since the 1990s.[53] Despite the efforts of physical therapists and physical therapy assistants, there is still a low profile (lack of awareness) regarding the profession amongst students and minimal knowledge on how to enter the profession. This may be in part due to school counsellors having a lack of knowledge regarding the profession and its prospects, a discontented workforce putting off prospective students, and the need for quality applicants to enter the workforce. Therefore strategies are required to promote the profession, its advantages, and enhance recognition of the role of the physical therapist and physical therapy assistant.[53]

One approach to address workforce shortage is to 'grow your own,' or provide training to lower levels of staffing so that they can take on more advanced roles.[54] Ancillary health personnel may be a worthwhile group to recruit to nursing. These individuals have worked with registered nurses, understand what nursing is, and witnessed the demands of the profession.[55] Aggressive marketing campaigns, flexible program options and tuition assistance are all strategies to improve recruitment into nursing from assistants.[55] Due to difficulties recruiting new entrants to nursing, secondment programs to recruit health assistants to undertake formal pre-registration university courses have been touted as a possible strategy to improve recruitment,[43] where they receive financial support in the form of a salary and fees are paid. In a survey, 97% of health assistants would be encouraged to take up training if offered professional secondment.[43] There is currently little literature that assesses the effectiveness of secondment schemes. Drawn from traditional nursing pre-registration education, characteristics linked to successful completion included mature women with care experience, and previous academic studies. Aspects of the curriculum, particularly science, present difficulties, especially for those who have not studied biology previously.[40] Often, nursing assistants are blocked from further studies due to the availability of courses offered only as full-time studies, which is not feasible for many assistants who are also working full-time.[54] Seconding existing health assistants to traditional pre-registration nursing programs is one possible solution to attrition rates from these programs. Some barriers to the course include anxieties regarding the course and the academic content, new responsibilities, the public nature of failure, personal costs, length of time and degree of commitment. It was suggested that secondment may not offer a ready solution and that there may only be limited potential to recruit from this group.[56]

Retention

Retention is an issue of concern for health assistants undergoing training, and in one paper it was noted anecdotally that perhaps only 50% of those who enter physical therapy assistant programs will complete it.[53] However, by introducing key skills from the beginning of training, retention and achievements are improved,[39] and learners were found to respond well to practical activities.[39]

A report assessing advancement for low wage workers described case studies of four organisations with career ladders for health assistants to progress towards licensed practical nurses, which differ from the traditional licensed practical nursing (LPN) training program and were successful in assisting low wage workers with limited previous education to finish demanding LPN training.[57] These programs provided intensive academic remediation in writing, maths and reading, offered flexible training schedules, and formal tutoring. In addition,

they offered employer financial support, classes on the worksite or close to it, and clear rewards with progression in the course.[57] The retention and completion rates for all the courses were noted as impressive.[57]

A program for certified nursing assistant progression to licensed practical nurse at the Community College of Denver found that the fast pace of the education at the start of learning led to attrition, and therefore the learning module was extended. During difficult modules, attrition was the highest. The students in the program enjoyed the cohort model and the support they received from other students, and also the support from their employer.[57]

It is essential that education programs for assistants attempting to become professionals provide active support and assistance to the student. As this group can be considered non-traditional students, different learning options may be needed; one example of this is providing flexible class times, such as in the evening or on the weekend.[49] By providing students with the option to undertake an occupational therapy assistant degree, with the option to progress to an occupational therapist masters degree, one university has seen an improvement in student numbers and retention.[58]

Conclusion

The international literature informing recruitment and retention to VET programs in allied health and nursing highlights a number of potential strategies, many of which have been adopted by the VET sector in Australia. Vocational training programs for allied health are being delivered in a variety of modalities[59] such as face to face, workplace based, and external study modes using online learning.[59] This range of study modes have all been shown to be preferred by health assistants in the international literature.[49, 50, 54, 56, 57, 60] The cost of training need to be addressed as this has been found to be a substantial barrier to recruitment into courses directed at health assistants internationally, and health organisations within Australia may consider providing financial support to staff undertaking such courses beyond incentives provided by government. Policy makers attempting to address recruitment and attrition issues to VET programs should be informed by these motivators and barriers when further exploring and developing strategies for allied health assistants. The above evidence suggests that financial reimbursement and guaranteed employment upon completion of the training may alleviate the cost associated with allied health assistance training programs; that academic support, program flexibility and program applicability all increase the attractiveness of training programs for participants; and that the distribution of information highlighting the health assistants role and its career potential can increase recruitment to allied health assistant VET programs.

Recommendations for practice

The following recommendations have been made from the included studies in the literature review component of this review for question 1, all of which are assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- The evidence suggests that the distribution of information highlighting the health assistant role and its career potential can increase recruitment to allied health assistant VET programs. (Level 4) (Grade B)
- The evidence suggests that academic support, program flexibility and program applicability all increase the attractiveness of training programs for participants. (Level 4) (Grade B)
- The evidence suggests that financial reimbursement measures and guaranteed employment upon completion of training may address the deterrent to allied health assistant training imposed by costs. (Level 4) (Grade B)

11. Literature Review on Question 2: Effective/appropriate strategies to establish the health assistant role as a recognised delegated clinical role and promote their inclusion in models of care

The need for assistants

In Australia, and much of the western world, the population is growing, living longer, and chronic disease is increasing, which all impact significantly on the health system.[61] Traditional practices in healthcare are being redesigned in order to meet the demands of the health care industry, particularly delivering health care that is equitable, accessible, efficient, and effective.[62] One strategy is to change the role of health professionals, and introduce more multi-skilled workers. This would involve role substitution, whereby health professionals and assistants take on tasks and roles previously provided by other professionals or medical specialists. This may result in moving away from the mono-professional basis for education programs and health professionals.[61] By having assistants provide direct patient care,[4, 5] this enable health professionals to spend more time on complex patient care activities.[61-63] As such, expanding the use of allied health assistants may address the increased demand for allied health services,[61, 64] with significant cost and other benefits.[1, 4, 5, 12, 65.]

Internationally and within Australia, the role that health assistants play varies widely and includes both clinical and non-clinical duties.[1, 9]. The clinical and non-clinical roles and tasks that health assistants undertake are inconsistent both within and across the different health professions.[1, 9, 38, 66.] Some of the clinical duties provided by allied health assistants include patient education, performing clinical procedures and assisting allied health professionals. Their non-clinical activities include administrative duties, preparation and maintenance of environments, record keeping and housekeeping duties.[1]

The completion of the Certificate III and IV in Allied Health Assistance has been introduced in Australia to further promote and define the allied health assistant as a recognisable delegated clinical role. Different allied health peak bodies in Australia have developed standards or guidance regarding the use of assistants within their profession.[10, 67, 68] However, further steps are needed to facilitate the incorporation of assistants within models of care within Australia, and ensure they have a recognised delegated clinical role. A number of studies were identified that directly informed the systematic review component for this question. The effectiveness and appropriateness of strategies informed by these studies has been discussed above. However, the wider international literature has been addressed to further support the relevance and direction of strategies identified. Due to differences in workforce characteristics of the included studies, it may be difficult to apply findings generated from one healthcare setting into another.[69]

Cost-effectiveness is a common reason put forward for introducing health assistants. From a survey of managers, the following reasons for introducing health assistants were identified; cost effectiveness was ranked as the main reason, followed by flexible hours and deployment.[46] It has been found for certain professions, such as occupational therapy,[65] that assistants do offer cost-effective and broad services. By delegating routine tasks to physiotherapy assistants, quality services will be able to be delivered at reduced costs.[4, 5] As an example, early mobilisation and early initiation of physical therapy is important in the critical care setting, but due to the number of complex cases and the lack of availability of physical therapists, physical therapy services offered may be limited. Assistants can be of great use in these cases.[70] Benefits resulting from the use of allied health assistants include improved outcomes, additional time to perform complex tasks for allied health personnel, increased patient satisfaction and the provision of higher level services.[1]

The complexity of practice and the shortage of professionals are two other cited reasons for the use of assistants,[71] allowing an increase in the number of clients seen by professionals.[63, 64, 72]

Allied health professions utilise assistants in a range of disciplines, including podiatry, occupational therapy, physiotherapy,[64] speech and language therapy, dietetics and radiography.[64] Allied health assistants providing supportive tasks to the allied health professional and care to the patient as prescribed by the allied health professional can bring about the 'unburdening' of the allied health professional, particularly in the rural health setting.[73]

Barriers to incorporation in models of care

However, barriers to the introduction of assistants have been identified, including a lack of clarity regarding the role of allied health assistants, confusion regarding tasks, and difficulties of health professionals letting go of their work.[1] In addition, professionals may perceive the role of assistants as a threat to their practice.[46 ,74, 75,76] This may be due to the boundaries between roles in the hospital setting being seen as blurred and fluid.[46] One study identified that nursing assistants saw little differences between their role and the nurses role, other than accountability, medication administration, and paperwork.[74] Similarly, this also occurs when rehabilitation therapy assistants are used.[36] The blurring of roles may be due to role ambiguity, which results from a lack of clarity about duties, authority, allocation of time, and relationships with others. Conflict and ambiguity occur when tasks and activities are not assigned specifically to the roles.[77] There is a need for clear and unambiguous guidelines detailing the scope of practice of assistants.[8]

Criticism of the use of unlicensed assistive supportive personnel (UAP) (personal care assistants and certified nurse's aides) exists in the literature, and there have been negative reactions to the introduction of unlicensed assistive personnel.[78,79] The use of unlicensed assistive supportive personnel can be infuriating to professional nurses, as it implies professional nurses are expendable and can be replaced. The introduction of UAP forces the restructure of the role of the professional nurse (PN) to supervise and delegate tasks to UAP, and not perform them themselves.[79] Due to a lack of clarification surrounding the role of UAPs, there are different views regarding their role, and what they can and cannot do. As PN's are responsible for UAPs, many worry about professional and legal risks that may arise from working with UAPs.[79] PNs also fear giving up control of patient care, may feel they have nothing to attain by helping UAPs, and feel that due to the need to oversee and supervise tasks by the UAP, they are taken away from patient care and lose traditional aspects of their role.[79] UAPs are also said to pose a risk to patient safety, if they perform tasks outside their remit. The quality of care provided can also be diminished when delivered by UAPs. The use of UAPs has been described as a poorly thought out quick fix to the shortage of nurses.[79]

Role of assistants

The role of the assistants varied significantly in the literature, and it was identified that they perform both clinical and non-clinical duties.[1, 9]

Physiotherapy assistants

Assistants are used extensively in physical therapy, however, their duties vary significantly.[63] Tasks of the physiotherapist assistant varied, but consisted of patient care, clerical work, and domestic tasks.[41] Many surveys and studies have been undertaken across the globe to determine the utilisation and role of physiotherapy assistants. In Canada, a survey identified that the duties of the assistant varied significantly across settings. The authors recommended that the roles of physical therapists and physical therapy assistants be defined and differentiated from each other.[63] In the United Kingdom, a large variation was seen in the levels of supervision of the assistants and the tasks they performed. For some tasks, such as electrotherapy, there was confusion regarding whether or not assistants should perform these activities. Changes in the workplace, such as staff shortages, increasing service demands, additional supervisory staff, and alterations in funding and training schemes affected the utilisation of assistants. The major issue that requires addressing from the study was the need for a standardised approach to the role of physiotherapy assistants, along with an associated grading structure.[80] Another UK survey found that assistants were employed in a wide range

of settings, and in a wide range of clinical areas, with the majority in elderly and orthopaedic care, and that there was a wide variation in the skills between physiotherapy assistants.[41]

In Indiana in the United States, treatments that were delivered by assistants without supervision included hot/cold packs, ultrasound, paraffin, and whirlpool. A number of responders stated that the use of aides had presented them with an ethical dilemma and many also desired guidelines on aide use.[71]

Within Australia, the Australian Physiotherapy Council has provided guidelines for physiotherapists working with assistants/aides.[10] General principles regarding the use of assistants state that they should not be used as substitutes for physiotherapists in certain tasks (assessment, diagnosis, education, program planning and evaluation), there needs to be direct or indirect supervision depending on the level of the assistant, condition of the patient and the task they are performing, and assistants must perform procedures in accordance with prescribed treatment plans.[10]

Occupational therapy assistants

There has been protracted and heated debate over the role and training of the occupational therapy assistant.[81] Occupational therapy assistants have been described as having good clinical reasoning and technical skills, are able to think critically, can participate collaboratively in care, and work with and form strong interpersonal relationships with diverse groups of patients and clients.[82] Occupational therapy assistants view their role as important to back up professional staff.[76] However, they also felt that they were taken for granted or that their role was devalued and underlying resentment was apparent.[76]

General practice

Health assistants are used in many settings, including general practice, allowing qualified staff more time to treat and manage complex conditions. Within general practice, there are concerns around the training for this role and the place of assistants in the general practice workforce.[74] Benefits of assistants in general practice included reducing waiting times, easier appointment access, extended general physician consultation time, and additional time for qualified staff to deal with complex cases. Development and employment of assistants was thought to provide benefits to the whole primary care workforce.[74]

Nursing

A literature review identified some of the roles nursing assistants undertook in healthcare settings: these included practical nursing tasks such as bathing and emotional support, allowing professional nurses to spend more time on medication, therapeutic tasks and paperwork, which the nurses generally appreciate.[74] It has also been found that assistants may take on additional tasks during periods of low staffing, but discontinue these activities when staffing levels return to normal.[74] There have also been reports of assistants taking on tasks outside their scope of practice, such as electrocardiogram tracings, taking blood, dressing wounds, and monitoring blood glucose levels and administering drugs without supervision.[74] A qualitative study investigating how health assistants perceived their role was performed. Health assistants saw their role as a supportive one, acting as a communicative link between the patient and nurse, and that through conducting their activities nurses had additional time to focus on therapeutic activities. There appeared to be uncertainty about the roles each group had from both groups.[83]

Lay health advisors

A systematic review was conducted to determine how lay health advisors have been used within Hispanic/Latino communities within the United States. It was found in the review that lay health advisors had different periods of training, ranging from 6-160 hours, with their primary roles being the recruitment and support of data collection, acting as health advisors, referral sources, being role models, distributing materials and advocating on behalf of

community members. The 37 studies included in the review were largely of low quality, but there was some positive evidence of effectiveness of lay health advisors.[84]

Podiatry

Podiatry assistants carry out a range of tasks, including simple foot care and clerical duties, education and assisting in nail and foot surgery. These assistants have potential if provided with opportunities for education and training. Podiatry assistants may be trained to undertake tasks previously performed by the podiatrist, providing time for the podiatrist to concentrate on specialist areas of care and develop and enhance their own skills.[64] The number of assistants employed in podiatry services and the roles they play varies widely. The most commonly reported tasks for podiatry assistants were nail care and assisting in nail surgery.[85] Despite initial controversy, most podiatrists accept the role of assistants in their workforce and support an increase in their use, and they are now accepted as part of the podiatry team.[64]

Audiology

The concept of utilising support personnel has not been embraced by all within audiology.[86] However, these positions can be of tremendous use to the profession, by increasing accessibility and providing high quality care that is productive and cost efficient, whilst increasing patient satisfaction. These personnel work under the auspices of the audiologist, and after receiving training, are prescribed tasks and supervised by a professional. Despite their proposed benefits, assistants are not widespread in audiology practices. In audiology, the assistant could perform tasks such as analysing and cleaning hearing aids, and completing paperwork, thereby freeing up time for the audiologist to spend time on other complex tasks.[86]

Midwifery

There is a concern regarding the role of assistants in midwifery care, often resulting in a heated debate about their use. Concern exists that they will encroach on areas which were once only the domain of the midwife, eroding the midwifery role.[87] However, due to staff shortages, they are increasingly required in midwifery care. Reliance on assistants and the role they play differs amongst hospitals, with some of their tasks including observations antenatal and postnatal, and meconium observations on neonates.[87] One study found that assistants carry out more indirect care activities than direct care activities, and they also assisted staff in a number of activities in line with their training and job description.[88]

Radiography

Due to the shortage of radiographers, there has been discussion that assistants can play a role in radiology services.[89,90] A questionnaire was used to determine the views of radiology service managers on assistants using ionising radiations. There was agreement amongst the managers that assistants need training to undertake examinations using ionising radiations. Duties that support staff could undertake were highlighted, and examinations they could perform were noted. Chest and extremity examinations were the most common examinations named that support workers could undertake. Support workers should have the opportunity to continue training and to qualify as state registered radiographers.[90]

Intensive care

A survey was conducted amongst senior clinical nurses from intensive care units who were asked to identify what tasks health assistants undertook. Assistants were shown to perform an array of different tasks, which were not consistent across settings. Training and remuneration for health assistants also varied. The assistants were noted as playing a valuable supportive role within the intensive care unit.[91]

Speech pathology

Speech and language pathology assistants have been utilised more frequently in recent years, due to the demand for expanding services and to contain costs.[92] The speech language pathology assistants do not replace clinicians, but rather act to support clinical services and provide more time for the clinician, and allow them to extend their services.[92] A case study reported the opinions of speech and language therapists on working with assistants. The speech and language therapists reported a number of advantages and disadvantages for working with speech and language therapy assistants. Advantages included expanding clientele, saving time, reduced labour cost, and being less isolated. Disadvantages included time demands when starting to work with assistants, risks/problems in assistants performing tasks not within their scope, inability of assistants to handle complex cases, difficulty delivering and monitoring therapy accordingly, less opportunities to build relationship with clients, their use may create perceptions that anyone can deliver the therapy, and undermining the complexity of planning and preparation.[93]

Operating room

A pilot project was developed to determine the role of assistants in the operating room, and to enable nurses further time to spend in direct patient care. In the operating room, assistants are primarily responsible for cleaning and transporting patients. Nurses were found to be dissatisfied with the amount of time spent in non-clinical tasks. The project mapped what tasks nurses were performing that could be allocated to supportive personnel, a new position was created (allowing assistants career advancement opportunities) and training programs designed. The position was advertised and training undertaken. Nurses were pleased with the addition of the new role, and assistants were incorporated into the operating room workflow model.[62]

Multidisciplinary support

It was identified that assistant roles are not always linked to the support of only one profession, but can be multidisciplinary.[9] The rehabilitation therapy assistant is an example of this, with the assistant working in the rehabilitation setting undertaking nursing, physiotherapy and occupational therapy related tasks.[36]

Promoting inclusion in models of care

There is current inconsistency in the roles and tasks that health assistants undertake.[1, 38] Alternative models of care that utilise increased numbers of assistants have been seen as a way to address the increasing pressures on healthcare systems today.[94] Often, assistants are not acknowledged in trans-disciplinary models of teamwork,[36] and it can be difficult to form functioning teams when they comprise persons with different levels of education and experience.[95] There were a number of articles that discussed strategies to promote the inclusion of assistants in models of care. Education has been highlighted as essential component for the successful implementation of new models,[96] and clear role delineation appears to be an aspect of delivering successful programs.[95,72] Some of these strategies are discussed below. However, it must be noted that due to differences in workforce characteristics, it is difficult to apply findings generated from one healthcare setting to another.[69] There is still a need for further research on the role of health assistants within rehabilitation and how they can be incorporated into multidisciplinary teams.[97]

Regardless of the model used, communication and delegation to support staff are integral parts of delivering care.[94] Using SBAR (situation, background, assessment, recommendation), a communication mnemonic was found very useful by paraprofessional staff when dealing with professional staff, and this improved communication between staff.[98]

Nursing

A new model of care utilising assistants in nursing (AIN) was used in an Australian haemodialysis unit, due in part to a severe shortage of specialist trained nurses in this setting. The AINs were employed to assist the registered nurse in the dialysis unit, with the aim to

promote and enhance their role under the direct supervision of a registered nurse. The senior nurses in the unit brainstormed what roles could be allocated to the AINs, and then developed a training program, prepared the current staff for their inclusion through training, and then recruited the AINs. The model used was described as a successful and transferable process to address staff shortages and promote recruitment of dialysis nurses.[69]

Surveys were used to determine the amount of time registered nurses and certified nursing assistants spent on tasks during a shift. The results identified that registered nurses were spending 12% of their time performing activities that assistants could perform.[99] Performing simple surveys such as this can provide administrators with knowledge of staffing needs and acuity levels.[99]

One article described the development of a new care delivery model, which was borne out of frustration with the current inefficient practice model that they were using. A team met to create a new model based on having the right person perform the right task. This new model clearly defined the registered nurse and assistant roles, which led to improvement in job satisfaction, increased clarity regarding expectations, and enhanced role identity.[6]

A comparative correlational study compared nursing quality outcomes between two different models; one comprising regulated staff (registered nurses and registered practical nurses) and the other containing regulated and unregulated staff (registered nurses and unregulated workers). The quality of care delivered by regulated and unregulated workers was perceived as lower. Registered nurses reported higher levels of job satisfaction when working with unregulated workers. In both models, there were high levels of role conflict.[100]

Different staff mix models for nursing were examined in a literature review. The authors found a wide variation in models in the literature, with a range of assistive roles described, which could be broken down into roles with a patient care focus, and patient unit focus. Different models existed within the patient care assistive roles, with nurse extender models, partnership models, nurse extender partnership models and associated care delivery redesign approaches. The authors recommended education for the nurse regarding managing, coordinating, supervising and delegation.[101]

Health institutions may make the mistake of underestimating the complexity of introducing models of care with certified nursing assistants.[102] Health administrations should make a commitment to address all barriers that may arise, and plan for these, particularly ones regarding existing personnel and the consequences to their role, satisfaction, sense of trust and sense of competency.[102] There must be empathy regarding these human factors and communication regarding the introduced changes. Action groups should be formed comprising both assistants and nurses to problem solve and review quality.[102] Some of the barriers to effective implementation include the role changes, particularly taking away aspects of holistic patient care from the nurse as they spend less time at the bedside, and their role changes to supervising and coordinating ancillary personnel, which can cause resentment and resistance.[102] Administrators need to actively involve staff in redefining the approach to care; which can be done in small group sessions.[102] Role clarity is important, and can be defined through sessions with nurses describing how tasks should get done, and what to delegate.[102] Teamwork is integral, as is fostering a team environment, and making sure there isn't an "us vs them" atmosphere. One strategy to address this is for registered nurses to act as nurse assistants for the day, or for nurse assistants to shadow registered nurses for a day, so they can live in each other's shoes.[102] Competencies of nursing assistants must be clear, and training to achieve these competencies needs to be provided. Teams members should respect and recognise the contribution each make according to their responsibilities, which shouldn't be overlooked – this can be achieved by rewards or a sincere thank you. Finally, systems should be put in place to ensure quality and to monitor feedback.[102]

One issue that may arise with the introduction of assistants is that as professional staff have difficulties limiting and defining their role, they have trouble delegating tasks to assistants, which results in the professional staff performing anything and everything.[103] A

recommendation by the authors was to clearly define the role of both levels of worker so that they can work together to provide care and understand each others' roles.[103]

Dentistry

Due to the oral health crisis existing in the United States, different models of the allied dental workforce have emerged to address shortcomings of the current workforce to provide greater access to oral healthcare. These were outlined in a report as the advanced dental hygiene practitioner (masters level education), the community dental health coordinator, and the dental health aide therapist. Each of these positions requires training from 18 months to two years, and has different preventative, treatment and restorative capacities. All of these models recognise the role of all members of the oral health team and focus on providing broader oral health care.[104]

Physiotherapy

One setting found the introduction of a physical therapy assistant improved patient outcomes remarkably in a critical care setting. In this setting, the assistant follows the plan of the physical therapist, and works closely with the patient's nurse as a member of the critical care team.[70] The work environment should be structured in such a way that the physiotherapist and the assistant work in close proximity to each other, so that the physiotherapist is available if the need for consultation arises, and they can remain in control of patient care.[4]

Occupational therapy

To promote teamwork between occupational therapists and assistants, and to facilitate appropriate utilisation of support personnel, the following recommendations were made in one article:[105]

- Supervision and creative partnerships should be provided as additional course content when introducing role delineation by educators.
- Educators should provide fieldwork opportunities to develop entry level supervisory skills.
- Occupational therapists should evaluate current tasks performed and determine how support personnel can be used.
- Assistants should identify and pursue areas for further development, effectively communicate role delineation between advanced and entry level assistants, and demonstrate their commitment to the profession.

One method identified in the systematic review to establish health assistants as a recognised delegated clinical role and promote their inclusion in models of care was collaboration during clinical learning. A model has been developed to provide occupational therapy and occupational therapy assistance students with the opportunity to develop a relationship. This model allows them to interact, work as teams and collaborate during education. After using this partnering model, it is expected that assistants and occupational therapists will be able to work more effectively with each other due to their past experiences.[106] In order to create an optimal working environment, and be able to deliver effective care to clients, a partnering relationship needs to be established between the occupational therapy assistant and occupational therapist.[106]

A qualitative study was performed to determine the factors that need to be addressed before extending the role of occupational therapy support workers. Five major factors were identified, these were to increase role clarity, lessen role threat, review organisational effectiveness, ensure clear delegation, and design and implement responsive training programs.[107]

Speech language therapy

The following essential factors were noted for increasing use of speech language therapy assistants: a need for adequate planning and supervision time, training to match assistant's abilities, awareness of clients to the difference in roles between assistants and speech language therapists, careful selection of client base to receive therapy from assistants, and

the danger of lessening intrinsic rewards for therapists. However, therapists may find it satisfying to help develop assistants' skills.[93]

Delegation

Delegation was highlighted as an important issue for professional staff when working with assistants, with appropriate and effective delegation able to promote the inclusion of assistants in models of care. Despite this, delegation and supervision are generally not very well understood,[9] and professionals may not be prepared to delegate tasks.[108, 109] Many new graduates particularly were not adequately prepared with the skills to delegate, and it was found that 'training to delegate skills' or use assistants effectively was at best scanty and mostly non-existent.[76] It is therefore pivotal to ensure that delegation is taught and practised by pre-entry health professional students, as it is often hard to hand over responsibility to another person.[4, 110] There are also issues with role confusion, which can result in ineffective delegation, causing the model of care to be less than effective.[102] When delegating tasks to assistants, health professionals need to take into account the training and competence of the assistant, the complexity of the task, supervision, and their own professional judgement.[9] Delegation frameworks have been developed to assist health professionals when deciding on the allocation of tasks to assistants, and may be a useful strategy to include assistants in models of care.[5, 9]

Nursing

A study found that a delegation exercise improved student's knowledge on delegation. The authors recommended that delegation be taught early in nursing curricula, and applied in classroom and clinical settings.[110] By teaching delegation early and preparing students to be ready to delegate when they enter the workforce, it may promote the inclusion of health assistants in models of care.

A survey found that following delegation by a licensed nurse to practice nurses, positive events occurred when there was routine observation, and negative events occurred when there was no direct observation. The authors acknowledged a need for delegation to be taught to the nurses in supervisory positions. This can take place in the classroom, at orientation or during ongoing education.[111]

One location used a teambuilding retreat as a way to integrate assistants into their units. At the retreat, groups were formed to plan care around a scenario, and they discussed delegation for appropriate personnel. Ground rules were established to build trust. Expectations of the roles were discussed, which were then shared. The retreat resulted in increased morale and respect amongst staff.[112]

The nursing assessment decision grid has been used to provide direction to the registered nurse when deciding whether or not to delegate a task, by allowing the nurse to evaluate total patient care needs.[108, 109] A study was performed to assess the effectiveness of the nursing assessment decision grid to teach delegation skills to registered nurses. Following exposure to the tool, a statistically significant increase resulted in the ability of registered nurses to identify nursing tasks and patient problems, and improve delegation decisions based on patient vignettes.[109] A delegation decision tool may be one strategy to promote the inclusion of health assistants in models of care, and to ensure they are utilised to their full potential.

Physiotherapy

Saunders (1996)[5] presented a functional model of delegation for physiotherapists to consider when delegating tasks to assistants, with the aim of producing benefits for patients and systems. The model presented follows a systematic approach, and is presented as a flow chart. The first step is to analyse the service needs and staff competencies. The next step is to establish levels of delegation, and the suitability of tasks to be delegated. The following step is to determine if there is a cost benefit in delegating the activity. Once this is done, teams need to be organised and staff trained in the tasks to be delegated, and plan how to

communicate the delegated tasks. Finally, the environment needs to be organised and the task undertaken.[4,5] Tasks that can be delegated are conceptualised as those which involve the use of movement controls and are skills based or rule based (such as ultrasound application), while physiotherapists perform tasks that require perceptual (mobilisation/manipulation), intellectual (diagnosing, planning treatment) and expertise skills (diagnosing uncommon conditions). This can relieve the physiotherapist from routine tasks and lead to job enrichment for both physiotherapists and physiotherapy assistants[4] In order to assist in the communication of delegation, performance aids, such as 'helper cards' can be provided to assistants, which have written instructions on them.[4]

Conclusion

There is an acknowledged need for changed models of care within health systems, including the expansion and substitution of roles for those at the assistant level. Despite this, there are barriers to incorporating assistants in models of care. These may include lack of clarity regarding roles, and negative perceptions of assistants by professionals. This may be due to the wide variety in the range of tasks and roles that assistants fill in current health systems across professions and areas of care. Strategies have been used to promote the inclusion of assistants in models of care, including education/training programs, communication tools, consultation with staff, and collaborative learning. Issues with delegation in models of care with assistants were also identified in the review, and it was found many professionals were inadequately prepared or did not have the skills to delegate tasks. To address this, education programs were conducted, and functional models of delegation created to assist professionals. Policymakers can, by introducing strategies such as those outlined above, address the barriers to incorporating assistants into models of care and ensure they are recognised as a delegated clinical role.

Recommendations for practice

From the included studies in the literature review component of this review for question 2, the following recommendations have been made, all of which are assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- The evidence suggests that a clear framework for delegation amongst staff coupled with education on 'delegation skills' can facilitate inclusion of assistants in models of care. (Level 4) (Grade B)
- The evidence suggests that communication mnemonics can facilitate necessary interaction between allied health assistants and allied health professionals. (Level 4) (Grade B)
- The evidence suggests that, in planning for the inclusion of health assistants in models of care, the variety of barriers and obstacles that exist in the workplace must be considered. (Level 4) (Grade B)

12. Literature Review on Question 3: Effective/appropriate strategies to promote consistency and standardisation of vocational training delivered to health assistants

The need to standardise

A common theme in the literature was the need to standardise the training provided to assistants.[79, 113] Currently, the training that assistants receive is often variable[52,74, 114] and in many areas assistants may receive little or no training. Costs of training and the time taken for training vary widely, and there is often no national regulation of training, despite support for this.[115] National vocational qualifications for assistants have received support as they provide recognition for previously demonstrated skills and commitment.[116] As consumers of healthcare, 'patients deserve to be served by a qualified and appropriately credentialed work force.'.[(p.116)117] Within nations, standardised training will enable qualifications to be transferable across states. This can currently act as a barrier to employment for those who have undertaken training in different locations. [118] In Australia, in an effort to promote consistency and national standardisation of VET delivered to health assistants, the Certificate III and IV in Allied Health Assistance has been developed. In the Australian VET sector, qualifications are provided based on either nationally endorsed competency standards or on standards developed by relevant professional, industry, enterprise or community groups.[17] These VET training packages offer a consistent and standard approach to training allied health assistants via mandatory components incorporating competencies, assessment and a predefined framework for qualification. National vocational qualifications for assistants have received support as they provide recognition for previously demonstrated skills and knowledge,[116] and they address the ideal that 'patients deserve to be served by a qualified and appropriately credentialed work force.'. [(p.116)117]

Despite the acknowledged need, there was minimal literature addressing strategies to promote consistency and standardisation of vocational training delivered to health assistants. Below is a narrative summary of this literature.

Pharmacy

Pharmacy technicians play an important role in supporting pharmacists, and it seems as if their role will keep expanding into the future. Due to the importance of their role, technicians must function 'in accordance with acceptable standards for education, training, certification, and regulatory oversight.'[(p.116)] A single standard for education, training and certification is necessary for technicians, as there are considerable flaws with having multiple accreditation standards, including: confusing the public, not ensuring minimum competencies, and not promoting delegation, which would allow pharmacists to spend additional time to deliver patient care.[117] When developing the standards for technicians, this needs to be performed in a not-for-profit environment by the pharmacy profession.[117]

Speech and language pathology

In the United States, although there are guidelines that have been developed regarding training, credentialing, using and supervising speech and language pathology assistants, there is discrepancy between states regarding the level of regulation and education for assistants, with some states not even allowing their use.[92]

Physiotherapy

A survey was conducted to determine the current utilisation of physical therapy support personnel in Canada. The survey identified that support workers received a minimal amount of on the job training. The authors recommended that standardised programs be established for support workers, with minimal education standards.[63] The frequency and quality of training for physiotherapy assistants varies, with most initial training being on the job. On-going training did occur in the UK, but varied from ad hoc in services to structured programs.[41]

Within Australia, the Australian Physiotherapy Council guidelines for physiotherapists working with assistants provide recommendations for education and training of assistants and aides, and also recommend a set of topics that needs to be included in education programs at a minimum.[10] These are: infection control, manual handling, basic medical terminology, emergency procedures, ethics, communication skills, and workplace specific skills/competencies.[10]

Occupational therapy

In the United States, training for occupational therapy assistants has moved from 12 week training programs to two year accredited college degrees or professional certificate program. Further education for occupational therapy assistants now exist in the form of career ladders, continuing education, developing specialty skills, or pursuing professional level degrees in occupational therapy. [81] Accreditation standards exist for occupational therapy assistant educational programs in the United States, with educational programs being granted an accreditation status based on the extent to which they comply with the standards.[119]

Strategies to maintain consistency

Nursing

For certified nursing assistants (CNAs) in nursing homes working in the United States there exist mandatory training requirements to become qualified for their job. This consists of 75 hours of initial training, 16 hours of supervised clinical training, and 12 hours of continual education annually. Some states require additional training to the figures named above. A survey was conducted to determine what the CNAs considered was required in their training, and where further training was needed. The authors concluded that the findings from the survey could inform policy makers, educators and providers to make changes to their training to address the needs of CNAs.[117]

Rehabilitation

In the UK, a national framework for therapy support worker education and development has been set up, which offers guidance for continuing professional development. This was created as a joint collaboration between the Chartered Society of Physiotherapists and the College of Occupational Therapists,[120] and can be used to standardise training programs.

Foundation degrees have been introduced as a strategy to address the need for a more standardised approach to education for support workers. Foundation degrees aim to provide students with 'a combination of the work skills, academic knowledge and transferable skills that employers require.'[(p.504), 52] The credit rating of the degree equals year 1 and 2 of undergraduate courses, providing 120 academic credits at level 1 and an additional 120 at level 2.[52] Foundation degrees, which are said to provide 'an ideal framework for the development of education for the assistant workforce.'[(p.505)] have a set of key features. These include: employer involvement, development of skills specific to the needs of the workplace, work based learning, credit ratings providing academic worth, progression within work or providing an opportunity to progress with further study, and being a degree in its own right (graduate qualification).[52]

In the United States, physical therapy assistant courses are accredited by the Commission on Accreditation in Physical therapy Education. To gain their license, physical therapy assistants must pass a national licensing exam, the National Physical Therapy Examination. A survey found that those who passed the exam were more likely from newer, public programs, with a higher ratio of clinical education. Curricula should therefore include adequate time for physical therapy assistants to meet required competencies.[121]

There are moves to standardise assessment in clinical education. One study described the development and testing of physical therapist and physical therapy assistant clinical performance instruments to create uniform processes and instruments to assess clinical performance of students.[122]

Midwifery

Training for midwifery support workers seems to be on an ad hoc basis. Uptake of national Vocational Qualification programs in the UK is 'patchy,' perhaps due to the focus of the awards not meeting the needs of maternity care. A project was conducted to 'assess the role of the support worker in maternity care and develop a training package in line with the government agenda of developing talents and lifelong learning.[(p.72),] The group identified the role of the midwifery care assistant, and developed a course dependent on their role. Not all aspects of the role were agreed upon; although there was consensus on most issues. A program was thus developed that provided a standardised generic training package.[87]

Speech and language pathology

Due to this variation in education and regulation, the American Speech-Language-Hearing Association has established criteria regarding the training and registration of assistants, and has an approval process for associate degree assistant technical training programs.[92] This national approval process will set a gold standard for programs to reach, which will send a clear message that there are certain standards that speech and language pathology assistants need to meet. In addition, having an approval process will strengthen the profession, and provide official recognition of assistants, with clearly defined roles. When doing fieldwork on-site, the program outlines 'specific ethical behaviours and applied skills to be developed.[(p.23)92,] The program will provide high quality, consistent training, providing credibility and expectations of high quality performance by speech language pathologist assistants.[92]

Conclusion

There is widespread agreement regarding the need to promote consistency and standardisation of vocational training delivered to health assistants. Despite this, there is a dearth of literature focusing on strategies to do so. However, there are promising signs, with different organisations creating guidelines, standards and accreditation processes for assistant training courses. In Australia, this is not so much of an issue, as standardisation of training has been introduced through the introduction of the Certificate III and IV in Allied Health Assistance.

Recommendations for practice

From the included studies in the literature review component of this review for question 3, the following recommendation has been made, which is assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- The evidence suggests that national standards allow recognition of qualifications and competencies associated with them across states. (Level 4) (Grade B)

13. Literature Review on Question 4: Effective/appropriate strategies to adapt vocational training programs to local contexts in healthcare

There was a lack of literature regarding effective or appropriate strategies to adapt vocational training programs to the local context in healthcare. Following is a summary of papers where educational courses and programs were implemented according to the unique context of the setting.

International examples

Iran has developed their own system of training for nurses. In addition to the registered nurse, there exists the associated nurse assistant (Komak Behyar), who provides basic nursing tasks following a short, 2-6 month vocational training course, to the nurse assistant (Behyar). The nurse assistant is trained through a one year curriculum if passing a competitive exam for entry, or a three year curriculum for first year high school students. In some areas, the Behyar are the primary nursing workforce.[123]

In North Carolina, there is a shortage of direct care workers, and high rates of turnover in these positions. There is also a significant projected need for future direct care workers which will not be met by current growth levels (as of 2004).[124] In an effort to address recruitment and retention issues, two new job categories were created: a medication aide and a geriatric nurse aide, which provide opportunities for career advancement for paraprofessionals. They have also established a voluntary program which provides incentives for completing training and agreeing to stay with their employers for certain time limits.[124]

An article outlined the success of an undergraduate program for occupational therapy support personnel which could be conducted by staff part-time whilst still employed. This program, developed in Bristol, was developed in part due to the national shortage of occupational therapists, and to meet local needs as well.[11] In Bristol, although there was a shortage in occupational therapists, there was no shortage of support personnel. The program, by encouraging support workers to become occupational therapists, would address the shortage by obliging the students to work in the region, and due to family and work ties, they would not be swayed to leave once qualified. This program has contributed to reducing the number of occupational therapy vacancies in the region.[11]

An article outlined the development of a training program for rehabilitation aides in Haiti, along with the successes, challenges and dilemmas that were encountered through the provision of this program.[125] The aim of the program was to address the need for long-term rehabilitative care for disabled persons within Port-au-Prince in Haiti, as there are not enough healthcare professionals to meet needs. The course consists of 6 months course work and 3 months of field experience. A survey of graduates found that improvements could be made to the course, including helping students find employment following graduation, lack of support from healthcare providers providing continued training, and a need for base nursing skill and first aid-education. The authors recommend that similar programs must be culturally sensitive and specific, provide continuing education and help create employment opportunities.[125]

An article outlined the development and delivery of a series of educational conferences for auxiliary maternity nurses in the Dominican Republic due to the high maternal mortality rate there.[126] This curriculum developed was previously didactic, and continuing education had no effect on changing quality of care. The new curriculum was participatory and dialogic, informed by empowerment education and adult learning methods. Following the program, there were positive behavioural changes on the participants. The findings of the study suggest that the education program may contribute to a reduction in maternal mortality.[126]

In North Dakota, which is a frontier state with urban communities spread over vast distances, those seeking mental health services are often required to travel considerable differences to access providers.[127] A project was established using natural caregivers and a train-the-trainer model to provide education to support workers, which promoted information in the community across the state. The train-the-trainer model appeared successful and was used due to the rural nature of the state and lack of specialists.[127]

An article describes the development and implementation of an occupational therapy assistant training course in Barbados.[128] The course was developed to meet the dire need for occupational therapy services, and was developed in the context of the eastern Caribbean region. The course was developed with a foreign consultant from an international organisation and a local professional, to create a course suited to the region. To do this, the following factors were taken into account; the course needed to be culturally appropriate, provided at a feasible cost, delivered with limited trainers, relevant to the job description, and independently functioning due to the limited number of trained occupational therapists.[128]

Australian examples

An article described the development of a curriculum for Aboriginal community health workers in remote South Australia. The aim was to develop a culturally oriented curriculum, and was therefore created in conjunction with aboriginal health workers, their teachers and communities.[129] Due to current views on Aboriginal health workers held by the Aboriginal community, where many are not trusted and undermine their abilities, the aim was to redefine their role, and generate appreciation for their functions. To do this, meetings were held over a nine month period, which were single-sex when discussing issues related to venereal disease and birth in deference to local cultural norms. Health workers were allowed to progress at their own pace. Teaching methods and content are designed to meet the needs of the health workers, which encourage Aboriginal involvement.[129]

A project report outlined the development and evaluation of a program aimed at training rural and remote therapy assistants in Western Australia. These therapy assistants deliver programs based on the direction of allied health professionals, and are used to deliver services to address the needs of rural and remote communities. The use of therapy assistants is seen as an effective strategy to improve access to allied health services in rural and remote areas, as they provide continuity of care and ongoing client management, build skills within the community, and work across a number of settings.[130] The training for therapy assistants in Western Australia is normally on the job, provided by supervising allied health professionals, which can place demands on their time. The course was developed to meet the needs for training based on a survey that had been distributed to both therapy assistants and allied health professionals. The training could be used as a credit towards a recognised qualification due to a partnership with a registered training provider. The training was developed to be delivered by videoconference and in other forms (such as CD-ROM) for those who could not attend teleconferences. The training consisted of stand alone packages, adapted for distance learning. Overall, there was a high level of attendance and high satisfaction with the program. This training reduced the work required for allied health professionals in their role as trainers. The authors conclude that this training approach is relevant for other health services who deliver similar models of delivery.[130]

Conclusion

Despite the need for evidence regarding appropriate and effective strategies to adapt vocational training programs to local contexts in healthcare, there was a lack of literature on this topic. However, from the few papers on this topic, it can be found that training does need to be contextualised at times for local contexts, and this may need to take into account (depending on the setting) population spread and rural health, cultural issues, developing countries, and local healthcare shortages.

Recommendations for practice

From the included studies in the literature review component of this review for question 4, the following recommendations have been made, both of which are assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- The evidence suggests that community and participant consultation can facilitate development and provision of VET programs that are appropriate to the local context. (Level 4) (Grade B)
- The evidence suggests that when contextualising programs for certain locations, population spread, cultural issues, and local healthcare needs all need to be taken into account. (Level 4) (Grade B)

14. Literature Review on Question 5: Effective/appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and health assistants

To ensure training is successful for allied health assistants in Australia, it is pivotal that it is relevant for the trainees and that both assistants and professionals recognise the importance of VET programs. Despite this, there was a lack of literature identified that addressed effective or appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and health assistants. Providing adequate recognition was highlighted as one strategy that was considered important in vocational training and identified in focus groups; this can incorporate recognition of prior learning and current competencies to increase the relevance of vocational training amongst allied health assistants.[9, 66, 131] An example of such recognition currently offered within the Australian setting exists within the VET sector.[9, 59]

It has also been found that professionals may not respect technical level education for assistants as a valued and effective part of learning,[65] despite the fact that the skill requirements of assistants are most efficiently and effectively taught at the technical level.[132] The assistant requires training related to the tasks they are to perform, with the professional checking competence and supervising the assistant in their development. To improve the reputation of vocational and technical level training programs, their content and depth should be clearly considered and carefully defined.[133] One strategy to increase the usefulness of training is to tailor the program to the needs of the service area,[134] and to increase relevance to the assistant, so that training should focus on the practical and not the just the theoretical component.[4]

Fieldwork or placement is an important part of any vocational program, and is where assistants and professionals transform academic learning into the requisite knowledge, skills, and attitudes for effective entry-level practice.[34] It is acknowledged that providing effective placement imbues students with the necessary learning experiences to be able to practice effectively once entering the profession.[34]

Strategies

Continuing Professional Development (CPD) is essential for all professionals, due to the demand on healthcare professionals to critically review their skills and knowledge and continuously keep up to date with changes in practice.[135] A whole range of activities contribute to CPD, including in service training, on the job day to day experiences, and courses to name but a few.[135] Some organisations mandate CPD and how it can be accrued.[135] In-service training is one of the most important forms of CPD, and for many physiotherapists, is a routine part of their week.[135] Continuing professional development may also be considered for assistant staff.

Imperative in the development of an education course for support workers is having defined roles and tasks that they will fulfil so that the course can contain the requisite knowledge.[131] For occupational therapy support workers, their role has expanded and developed over time, although it still varies amongst different settings. The Higher National Certificate, which is an example of competence-based vocational education in the United Kingdom for occupational therapy support workers takes account of individual learning styles and various approaches in delivery. This course encompasses the concept of learning by doing. This involves the learners and their experiences, the integration of theory to practice and the provision of credit and recognition.[131]

Different studies have assessed the use of certain techniques to improve training for mental health paraprofessionals and assistants.[136, 137] One study found that the use of modelling-role playing enhanced paraprofessionals counselling skills,[137] whilst another found that experiential techniques (such as role plays and simulations) are efficacious learning methods for nursing staff in a nursing home.[136] Adult learning techniques may be appropriate strategies to increase the relevance and satisfaction of participants in training programs.[138,139] Role playing during in-services is a hands on, experiential learning technique that can be used to improve retention amongst adult learners. Role playing was well received by certified nursing assistants in one aged care facility and was successful in addressing the outcomes of its training program, with empathy for the resident enhanced.[138] In-services may be repetitive and monotonous for both the attendees and presenter. Mannequins were found to be useful to encourage participation of learners and was responded to positively by home health aides.[139]

There have been a number of studies that focused on collaborative fieldwork between assistants and professionals during their education.[13, 24, 25] The aim of these courses is to prepare assistants and professionals to work together following training, and to gain a better understanding of each other's roles. This strategy resulted in benefits in all three studies, and may be considered as a way to increase the relevance of training amongst allied health professionals and health assistants.[13, 24, 25]

A study was conducted to determine which interventions entry level occupational therapist and occupational therapy assistants were performing in order to determine what the implications are for fieldwork education.[34] From this study, four guiding principles were highlighted when planning occupational therapist and occupational therapy assistant fieldwork. The first was not to automatically assume that the setting of the fieldwork will provide a wide variety of fieldwork experiences. The second recommended each student being granted the opportunity to develop entry level competencies in the core interventions used across the sites with high frequency. Third, careful consideration regarding placement locations is required, as some may provide replication of experiences, whilst others may allow divergent experiences. Both of these may be valued. Finally, fieldwork coordinators should assess each site prior to fieldwork to ensure appropriate professional development.[34]

One article described the use of a postal survey to evaluate the relevance of an allied health assistant training course. The respondents noted that the skills they learnt during the course were utilised regularly, and their training was relevant to their responsibilities at work, their relationships with clients, and to their usefulness of work.[140] By performing surveys of training needs and developing educational programs based on the results, the relevance of training may be increased.[130]

Conclusion

To ensure training for allied health assistants is successful, it is pivotal that its relevance and importance is understood by allied health professionals and allied health assistants. Different strategies were identified in the literature to increase the relevance of training, which can be considered by policy makers. Strategies include use of adult learning techniques, recognising prior learning, ensuring relevance to future work, surveying entry level practice and designing training based on this, collaborative learning, and continuing professional development. Many of these strategies are already being addressed in the Australian VET sector.

Recommendations for practice

From the included studies in the literature review component of this review for question 5, the following recommendation has been made, which is assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation (Appendix 6).

- The evidence suggests that training should be mostly practically oriented and as relevant as possible to the associated profession of the health assistants, and utilise adult learning techniques. (Level 3) (Grade B)

15. Summary and conclusions

This review commissioned by Queensland Health, aimed to summarise the Australian and International evidence regarding effective/appropriate strategies for the clinical education and training of allied health assistants.

The review was undertaken during April-May 2011, and included 19 studies in the systematic component of the review. A large number of studies were identified that did not meet the inclusion criteria from the systematic component of this review, and were included in a literature review.

Overall, there was a significant lack of literature for all of the questions in the review, and that which was identified, was of generally low quality. Despite this, a meta-synthesis was able to be performed for question 2, providing a unique perspective on the role of health assistants and strategies to include them in models of care.

Notwithstanding the limitations of the evidence, this review provides a comprehensive discussion surrounding the issues of clinical education and training for health professionals, and information contained in both the systematic and literature review components may be considered to inform policy and practice.

Five questions specific questions were addressed in the review and the results for each question are summarised below along with identified recommendations for practice[1] from both the systematic and literature review components of this review.

Question 1: What are effective/appropriate strategies to increase/promote recruitment and retention of HAs in vocational training programs?

For question 1, there was some evidence, albeit limited, regarding motivations and barriers to the uptake of training programs identified in the literature review component. Common barriers to recruitment were noted, which included costs associated with training, lack of time, distance issues and lack of recognition for training. Common barriers to retaining students included academic course content and the fast pace of training. Motivating factors for undertaking and staying in training included the desire to progress professionally, guarantee of employment following training, the ability to earn and learn, flexible course times, options to progress to professional training, and introducing key skills from the beginning. Although the information presented did not discuss strategies as such, it can be used to inform strategies to increase/promote recruitment and retention of health assistants in vocational training programs.

Recommendations for practice

- The evidence suggests that the distribution of information highlighting the health assistant role and its career potential can increase recruitment to allied health assistant VET programs. (Level 4) (Grade B)
- The evidence suggests that academic support, program flexibility and program applicability all increase the attractiveness of training programs for participants. (Level 4) (Grade B)
- The evidence suggests that financial reimbursement measures and guaranteed employment upon completion of training may address the deterrent to allied health assistant training imposed by costs. (Level 4) (Grade B)

[1] Recommendations have been assigned a grade and a level of evidence according to the Joanna Briggs institute Levels of Evidence and Grades of Recommendation. Grade A recommendations have 'strong support that merits application,' whilst Grade B recommendations have moderate support that warrants consideration of application.

Question 2: What are effective/appropriate strategies to establish the HA role as a recognised delegated clinical role and promote their inclusion in models of care?

The majority of the studies included in both the systematic review and the literature review components of this project were identified for question 2. In the systematic review, strategies to promote assistant inclusion in models of care included empowered work teams, collaborative learning, analysing and redesigning the assistant role and educational courses/workshops. The literature review identified other issues of importance, such as delegation, barriers to inclusion, and educational needs of assistants and professionals.

Analysis of the included qualitative studies resulted in four meta-synthesised findings. These meta-syntheses addressed the relationship between assistants and professionals, what affects the assistant's role and how it is perceived, training programs for assistants and professionals, and accountability and supervision concerns. Together, these findings can be used to provide guidance when educating assistants and health professionals, and when preparing to incorporate assistants in models of care.

Recommendations for practice

- Where possible, undergraduate allied health professionals and allied health assistants in training should have the opportunity to interact with each other, either in the classroom or in the clinical setting, as this has been shown to result in collaborative relationships. (Level 3) (Grade B)
- Educational courses/workshops for assistants and professionals regarding working with assistants have been shown to improve collaboration and may be recommended. (Level 3) (Grade B)
- Empowered assistant work teams are one strategy that has resulted in improved practice for nursing assistants, and may be considered. (Level 3) (Grade B)
- Prior to introducing assistants, it may be useful to analyse and design their role in the setting, in consultation with staff, as this has been shown to result in positive outcomes in nursing assistant roles. (Level 3) (Grade B)
- Relationships between assistants and professionals are dependent on a range of factors, all of which need to be considered when incorporating assistants in models of care. (Level 1) (Grade A)
- A number of different factors influence the assistant role, and policymakers need to be aware that people perceive the role and need for practice change differently. (Level 1) (Grade A)
- The preparedness of assistants to undertake training programs needs to be considered when running training courses; as do the characteristics of effective training programs. (Level 1) (Grade A)
- Due to the concerns of health professionals regarding responsibility in models of care using assistants, there is a need for appropriate supervision and mentoring of assistants in these models. (Level 1) (Grade A)
- The evidence suggests that a clear framework for delegation amongst staff coupled with education on delegation skills can facilitate inclusion of assistants in models of care. (Level 4) (Grade B)
- The evidence suggests that communication mnemonics can facilitate necessary interaction between allied health assistants and allied health professionals. (Level 4) (Grade B)
- The evidence suggests that, in planning for the inclusion of health assistants in models of care, the variety of barriers and obstacles that exist in the workplace must be considered. (Level 4) (Grade B)

Question 3: What are effective/appropriate strategies to promote consistency and standardisation of vocational training delivered to HAs?

For question 3, there was widespread agreement regarding the need to promote consistency and standardisation of vocational training delivered to health assistants. Despite this, there was a significant lack of literature focusing on strategies to accomplish consistent or standardised training. However, there were promising signs, with different organisations creating guidelines, standards and accreditation processes for assistant training courses, and the two studies included in the systematic review expounded on how standards could be developed and tested, or generated from practice. These findings may be used to provide guidance when conducting strategies to promote consistency and standardisation of vocational training for health assistants.

Recommendations for practice

- There is an acknowledged need for consistency and standardisation of vocational training programs nationally for health assistants, and programs should be designed as such. (Level 4) (Grade B)
- The evidence suggests that national standards allow recognition of qualifications and competencies associated with them across states. (Level 4)

Question 4: What are effective/appropriate strategies to adapt vocational training programs to local context in healthcare?

For question 4, there was limited evidence supporting the need for appropriate and effective strategies to adapt vocational training programs to local contexts. From the few papers on this topic, it appears that training need to be contextualised for local contexts, and this may need to take into account (depending on the setting) population spread and rural health, cultural issues, developing countries, and local healthcare shortages.

Recommendations for practice

- The evidence suggests that community and participant consultation can facilitate development and provision of VET programs that are appropriate to the local context. (Level 4) (Grade B)
- The evidence suggests that when contextualising programs for certain locations, population spread, cultural issues, and local healthcare needs all need to be taken into account. (Level 4) (Grade B)

Question 5: What are effective/appropriate strategies to increase the relevance and understanding of vocational training amongst allied health professionals and HAs?

For question 5, different strategies or points relating to increasing the relevance of vocational training amongst allied health professionals and assistants were identified in the literature. These included the use of adult learning techniques, ensuring relevance to future work, surveying entry level practice and designing training based on this, collaborative learning, and continuing professional development. The one study included in the systematic review highlighted components of a training program that were either well received or not. These findings may be able to provide guidance to increase the relevance and understanding of vocational training amongst allied health professionals and assistants.

Recommendations for practice

- Different characteristics of training may be preferred or be more relevant for health assistants in training. Training should be designed in order to be as relevant as possible for health assistants. (Level 3) (Grade B)
- The evidence suggests that training should be mostly practically orientated and as relevant as possible to the associated profession of the health assistants, and utilise adult learning techniques. (Level 3) (Grade B)

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17. Appendices

Appendix 1: Initial search in Medline using Ovid

1 Allied Health Personnel/ or allied health.mp. or Allied Health Occupations/
2 physical therapy.mp. or "Physical Therapy (Specialty)"/
3 "Physical Therapy (Specialty)"/ or physiotherapy.mp.
4 "Physical Therapy (Specialty)"/ or physical therapist.mp.
5 "Physical Therapy (Specialty)"/ or physiotherapist.mp.
6 nursing.mp. or Nursing/
7 nurse.mp. or Nurses/
8 occupational therapy.mp. or Occupational Therapy/
9 Occupational Therapy/ or occupational therapists.mp.
10 Podiatry/ or podiatrists.mp.
11 podiatry.mp. or Podiatry/
12 speech pathology.mp. or Speech-Language Pathology/
13 Speech-Language Pathology/ or Speech Therapy/ or speech pathologists.mp.
14 Dietetics/ or dietitian.mp.
15 dietetics.mp. or Dietetics/
16 nutritionist.mp.
17 Pharmacists/ or pharmacists.mp.
18 Pharmacy/ or pharmacy.mp.
19 Orthopedics/ or orthotists.mp.
20 prosthetists.mp.
21 Radiography/ or radiographers.mp.
22 Podiatry/ or chiropodists.mp.
23 nurse aide.mp. or Nurses' Aides/
24 Nurses' Aides/ or assistants in nursing.mp.
25 dental assistants.mp. or Dental Assistants/
26 support worker.mp.
27 Psychiatric Aides/ or Pharmacists' Aides/ or Nurses' Aides/ or aides.mp.
28 helpers.mp.
29 helper.mp.
30 Health Education/ or Education, Nursing, Graduate/ or Education, Dental, Graduate/ or Education, Predental/ or

Education, Nursing, Associate/ or Competency-Based Education/ or Education, Nursing, Baccalaureate/ or Education, Public Health Professional/ or Education, Nursing/ or Education, Premedical/ or Education, Pharmacy, Graduate/ or Education, Professional/ or Education, Nursing, Diploma Programs/ or Education, Medical, Undergraduate/ or Education, Pharmacy, Continuing/ or Education, Graduate/ or Education, Special/ or Education, Medical/ or education.mp. or "Education of Mentally Retarded"/ or Area Health Education Centers/ or Education, Medical, Graduate/ or Education, Pharmacy/ or Education, Professional, Retraining/ or Education, Dental, Continuing/ or Nursing Education Research/ or Education/ or Education, Distance/ or Vocational Education/ or Education, Medical, Continuing/ or Education, Nonprofessional/ or Education Department, Hospital/ or Education, Continuing/ or Health Education, Dental/ or Education, Nursing, Continuing/ or Education, Dental/
31 training.mp. or Inservice Training/
32 vocation.mp. or Occupations/
33 Learning/ or learning.mp. or Problem-Based Learning/

34 instruction.mp. or "Instructional Films and Videos"/

35 Remedial Teaching/ or Teaching Rounds/ or Hospitals, Teaching/ or Teaching Materials/ or Teaching/ or teaching.mp.

36 curriculum.mp. or Curriculum/

37 curricula.mp. or Curriculum/

38 enrollment.mp.

39 enrolment.mp.

40 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 (818332)

41 assistant.mp. or Ophthalmic Assistants/ or Dental Assistants/ or Pediatric Assistants/

42 model of care.mp.

43 models of care.mp.

44 pathway.mp.

45 Personnel Delegation/ or Delegation, Professional/ or delegation.mp.

46 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22

47 aid$.mp.

48 Home Health Aides/ or Psychiatric Aides/ or Community Health Aides/ or Pharmacists' Aides/ or Nurses' Aides/ or aide.mp.

49 23 or 24 or 25 or 26 or 27 or 28 or 29 or 45 or 48

50 41 or 49

51 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 42 or 43 or 44

52 46 and 50 and 51

53 limit 52 to english language

Additional search following inclusions to the search strategy after feedback.

54 community rehabilitation assistant.mp.

55 Community Health Aides/

56 community health aides.mp. or Community Health Aides/

57 education.mp. or Education/ or Vocational Education/

58 training.mp.

59 vocation.mp.

60 Learning/ or learning.mp.

61 instruction.mp.

62 Teaching/ or teaching.mp.

63 curriculum.mp. or Curriculum/

64 curricula.mp. or Curriculum/

65 enrolment.mp.

66 enrollment.mp.

67 models of care.mp.

68 pathway.mp.

69 role development.mp.

70 role redesign.mp.

71 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70

72 56 and 71

73 69 or 70

74 Psychiatric Aides/ or Pharmacists' Aides/ or Nurses' Aides/ or aide.mp.

75 assistant.mp. or Ophthalmic Assistants/ or Dental Assistants/

76 support worker.mp.
77 helper.mp.
78 Personnel Delegation/ or Delegation, Professional/ or delegation.mp.
79 74 or 75 or 76 or 77 or 78
80 73 and 79

Appendix 2: Critical Appraisal Instruments

JBI Critical Appraisal Checklist for Experimental Studies

JBI Critical Appraisal Checklist for Randomised Control / Pseudo-randomised Trial

Reviewer _____ Date _____

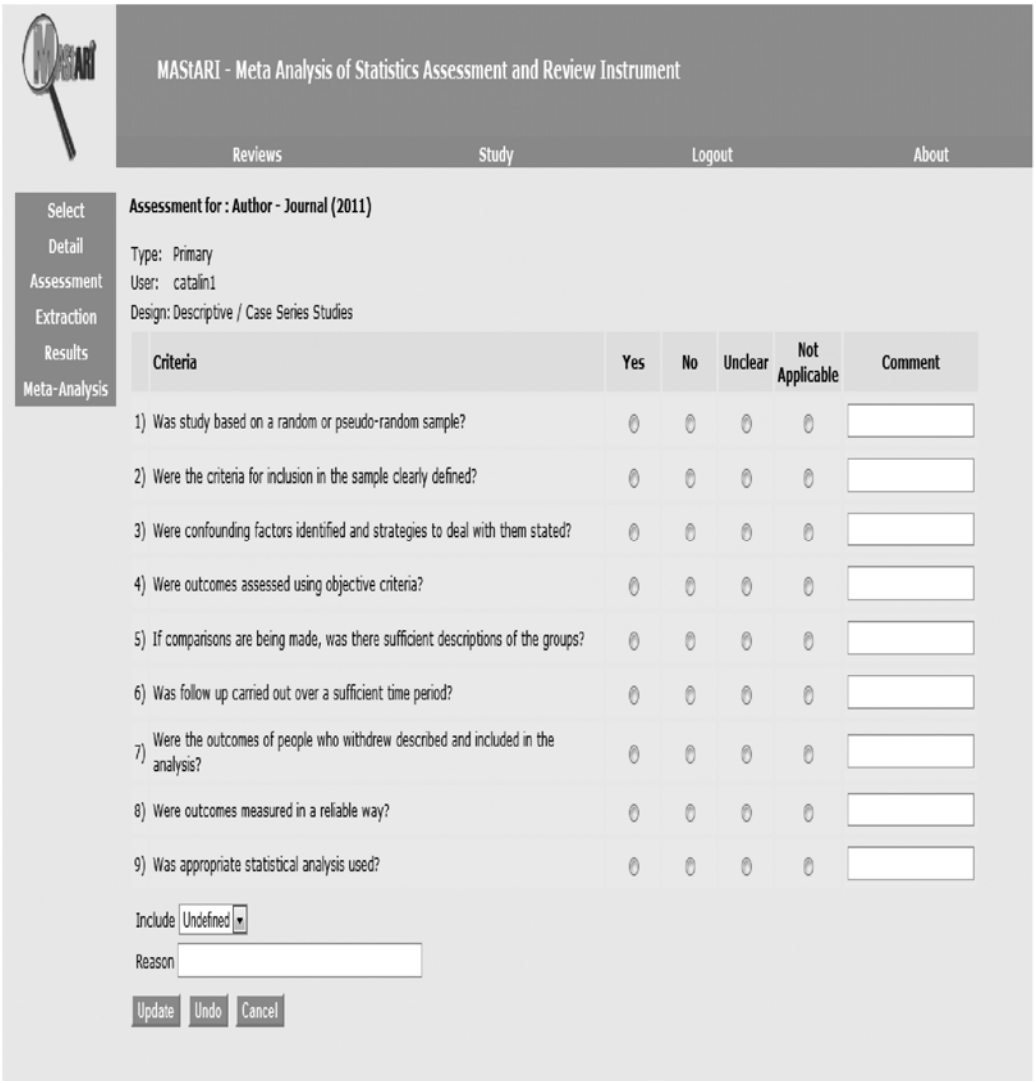
Author _____ Year _____ Record Number _____

	Yes	No	Unclear	Not Applicable
1. Was the assignment to treatment groups truly random?	☐	☐	☐	☐
2. Were participants blinded to treatment allocation?	☐	☐	☐	☐
3. Was allocation to treatment groups concealed from the allocator?	☐	☐	☐	☐
4. Were the outcomes of people who withdrew described and included in the analysis?	☐	☐	☐	☐
5. Were those assessing outcomes blind to the treatment allocation?	☐	☐	☐	☐
6. Were the control and treatment groups comparable at entry?	☐	☐	☐	☐
7. Were groups treated identically other than for the named interventions	☐	☐	☐	☐
8. Were outcomes measured in the same way for all groups?	☐	☐	☐	☐
9. Were outcomes measured in a reliable way?	☐	☐	☐	☐
10. Was appropriate statistical analysis used?	☐	☐	☐	☐
	☐	☐	☐	☐

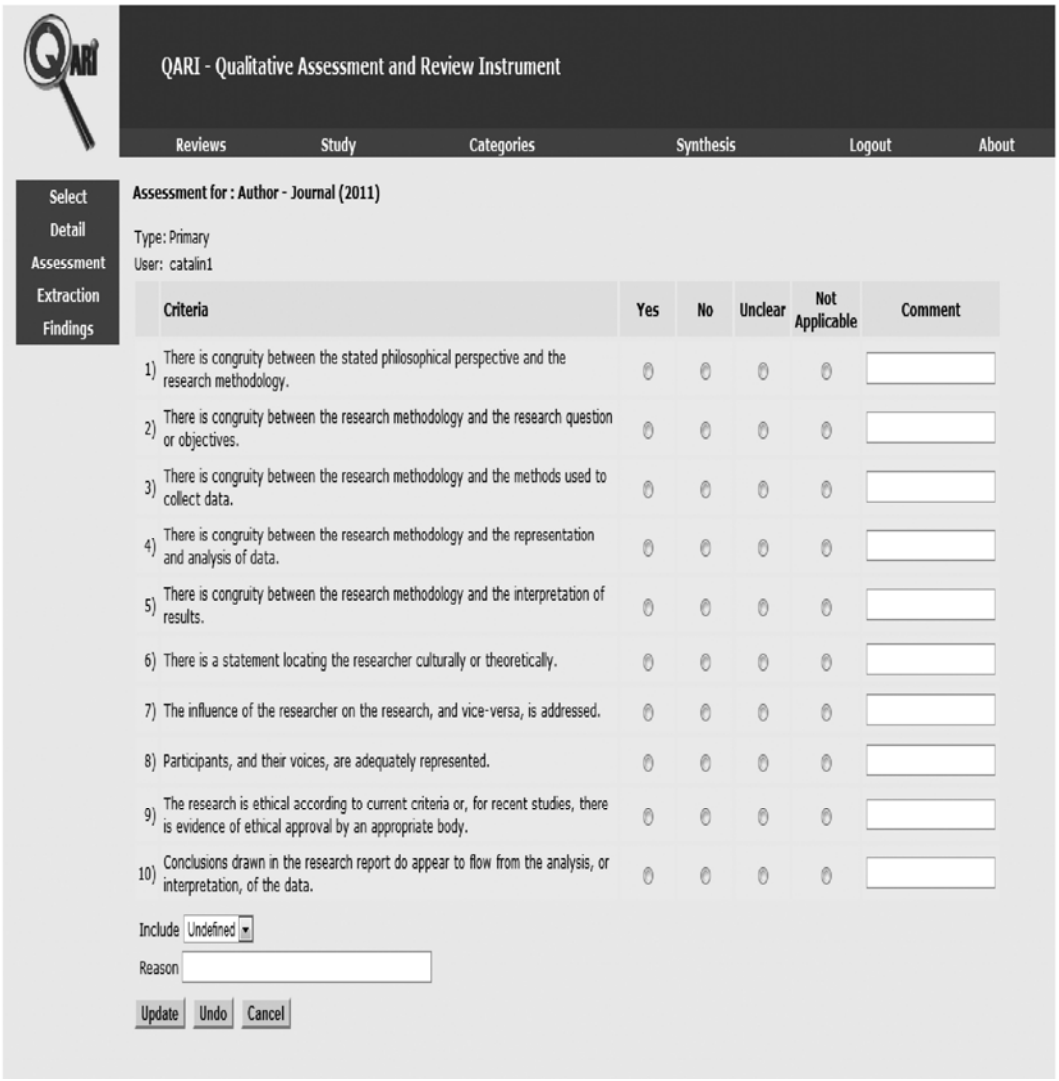
Overall appraisal: Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)

JBI Critical Appraisal Checklist for Descriptive/ Case Series



JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research



Appendix 3: Data Extraction Instruments

JBI data extraction form for experimental/observational studies

JBI Data Extraction Form for Experimental / Observational Studies

Reviewer _____ Date _____

Author _____ Year _____

Journal _____ Record Number _____

Study Method

RCT	☐	Quasi-RCT	☐	Longitudinal	☐
Retrospective	☐	Observational	☐	Other	☐

Participants

Setting

Population

Sample size

Group A _____ Group B _____

Interventions

Intervention A

Intervention B

Authors Conclusions:

Reviewers Conclusions:

Study results

Dichotomous data

Outcome	Intervention ( ) number / total number	Intervention ( ) number / total number

Continuous data

Outcome	Intervention ( ) number / total number	Intervention ( ) number / total number

JBI QARI Data Extraction Form for Interpretive & Critical Research

Reviewer _____ Date _____

Author _____ Year _____

Journal _____ Record Number _____

Study Description

Methodology

Method

Phenomena of interest

Setting

Geographical

Cultural

Participants

Data analysis

Authors Conclusions

Comments

Complete Yes ☐ No ☐

Findings	Illustration from Publication (page number)	Evidence		
		Unequivocal	Credible	Unsupported

Extraction of findings complete Yes ☐ No ☐

Appendix 4: Summary of quantitative studies included in Question 2

Consequences of Empowered CNA Teams in Nursing Home Settings: A Longitudinal Assessment[32]

Yeatts and Cready (2007)[32] performed a multi-method, pre-test/post-test design including qualitative analysis to determine the effects of empowered certified nursing assistant (CNA) work teams within nursing home settings in Texas. Empowered work teams consist of a group of employees with similar roles and titles, with characteristics of the teams including members taking on supervisory responsibility, and workers are 'empowered to make decisions about some aspects of their work and recommendations about others.'(p. 324)[32] Other titles for empowered work teams include self-directed teams, autonomous work groups, and self-managed work teams. The study used a non-equivalent control design, where in five nursing homes CNA empowered work teams were established as the experimental group; whilst in five comparable nursing homes the CNAs were treated as the control group. Self-administered questionnaires that measure employee empowerment using a Likert-type scale ratings were used to collect data. Qualitative approaches included observations of team meetings, examination of meeting summaries, and examination of written weekly responses from nurse management to the teams. The results found that there was increased CNA empowerment, improvements in CNA performance, improved delivery of resident care and choices, improved procedures, increased cooperation between nurses and CNA, improved coordination, and possibly reduced turnover of staff. Work attitudes were mixed regarding the empowered work teams.[32] The strategy of using empowered work teams maybe one way to promote the inclusion of health assistants in models of care.

Collaboration Between Physical Therapists and Physical Therapist Assistants: Fostering the Development of the Preferred Relationship Within a Classroom Setting15

Plack et al. (2006)[15] performed a mixed methods study to evaluate a model that fosters the development of a preferred relationships between physical therapists and physical therapist assistants in a classroom setting. The study used pre-test/post-test questionnaires and focus groups as a way to collect quantitative and qualitative data respectively. The study consisted of 34 first year physical therapist students and 21 second year physical therapist assistants. Also included for comparison were 24 second and 22 third year physical therapist assistants, who did not partake in the same collaborative course with assistants as the first year students. Two focus groups consisting of 6 assistants and 5 physical therapists respectively were conducted. The course that the first year physical therapists undertook included three 2-hour sessions. The first session covered various aspects regarding assistants such as their role, delegation and the preferred relationship between therapists and assistants. The second session was between the researchers and the assistants, as they discussed what would be delivered to the physical therapist students in the final session, which was a collaborative experience between physical therapist students and assistant students. Results showed that for the first year physical therapist assistants, there was a significant difference between pre-test and post-test scores. The results of the qualitative component confirmed that the learning experience was valued. Qualitative findings also included assistants students found it as a satisfying experience, and both groups of students suggested continuation of the course, stating that it had 'enhanced appreciation for the preferred relationship.'(p.3)[15] The authors conclude that the instructional model is an effective method to teach physical therapist assistant students about assistants and it provides a basis for forming collaborative relationships.[15] The strategy of using classroom sessions to teach physical therapists regarding assistants, and then to have them collaborate in a session whilst still learning, can be considered an effective and appropriate strategy to establish the health assistant role as a recognised delegated clinical role and promote their inclusion in models of care.

Redesigning the RN and NA roles [31]

Gould et al. (1996)[31] conducted a survey following a redesigning of the registered nurse and nurse assistant roles. The Nursing Administration Council, who developed the new system of nursing and care delivery, set goals for reorganising care delivery, and sought input from staff, including a survey. Policies were then drafted, one giving guidance regarding nursing observations and delegation, and another regarding educational processes for developing and maintaining nursing assistants. Nursing assistants were then educated using a competency based approach for all the tasks or skills that they could perform. A survey was conducted following the change and the results were positive, with concerns for quality of care decreased, improvement in patient care and satisfaction, staff satisfaction improvement, nurses had more time, and improved teamwork. Staff overtime was also recorded and a decrease in overtime was found for most units. By analysing and redesigning the role of the assistant, a more effective model of care may be able to be developed.[31]

Towards healthy professional-client relationships: the value of an inter-professional training course [20]

Fronek et al. (2009)[20] performed a quantitative and qualitative analysis of an inter-professional training course throughout Queensland, Australia to promote healthy professional-client relationships. The one day course was entitled Professional Boundaries for Health professionals, and included four topics areas: professional boundaries, ethical decision making, rigid relationships, and unique issues for community settings, rural and other small communities. The 109 participants included a range of health care professionals and assistants across seven different sites working in various areas. The quantitative evaluation consisted of a questionnaire. Open-ended questions were used to collect qualitative data regarding the course, and thematic analysis was sued to analyse this. The course was rated as very good by 31.9% of the 109 participants, and 68.1% rated it as excellent. It is thought that the effectiveness of this training will help foster collaborative relationships between professionals and paraprofessionals. The authors conclude that delivery of inter-professional training courses for professional boundary training is supported by evidence of the positive evaluations, and the consequences of professional boundary violations.[20] Courses such as this may help define boundaries between assistants and professionals, and improve collaboration in models of care.

The integration of unlicensed assistive personnel using an “expanding our skills” workshop [30]

Clayworth (1997)[30] conducted before and after study assessing the effects of a education program entitled ‘Expand our skills workshop’ on a range of statements in a questionnaire. The workshops consisted of a pre-workshop questionnaire, distribution and review of a role clarification tool, and a delegation exercise and further discussion, followed by a post-workshop questionnaire. The aim of the workshop was to ‘facilitate the use of obstetric technicians in a large labour and delivery unit’[(p.243)30]. Multiple workshops were conducted over three weeks, with 79 completed post-workshop questionnaires. Following the workshop, there were a wide range of improvements in the questionnaire responses. More participants felt as if they understood the role of obstetric technicians more, and there were more nurses confident about their delegation skills. The authors conclude that an educational program for nurses can increase the likelihood of success when implementing a nurse assistant program.[30] A workshop such as the one described in this article may be useful to facilitate the inclusion of assistants in models of care, and improve the reception of the introduction of assistants by professional staff.

Evaluation of the implementation of Assistant in Nursing workforce in haemodialysis units [29]

Chow and Migeul (2010)[29] conducted a before and after survey evaluation following the introduction of assistants in nursing in Sydney, Australia, in a haemodialysis units at a major tertiary Area Health Service. The primary outcome measure was nurse’s attitudes and satisfaction with the organisation of care, with secondary outcome measures including incidence of patient and nurse adverse outcome events across the units. A baseline survey was conducted amongst nurses, followed by an education session to prepare staff for the introduction of assistants in nursing. A follow up survey was conducted six months following

the implementation of the assistants in nursing. For the baseline survey, 52 nurses responded, with 33 responding on the follow up survey. From the results of the follow up survey, it was found that nurses acknowledged they coped well with the introduction of assistants, as would other staff. It was also found that less people disagreed that their workload would increase. There was also a small difference in the rate of clinical incidents following the introduction of assistants. The authors conclude that the research presented 'unique data about the effects of skill mix changes on nurses' attitude to organisational change and patient outcomes.'[(p.490)29] This study describes the introduction of a new model of care and staff reactions to it, which can help inform future projects.

Getting a foot in the door: Can expanding the role of podiatry assistant improve access to public podiatry services? [28]

Bergin (2009)[28] performed a before and after evaluation pilot study to measure the effects of delegating tasks to a qualified podiatry assistant. Outcomes of the project included clients seen, change in podiatry hours, change in waiting times, adverse events and patient satisfaction. Workshops were conducted to produce a service map and to identify gaps in current services, with additional workshops conducted to define the role of assistant and the required skills set and training needs. The role of podiatry assistant was then implemented. The results found that the assistant saved 40 hours per month, through the allocation of non-clinical tasks such as sterilisation of instruments and equipment. Waiting periods were reduced by ten weeks (from 12 to 2). The authors conclude that 'the findings of this pilot have implications for improving affordability and accessibility of footcare services to a significant proportion of the community and reducing the burden on current community based services.'[(p.45)28] The study displays how a podiatry assistant can be incorporated into models of care with positive outcomes.

Appendix 5: Summary of qualitative studies included in Question 2

Towards healthy professional-client relationships: The value of an inter-professional training course [20]

Fronek et al. (2009)[20] performed a quantitative and qualitative analysis of an inter-professional training course throughout Queensland, Australia to promote healthy professional-client relationships. The one day course was entitled Professional Boundaries for Health professionals, and included four topics areas: professional boundaries, ethical decision making, rigid relationships, and unique issues for community settings, rural and other small communities. The 109 participants included a range of health care professionals and assistants across seven different sites working in various areas. Open-ended questions were used to collect qualitative data regarding the course, and thematic analysis was used to analyse the data. The authors concluded that delivery of inter-professional training courses for professional boundary training is supported by evidence of the positive evaluations, and the consequences of professional boundary violations.[20] The findings of the study are listed below.

Finding1	**Teaching methods**
Illustration	The intimacy of the group and the practical example, made people think and exchange ideas. page 24 The hands on activities really cemented the information given. page 24
Finding2	**Ethical decision making**
Illustration	I really enjoyed this workshop today, it really makes you stop and think about the way you handle situations not only at work but also in your own life, still unsure about whether some things are appropriate or not, while there are not always clear cut black and white answers to some of these situations, I feel I now have the tools and knowledge to do the right thing. page 24
Finding3	**Supervision**
Illustration	There is a need for supervision opportunities; will encourage supervision with all staff; need to introduce into the orientation; make the education compulsory; will support staff more. page 24
Finding4	**Critical reflection**
Illustration	I enjoyed the opportunity to self analyse; it made me more aware of my own obligations, to analyse more, be more aware of own thoughts, reactions, feelings and how this impacts on work . . . I will stop and think; recognize my own ethics and values may or will impact on others. page 25
Finding5	**Separation from the workplace**
Illustration	Some participants indicated they were concerned about their absence from the workplace for the duration of the one-day training workshop…Time spent away from work based responsibilities was perceived by a number of participants. Participation in training, though highly valued, was seen of lesser importance against the competing priorities necessitated by those work-based responsibilities. page 25

Role development in health care assistants: The impact of education on practice [21]

Hancock et al. (2005)[21] conducted a qualitative, inductive study using semi-structured interviews to determine the impact of an educational health care assistant development programme on care delivery and the role of the healthcare assistant. The study was split in two parts; part one, which included three health care assistants, 24 of their colleagues and nine patients, aimed to evaluate the impact of the health care assistant development programme. Part two, which consisted of twelve healthcare assistants who did not participate in the development programme, aimed to ascertain their current and desired roles, barriers to the new roles, and assess their preparedness to attend the development programme. The authors concluded that the development programme had a positive influence on the role of the healthcare assistant, and that there is a need to prepare for the restructuring of roles. The findings from the study are listed below.

Finding1	**Changes to practice that occurred as a result of the programme**
Illustration	'There was an overriding sense of a transition from the execution of tasks to the provision of a more holistic approach to care' page 492-493
Finding2	**Variations in practice within and between wards/departments**
Illustration	Local need and decisions about the HCAs roles affected the skills they performed both prior to and following the HCA Development Programme. The HCAs spoke of the difficulty they encountered, and frustrations they experienced as a result of differences in role between areas. At least to some extent, their role was affected by that of the qualified staff… HCA1 learnt and applied phlebotomy to practice, HCA2 was learning the skill but was not competent to practise at the time of the study. HCA1 was in the process of learning about heart manual delivery. HCA1 learnt and applied troponin testing and HCA2 learnt and applied pin site dressings. These changes do not provide a full portrayal of the impact of the HCA Development Programme, as they do not demonstrate improvements or changes in the way that care was delivered. page 493
Finding3	**Factors influencing the application of knowledge and skills gained from the HCA Development Programme into practice**
Illustration	There were a number of factors that affected the HCAs' ability to apply their knowledge and skills. page 493
Finding4	**Reactions by HCAs to role development**
Illustration	While it was apparent that the HCAs had had some initial concerns about changes to their role, the completion of the programme resulted in a sense of satisfaction and achievement. page 493

Finding5	**Responsibility**
Illustration	The HCAs viewed the increased responsibility that came with their role development as part of their new role. Any concerns were accompanied by their acceptance of responsibility to their own level, and a sense of reassurance about the back-up provided by qualified staff. Responsibility appeared significant to the HCAs' colleagues' perceptions of the role development. They voiced positive views, as well as concerns about the consequences of taking responsibility for care provided by the HCAs. They also expressed some concerns about the potential impact of the increased responsibility on the HCAs themselves. page 493-494
Finding6	**Patient dependency**
Illustration	Patient dependency affected the level of input from the HCAs, so that the more dependent the patient, the less they were involved in care. page 494
Finding7	**Local decisions about roles**
Illustration	Despite competencies listed for the HCAs following the Development Programme, local decisions about their roles affected and restricted their roles. page 494
Finding8	**Responses of colleagues to extended HCA role**
Illustration	The HCAs spoke of difficulties in their role as a result of their colleagues' reactions to it. Much of what occurred seemed to be explained, at least in part, by negative perceptions about their role development. While the HCAs' colleagues saw obvious benefits in the HCAs' role development, they also voiced concerns. page 494
Finding9	**Relationships**
Illustration	Relationships between the HCAs and their colleagues influenced the HCAs' roles and appeared to be determined by the local experience of the HCA (in years). page 494
Finding10	**Role clarification**
Illustration	One of the HCAs spoke of the positive effect of the programme on the responses of her colleagues to her role. There was however, an apparent lack of clarity in regard to the HCAs' role from their colleagues in relation to what the HCAs were allowed to do, and about the rationale upon which roles were allocated. page 494
Finding11	**Role transition**
Illustration	Many of the HCAs' colleagues spoke of changes to ways of working as a result of role developments. The delay between recognizing the need for change and implementing it was also acknowledged. page 494

Finding12	**Competency assessment**
Illustration	The successful completion of competencies by the HCAs was dependent upon a number of factors including time, availability of staff, utilization, relevance and previous training. page 494
Finding13	**Staffing levels**
Illustration	Staffing levels were viewed as significant to the HCAs' role and resulted in either more or less being done by them. page 494
Finding14	**Other training needs**
Illustration	The issue of having a number of staff in the same ward/department who required training and development was highlighted as restricting time for training and for access to patients or procedures and therefore role development. page 494
Finding15	**Housekeeping**
Illustration	The lack of a designated housekeeper affected the ability of the HCAs to apply their knowledge and skills. There was some concern from the HCAs and their colleagues about ensuring the quality of housekeeping and about the difficulty the HCAs faced in attending to housekeeping duties at the expense of their new, patient-focused, roles. page 494
Finding16	**Current and desired roles**
Illustration	Individual roles varied significantly, both in terms of remit and responsibility and were affected by a number of factors, which included patient needs, colleagues, relationships, local decisions about roles, staffing levels and clarity about the remit of roles. As a result, the HCAs' roles varied between and within areas. The HCAs held both positive and negative views about the development of their role. Positive views were in relation to patient benefits as well as personal job satisfaction as a result of their increased contribution to care. HCAs who were prepared to develop their role spoke specifically about the areas or particular skills in which they saw the potential for this, which included: more hands on patient care, more skills and more responsibility. page 494
Finding17	**Preparedness to attend the HCA Development Programme**
Illustration	Of the 12 HCAs interviewed: Eight were prepared and keen to attend the HCA Programme. Two were undecided. Two were not prepared to attend the programme. page 495
Finding18	**Prepared to attend**
Illustration	Those who wished to attend the programme spoke of their desire to do more training. One HCA spoke of her desire to train more, to the extent that she was leaving to do her training. page 495

Finding19	**Prefer not to attend**
Illustration	For some HCAs, their reluctance to attend the programme was as a result of their lack of knowledge about it, for others it was based in satisfaction with their current role, their level of responsibility and pay issues. There was an overriding sense among the HCAs that, if they were to develop their roles, they should be rewarded financially for doing so. For some HCAs this meant that they were not prepared to develop their roles. page 495

A national vocational qualification in the operating theatre: participants' perspective on its effects on staff relationships [22]

Hauxwell (2002) [22] conducted a qualitative case study using structured interviews for 40 participants; only 26 were of use. The aim of the study was to determine the participant's perspectives on the implementation of a National Vocational Qualification in the operating theatre, and its effects on work relationships, safe practice, and teaching and learning. The sample consisted of both nurses and assistants. The authors concluded that the implementation of the National Vocational Qualification resulted in an improvement in staff relationships, particularly noted by assistants. The findings of the study are below.

Finding1	P**articipant's perspectives of staff relationships**
Illustration	I found it involves more people in the teaching ... it's taken it away from a few people who like to own the teaching and assessing of learners. page 485 The nurses' become involved ... they tend to be getting involved a bit more. page 485 The major impact at (sic) NVQ has been to motivate the qualified staff' with many more people involved in training ... Certainly professionally it's certainly involved nurses in the qualification much more than 752 ever did. page 485
Finding2	**Greater awareness by nurse and ODA of each other's actual job**
Illustration	We've got an infiltration of both sides ... I think they (the nurses) appreciate our skills as both surgical and anaesthetic. I think we appreciate theirs as well we understand what they do. page 488 It was divided down the middle ... I think they've (the nurses) now realised what the ODA has done all these years. Which they never sat back and looked at ... I don't think there's one that hasn't come back and said we never realised just what you had to do. page 488
Finding3	**The creation of a new 'them and us' concept**
Illustration	... the them and us situation that we have here are those ... who do not take on the whole of theatre practice ... then those nurses and ODPs who are multi-skilled are the us. page 490 What Mrs X [name of theatre manager] tried to create was this core group of people ... a traditional nurse scrub, a traditional ODA doing anaesthetics and in the middle we've got this multi-skilled group of practitioners the ODPs. Which is getting bigger and bigger as we go on. page 490

Finding4	**Participants' perspectives of motivation issues**
Illustration	I think the image of the ODA and the ODP has changed as well ... because they've been encouraged to be multi-skilled ... maybe their [ODAs] outlook on careers have changed and there is opportunities there to be team leaders or deputy team leaders. Quite a lot of them [nurses] here have done it [the ODP NVQ] ... even the ones that haven't done it have been involved ... they can see the ODP's knowledge base ... and I think some of them realise that ... 'cos they've got nurse qualified qualification doesn't make them ideal to work in theatre ... so that's brought them down of(f) the high horse a bit.. Where now the enthusiasm is back again with every body ' wanting to learn to scrub again, majority can now. Again we [the ODAs] don't want to be left behind. page 491

Intra-disciplinary Clinical Education for Physiotherapists and Physiotherapist Assistants: A Pilot Study [13]

Jelley et al. (2010)[13] conducted a qualitative study to investigate the perceived impact of intra-disciplinary clinical education for physiotherapists and physiotherapist assistants. Data was collected via interviews with the participants both before and after placement, and the participants also kept journals. The sample consisted of three third year physiotherapist students, and three second year physiotherapist assistant students, as well as three physiotherapists as clinical instructors. The clinical education consisted of a paired five week clinical placement, using the 2:1 clinical model of supervision. The authors concluded that the shared clinical placements can result in improvements in student's communication, consultation and assignment skills. The findings of the study are below.

Finding1	**Collaborative practice**
Illustration	Certain days we'd have like 20 [patients] to see . . . In the morning we'd sit down, discuss it . . . like the patients we'd see together . . . we really figured out ways to get around our schedule and basically get through our schedule. Because if not we would never see the patients. . . if we wouldn't have done that it would never have worked. (PT student interview)page 77 [PT and PTA students] have gotten into a rhythm in their daily tasks producing excellent care to patients. (CI journal entry)page 78 Well she [PTA student] was good . . . because she has a better eye than me so sometimes she could pick things up that I didn't see. (PT student interview)page 78

Finding2	**Collaborative learning**
Illustration	She [PT student] really found that she learned a lot about the physiotherapist assistant's role that she didn't know before. So she had very clear outlines of what they did, what they could do, what they could not do. They discussed their education and what they learned in their courses and when she delegated, she knew what she could delegate and what she had to do on her own. (CI interview)page 78 I thought it was interesting from the beginning, seeing them learning together at the same time. It [learning together] worked all the way along they learned who did what and how to organize their time and lots about communicating.(PTA interview)page 78 Now I know a bit more about the mentality of why they [physiotherapists] are asking us to do certain stuff. (PTA student interview) page 78

The role and accountability of senior health care support workers in intensive care units [23]

Johnson et al. (2004)[23] conducted a qualitative study using structured non-participant observation and semi-structured interviews to evaluate the introduction of senior health care support workers with advanced skills into intensive care units. The sample consisted of 17 senior health care support workers who participated in semi-structured interviews. The authors found the senior health care workers have an important role to play, but that it is not as yet clearly defined. The findings of the study are below.

Finding1	**The role itself**
Illustration	Interviewer: Such as, what do you think, where is the line that you draw' SHCSW: Well I didn't know what the line was, this is what I am saying, I was sure that we shouldn't be messing with ventilators and things like that, I know that we don't actually attach a patient up, but we can set up ventilator, but we have not to do the alarms. Because we don't know what is right and wrong, we could take the blood pressure at 60 over 40 and the alarm wouldn't go off until it reached 60 over 40. You know what I mean, we are not qualified to do that so we don't do that now. Interviewer: But did you find you were doing that at the beginning, or you were being shown how to do it' SHCSW: Yes, yes, they were showing us everything, which was good, not that we were going to be doing everything but we were shown how to draw drugs up, although we will never touch some it was interesting to know what they were for. It helps us that way. I think if there are no guidelines for what you can and can't do I think you are open to abuse. (SHCSW 5, Site 2)page 127 Interviewer: So does it depend on who you are on with as to what you learn that day' SHCSW: Yes some days you learn absolutely nothing. You don't learn anything, you learn how to brew up and do bed baths. (SHCSW 5, Site 2)page 127

Finding2	**More than an auxiliary**
Illustration	SHCSW: I know they had an auxiliary here because I took her job. Andrea was here for 7 years and she left, that is when I asked about the job she said, 'Oh, I am leaving', and she was only part time and they want somebody full time, which is what I wanted, but I know Andrea was an auxiliary, just helped to turn the patients, do the filling up (stock) and running around, but I know that the Health Care Support Workers is going to be a lot more than that. (SHCSW 3, Site 1)page 127 Interviewer: So what duties have you performed in the ICU so far' SCHSW: This morning I've worked with Jenny who is an NVQ verifier and is very good and she actually showed me how to suction and I've gone on to suction myself and while she was on her meal break I did the hourly observations and actually suctioned the gentleman out and the nurse in the next bed watched me so it's been quite good today I've actually done things...yes not just watched. (SCHSW 10, Site 4)page 127
Finding3	**Accountability concerns**
Illustration	Manager: The nursing staff were concerned about the boundaries,...it matters, we want to know the boundaries. The staff are very scared about the boundaries of accountability. (Manager, Site 1)page 127 The thing I have found is that when I first started I did my first two shifts with someone (who wasn't even related to the NVQ), she taught me the blood gas, she was fantastic and she taught me the 'obs' in one day. Then when my assessor came in because she had been off for a while I hadn't even met her before. She said 'Oh, I'm going to have to show you how to do blood gas', and I said 'well I have been shown' and I have done a write-up on it to say I can do it and she (the other nurse) has signed it off. 'Well, I am not really happy you doing it, I want to watch to do it, and then you can build your confidence up.' (said the assessor) You are always going back to base with different people. (SHCSW 17, Site 6)page 128
Finding4	**The 'blood gas'**
Illustration	Interviewer: (Is it) that they don't know you can do it rather than they don't want you to' I don't think it is a case of them not wanting (us) to because again it is a 'big deal' blood gas and if they take a few times for me to pick it up, but now a couple of them (nurses) know I can do them 'Oh do you want to do this blood gas for practice go and get the results' and I say 'Fine, OK, yes,' but some of them say 'No, I'd rather do it. It depends on the person. (SHCSW 17, Site 6)page 128-129
Finding5	**Who really is accountable?**
Illustration	Interviewer: Who do you think is responsible, maybe when, well are you responsible when you do something or is it the nurse that is watching you' SHCSW: Everyone is accountable for their own actions, that is the way I have always worked. I know that the nurses do have an overall accountability, but I think that everyone should be responsible for their own actions. (SHCSW 1, Site 1)page 129

Finding6	**Responsibility of assistants**
Illustration	Interviewer: And who is responsible if you make a mistake' SHCSW: The trained staff, because when we have finished this course we work in HDU which is one nurse to two patients, so we would just assist the nurse in looking after one of the patients, well that is how I believe it is going to work anyway, we won't just be given a patient to look after ourselves. (SHCSW 12, Site 5)page 129 Interviewer: And who takes it on if you are doing something' SHCSW: Well if I am doing something that I have been trained to do then obviously I am responsible for my own actions, but also I suppose whoever has trained me as well and who ever supervises me is responsible to ensure that I have been shown the correct way, because if I do something and it works out that I have been shown the wrong way then obviously that person is responsible also for showing me the wrong technique or whatever. (SHCSW 2, Site 1)page 129
Finding7	**'I'll do it myself'**
Illustration	A lot of them are happy dealing with their own patient in their own way. And I get the feeling sometimes that even the ones (nurses) that I am put with, they feel that they would rather (as they say) 'be on my own and I can sort my own patient out. I know where I am up to with them and I don't want you interfering with that because I will lose what's going on.' It would be a shame if it (the new role) didn't work because it is a nice place to work but I don't know, time will tell us all. (SHCSW 17, Site 6)page 130

Intra-professional fieldwork education: Occupational therapy and occupational therapist assistant students learning together [24]

Jung et al. (2008)[24] conducted a qualitative study to assess the impact of a combined collaborative fieldwork placement between occupational therapist students and occupational therapist assistants student. During the placement, tutorials that discussed intra-professional issues were held. Data was collected using the journals of students, tutors and preceptors, as well as a post-fieldwork focus group. The authors concluded that intra-professional fieldwork and collaborative learning can assist in preparing occupational therapist and occupational therapist assistant students for working together post graduation. The findings of the study are below.

Finding1	**Developing the relationship**
Illustration	I have been able to teach [my student partner] what we have learned in our OTA classes and she taught me what they have learned. (student OTA) page 46

Finding2	**Understanding roles**
Illustration	I think that every OT student should have at least one opportunity to work alongside OTAs [student or graduates] so that they may learn the value of their role. (student OT) page 46 I have had the opportunity to work with the OT student on a module for the mentally ill. This I think has been a turning point in our relationship because it gave us the opportunity to actually see what the other was capable of doing. (student OTA)page 46 While we worked together with this client throughout the past two weeks, we would have a small discussion after each intervention, and we would discuss the differences in our roles as OT and OTA. It was a very interesting experience, and really clarified our roles to both of us. (student OTA) page 46
Finding3	**Recognising environmental influences**
Illustration	It appears that despite the stated goals of [our] research study, the [hospital] organization structure determines the students' ability to work collaboratively by controlling the frequency, duration, and quality of their interactions. (OTA tutor) page 47

Collaborative fieldwork education with student occupational therapists and student occupational therapist assistants [25]

Jung et al. (2002)[25] conducted a qualitative study using reflective journals and a questionnaire to describe the process of collaborative fieldwork between occupational therapist and occupational therapist assistant students. The authors concluded that there were benefits and challenges when using the collaborative learning model, and that students have the necessary preparation to work together. The findings of the study are below.

Finding1	**Learning about each other's roles**
Illustration	I feel that we are all confused about our roles and expectations and meeting the needs of all concerned (schools, facilities, student occupational therapists and student occupational therapist assistants). (Student occupational therapist) page 99 Once we had established approximately where our professional boundaries overlapped and where they separated, we were able to accept what each other was doing. (Student occupational therapist assistant) page 99 As for working with the [occupational therapist assistant] students, the experience has been an excellent learning process for me. I have learned, discussed, and analysed the professional boundaries, appropriate utilization of occupational therapist assistants and effective and efficient team functioning. (Student occupational therapist) page 99

Finding2	**Collaborative learning**
Illustration	The partnership that needs to exist for the students to provide care to clients is one of trust and an agreement on consistent, thorough and concise updates on clients between the occupational therapist and occupational therapist assistant. We have worked on this in our arrangement, which is great ...this focused time on communication has been very useful for organization and proper client care. (Student occupational therapist) page 100 I have been very conscientious about my approach with the occupational therapist assistant student to ensure a feeling of partnership and mutual esteem and respect. She has a great knowledge base of terms, and I have to wonder why I don't. I guess working with her I'll have the chance to learn all about them. (Student occupational therapist) page 100 The occupational therapist and occupational therapist assistant relationship is working really well. I feel that we are doing an excellent job and getting things done as a team. (Student occupational therapist assistant) page 100 This project ...is also an excellent way to practice team-work. I often found myself relying on something the occupational therapy student was working on or had already done, and I was also able to help her complete her work efficiently by doing certain things for her. As a result of this project, I now feel more prepared to work together with an occupational therapist in the future because I have had an opportunity to practice and explore first. (Student occupational therapist assistant) page 100
Finding3	**Impact on client care and future practice**
Illustration	From my perspective working together as a team means learning from each other and collaborating with other professions to best meet the needs of the residents. (Student occupational therapist) page 100 I feel that I have gained a lot of knowledge and ideas about how occupational therapists and occupational therapists assistants could work together in other settings. This may be useful for me in the future if I work in an area that had previously not used many assistants. (Student occupational therapist assistant) page 100
Finding4	**Resistance to roles**
Illustration	I don't mind giving treatment plans to the student occupational therapist assistants that they can carry out, but aside from that, I don't feel that our role is to supervise. (Student occupational therapist) page 100 I don't really like them being our teachers. I don't think they have enough hands on to show me the ropes. (Student occupational therapist assistant) page 100

The introduction and evaluation of an occupational therapy assistant practitioner [26]

Nancarrow and Mackey (2005)[26] conducted a qualitative study to explore and describe the introduction and evaluation of an occupational therapy assistant practitioner in a health trust in the United Kingdom. Data collection was via focus groups with assistant practitioners (five), supervising occupational therapists (5), team managers (4), and clients or carers (3). The authors concluded that career structures and accountability need to be clearly defined, and training should be available for staff undertaking new roles. The findings of the study are below.

Finding1	**Definition of the role**
Illustration	Basic skills that you are just taking on board so all the transfers; it is just basic bread and butter, as I would call it basic assessments in the kitchen. Kitchen practice, bathroom, bath board, and seat (assistant practitioner 471).page 296
Finding2	**Roles and responsibilities of assistant practitioners**
Illustration	Assistant practitioners have a range of roles and responsibilities within the service that vary according to the setting in which they work (health or social care setting); their relationship with their supervising occupational therapist; and the supervisory arrangements within the service. page 296
Finding3	**Interface between the assistant practitioners and state registered occupational therapists**
Illustration	Clinically I think we're working very similarly. If there is a more complex case then I will try and pick that case up but in practical terms that's not possible because I work part time so (the assistant practitioner) has actually gone out on cases that on paper look pretty complex (occupational therapist 96).page 296 From our point of view I think what the problem is, what a lot of OT's do is not OT and that is something that we've done over maybe 20 years, we've suddenly developed dressing practices in OT role, transfer practise, and actually we've lost the occupational meaning behind those roles, so suddenly this is a task, so we now end up in this new position of trying to defend tasks when really we shouldn't be taking a task approach, it's what we bring as professionals with their own background about the essence (Manager 405). page 297 When I first started I was not to take complex cases, noncomplex cases that was on my job description, there are no noncomplex (cases) as far as I am concerned. Then it was anybody that has got a multi-diagnosis well we haven't had one client that hasn't got a multi-diagnosis. I come across a lot of incredibly difficult social situations more so than medical (Assistant Practitioner 477).page 297
Finding4	**Circumstances in which assistant practitioners can add value**
Illustration	Sometimes I think that we are on ground level and we think at the most obvious things, obvious solutions (Assistant Practitioner 521).page 297

Finding5	**Accountability and supervision issues**
Illustration	We've certainly had issues where some of the supervising OT's have been so worried about the quality of the service on offer and so worried about not being able to control that they've actually over supervised the assistant practitioners and made them come back, and in great detail go through every single patient every week, and then we've also had the exact opposite which was perhaps 'well I don't really want these assistant practitioners but other people have imposed them on me and they've said they're okay and they say they can do the work so I'm letting them get on and doing it' and they haven't had supervision from one month to the next, official supervision, they'll say 'oh well, we'll catch them in the corridor or something (manager 215)'.page 298 Do you know what really brought it home to me was when last year you'd missed signing your professional accountability and (the manager) said that you couldn't see patients.' You couldn't see patients and yet we're sending (the assistant practitioners) out who have no legal status at all. We're sending them out to do clinical work and yet you couldn't see patients (Occupational Therapist supervisor 593).page 298 In some cases I don't think you've got the confidence in your assistants and until you build up that relationship you need to meet with them more often just to test their thinking (Manager 286).page 298
Finding6	**Training and education requirements of assistant practitioners**
Illustration	Good assistant practitioners can make reasonable judgements, that's not an OT skill, that's an anybody skill, you can take responsibility, they can build up the networks, so we're also looking at a set of competencies that are non-OT competencies ' (Manager 346). page 299 I see a knowledge base as being important and the training is important. You start off with a personal qualification but I think you have to have a professional set of qualifications at whatever level it is whether it is from the lowest down to degree level and beyond. The person doing the work must be at the right level. There is no good giving a person who's starting off something which they are unqualified for or incapable of and as has been said judging that person at whatever stage in their career for whatever task they are trying to achieve (Service user 330). page 299

Finding7	**Implementation of the role**
Illustration	The implementation of the new roles was seen as a challenge to managers who, on the one hand, are encouraged to be innovative and flexible, but need to manage this innovation within the confines of clinical governance and innovation. Factors that facilitated the implementation of the new roles included: having a 'champion' for the role at the management level, an innovative and flexible environment for service delivery, willingness of managers and clinicians to try new ideas and learn from their mistakes, and a team attitude that embraces 'modern' ways of working. page 299

Collaboration Between Physical Therapists and Physical Therapist Assistants: Fostering the Development of the Preferred Relationship within a Classroom setting [15]

Plack et al. (2006)[15] performed a mixed methods study to evaluate a model that fosters the development of a preferred relationships between physical therapists and physical therapist assistants in a classroom setting. The study used pre-test/post-test questionnaires and focus groups as a way to collect quantitative and qualitative data respectively. The study consisted of 34 first physical therapist students and 21 second year physical therapist assistants. Also included for comparison were 24 second and 22 third year physical therapist assistants, who did not partake in the same collaborative course with assistants as the first year students. Two focus groups consisting of 6 assistants and 5 physical therapists respectively were conducted. The course that the first year physical therapists undertook included three 2-hour sessions. The first session covered various aspects regarding assistants such as their role, delegation and the preferred relationship between therapists and assistants. The second session was between the researchers and the assistants, as they discussed what would be delivered to the physical therapist students in the final session, which was a collaborative experience between physical therapist students and assistant students. The results of the qualitative component confirmed that the learning experience was valued. The authors conclude that the instructional model is an effective method to teach physical therapist assistant students about assistants and it provides a basis for forming collaborative relationships.[15] The findings of the study are below.

Finding1	**Confirmed Misconceptions Presented in the Literature**
Illustration	A PTA student commented: I have worked at 3 places: One doesn't use PTAs, one utilized PTAs but under real direct supervision, and ...the other ...if you didn't know any better you would think she was a PT, she had an enormous amount of autonomy. That is 3 different uses of a profession I am entering. page 7 (One PT student noted) I came in with a bias honestly because when we had that [first] class, the biggest thought in my head was these people are going to take away my hands-on experience with my patients, for me, that's what I'm looking forward to ...not being someone who's back in the office, doing paperwork and telling other people what to do. I'm like wait, but I want to work with the patients, so I think that kind of biased my view towards it honestly. page 7

Finding2	**Reactions**
Illustration	We should know what the boundaries are because they are going to be working in our same environment and we need to know what they're capable of doing and what their coursework was, in that respect I thought it was a great experience. I think it really should be a part of our education. page 7 The [PTAs] had more of a sense of the differences between our practices, they get more, training at it. It's brought up to them a little bit more. page 7 In our curriculum it is reinforced over and over how important PTs are, how much you have to respect PTs, how much authority the PT has, and how we can never cross that, we can never step over [the PTs] authority. page 7 Comments from PTA students included: I am happy I went through that day. The PT students were very surprised at the training we really had. It was great for them to realize who we are and what we are capable of doing. page 7 It didn't only help [the PT students], I think it is really helping us to understand that when we do go out into the field as physical therapist assistants that we have a responsibility to ourselves and to everyone else to let them know what our role is also. page 7 I felt a little under prepared. It was hard to try and keep up with specifics of things where we really didn't know what we were talking about. It was hard to explain. page 7 [The PTAs] have more experience, they are more knowledgeable than we are, and it's kind of intimidating. page 7 They [i.e., the PT students] were shocked, and that bothered me. They shouldn't be shocked. They should not go out into the field and be shocked about what we know. They should already have that before they get out there. page 7 Some of them . . . were getting a little overly aggressive which automatically turns me off and makes me angry. page 7 I kind of got a negative view. They kind of came to us like, 'well, we've done all this, we know all this.' page 7

Finding3	**Process**
Illustration	I think the scenarios [were most helpful]. The class before we learned about their roles, . . . but actually putting that into a scenario or practice is, I think, helpful. page 7 It was very realistic . . . we are going to have to know how to communicate with the PT and how the PT is going to have [to] communicate with us and be on the same level. page 7 Everything is skewed to someone's perspective. That is why the interaction of both members of the profession gives you more insight than just you [i.e., PT faculty] teaching your PT students what a PTA does, that is your perspective. That is why the actual interaction of the individuals makes a difference. page 7 I think it's also helpful for them, too, because . . . a couple of them . . . got a little defensive, like 'whoa, PTs don't give us enough respect, like we're going to school for this. You can delegate this to me because this is my career and this is what I worked hard for.' So in that respect if they see us doing a class like this and being in these situations where we do have that mutual respect and can create that environment where we're working for the best preferred relationship. page 7-8 A lot of the scenarios showed that it was not always the PTs, but sometimes it is the PTAs who can be very aggressive with the chip on their shoulder thinking that people don't know what they are capable of doing, when you do have those physical therapists who do know exactly what we do, and do have a lot of confidence in what we are doing. It did help me understand that sometimes I have to back off and say, hey, this is what I am capable of doing . . . and not thinking that they are taking me for granted. page 8 The role playing opened up lines of [communication]. It enabled everyone to take on the role of the other person; It let the physical therapist assistant act like the physical therapist and then when you are in that position you realize things. I wouldn't have known a lot about the feelings involved, how do I ask this person what do they know, how would you ask them to show you what they know and all of this while you are trying to work and trying to get through the day, so it really opened that up. You were able to express a lot of the background feelings that you don't really want to say, but you have to find a nice way to kind of figure things out. It helped me figure things out and [I think it helped them too]. We figured out that communication was so big. page 8

Finding4	**Outcomes and Recommendations**
Illustration	[The PT students] are now more open to asking us questions and we are more open to asking them questions and I think it really helped me for when I go into clinic to be able to interact with my physical therapist, my supervisors. It opened my eyes a lot. page 8 It made us realize that [PTs] are people too and it is not all [PTs] against us PTAs and it made us realize that there are many PTs out there that are team players. It made us realize that [PTs] weren't the enemy. page 8 It [i.e., communication] is a collective responsibility .page 8 I think I would just be more aware of what the relationship should be like and I completely agree with the preferred relationship to be beneficial to everybody, both workers and of course the patients. I think I would strive more to already have that attitude to have that relationship with the PTA even before my first clinical. I have the mindset already [I know the] expectations I would want, so it definitely helped. page 8 They have more experience, they are more knowledgeable than we are and it's kind of intimidating because they're saying 'this is a fact, I've been out there, I know' and then I was like OK, should I just take it for granted because you [i.e., the PTA students] do have more knowledge' I mean, right now you know a lot more about it than I do. page 8 Even with all this class learning you do, none of us have had that experience out in the real world, so they definitely had that up on us. They've seen that interaction. page 8 It's probably almost better to go into [this classroom experience] without having any [clinical] experience because . . . you can go in there and have some knowledge on what the preferred relationship is and try to have knowledge of the laws . . . and maybe bring that to your clinical experience; whereas if you've already had the clinical experience you're definitely going to have a bias. page 8 The ultimate thing that [instructors] can do is to break up a semester so that the PT students and the PTA students spent like 2 weeks together on a role-playing activity in the field. That would definitely benefit the relationship, . . . because then when we both get into the field we can both say, 'alright now we are used to this, we have done this.' page 8 Even if it were 2 weeks or 1 day or a month that we go out there . . . there has to be more of that real life situation, not just the textbook, . . . the PT and PTA spending time together. I just think that that day showed what could be possible, and that was the first step in the right direction. page 8 [It would be good to determine] how confident [we] would be [turning] someone down that we are not sure how to treat' And [see] how the PT[s] would act if they see the PTA is not so secure. page 8 I would . . . see how they answer it right on the spot . . . in the clinic you don't have time, and you don't have a card that will tell you what kind of an attitude you will have, so a more impromptu role play would be helpful. page 8

Understanding RN and unlicensed assistive personnel working relationships in designing care delivery strategies [27]

Potter and Grant (2004) conducted a qualitative study to better understand the relationship between registered nurses and unlicensed assistive personnel and how they work together to deliver care strategies. The sample consisted of 13 registered nurses and nine unlicensed

assistive personnel who did not work on the same patient care unit. The authors conclude that the successful partnering between unlicensed assistive personnel and registered nurses provides a shared common patient care focus.

Finding1	**Working Relationship Between RNs and UAPs**
Illustration	Whether RNs and UAPs can work together as a team is clearly a product of the relationship they share. An analysis of the authors' focus session interviews revealed that trust is central to effective RN and UAP relationships. page 20
Finding2	**Good Relationships**
Illustration	Yeah, they work with you. They know what you need. They're there doing it before you even have a chance to ask them. If you have anything special they will do it. If they can't, they will tell you they have something else that must be done and can you wait or do you have to do it yourself, which is fine.(An RN explains the importance of a UAPs initiative)page 20 Communication with me, when we can talk together. When she (the RN) is not talking down to me, and when she is treating me like I'm part of the team, I'm equal. Communicating with me and letting me know what is going on with the patient, you know, and that makes a good day when we can work together.(One UAP shared a valuable story by relating what makes a good relationship with an RN)page 21
Finding3	**Difficult Relationships**
Illustration	RN: I think it is often times just checking with them and asking, 'Oh, did you do Mr. So and So's vital signs'' UAP: Well yeah! RN: OK, I'm just checking, I'm just asking. I'm just making sure that it got done. And I think it is just a lot of times you're asking if care gets done. You know, and it's just, I guess they feel like we have authority over them and just keep questioning them, you know, did you do this, did you do that, is this getting done.(One RN in this study offered a valuable view of how discourse between an RN and a UAP might evolve in a difficult relationship)page 21

Finding4	**Assignment Method**
Illustration	Two of the UAPs who were interviewed share an instructive story of what it is like to work with multiple RNs and relate the disorder and relational stress that can develop: UAP 1: I can give you some examples where me and my nurses don't work well together. That's on days when they assign you to 4 nurses or 3 nurses or 5 nurses, and to me, that is crazy. UAP 2: Because you've got to remember who to report to and you've got them all coming to you at one time telling you something, you know. UAP 1: You get terrible feedback from the nurse. This nurse will tell you so-and-so needs a BMP and a CBC. And you say okay and you go to walk away. Then a second nurse says, 'I need an EKG and Ms so-and-so needs a gown.' UAP 2: What do you do first' UAP 1: You know, you tell yourself you got all this to do and she (RN) is telling me Ms so-and-so needs a gown' See it frustrates you because you've got too many places to go at one time. Then you get down to the point and you're grabbing the machine and they (RNs) see you with the EKG or they see you with the blood and they know you're going to draw blood, but then another nurse, number 3, she don't care because she got all the stuff she wants you to do and she wants you to do her stuff first. Why all the sudden she gives me this list of duties to do. I am only 1 person. page 22
Finding5	**Orientation and Mentoring**
Illustration	I like the way I did it because mentoring with an RN, well the particular RN was very, she showed you exactly how to do it and how to do it right. You know, no shortcuts, you just did it the way it was supposed to be done. And that was good, I mean, and she just knew how to teach. page 22
Finding6	**Change-of-Shift Reporting**
Illustration	This study also revealed that there was no standardized approach used by RNs in providing a beginning shift report to UAPs. UAPs did not attend their units' change-of-shift reports. RNs typically provided a report at some point after the change of shift, but when this occurred varied across units. page 23
Finding7	**Knowing Patients**
Illustration	(One UAP shared a poignant story): The patient's SATs (oxygen saturation) was, you know, when I went in earlier, the SATs were fine. Then you go in and you know you can see the difference in the breathing. You do a SAT and then like I said, a good UAP would know you don't have to go find a nurse to say do you need to get a SAT done. You just go ahead and you do it. And then you study it and then you go tell the nurse, listen, so-and-so's SATs have started dropping and he's not looking real good. She (the nurse) got right on up then. And I said that I'm going to go get the EKG machine because you know that's what is going to be next. And by the time, when we finished getting this guy, I mean this guy was almost in a full code. But we were able to head him off a lot because the nurse got right on up and that means a lot when you go and tell the nurse that something is going on with this person. page 23

Finding8	**One-to-One Assignments**
Illustration	Improvement in care delivery can be quickly achieved by assigning RNs and UAPs one-to-one. This can be difficult when patient care units are not budgeted to have an equal number of RNs and UAPs working together on an assigned shift. page 23-24
Finding9	**Change-of-Shift Report**
Illustration	The quality of a change-of-shift report has always been pivotal to keeping RNs informed so that patient needs can be anticipated and addressed. The authors' recommendations include having RNs and UAPs at- tend change-of-shift reports together. page 24
Finding10	**Patient Rounds**
Illustration	The authors recommend having RNs and UAPs accompanying each other during patient rounds. The RN can acquire a thorough picture of a patient's condition, developing needs, and priorities of care. The UAP can be an invaluable resource and help to minimize the disruptions that may prevent an RN from completing an uninterrupted and focused assessment. UAPs can assist in positioning patients during an examination, in acquiring equipment used for assessment (eg, a glucose meter or pulse oximeter), and in assisting RNs with initial care activities (eg, positioning and taking vital signs). page 24
Finding11	**Planning Based on Priorities**
Illustration	It is important for RNs and UAPs to share a common plan of care for their assigned patients. This can be best accomplished during the course of patient rounds. RNs conduct their assessments, UAPs observe RN actions and patient responses, and then RNs identify the care priorities for the day. page 24

Appendix 6: JBI Levels of Evidence and Grades of Recommendation

Levels of Evidence	Feasibility F (1-4)	Appropriateness A (1-4)	Meaningfulness M (1-4)	Effectiveness E (1-4)	Economic Evidence EE (1-4)
1	Metasynthesis of research with unequivocal synthesised findings	Metasynthesis of research with unequivocal synthesised findings	Metasynthesis of research with unequivocal synthesised findings	Meta-analysis (with homogeneity) of experimental studies (eg RCT with concealed randomisation) OR One or more large experimental studies with narrow confidence intervals	Metasynthesis (with homogeneity) of evaluations of important alternative interventions comparing all clinically relevant outcomes against appropriate cost measurement, and including a clinically sensible sensitivity analysis
2	Metasynthesis of research with credible synthesised findings	Metasynthesis of research with credible synthesised findings	Metasynthesis of research with credible synthesised findings	One or more smaller RCTs with wider confidence intervals OR Quasi-experimental studies (without randomisation)	Evaluations of important alternative interventions comparing all clinically relevant outcomes against appropriate cost measurement, and including a clinically sensible sensitivity analysis
3	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Cohort studies (with control group) b. Case-controled c. Observational studies (without control group)	Evaluations of important alternative interventions comparing a limited number of appropriate cost measurement, without a clinically sensible sensitivity analysis
4	Expert opinion	Expert opinion	Expert opinion	Expert opinion, or physiology bench research, or consensus	Expert opinion, or based on economic theory

The JBI currently uses the following Grades of Recommendations

Grade of Recommendations	Feasibility	Appropriateness	Meaningfulness	Effectiveness
A.	Strong support that merits application	Strong support that merits application	Strong support that merits application	Strong support that merits application
B.	Moderate support that warrants consideration of application	Moderate support that warrants consideration of application	Moderate support that warrants consideration of application	Moderate support that warrants consideration of application
C.	Not supported	Not supported	Not supported	Not supported

Appendix 7: Summary of quantitative studies in Question 3

Entry-level OTR and COTA intervention utilization derived from NBCOT practice analysis: implications for fieldwork experiences [34]

Crist et al.[34] (2007) conducted a descriptive survey to determine the interventions that newly qualified occupational therapists and assistants performed, in order to provide a description of entry-level practice to inform academic fieldwork coordinators regarding placement decisions. The survey took place in seven different practice settings, with 479 occupational therapists and 168 assistants responding. The therapists and assistants worked in a range of settings, including acute care rehabilitation, skilled nursing facility, home health, long-term care, outpatient/community, schools, or a combination. Fourteen interventions were identified that occurred in every setting for occupational therapists, and eleven for assistants. The eleven interventions that were common to all settings for assistants were; adaptive equipment recommendation/training; attention, orientation, concentration; dressing; fine motor coordination training; functional mobility; gross motor coordination training; problem solving training; safety awareness insight training; strength and endurance training; therapeutic activities; therapeutic exercises. Following on from their analysis, four guiding principles were highlighted when planning occupational therapist and occupational therapist assistant fieldwork. The first was not to automatically assume that the setting of fieldwork will provide a wide variety of fieldwork experiences as required for accreditation standard. The second recommended each student being granted the opportunity to develop entry level competencies in the core interventions used across the sites with high frequency. Third, careful consideration regarding placement locations is required, as some may provide replication of experiences, whilst others may allow divergent experiences. Both of these may be valued. Finally, fieldwork coordinators should assess each site prior to fieldwork to ensure appropriate professional development.[34] These principles may be useful in order to promote consistency and standardisation of fieldwork training for assistants.

Evaluation of clinical education centers in physical therapy[33]

Barr et al. (1982)[33] conducted a descriptive survey to test a set of physical therapy clinical education standards for the selection and evaluation of clinical education centres which had been developed in 1976. Data was collected via mail questionnaires and telephone interviews, with results form 909 participants; 134 Academic Coordinators of Clinical Education, 708 Centre Coordinators of Clinical Education, 15 Clinical instructors, and 52 physical therapist or physical therapist assistant students. The results showed that all academic and centre coordinators believe that standards are necessary for clinical education in physical therapy, regardless of the setting. It was thought by a majority of responders (65%) that standards should be used as guidelines rather than minimal requirements. The standards tested were all seen as essential by more than 60 percent of Academic Coordinator respondents, bar one concerning professional associations. The standards also reflected characteristics of a strong clinical education centre. Based on the results of a weighting study, whereby responders ranked the 20 standards in importance, practicality and how crucial they are, the standards were organised so that the first 4 that are displayed were rated the most important and practical, with the fifth being a federal requirement. The authors recommended that clinical centres should comply with these first 5 criteria before assigning students there for placement. Evaluation forms for the standards were also found to be practical, reliable, and valid. Based on their results, the authors recommended that the standards to be used by those involved in physical therapy education programs. The authors conclude that the setting of the standards will benefit the centre, the academic educational program, and the profession.[33] This study provided an example of how standards could be systematically developed and tested for clinical education in physical therapy.

Appendix 8: Summary of quantitative studies in Question 5

Satisfaction of nurse aides with pre-job training programs[35]

Lin et al. (2003)[35] conducted a survey using structured and semi-structured questionnaires to determine nurse aid satisfaction with pre-job training programs in Taiwan. The sample was randomly selected from 20 facilities, with 165 questionnaires being accepted for analysis. The preferred sites for training programs were hospitals, then nursing homes, schools, and nurses associations. For clinical practice, preferred sites were general hospitals, nursing homes, chronic care hospitals, and schools. The highest satisfactions with training programs were with lecturers, practical application and practice instructors. Lowest satisfaction was with fees, class size, and clinical practice hours. Some students thought that were too few lecture hours and particularly clinical practice hours. Suggestions for course content were also made. Large class sizes were disliked by some. The authors conclude by stating that the findings of this study will be beneficial to those involved in designing nurse aid training programs.[35] The findings from this study may be able to assist educators in increasing the relevance of training amongst health assistants.