Journal of Multidisciplinary Healthcare

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REVIEW

Role, implementation, and effectiveness of advanced allied health assistants: a systematic review

This article was published in the following Dove Press journal:
Journal of Multidisciplinary Healthcare
29 November 2013
Number of times this article has been viewed

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Background: The purpose of this systematic review was to determine the effectiveness and implementation of advanced allied health assistant roles.

Methods: A systematic search of seven databases and Google Scholar was conducted to identify studies published in English peer-reviewed journals from 2003 to 2013 and reporting on the effectiveness and implementation of advanced allied health assistant (A/AHA) roles. Reference lists were also screened to identify additional studies, and the authors' personal collections of studies were searched. Studies were allocated to the National Health and Medical Research Council hierarchy of evidence, and appraisal of higher-level studies (III-1 and above) conducted using the Centre for Evidence Based Medicine Systematic Review Critical Appraisal Sheet for included systematic reviews or the PEDro scale for level II and III-1 studies. Data regarding country, A/AHA title, disciplines, competencies, tasks, level of autonomy, clients, training, and issues regarding the implementation of these roles were extracted, as were outcomes used and key findings for studies investigating their effectiveness.

Results: Fifty-three studies were included, and most because they reported background information rather than investigating A/AHA roles, this representing low-level information. A/AHAs work in a range of disciplines, with a variety of client groups, and in a number of different settings. Little was reported regarding the training available for A/AHAs. Four studies investigated the effectiveness of these roles, finding that they were generally well accepted by clients, and provided more therapy time. Issues in integrating these new roles into existing health systems were also reported.

Conclusion: A/AHA roles are being implemented in a range of settings, and appear to be effective in terms of process measures and stakeholder perceptions. Few studies have investigated these roles, indicating a need for research to be conducted in this area to enable policy-makers to consider the value of these positions and how they can best be utilized.

Keywords: allied health, assistant, advanced, systematic review, effectiveness, role

Introduction

The shortage of health professionals in Australia has led governments to consider workforce redesign to utilize better their human resources to meet the health needs of the population. One aspect of redesign in the health workforce is advanced practice or extended scope roles. Advanced scope of practice refers to "a role that is within the currently recognized scope of practice for that profession, but that through custom and practice has been performed by other professions. The advanced role would require additional training, competency development, as well as significant clinical experience and formal peer recognition. This role describes the depth or practice",[1] whilst extended scope of practice is defined as "a role that is outside the currently recognized scope of practice

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and requires legislative change. Extended scope of practice requires some method of credentialing following additional training, competency development, and significant clinical experience… This role describes the breadth of practice".[1]

Although advanced/extended practice is most commonly associated with nurse practitioner roles, and extended scope physiotherapists, there is also a shift towards expanding the roles of allied health assistants (AHA). The current scope of practice of AHAs was reported in a recent systematic review,[2] with duties including assisting allied health professionals, providing physical and social support to patients, administering clinical services and modalities, transferring patients, communicating patient progress, communicating with other staff, assisting with mobility and gait, providing equipment, patient education, provision of health care to patients, supervising/conducting exercise classes, preparing patients for treatment, conducting individual or group therapy, coordinating and assisting in the operation of services, assisting and coordinating health service, administration, stock ordering/requisition, preparing/maintaining the environment, maintaining equipment, health promotion, monitoring and updating health care databases, recording/statistics/database, housekeeping, and cleaning. This systematic review did not report the role of advanced allied health assistants (A/AHA), although there are examples of advanced roles being implemented in Australia, highlighting the need for a more specific review in this area. In better understanding these roles, and how they have been implemented elsewhere, policy-makers will be better able to determine whether such roles are worthwhile, how they can best be utilized, and potential issues in the implementation of A/AHA roles.

The working definition of A/AHA used for the purpose of this review is any assistant role supporting allied health professionals, working beyond the skill base or level of responsibility normally expected for an AHA. It is acknowledged that there is likely to be a range of terms used to describe these roles, eg, advanced, senior, or extended scope, as well as terms reflecting the allied health disciplines they support (eg, physiotherapy, occupational therapy), or more generic health care terms (eg, health care assistant, support worker).

This systematic review sought to answer the following questions:

1 What is the scope of practice of A/AHAs?
2 What client groups do A/AHAs work with?
3 What settings do A/AHAs work in?
4 What training is available for A/AHAs?
5 How effective are A/AHA roles in terms of health, cost, and process outcomes?
6 What are the workforce issues for A/AHAs?

Materials and methods

Systematic search

A systematic search of key library databases (Embase [OvidSP], Medline [OvidSP], Scopus, Web of Science, Nursing and Allied Health Source [ProQuest], Health and Medical Complete [ProQuest], and Cumulative Index to Nursing and Allied Health Literature [CINAHL], EbscoHost) was conducted in February 2013, using a comprehensive list of search terms (see http://www.unisa.edu.au/PageFiles/68220/AAHA%20paper%20appendix%20pdf%20(2).pdf). These terms were developed through iterative discussion and by consulting systematic reviews of AHA roles.[2,3] These terms were searched in all fields, and limited to peer-reviewed studies published in English from 2003 to 2013 where permitted by the databases. Additionally, a similar search was conducted in Google Scholar using the same terms (see http://www.unisa.edu.au/PageFiles/68220/AAHA%20paper%20appendix%20pdf%20(2).pdf). This search was also limited to 2003–2013.

To widen the search, the reference lists of all included peer-reviewed studies, and the reference lists of any systematic reviews identified through the search were manually screened to identify any study titles which made reference to A/AHA, or which referenced A/AHA in the text. Additionally, the authors screened their personal collections of studies for any relevant information. If further studies were included, this process was repeated until saturation was reached.

Study identification

All studies obtained were exported into EndNote X6 where duplicate studies were excluded. The titles and abstracts of all remaining studies was screened, before the full texts were obtained and screened. Studies were excluded if they:

- did not involve A/AHA (eg, the assistant was not identified as advanced, senior, or extended scope, or did not perform tasks identified as extended scope or advanced practice, or they clearly stated that their role was to support non-AHA staff, eg, nurses)
- only reported potential A/AHA roles, rather than those which had been implemented
- were not published between 2003 and 2013 (or where no date could be determined)
- were not published in English
- were not available in full text (eg, conference abstracts)
- were not published in peer-reviewed journals
- did not include any information pertaining to the six review questions.

Due to the broad nature of questions for this review, studies of any design were included. Furthermore, any paper

reporting relevant data was included, even if this was not investigated in the study (eg, relevant information for this review was reported in the background). Where this relevant information was citing another reference, the original study was identified to ensure it (the original study) met the inclusion criteria. Where all relevant information was cited from other references, the study was excluded.

Assigning levels of evidence

Where the findings of a study informed the review questions (ie, not solely background information) the study design was identified, and assigned to the National Health and Medical Research Council (NHMRC) hierarchy of evidence.[4]

Critical appraisal

Critical appraisal was only conducted for studies identified as level III-1 or higher. Systematic reviews were appraised using the Centre for Evidence Based Medicine Systematic Review Critical Appraisal Sheet,[5] and the PEDro scale[6] was used for level II and III-1 studies. Lower-level studies were not appraised due to the biases inherent in their designs.

Data extraction

Relevant data were extracted from all included studies, according to the headings reported in Table 1. Where relevant information was reported with a reference, the data were not extracted, but the reference was obtained and included in the review if it met the inclusion criteria.

Table 1 Data extraction

General	• Country[a] • Study design • Title of the A/AHA
Question 1: what is the scope of practice of A/AHA?	• AH discipline they support • Competencies of the A/AHA role • Tasks performed which directly or indirectly involve patient care (eg, not audits for research purposes) • Level of autonomy
Question 2: what client groups do A/AHA work with?	• Age groups • Conditions
Question 3: what settings do A/AHAs work in?	• Any setting they work in
Question 4: what training is available for A/AHA?	• Any type of training (formal or informal) either enabling them to work as A/AHAs or to extend their skills in this role (ie, professional development)
Question 5: how effective are A/AHA roles in terms of health, cost and process outcomes?	• A/AHA role implemented • Outcome measures used • Key findings
Question 6: what are the workforce issues for A/AHA?	• Any issues identified, including but not limited to changing roles of others (eg, AHA or AHP), and funding

Note: [a]Unless otherwise stated this was assumed to be the same as the author's affiliations.
Abbreviations: A/AHA, advanced allied health assistant; AHA, allied health assistant; AHP, allied health professional.

Analysis

Due to the nature of the questions posed, all data are reported descriptively.

Results

Of the 1,987 studies identified through searching of the database/Google Scholar, 52 were included, with one additional study[7] meeting the inclusion criteria already known to the authors also included (see Figure 1 for the flow chart). Table 2 reports the A/AHA roles reported in the literature, as well as the countries in which they have been implemented.

Question 1: what is the scope of practice of A/AHAs?

Allied health disciplines

A/AHAs work in a range of disciplines, including pharmacy, social work, psychology, occupational therapy, physiotherapy, podiatry, and dietetics (see Table 3). Some studies[8–13,16–20,22–25,27,28,31–33,36,37] did not report which allied health discipline the assistant worked in; however, they were included in this review because they did not clearly state that they were supporting a role outside of the allied health professions (eg, medical). This section of the review was informed by 33 studies; however, none of these studies specifically researched the disciplines, so these data cannot be allocated to the hierarchy of evidence.

Competencies

A qualitative study[7] (NHMRC level not assigned) reported the competencies required of an extended role occupational therapy support worker. These were the ability to make sound judgments, interpersonal skills (eye contact, "nice disposition", friendly), interest in the job, communication skills, confidence, need to be able to assert their own role boundaries/competence/confidence, drive, have developed the role themselves, assertiveness, initiative, ability to "think outside the box", need for self-direction, trustworthy (more than just a police check), ability to think/reflect on role, type of people who will continually improve (eg, undertake training), experience, training to underpin competence, formal qualifications, willing to accept responsibility, willing to learn, and clinical competence.[7]

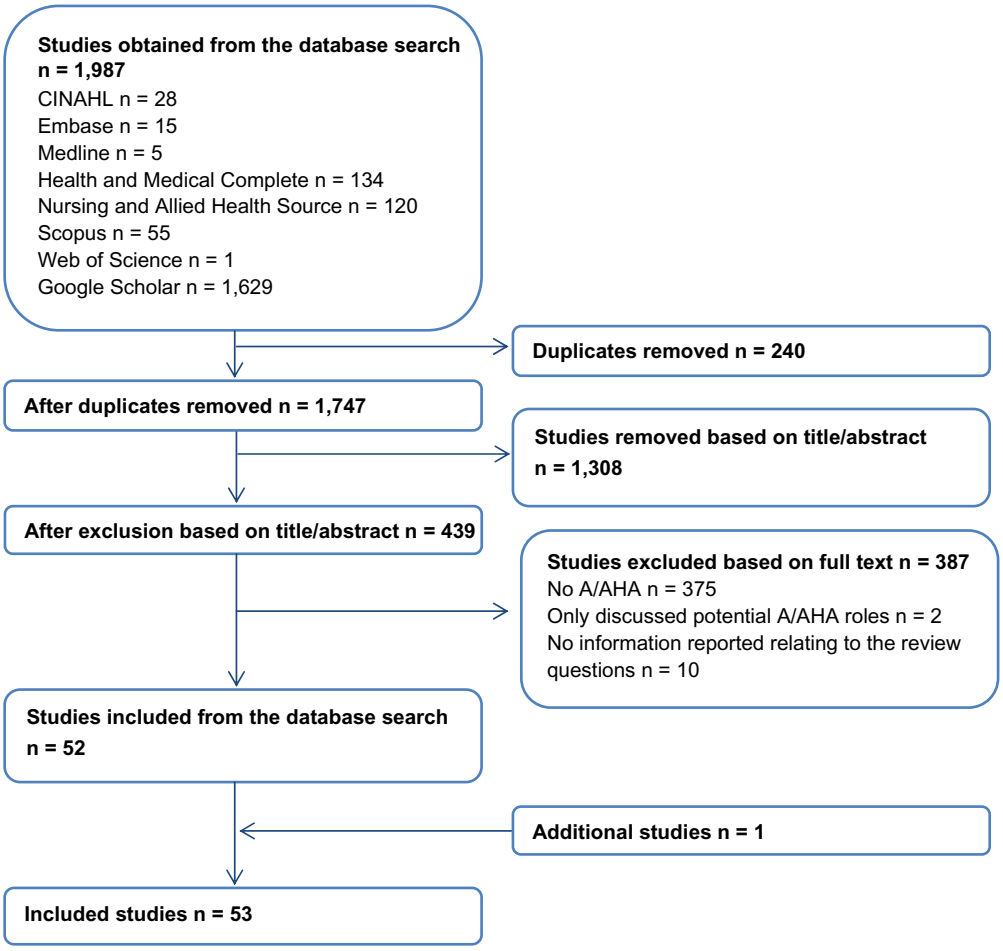

Figure 1 Flow chart for database search.
Abbreviations: CINAHL, Cumulative Index to Nursing and Allied Health Literature; A/AHA, advanced allied health assistant.

Tasks performed and level of autonomy

The tasks performed by A/AHAs, including their level of autonomy, are reported in Table 4. This section drew upon 22 studies; however, only one study[44] (cross-sectional cohort, NHMRC level III-3) investigated the advanced tasks being performed by A/AHAs.

Question 2: what client groups do A/AHAs work with?

Twenty-six studies reported the client groups in which A/AHAs worked, but none of these studies investigated this, so no study was allocated to the NHMRC hierarchy of evidence. A/AHAs work with both adults and children with a range of conditions, including intellectual/learning disabilities, emotional, behavioral, and/or social difficulties, neurologic conditions, dementia, cancer, post-surgery (including total hip replacement), mental health problems, mobility problems, and those at risk of falls (see Table 5).

Question 3: what settings do A/AHAs work in?

A/AHAs work in various settings, including clients' homes, community services, and hospitals (see Table 6). All data reported for this question were regarded as providing background information (ie, not from the research findings) for 30 studies, and were therefore not allocated to the hierarchy of evidence.

Question 4: what training is available for A/AHAs?

Formal training

In Australia, the Certificate IV in Allied Health Assistance was reported as a formal qualification for A/AHAs (one study,[38] background information, NHMRC level not assigned). Further, a Certificate IV level qualification in Hospital/Health Services Pharmacy Support was held by some of the pharmacy technicians/assistants in O'Leary's[44] study (cross-sectional cohort, NHRMC level III-3), but not

Table 2 Advanced allied health assistant terms used and the countries in which advanced allied health assistants work

Advanced allied health assistant	Countries
Senior support worker	UK[8–24,25] Australia[26–28] USA[29,30]
Senior health care assistants/senior support workers	UK[22,31]
Senior health care support worker	UK[32]
Senior health care assistant	UK[33,34]
Senior health care assistant/assistant practitioner	UK[35]
Advanced practice health care aides	Canada[36]
Senior rehabilitation technician	USA[37]
Advanced community rehabilitation assistant	Australia[38]
Senior occupational therapy assistant	UK[39]
Extended role occupational therapy support worker/occupational therapy assistant practitioner	UK[7]
Senior social worker assistants	Hong Kong[40,41]
Senior social work assistant	UK[42]
Physical therapy assistants taking on advanced-level opportunities	USA[43]
Pharmacy technicians/assistants with advanced practice roles	Australia[44]
Pharmacy technician with extended roles	Australia[45]
Advanced practice pharmacy technicians	USA[46]
Senior pharmacy technician	The Netherlands[47] Canada[48,49] Australia[50,51] UK[52–59]
Senior pharmacy assistant	Malaysia[60]

all of them, highlighting the inconsistencies in the level of education required to undertake these advanced roles.

In the United Kingdom, expanded role occupational therapy support workers/advanced practitioners had completed National Vocational Qualification training.[7] However, there was a perception reported in this qualitative study (NHMRC level not assigned) that a number of the skills/attributes that the A/AHA requires could only be gained through experience, rather than the formal "paper" qualification.[7]

Informal training

Informal training for A/AHAs was also reported in two studies[46,55] (background information, NHRMC level not assigned). For advanced practice pharmacy technicians, a self-learning package was used and was developed inhouse.[46] Informal training for both advanced practice pharmacy technicians and senior pharmacy technicians involved competency assessments.[46,55]

Question 5: how effective are A/AHA roles in terms of health, cost, and process outcomes?

Process outcomes and stakeholder perspectives (relating to health and processes) were reported in four studies,[7,38,46,55] but no study reported cost or health outcomes. The main findings

Table 3 Allied health disciplines in which advanced allied health assistants work

Advanced allied health assistant title	Pharmacy	Social work	Psychologist	Occupational therapy	Physiotherapy	Speech therapy	Podiatry	Dietetics nutrition
Senior support worker		21	14,15,26,29,30					
Senior health care assistant		34						
Senior health care assistant/ assistant practitioner					35			
Advanced allied health assistants				3				
Advanced community rehabilitation assistant				38	38	38	38	38
Senior occupational therapy assistant				39				
Extended role occupational therapy support worker/ occupational therapy assistant practitioner				7				
Senior social worker assistants		40,41						
Senior social work assistant		42						
Physical therapy assistants taking on advanced-level opportunities					43			
Pharmacy technicians/assistants with advanced practice roles	44							
Pharmacy technician with extended roles	45							
Advanced practice pharmacy technicians	46							
Senior pharmacy technician	47–59							
Senior pharmacy assistant	60							

Note: Numbers in table refer to references supporting data.

Table 4 Tasks performed by advanced allied health assistants

Advanced allied health assistant	Tasks and level of autonomy
Senior support worker	• Supervise support workers[15,30] • Assist psychologists in training and supervising support workers, and running a parent's group, along with the psychologist[16] • Discuss assessments of children with the support worker who carried out these assessments[29]
Advanced practice health care aides	• Involved in falls prevention program[36]
Advanced community rehabilitation assistant	• Conduct interventions including self-care, domestic tasks, physical programs, community access and integration, domestic tasks, leisure, advocacy for clients at medical appointments, speech and communication, monitoring medication compliance and basic wound care, in individual and group settings, phone, and face-to-face[38] • Work under the supervision of an AHP or nurse[38] • Work with more autonomy than an AHA[38]
Senior occupational therapy assistant	• Advised patients regarding hip precautions[39]
Extended scope occupational therapy support worker	• Works autonomously on an occupational therapy caseload[7] • Can assess the need for and deliver occupational therapy management strategies, within their professional boundaries[7] • Are supervised by an occupational therapist, but has responsibility for the progress of their clients[7] • Is managed by a team leader and an occupational therapist[7] • Can perform occupational therapy and generic tasks in a range of social and health care settings[7]
Advanced practice role for pharmacy technicians/assistants	• Extemporaneous compounding (eg, aseptic admixtures, aseptic cytotoxic admixtures)[44] • Provide research support[44] • Processing claims, new admissions[44] • Assist the pharmacist with clinical review tasks[44] • Assist the pharmacist with therapeutic drug monitoring activities[44] • Provide medicine information to other health professionals and to patients[44] • Provide information for ongoing care, monitoring adverse drug reaction[44] • Conduct quality control activities[44]
Advanced practice tasks for pharmacy technicians	• Answering phones[45] • Posting mail[45] • Photocopying[45] • Entering patent data[45] • Deal with patent billing queries[45] • Notify the billings department of any high cost drugs supplied via the imprest system[45]
Advanced practice pharmacy technicians	• Validate the work of other technicians where nonjudgmental pharmacy functions are performed (tech-check-tech) a task usually performed by a pharmacist[46]
Senior pharmacy technician	• Prepare compound cytotoxic drugs[51] • Have a supervisory role[48]/team leader[49] • Analyze the prescription of drugs[59] • Take medication histories[58] • Have an involvement in the transition from hospital to intermediate care[58] • Liaise between the patient, medical/nursing staff, community pharmacist and/or general practitioner[58] • Ensure legibility and accuracy of discharge prescriptions and/or medicines administration records[58] • Assess the patient's understanding of medications and the potential issues with self-administration[58] • Educate the patients and their families about their medications[58] • Provide support and guidance to students in a foundation degree in medicines management course, and as a work-based facilitator[53] • Lead a drug administration round (oral medicines only), and a nurse would take the lead for complex patients if the senior pharmacy technician did not feel comfortable[55] • Educate students and return to practice nurses who follow on in the drug administration rounds[55] • Coordinate the medical gases service, which included policy implementation, receiving the new cylinders, coordination of the collection of old cylinders, charging the cylinders to the users (wards, departments, special schools), arranging the store room and completing the associated paper work[56]
Senior pharmacy assistant	• Front line for screening for prescriptions reviewed by the outpatient pharmacy department, which were then referred to a trainee pharmacist or pharmacist[60]

(*Continued*)

Table 4 (*Continued*)

Advanced allied health assistant	Tasks and level of autonomy
Advanced allied health assistant	• Practice autonomously[3] • Have primary contact status[3] • Provide plan care programs[3] • Make decisions regarding interventions[3] • Discharge patients[3]
Senior health care assistant/assistant practitioner	• Screen for falls risk[35] • Assist the patient with walking and exercising following instructions provided by a physiotherapist[35]

were that the A/AHA role appears to be well accepted by clients, provides clients with more therapy time, and frees up time for allied health professionals to perform other duties. The details of the effectiveness of A/AHA roles are reported in Table 7. It should be noted that none of these studies were of high-level design. Consequently, there are inherent biases in the study designs, which reduce the believability of these findings.

Question 6: what are the workforce issues for A/AHA?

Two qualitative studies[7,38] (NHMRC level not assigned) reported the issues associated with implementing A/AHA roles. A key issue was the uncertainty of the scope of practice of A/AHA,[7,38] concerns relating to how they should be best utilized,[38] as well as issues around responsibility and accountability.[7,38] In some cases, the allied health professionals had to spend more time supervising and training the A/AHA in the initial stages.[38] One study[7] reported both undersupervision and oversupervision of the A/AHA, which may have been due to lack of understanding of the A/AHA role and the training provided to these assistants. Specific to the advanced community rehabilitation assistant role, time management was an issue because the A/AHA had to report to and communicate with a range of supervisors.[38] Some allied health professionals felt that the A/AHA were a cheap alternative to their own role;[7] however, in another study,[38] an A/AHA felt that their remuneration was insufficient given the additional responsibility of the role. These factors need to be considered in implementing A/AHA roles.

Table 5 Client groups that advanced allied health assistants work with

Advanced allied health assistant	Client group
Senior support worker	People with intellectual/learning disabilities[9,18,23] Adults with intellectual/learning disabilities[8,10,14,17,19,27] Adults with intellectual/learning disabilities and challenging behavior[20] People with disabilities[26] Trafficking victims[13] Adults with Prader–Willi syndrome[12] Children with emotional, behavioral, and/or social difficulties[16,29] Children with (or at risk of developing) conduct disorders[15,30] People with progressive long-term neurological conditions[22]
Senior health care assistant	People with dementia and cancer[33] Cancer patients at end of life[34]
Senior occupational therapy assistant	Patients post primary total hip replacement[39]
Senior social worker assistant	People with mental health problems[40,41]
Senior social work assistant	People with mental health problems and substance abuse[42]
Senior pharmacy assistant	Patients on surgical wards[55]
Senior health care assistant/ assistant practitioner	People with mobility problems[35] People at risk of falls[35]

Discussion

This systematic review is the first investigating the roles, implementation, and effectiveness of A/AHAs. This review therefore provides the first high-level synthesis of literature, providing a greater overview of the scope and effectiveness of the A/AHA role than the primary literature. The published research is low-level (NHMRC level III-3 or not assigned), and for some research questions there were few relevant studies identified, limiting the conclusions that can be drawn from this review. This lack of evidence highlights the need for greater research into the area of A/AHA roles.

A/AHA roles are diverse in terms of the disciplines they work with, as well as their work settings, tasks, and titles. This diversity presents challenges in defining such a role, and therefore providing appropriate training for these roles. A/AHA roles are likely to have emerged within a specific health service to meet unique needs, thus leading to ambiguity in what the role actually entails. This is not unique to A/AHA, given that systematic reviews regarding AHA roles

Table 6 Work settings of advanced allied health assistants

Allied health assistant role	Hospital	Residential services/ group homes	Care homes	Acute services and outreach teams	Adult mental health and learning disability services	Community based services/ programs	Day care	Therapy centers	Community settings	Client homes	Outpatient pharmacy department	NHS trust	Intermediate care facility
Senior support worker/senior health care assistants/senior health care support worker	31,32	10,12,14, 20,23	31	13	11	9,16,28							
Senior health care assistant/assistant practitioner	34,35					34	34						
Advanced practice health care aids	36												
Senior rehabilitation technician	37												
Advanced community rehabilitation assistant	38							38	38	38			
Senior occupational therapy assistant	39												
Senior social work assistant						42							
Pharmacy technicians/ assistants with advanced practice/ extended roles/ advanced practice pharmacy technicians	44–46												
Senior pharmacy technician	47,49,51, 54,56–58											59	58
Senior pharmacy assistant											60		

Note: Numbers in table refer to references supporting data.
Abbreviation: NHS, National Health Service.

Table 7 Key findings regarding the effectiveness of advanced allied health assistant roles

Study	Study design (NHMRC level)	Advanced allied health assistant role implemented	Comparison	Key findings
Nancarrow and Mackey[7]	Qualitative (not assigned)	Expanded role occupational therapy support worker	OT	This A/AHA role freed up time for the occupational therapist to perform other duties. The A/AHA was reported to spend more time in the client's home than the occupational therapist, which allowed them to get to know the patient better, and therefore were better able to manage them appropriately. Some support workers as well as managers stated that the support workers were better able to relate to the patients as they used less complicated language and had a similar background to their patients. The patients valued having the additional time with a staff member, could not differentiate between the A/AHA and occupational therapist, and they were not concerned about the lack of formalized training, provided they were trained appropriately.
Wood et al[38]	Qualitative (not assigned)	Advance community rehabilitation assistant	AHP	Clients were satisfied with the A/AHA services, in particular the home visits were viewed as being valuable, as were the motivation, feedback, assistance, and monitoring within their therapy programs. Some clients felt they were getting more therapy with the A/AHA than they were prior to implementation of these roles. AHPs reported improvements in client outcomes, which they felt were due to more frequent and longer therapy sessions. AHPs reported decreased waiting lists, increased throughput, service extension and expansion, enhanced multidisciplinary practice, resource development, and improved ability to provide services under the most appropriate delivery model.
McKee and Zimmerman[46]	Non-randomized blocks, without concurrent controls (III-3)	Advanced practice pharmacy technicians	Pharmacist	Outcome measures used: time saving for the clinical pharmacist and the variances. Implementation of this role saved the clinical pharmacist over 50 hours per month, which freed up their time to provide more patient-focused services. Variances for the pharmacist in the 12 months immediately prior to implementation of the A/AHA role was 1.42 per month (95% CI 0.95–1.88), whereas the variance rate for the advanced practice pharmacy technician was 0.31 per month (95% CI 0.00–0.77), indicating greater accuracy of the new role.
Holding[55]	Self-reflection (not assigned)	Senior pharmacy technician	Nurses	The senior pharmacy technician reported that there were improvements in terms of drug security, medicines being delivered in a more timely manner, and the senior pharmacy technician was able to explain what the medicines were for and how to take them.

Abbreviations: NHMRC, National Health and Medical Research Council; A/AHA, advanced allied health assistant; AHP, allied health professional; OT, occupational therapist; CI, confidence interval.

have also reported this diversity.[2] The inconsistencies in how AHA roles are defined also has potential implications for defining the A/AHA roles, given that what may be considered an advanced role in one health service may be considered an AHA role in another. This has potential implications for this review, considering that studies had to identify the role as being advanced, extended, or senior to meet the inclusion criteria; hence studies of AHAs which may be considered advanced in some settings may have been missed.

In implementing A/AHA roles, stakeholder perspectives have been positive and the roles have been effective in terms of process outcomes, although evidence is low-level. There is currently no evidence regarding the effectiveness of these roles in impacting health or cost outcomes, presenting a clear evidence gap. All included studies regarding the effectiveness of A/AHA compared them with health professionals, rather than with AHAs. Hence the value of implementing A/AHA roles over AHA roles has not been determined. This reveals another area for future research.

A number of issues were reported in terms of fitting the new A/AHA roles into traditional health care models. Prior to implementation, the potential impact on other staff should be considered; strategies should be put in place to ensure that the A/AHAs are appropriately trained, supervised, and

utilized within the health care system they are working in; and the level of responsibility and accountability of A/AHAs and the supervising allied health professionals needs to be established.

As with any change in the health care system, potential legal issues must also be considered. This was not discussed in implementation of A/AHA roles in any of the included studies. These requirements are likely to differ depending on location, the professions involved, the tasks being performed, and the level of autonomy and accountability assumed by the A/AHA. It should be noted that advanced practice roles by definition are still within the scope of practice of AHAs and are therefore unlikely to have significant legal implications. However, the legal issues would have to be considered carefully before any exploration of extended-scope tasks for AHAs.

Conclusion

This is the first systematic review, to our knowledge, which has specifically investigated the roles of A/AHAs. The conclusions drawn are limited, due to the quality (low-level designs used, qualitative studies) and quantity of research evidence. Despite this, A/AHA roles are being established in Australia and internationally. These roles are diverse and welcomed by consumers, and there is some suggestion that they are effective in terms of process and health outcomes. Further research in the area should aim to understand the roles better and conduct higher-level studies to determine their effectiveness, particularly in terms of health and cost outcomes. This would enable policy-makers to determine the value of these roles, and how best to utilize them.

Acknowledgments

We would like to acknowledge Leanne Pagett and Karen Murphy (ACT Health Directorate) for their assistance in developing the project, Karen Grimmer (International Centre for Allied Health Evidence, University of South Australia) for her assistance in developing the search strategy, and Saravana Kumar (International Centre for Allied Health Evidence, University of South Australia) for assisting in the drafting of the manuscript.

Disclosure

The authors report no conflicts of interest in this work.

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