The effectiveness of delegation interventions by the registered nurse to the unlicensed assistive personnel and their impact on quality of care, patient satisfaction, and RN staff satisfaction: a systematic review

Una Hopkins MS, RN, FNP-BC, DNPc[1]
Any Sajan Itty MS, RN, FNP-BC, DNPc[1]
Helen Nazario MS, RN, FNP-BC, DNPc[1]
Miriam Pinon MS, MPH, RN, FNP-BC, DNPc[1]
Jason Slyer DNP, RN, FNP-BC[1]
Joanne Singleton PhD, RN, FNP-BC, [2]

1.Pace University, New York, NY.
2.Pace University, New York, NY; The New Jersey Centre for Evidence Based Nursing: A Collaborating Centre of the Joanna Briggs Institute at the University of Medicine and Dentistry of New Jersey.

Centre submitting review:

Pace University, College of Health Professions, Lienhard School of Nursing and the New Jersey Center for Evidence Based Practice at the University of Medicine and Dentistry of New Jersey School of Nursing: A Collaborating Centre of the Joanna Briggs Institute

Corresponding author: Una Hopkins, MS, RN, FNP-BC, DNPc

Email: unahopkins@me.com

Executive summary

Background

Delegation by the registered nurse is a decision making process that includes assessment, planning, implementation, and evaluation. Due to an ever-expanding global shortage of nurses, registered nurses are increasingly dependent on unlicensed assistive personnel to assist in the provision of safe patient care. Delegation is recognised as a fundamental nursing skill that can be utilised effectively to improve quality care.

Objective

To examine and synthesize the best available evidence regarding the impact of delegation interventions used by the registered nurse with the unlicensed assistive personnel and their impact on quality of care, patient satisfaction, and registered nurse staff satisfaction.

Inclusion Criteria

Types of participants

Registered nurses and unlicensed assistive personnel in patient care settings where delegation occurs.

Types of interventions

This review considered studies that evaluated the effectiveness of delegation interventions by registered nurses to unlicensed assistive personnel.

Types of Outcomes

The outcomes examined were quality of care, patient satisfaction, and/or registered nurse staff satisfaction as measured by validated and reliable tools.

Types of Studies

The review first considered randomised controlled trials; in their absence other research designs, such as non-randomised controlled trials, or other quasi-experimental studies, observational studies and descriptive studies were considered for inclusion in the systematic review.

Search Strategy

The search strategy aimed to find both published and unpublished studies in the English language from the inception of the included databases through December 2011. The databases searched included the Central Register of Controlled Trials (CENTRAL), EMBASE, MEDLINE, CINAHL, Healthsource Nursing/Academic edition, and PsycINFO. A search of the grey literature and electronic hand searching of relevant journals was also performed.

Methodological Quality

The studies selected for retrieval were critically evaluated by two independent reviewers for methodological quality using standardised critical appraisal instruments from the Joanna Briggs Institute.

Data Collection

Data were extracted using standardised data extraction instruments from the Joanna Briggs Institute.

Data Synthesis

Studies were found to have significant heterogeneity between the populations and interventions of the included studies; therefore, pooled statistical meta-analysis could not be completed. The findings are presented in narrative form.

Results

Two quasi-experimental studies were identified. In one study, the women counselled by the lay nurse aides received 80% of recommended messages compared to 75% received by the women counselled by the nurse-midwives (β= 4.7, 95%CI: -1.7, 11.0; Non-inferiority). Non-inferiority was demonstrated between the lay nurse aides and the nurse-midwives with respect to communication techniques. The mean performance was high, 95% and 98% among nurse-midwives and lay nurse aides respectively (β =2.4, 95%CI: -0.2, 5.0; Non-inferiority). No difference was found between the nurse-midwives and the lay nurse aides in providing antenatal counselling, education, and maternal-newborn care when proper training and supervision was given. The other study examined six hypotheses that looked at quality of care outcomes in a care model where the registered nurse delegated tasks to unlicensed assistive personal. Five of these outcomes showed no significant improvement as a result of the intervention. Patient knowledge about intravenous therapy was the only quality of care outcome that showed improvement post-intervention with scores increasing from 27% at baseline to 78% at 12 months. There was no improvement in the one hypotheses evaluating registered nurses job satisfaction.

Conclusions

There is a paucity of evidence on the effectiveness of delegation interventions and strategies by registered nurses to unlicensed assistive personnel. Delegation interventions require characteristics such as teamwork, training, support, supervision, communication, and evaluation to positively impact quality of care, patient satisfaction, and registered nurse staff satisfaction outcomes.

Implications for practice

Task shifting could have a positive impact on quality of care and staff satisfaction while providing the registered nurse with an opportunity to increase efficiency.

Implications for research

The areas of feedback and evaluation in the registered nurse / unlicensed assistive personnel relationship needs further study.

Keywords

delegation, nurse, registered nurse, clinical nurse specialist, unlicensed assistive personnel, patient care associate, patient care technician, nurse's aides, quality of care, staff satisfaction, missed care

Background

The Institute of Medicine's (IOM) 2001 report, *Crossing the Quality Chasm*, identified coordination of care, team effectiveness, and workforce shortages as important areas that must be addressed in an effort to improve the quality and safety of health care in the 21st century.[1-3] In 2003, the IOM challenged nursing professionals to attain excellence in five areas of proficiency and competence in order to create safe work environments and improve patient care. These areas were considered to be the fundamentals of quality nursing care, and included: patient centred care, interdisciplinary teamwork, quality improvement, the use of information technology, and the use of evidence-based practice.[4] Delegation is recognised as a fundamental nursing skill that can be utilised effectively to improve quality care.[1]

The workload, responsibility, and increasing age of a shrinking registered nurse (RN) workforce worldwide, has resulted in a growing dependency on unlicensed assistive personnel (UAP) to provide many aspects of patient care.[5] Globally, RNs are dependent on UAPs to assist in the provision of safe patient care.[6] The World Health Organization has recently released guidelines on task shifting to ensure that quality of care is not compromised when non-professional personnel render care to patients.[7-9] In third world countries in Africa and elsewhere, task shifting has been accepted due to the shortages of qualified health personnel and monies for programs in healthcare.[8]

Delegation and communication are important skills necessary for the RN to provide clear and effective direction to the UAP.[10] The standards of nursing care, quality of care, patient satisfaction, and RN staff satisfaction outcomes may be compromised in the absence of effective communication between the RN and the UAP. Literature on RN delegation has shown that omissions and errors have been associated with poor communication between the RN and the UAP.[6,11] The World Health Organization has enjoined patient safety groups to urge better communication among personnel who are providing patient care. There are similarities that exist between the United Kingdom and the United States regarding effective

delegation. Both countries use the National Council of State Board of Nursing's Five Rights of Delegation as a guideline for effective delegation.[5]

The American Nurses Association defines the UAP as an individual trained to assist the RN in direct and indirect care when an RN delegates tasks to them.[12] UAPs have been referred to by many titles, including nursing assistants, certified nurse's aide, nursing attendant, patient care associate, patient service aide, and patient care technician. The tasks most commonly delegated to the UAP by an RN include feeding, turning and positioning, ambulation, mouth care, hygiene, and monitoring vital signs.[11-13]

The International Council of Nurses has published a position statement about the relationship between nurses and assistive personnel. The statement describes the delegation and supervision of nursing care by the RN to the UAP emphasising that the RN retains all responsibility for nursing care at all times. The International Council of Nurses statement recognises the centrality of RN responsibility for nursing care and the role of the UAP to maintain safe effective care within defined standards and based on the code of conduct of its country and employer. The International Council of Nurses supports the independence of each country and locality to determine the nature of care delivery, and the standards of quality, training and allocation of resources.[14]

Similarly, the American Nurses Association and the US-based National Council of State Board of Nursing define "delegation as the process for the RN to direct another person to perform nursing tasks and activities."[15(p.1)] There are Five Rights of Delegation to be considered when delegating: right circumstance, right task, right person, right supervision, and right communication.[15] The essence of the Five Rights of Delegation highlights the RN's accountability for all aspects of patients care. Communication between the RN and the UAP is fundamental to the delegation process.

Nursing organizations worldwide, describe RN delegation to the UAP as common practice in hospitals, extended care facilities, and other health care environments.[1-3, 12-15, 27-28] RN and UAP roles, responsibilities, and relationships have been discussed and published by authors such as Bittner and Gravlin[11], Anthony and Vidal,[2] Aiken[22,23, 26-28], Kaplan and Ura [49], Allen,[19] and Potter,[24] in the form of expert opinions, descriptive, and qualitative studies. The impact of effective delegation strategies by the RN to the UAP on quality of care, patient satisfaction, and/or RN satisfaction outcomes has not been clearly defined or supported by sufficient quantitative evidence. As staffing patterns continue to utilise the RN-UAP, ongoing evaluation of quality of care outcomes, patient satisfaction, and RN staff satisfaction will be very important from cost, quality, and access perspectives.

The delegation process between the RN and the UAP has been reported in the literature since the early 1990s.[16-18] Effective delegation in a health care setting between the RN and the UAP can impact patient

outcomes, patient safety, job satisfaction, efficiency of care delivery, and facilitate cost containment.[16,19,20] The delegation of specific tasks associated with patient care from the RN to the UAP is a process and incorporates skills such as communication, evaluation, feedback, and mutual respect.[2,21] The use of the UAP is common practice and often provides a cost offset in terms of human resource expenditures.[2,15,22-24] The National Council of State Board of Nursing outlines the process of delegation for RNs in the Nurse Practice Act.[2,15]

In the current health care environment, it is imperative that the acute care setting maintain an effective RN to UAP staffing ratio in order to deliver safe, quality, cost effective health care to their consumers.[25] The evidence provided by an international study, which included five countries, 43,000 RNs, and hundreds of thousands of patients, points to the relationship between healthy work environments and patient satisfaction, staff satisfaction, and positive patient outcomes.[26-28] The skilful use of the delegation process by the RN to the UAP may impact quality of care, patient satisfaction, and staff satisfaction. Poor delegation skills may adversely impact quality of care and patient outcomes.[26]

Effective delegation occurs when the desired patient outcome is achieved through RN delegation, communication, and supervision of tasks assigned to the UAP.[29] Identification of the most effective delegation strategies can contribute to achieving the highest quality nursing care delivery in many complex and dynamic health care environments. Stressful RN-UAP relationships typically result in poor communication and teamwork that can contribute to ineffective delegation, missed care, and poor patient outcomes.[3,5]

An important aspect of delegation is relational coordination. Relational coordination is a process that includes communication, and relationship building. It is measured by the frequency of communication, strength of shared goals, and the degree of mutual respect among care providers.[21] Relational coordination is associated with improved quality of care and has been shown to enhance patient outcomes.[21]

The RN must be familiar and comfortable with patient care responsibilities and the scope of practice, and understand the skills needed to delegate effectively to the UAP. The RN who delegates must clearly communicate the specific tasks to the UAP and is responsible for ensuring that the one to whom the task is delegated is qualified to do the task. Aiken[26-28] describes organisational characteristics that impact delegation to enhance positive patient outcomes. These characteristics include staffing ratios, the availability of the UAP, and the RN's ability to exercise professional judgment and control over the practice environment. These organisational characteristics impact risk mortality rates and job satisfaction.[26,28]

Teamwork and communication are necessary for effective delegation and are essential to the building of solid relationships among staff. It is up to the directors, managers, and educators to teach the staff effective communication and delegation skills. The RN must be available to those he or she is delegating to, should there be questions in the execution of any task.[2,15] Trust, active participation, understanding, communication, and preparation are five key elements that contribute to successful delegation. It is imperative that RNs continue to evaluate their own practice as well as to evaluate and find the best strategies to train and educate the UAP to ensure competent and efficient care. Efficiency, quality patient care, and the satisfaction of both the patient and staff members may impact effective delegation by the RN to the UAP.[2]

Bittner and Gravlin[11] identify four key components to successful delegation: the relationship between the RN and UAP, communication, system support, and nursing leadership. Clarity about tasks being delegated, confirmation of knowledge and comprehension, trust, respect, effective communication such as UAP handoffs, and critical thinking have all been identified as skills necessary for effective delegation.[3] Delegation involves modelling and mentoring for those to whom responsibilities are delegated. Successful delegation skills involve critical thinking and preparing the RN to assume increasingly responsible leadership roles.[48] Training and education are paramount for successful delegation interventions in the RN-UAP care model. Kaplan and Ura[49] support the use of simulation based learning to teach skills of delegation, prioritisation, and implementation. In the non-static healthcare environment prioritisation is a skill all members of the healthcare team should become proficient in and therefore should be teachable to both UAP and RN.

The IOM defines quality as "the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." [4(p.1)] Institutions in the United States and abroad have utilised various tools to measure outcomes including quality of care, patient satisfaction, and staff satisfaction. Examples of commonly used tools are The National Quality Forum's (NQF) NQF-15, used to measure the quality of care; the Hospital Consumer Assessment of Healthcare Providers Survey (HCAHPS) used to assess patient satisfaction; and the National Database of Nursing Quality Indicators (NDNQI), used to measure staff satisfaction.

The NQF and the Agency for Health Research and Quality (AHRQ), along with the IOM, are in agreement about the definition of quality.[30-31] The NQF, a non-profit organisation, has developed a three-part mission to improve quality of care, provide goals for performance improvement, publicly set and report standards, and promote national goals through education and outreach programs.[30] A specific nursing-sensitive tool, the NQF-15, was developed by the NQF to measure quality of care and consists of three domains: patient, nursing, and system measures.[30-33]

Patient centred care is one of six priority areas identified for improvement of quality by the IOM.[1] Achieving patient satisfaction is an important element of patient centred care. Patient satisfaction with nursing care is achieved when the care received by the patient meets or exceeds expectation.[34] These expectations have been described as including technical, interpersonal, environmental, financial, and outcome components.[34]

An established tool for measuring patient satisfaction with inpatient hospital care is the HCAHPS or the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Hospital Survey. Effective communication with nurses and nursing services are among the eight components used to evaluate patient satisfaction with hospital care.[35-36] In addition, the ratio of RNs to patient days is used as a characteristic of a hospital to evaluate patient satisfaction.[36] The HCAHPS has been translated into Spanish for use in the United States, as well as being internationally accepted in countries such as Singapore, Belgium, Japan, Korea and the Netherlands.[38-39]

The NDNQI tool has been utilised to measure staff satisfaction. The NDNQI was established in 1998 as part of the American Nurses Association's Safety and Quality Initiative and is currently being utilised in over 1425 hospitals in the United States and in at least six countries worldwide.[40] It is the only nursing database which provides quarterly and annual reporting of structure, process, and outcome indicators to evaluate nursing care at the unit level. It consists of several indicators, including the RN satisfaction survey and nurse staff turnover.[4,41]

Delegation by the RN to the UAP may have considerable impact on quality of care, patient satisfaction, and staff satisfaction. Identifying the best available evidence on delegation interventions may enhance patient outcomes. This review is aimed to find the best available evidence about the impact of RN-UAP delegation strategies on quality of care, patient satisfaction, and/or RN staff satisfaction.

Medline, CINAHL, PsycINFO, The Joanna Briggs Institute Library of Systematic Reviews, and the Cochrane Database of Systematic Reviews were searched for systematic reviews on this topic and no reviews were identified on the subject of the impact of RN-UAP delegation strategies on quality of care, patient satisfaction and/or RN satisfaction.

Review question/objective

The objective of this systematic review was to synthesize the best available research evidence on the effectiveness of delegation interventions by the RN to the UAP and their impact on quality of care, patient satisfaction, and/or RN staff satisfaction. Delegation interventions were not limited to any particular health care setting.

The review question was: To what extent does the effectiveness of delegation interventions by the RN to the UAP impact on quality of care, patient satisfaction, and/or RN staff satisfaction?

Inclusion Criteria

Types of participants

The review considered studies about delegation that included *Registered nurses* and *Unlicensed assistive personnel* in any patient care setting.

In this systematic review the following definitions were used:

Registered nurse: A person that has graduated from a nursing program and has been licensed to practice.[15,40] Advanced practice nurses, including nurse practitioners and nurse-midwives, are registered nurses who have graduated from a nursing program and who will require an additional certification to practice in the advanced role.

Unlicensed assistive personnel: Persons that are prepared to assist the RN under the RN's direct supervision. Unlicensed assistive personnel may include, according to the International Standard Classification of Occupation, nurses aides, certified nursing attendant, personnel support worker, and health care assistant.[42,43] Personal support assistant and lay nurses aide would also fall under the same category as the unlicensed assistive personnel.

Types of interventions

This review considered studies that evaluated the effectiveness of delegation interventions by the RN to the UAP and their impact on quality of care, patient satisfaction, and/or RN staff satisfaction.

For the purposes of this systematic review the following definitions were used:

RN-UAP delegation: "Entrusting the performance of a selected nursing task to an individual who is qualified, competent, and able to perform such tasks. The nurse retains the accountability for the total nursing care of the individual."[15(p.1)]

The comparator is standard nursing care delivered by the RN.

Types of outcomes

The outcomes examined were quality of care, patient satisfaction, and/or RN staff satisfaction measured by validated and reliable tools. Validated and reliable measurement tools are considered measurement tools that have been previously tested and found to have acceptable and reported psychometric properties.

For the purposes of this systematic review the following definitions were used:

Quality of care (as defined by the IOM, the NQF, and AHRQ): The ability for desired health outcome to be achieved consistent with current professional knowledge.[1, 25,30,32] Examples of quality of care measurement include a decrease in the incidence of missed care, a decrease in the incidence of medication errors, a decrease in falls, and a decrease in call bell response time.

Patient satisfaction: The patients' perception that their nursing care needs were met or exceeded.[49] The expected outcomes can be technical, interpersonal, environmental, or financial in nature.

RN Staff satisfaction (as defined by the American Nurses Association): Job satisfaction expressed by nurses as determined by a scaled response to a series of questions to identify the nursing staff's attitudes towards their employment situations and environment in a patient care setting.[39] Tasks, autonomy, RN-RN interactions, professional status, nurse-physician interactions, pay, and nursing management are a few examples of categories surveyed to determine RN staff satisfaction.

Types of studies

The review first considered randomised controlled trials (RCTs); in the absence of RCTs other research designs, such as non-randomised controlled trials, or other quasi-experimental studies, observational studies and descriptive studies were considered for inclusion in the systematic review.

Search strategy

Both published and unpublished research studies available in the English language from the beginning of the databases to December 2011 were sought. A three-step search strategy was utilised in this review. An initial search of MEDLINE and CINAHL was undertaken to formulate a comprehensive list of key words. This was followed by analysis of the text words contained in the title, abstract, and the index terms. Medical subject headings (MeSH), keywords, and subject headings were identified to pursue a consistent search strategy (Appendix I). A second search using all identified keywords, index terms, and subject headings were then undertaken across all included databases. The full text of an article was retrieved for all studies that met the inclusion criteria. Thirdly, the reference lists of all identified papers, including reports and articles, were searched for additional studies. Studies identified from reference list searches were assessed for relevance based on the study title. Virtual hand-searches of *Journal of Nursing Management, Journal of Nursing Administration, and Journal of Nursing Administration Quarterly* on the topic of delegation by RNs were conducted from January 2010 through December 2011 to identify any current literature that may not yet be catalogued in indexed databases.

The databases searched include MEDLINE, CINAHL, Healthsource: Nursing/Academic edition PsycINFO, EMBASE, and the Central Register of Controlled Trials (CENTRAL).

A initial grey literature search included: ProQuest Dissertations and Theses, MedNar, Scirus, New York Academy of Medicine, Google Scholar, The Virginia Henderson International Nursing Library, and reference lists from selected articles. After the initial search, the grey literature searches were expanded to include Biomed, Clinical medicine NetPrints collection, Dissertation abstract database, GreyNet, Health Services Research Projects in Progress, Health Services/Technology Assessment Texts, World Health Organization Institutional Repository for Information Sharing database, National Information Center on Health Services Research and Health Care Technology, Science.gov, Theses Canada, TRIP Database, and Centre for Evidence in Ethnicity, and Health and Diversity (CEEHD). Electronic communication with leading authors in the field was initiated but no response was received. A detailed record of the search strategy can be found in Appendix II.

The keywords/search terms used were: delegation, nurse, clinical nurse specialist, unlicensed assistive personnel, patient care associate, patient care technician, nurse's aides, quality of care, RN staff satisfaction, missed care, nursing staff satisfaction. See Appendix I for a full list of keywords, MeSH terms, and subject headings.

Methods of Review

Assessment of methodological quality

Studies that were selected for retrieval were assessed by two independent reviewers for methodological validity prior to inclusion in the review using the standardised critical appraisal instruments from the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix III). Any disagreements that arose between the reviewers were resolved through discussion, or with a third reviewer.

Data extraction

The standardised data extraction tool from JBI-MAStARI (Appendix IV) was used to extract the data from the studies included in this systematic review. The data extraction included details regarding the interventions, populations, study methods and outcomes of significance to the review question and objective.

Data synthesis

Studies were found to have significant heterogeneity between the populations and interventions of the included studies. Pooled statistical meta-analysis could not be completed; therefore, the findings are presented in narrative form.

Review Results

Description of studies

The database search yielded a total of 151 citations and the grey literature search yielded a total of 670 citations. An electronic hand search of the three identified journals yielded one article. This search strategy resulted in a total of 812 potentially relevant citations. The search was then narrowed down to a total of 34 papers based on title and keyword review. After evaluation of the abstracts, 20 additional papers were excluded. Out of the 14 papers that were retrieved for full review, 12 papers were excluded for not meeting the inclusion criteria on the basis they were qualitative studies, leaving two studies for critical appraisal of methodological quality. See appendix V for a list of the excluded studies and the reasons for exclusion. Two quasi-experimental studies were included in the systematic review.

Figure 1 outlines the process used to identify the relevant studies included in this review.

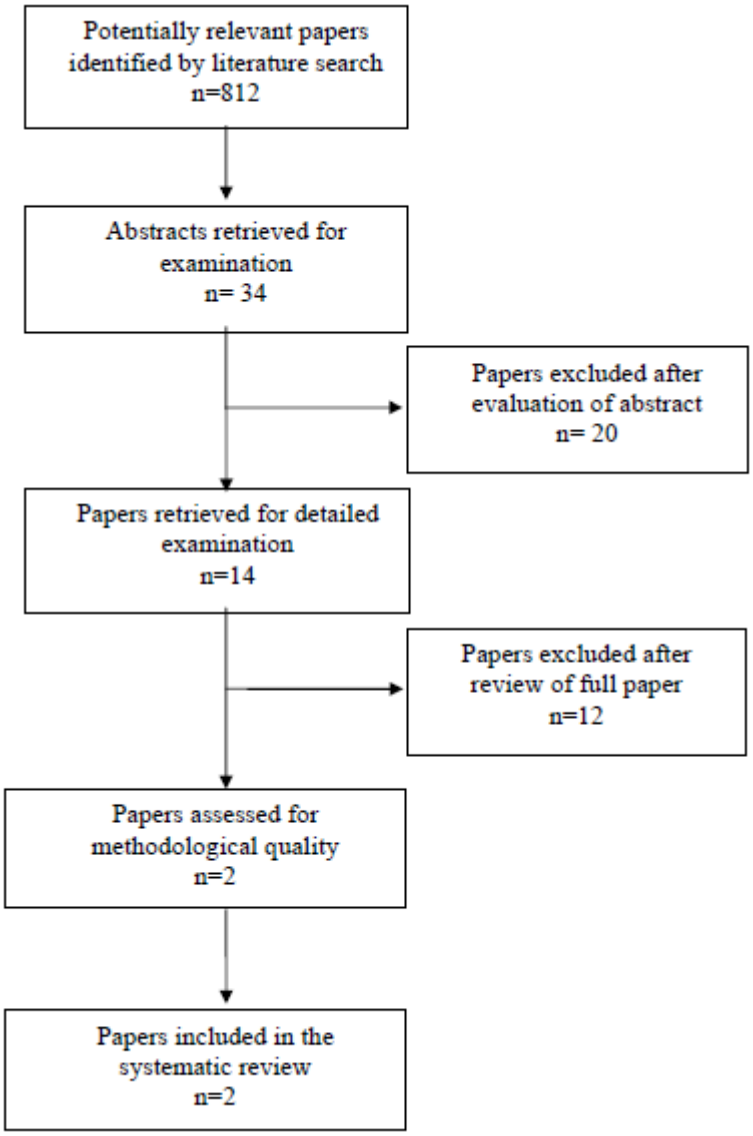

Figure 1. Flow chart for study selection

Methodological Quality

The two quasi-experimental studies met the criteria for inclusion to this systematic review. The reviewers initially determined that at least five of the ten questions on the assessment tool for RCTs/Pseudo-RCTs from JBI MAStARI (Appendix III) should be answered yes for a study to be considered to have acceptable methodological quality for inclusion in this review, with questions 6, 7, 8 and 9 being the most important to be positive. The Tourangeau study[16] met 6/10 of the questions positively and was included in the review (Appendix VI). The Jennings study[46] met 5/10 questions and was included in the review (Appendix VI).

Review Results

Two quasi-experimental studies were included in this systematic review (Appendix VII). One study was conducted in Canada[16] and one in Benin.[46] The studies met the inclusion criteria where a delegation intervention from RN to UAP resulted in an outcome of quality of care, patient satisfaction, and/or RN staff satisfaction. These two studies highlighted the importance of training, supervision, and evaluation for effective delegation by the RN to the UAP.

The Jennings[46] study

The Jennings[46] study investigated task shifting of maternal and newborn care counselling from nurse-midwives to UAPs, referred to as lay nurse aides in this study. Task shifting refers to the delegation of non-technical tasks traditionally held by professional workers to workers with lower qualifications. Effective task shifting of work from the nurse-midwives to the lay nurse aides was expected to free the nurse-midwives from non-essential duties and enable them to concentrate on more urgent issues requiring professional skills and judgment for which the nurse-midwives were qualified. Training for the lay nurse aides consisted of maternal and newborn counselling instruction, which included the use of pictorial counselling aids to more effectively and accurately give counselling to pregnant women. The concept of task delegation, peer and group role-playing, interpersonal communication, and quality of care were also part of the training. The nurse-midwives' training included planning, supervision, and evaluation of the lay nurse aides in order to ensure quality care within the standard of care.

Seven public health maternity centres in Benin with a total of 409 pregnant women participated in the study. Two hundred six women were in the RN group and 203 women were in the group being counselled

by the lay nurse's aide. Forty-eight health care providers including 21 nurse-midwives and 27 lay nurse aides were evaluated to determine the outcomes related to quality of care and RN staff satisfaction. Using systematic sampling, clients were approached while waiting for a consultation and were given information regarding the purpose of the study. They were then invited to participate. The nurse-midwives comprised the control group and the lay nurse aides who provided antenatal counselling comprised the intervention group.

The study[46] used a non-inferiority methodology to determine whether antenatal counselling in maternal and newborn care provided by the lay nurse aides was non-inferior to that of the skilled nurse-midwives. Communication skills of the lay nurse aides and the nurse-midwives needed to be of the same level and standard. Two areas were reviewed in this study: the quality of counselling by the lay nurse aides was observed through direct observation using a pre-tested observation checklist and the pregnant women's comprehension of maternal and newborn care was evaluated by interviewing them on their knowledge prior to leaving the clinic. The focus for this review was quality of care as assessed by the counselling by the lay nurse aides and the pregnant women's comprehension of maternal and newborn care.

All public maternity sites participating in the study were part of the Integrated Family Health Program (PISAF) supported health centres. These are funded by the United States Agency for International Development Works (in the community and civil society) to improve knowledge and health behaviors.[46,47] This funding may have potentially influenced the study's results compared to non-supported sites; however, no evidence of this was found. The observers of the study could not be blinded to the type of provider, which could have contributed to bias in the study; however, this could not be confirmed. To minimize bias as to which women were selectively counselled by provider type, the study had two data collection periods where sessions led by nurse-midwives were examined prior to their shift followed by examination of sessions led by the lay nurse aides after the shift.

Jennings[46] demonstrated that with adequate training and support rendered to the lay nurse aides, the counselling services by the less skilled workers could be equivalent, or non-inferior, to the counselling given by the nurse-midwives in areas of birth preparedness, danger sign recognition and clean delivery. The non-inferiority study was designed to show that the difference between the nurse-midwives and lay nurse aide is no less than the non-inferiority margin (Δ_{NI}) of 10%. Non-inferiority (NI) was determined if the lower confidence interval (CI) for the difference in mean percent (β) of recommended messages between the two provider groups lay above $-\Delta_{NI} = -10$. A lower confidence limit above zero supported superiority (S) of counselling by the lay nurse aides.

The three areas measured in this study[46] were: quality of counselling, provider perceptions of task delegation, and women's knowledge of maternal and newborn care. Patient satisfaction and RN staff satisfaction were not evaluated.

Contents of Communication

Five areas of content related to antepartal counselling by lay nurse aides were measured by direct observation with a pre-test post-tested observation checklist. The quality of counselling measures included the following topics: perinatal care, birth preparedness, danger signs, clean delivery, and newborn care. The women counselled by the lay nurse aides received 80% of recommended messages compared to 75% received by the women counselled by the nurse-midwives (β= 4.7, 95%CI: -1.7, 11.0; NI). This demonstrated non-inferiority in the contents of communication delivered by the lay nurse aides.

Communication techniques and duration

The six communication techniques measured by direct observation with a pre-test post-tested observation checklist were: presenting the subject, posing questions to determine current knowledge, using visual aids, verifying understanding, motivating adoption of new behaviours, and asking the woman if she has questions. Non-inferiority was demonstrated between the lay nurse aides and the nurse-midwives with respect to communication techniques. The mean performance was high, 95% and 98% among nurse-midwives and lay nurse aides respectively (β =2.4, 95%CI: -0.2, 5.0; NI). The high scores suggested that both cadres used good communication techniques. Time spent with patients was slightly higher, though not statistically significant, with the lay nurse aides (32 minutes) compared with the nurse-midwives (29 minutes; 95%CI -0.7, 6.4).

Maternal knowledge

The women's knowledge of maternal and newborn care was measured with a structured questionnaire that was administered verbally. Components of the questionnaire included an assessment of what the woman had considered important with regard to care during and after pregnancy, including newborn care. Maternal knowledge on their ability to understand and recall messages was examined following the consultation with the providers. Statistical analyses were used to adjust for multiple sites and providers. Maternal knowledge after their sessions with the lay nurse aides was non-inferior or superior in four of the five topic areas assessed: newborn care (β=9.9 95%CI: -0.3, 20.1; NI), prenatal care (β= 23.8, 95%CI: 15.7, 32.0; S), birth preparedness (β=12.7, 95%CI: 5.2, 20.1; S) and danger sign recognition (β=8.6, 95%CI: 3.3, 13.9; S).

The Tourangeau[16] study

The Tourangeau[16] study investigated the impact of the implementation of a RN-UAP partnership nursing care delivery model on patient, caregiver, and system outcomes. The model was studied in a 258-bed acute care community hospital in metropolitan Toronto. The partnership model consisted of a team of two

RNs and one UAP on both the day and evening shifts. The authors did not report the number of RNs and UAP participating in the study. The purpose of the study was to determine the effectiveness of the UAP in giving direct patient care under the direction and supervision of the RN and, if the use of the RN-UAP partnership model had an impact on quality of care and RN staff satisfaction.

This quasi-experimental study utilised a pre- and post-test study design on three medical-surgical units within the hospital. Pre-tests were done at baseline, with post-tests at six months and 12 months after implementation of the model. Two units utilised the RN-UAP partnership model of care delivery. The third unit did not have a UAP to whom patient care could be delegated, and served as the control. There was no randomisation in the assignment of RNs to a unit.

In the model, the RNs were responsible for managing overall patient care and the UAP's role was to assist the RN in performing care related to activities of daily living. The RNs received a four-hour mandatory education session. Topics included in the training were legal accountability for delegating and supervising, principles of change theory, and reasons for the care delivery system change. The UAP were expected to have basic skills including a health care aide certificate and strong interpersonal skills. The educational component included a practice session where the RNs could practice assignment, delegation, and supervision. A skills checklist and unit specific orientation was distributed in order to facilitate the transition to the new model.

Tourangeau[16] examined nine hypotheses to evaluate the effectiveness of the partnership model. Of the nine hypotheses, two were not relevant to this review. Quality of care outcomes were addressed in six hypotheses and RN job satisfaction in one. None of the hypotheses addressed patient satisfaction. The quality of care hypotheses looked at patient knowledge of intravenous therapy, intravenous therapy adverse outcomes, fall rates, medication incident rates, patient initiation of the nurse call system, and the amount of time RNs spent providing nursing services. The researchers hypothesised that the nursing care delivery model could also improve RN job satisfaction.

The Tourangeau[16] study demonstrated that the implementation of the RN-UAP model in this context did not result in an overall improvement in quality of care or RN staff satisfaction outcomes. Six hypotheses looked at quality of care outcomes. Five of these outcomes showed no significant improvement as a result of the intervention. There was no improvement in the one hypotheses evaluating RN job satisfaction. Patient knowledge about intravenous therapy was the only quality of care outcome that showed improvement post-intervention.

Patient knowledge regarding intravenous therapy increased with the introduction of the RN-UAP model. An increase in patient knowledge from the pre-test to post-test was better in the experimental group

compared to the control group. At baseline (pre-test), the patient knowledge indicator scores in the experimental groups averaged 27%. At six months and 12 months the scores improved to 50% and 79% respectively. The control group pre-test scores averaged 67% and post-tests scores averaged 60% and 48% at six and 12 months respectively. The study authors did not provide a statistical analysis for significance.

Adverse intravenous therapy outcomes decreased in the experimental groups from 9% at the time of the pre-test to 0% and 3% at six and 12 months respectively. There was also a significant decrease seen in the control group from 13% at baseline to 1% and 5% at six and 12 months. The similar decrease in adverse outcomes in both the experiment and control suggest something other than the RN-UAP model may be influencing this outcome. No significance testing was done.

The experimental group experienced a decrease in patient falls as incidence per patient census day from baseline (0.0065) to six months (0.004). There was a subsequent increase in falls as incidence per patient census day at 12 months (0.006). The control group experienced a sustained decline in patient fall as incidence per patient census day from baseline (0.004) to six months (0.006) and an increase at 12 months (0.002). The RN-UAP model implementation did not result in a decrease in fall rates. Significance testing was not done.

An increase in medication incidents to prescriptions was seen in the experimental group from baseline (0.004) to six months (0.005) but decreased by 12 months (0.003) to a level below baseline. In the control group, there was also an increase from baseline (0.0) to six months (0.002), and a decrease at twelve months (0.0). The similar trend between groups suggests something other than the RN-UAP model may have influenced this outcome. Significance testing was not done.

Data on patient initiated call bell use was only available on one experimental unit and there was no control group. Patient initiated call bell use decreased from baseline (21 calls per patient per day) to six months (7 calls per patient per day) but increased back to baseline after 12 months (20 calls per patient per day). The RN-UAP care delivery model did not contribute to a sustained decrease in call bell use. Significance testing was done.

Three nursing job activities were analysed in the experimental groups: discharge planning, providing emotional support, and teaching to patients and families. There was no control group used. The amount of time RNs spent on discharge planning increased from 0.15% at baseline to 0.42% at six months but decreased to 0.24% by 12 month. No difference was found in the time the RN spent performing discharge planning (results of significance testing were not provided by the study authors). There was a statistically significant decrease in the time spent by the RN providing emotional support (p=0.003) and teaching

(p=0.038). The amount of time RNs spent providing emotional support decreased from 2.79% to 1.67% at six months and risen to 2.05% at 12 months. The amount of time RNs spent teaching decreased from 1.72% at baseline to 1.68% at six months and 1.09% at 12 months. The RN-UAP model provided less time for provision of emotional support and teaching.

Overall RN job dissatisfaction was measured in both experimental groups and control groups. The average job dissatisfaction index score after the implementation of the RN-UAP model decreased from baseline (23.61) to six months (21.87) and increased at 12 months (22.37). In the control group, the average job dissatisfaction index score increased from baseline (18.50) to six months (22.19) and decreased at 12 months (18.58). An analysis of variance showed no statistically significant differences among or between control groups (p= 0.211). The RN-UAP model did not have an impact on the overall RN job dissatisfaction.

Discussion

Two quasi-experimental studies with differing results were identified in this review. The Jennings[46] study found positive results related to delegated tasks on quality of care. The presence of task training, supervision, and evaluation of lay nurse aides by nurse-midwives had a positive impact on quality of care. It was demonstrated that task training could lead to task shifting without compromising outcomes. It was also demonstrated that there was no difference between the nurse-midwives and the lay nurse aides in providing antenatal counselling, education, and maternal-newborn care when proper training and supervision was given. The importance of establishing strategies to ensure that lay nurse aides are trained, supervised, and evaluated sufficiently was clearly delineated in Jennings.[46] Tournangeau[16] demonstrated that the introduction of the RN-UAP care model, including delegation from the RN to UAP, did not significantly improve quality of care or increase RN staff satisfaction.

Limitations of the review

Quantitative research was the focus of this review. The review consists of two quasi-experimental studies. There were no RCTs identified that reviewed effective delegation interventions and their impact on quality of care outcomes, patient satisfaction, and/or RN staff satisfaction.

The quasi-experimental studies included in this review differ with regard to sample sites and sizes, populations, and the nature of interventions, strategies or models. The heterogeneity of the included studies made statistical meta-analysis impractical. This further limits the depth, breadth and applicability of this review. Heterogeneity between the two available studies makes generalisability of RN-UAP

delegation interventions and their impact on quality of care outcomes, patient satisfaction, and/or RN staff satisfaction difficult to extrapolate.

The type of healthcare systems examined in the included studies may limit the applicability of the findings to other countries or health care systems. In addition, the two quasi-experimental studies identified did not describe the details of the delegation interventions used, limiting the ability to replicate these interventions.

A limitation of this review may have been the broad nature of the concept of delegation. In preparation for this review much qualitative data was found to indicate that satisfaction may be best measured with descriptive qualitative analyses. Many qualitative research studies on delegation by RNs to UAPs were identified in the literature.[3,5,22-28]

Another limitation of this review is the methodology chosen to address the question of the role of effective delegation by RNs to UAP in the clinical setting. In preparation for this review many qualitative research studies on delegation by RNs to UAPs were identified in the literature.[3,5,22-28] RN delegation interventions may be studied more effectively with qualitative research methods such as surveys, questionnaires, and descriptive analyses.

Conclusions

Effective delegation interventions and strategies from the RN to the UAP and their impact on quality of care, patient satisfaction, and/or RN staff satisfaction have not been adequately described or tested in quantitative research studies to date. Jennings[46] identified task training, supervision, and evaluation of the UAP as delegation strategies that may improve quality of care. The review suggests that task training is a concept that could be used effectively to provide care to patients without compromising patient care outcomes. In the Tourangeau[16] study, the introduction of the RN-UAP care model, including delegation from the RN to UAP, demonstrated no improvement in the outcomes of quality of care and/or RN staff satisfaction. Tourangeau [16] found that the RNs lacked the delegation skills needed to effectively direct the UAP, despite the education sessions. The need for improved communication and team building between the RN and UAP was evident in this study.

Implications for practice

The evidence that task shifting had a positive impact on patient outcomes and job satisfaction is important. The concept of task shifting may provide the RN with the opportunity to increase efficiency by allowing the UAP to complete and carry out many of the routine tasks required in patient care (JBI Level

of evidence[50]= 2). The training aspect of task shifting is important and modifiable based on the outcome achieved.

Choosing a specific task to be accomplished, formally teaching the steps to reach the goal, evaluating its execution, and supervising the outcome can achieve the success of task shifting. In this manner, the knowledge and rationale for why the task must be completed and its impact on the patient care outcomes remains with the professional. Jennings[46] confirms the importance of providing training and effective communication in the development of clinical skills. Training the lay nurse aides and the nurse-midwives on supervision and delegation proved to be essential in this study[46] in order to maintain the quality of care. RNs have identified delegation skills as being absent from their formal training and as skills acquired on the job.[16]

Implications for research

The paucity of evidence surrounding the concept of delegation in this review highlights the need for future research on RN-UAP delegation interventions and their impact on outcomes such as quality of care, patient satisfaction, and/or RN staff satisfaction. The opportunity for primary research is evident based on this review's findings, which included no RCT's that describe the outcomes under review. Areas of RN responsibility that could potentially be given to a less skilled individual should be further reviewed, tested, and evaluated. Qualitative research may provide additional insights into the topic of effective RN-UAP delegation interventions. These insights may lead to further quantitative research on the subject.

Training and education should be included as a focus of any delegation intervention being evaluated. The delegation of specific tasks associated with patient care from the RN to the UAP is a process that incorporates skills such as communication, evaluation, feedback, and mutual respect. Evaluating the manner by which the RN decides what tasks the UAP can perform may be as simple as outlining the educational steps to accomplish the task and setting expectations for its completion.

Conflicts of interest

There are no conflicts of interest

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Appendix I: Search terms

Delegation (KW)	Nurse clinicians (MeSH)	Unlicensed assistive personnel (KW)	Quality of care (KW)
Delegation, professional (MeSH)	Nurse (KW)	Nursing assistants (CINAHL)	Patient satisfaction (MeSH, CINAHL)
Delegation of authority (CINAHL)	Clinical Nurse Specialists (CINAHL)	Nurses' Aides (MeSH)	RN staff satisfaction (KW)
Personnel delegation (MeSH)	Nurses (PsycINFO, MeSH)	Patient care associate (KW)	Missed care (KW)
	Nursing (PsycINFO)	Patient care technician (KW)	Outcome and Process Assessment (Health Care) (MeSH)
	Clinical nurse specialist (KW)	Nurse aides (KW)	Job satisfaction (MeSH, CINAHL, PsycINFO)
		Health Personnel, Unlicensed (CINAHL)	Nursing staff satisfaction (KW)
			Quality of health care (CINAHL, MeSH)
			Outcome assessment (CINAHL)

Appendix II: Details of Search Strategy

MEDLINE VIA PUBMED

S1	(((((delegation) OR (delegation, professional) OR ("delegation of authority")
S2	((nurse clinicians) OR (nurse OR nurses OR nursing) OR ("clinical nurse specialists") OR ("clinical nurse specialist")))
S3	("unlicensed assistive personnel" or "nursing assistants" or "nurses' aides") OR ("patient care associate" or "patient care technician") OR ("nurse aides" or "health personnel, unlicensed")
S4	(("quality of care") OR (patient satisfaction) OR ("missed care") OR (outcome and process assessment) OR (job satisfaction) OR ("nursing staff satisfaction") OR (quality of health care) OR ("outcome assessment"))
S5	S1 and S2 and S3 and S4

Cochrane Central Register of Controlled Trials (CENTRAL) Initial

S1	delegation
S2	delegation, registered nurse, unlicensed assistive personnel, staff satisfaction

Cochrane Central Register of Controlled Trials (CENTRAL) with key words

#1	(Delegation OR Delegation of authority or professional delegation):ti,ab,kw
#2	(Delegation or delegation of authority or personnel delegation or professional delegation):ti,ab,kw
#3	(delegation or delegation of authority or personnel delegation or professional delegation):ti,ab,kw
#4	(delegation or delegation of authority or professional delegation or personnel

	delegation)
#5	(delegation or delegation of authority or personnel delegation or professional delegation)
#6	(delegation) or (delegation of authority):ti or (personnel delegation):au or (professional delegation):ab
#7	(delegation):kw or (delegation of authority):kw or (personnel delegation):kw or (professional delegation):kw
#8	(delegation):kw or (delegation of authority):kw or (personnel delegation):kw or (professional delegation):kw
#9	(nurse clinicians):kw or (nurses):kw or (nurse):kw or (clinical nurse specialist):kw or (clinical nurse specialists):kw
#10	(unlicensed assistive personnel):kw or (nursing assistants):kw or (nurses' aides):kw or (patient care associate):kw or (patient care technician or nurse aides or unlicensed health personnel):kw
#11	(quality of care):kw or (patient satisfaction):kw or (RN staff satisfaction):kw or (missed care):kw or (outcome and process assessment or job satisfaction or nursing staff satisfaction or quality of health care or outcome assessment):kw
#12	(#7 AND #8 AND #9 AND #10)

CINAHL

S1	delegation OR ("professional delegation" or "delegation of authority") OR "personnel delegation"
S2	(nurse or nurses or nursing) OR ("nurse clinicians" or "clinical nurse specialist*")
S3	("unlicensed assistive personnel" or "nursing assistants" or "nurses' aides") OR ("patient care associate" or "patient care technician") OR ("nurse aides" or "health personnel, unlicensed")
S4	"quality of care" OR "patient satisfaction" or "rn staff satisfaction" or "missed care" or "outcome and process assessment" or "job satisfaction" or "nursing

	staff satisfaction" or "quality of health care" or "outcome assessment"
S5	S1 and S2 and S3 and S4

CINAHL and Health Source: Nursing/Academic Edition and PsycINFO

S1	delegation OR ("professional delegation" or "delegation of authority") OR "personnel delegation"
S2	(nurse or nurses or nursing) OR ("nurse clinicians" or "clinical nurse specialist*")
S3	("unlicensed assistive personnel" or "nursing assistants" or "nurses' aides") OR ("patient care associate" or "patient care technician") OR ("nurse aides" or "health personnel, unlicensed")
S4	"quality of care" OR "patient satisfaction" or "RN staff satisfaction" or "missed care" or "outcome and process assessment" or "job satisfaction" or "nursing staff satisfaction" or "quality of health care" or "outcome assessment"
S5	S1 and S2 and S3 and S4

EMBASE

1	delegation OR ("professional delegation" or "delegation of authority") OR "personnel delegation"
2	(nurse or nurses or nursing) OR ("nurse clinicians" or "clinical nurse specialist*")
3	("unlicensed assistive personnel" or "nursing assistants" or "nurses' aides") OR ("patient care associate" or "patient care technician") OR ("nurse aides" or "health personnel, unlicensed")
4	"quality of care" OR "patient satisfaction" or "rn staff satisfaction" or "missed care" or "outcome and process assessment" or "job satisfaction" or "nursing staff satisfaction" or "quality of health care" or "outcome assessment"
5	1 and 2 and 3 and 4

Grey Literature Search strategy without character limits

delegation OR ("professional delegation" or "delegation of authority") OR "personnel delegation" AND (nurse or nurses or nursing) OR ("nurse clinicians" or "clinical nurse specialist") AND ("unlicensed assistive personnel" or "nursing assistants" or "nurses' aides") OR ("patient care associate" or "patient care technician") OR ("nurse aides" or "health personnel, unlicensed") AND "quality of care" OR "patient satisfaction" or "rn staff satisfaction" or "missed care" or "outcome and process assessment" or "job satisfaction" or "nursing staff satisfaction" or "quality of health care" or "outcome assessment")

Grey Literature Search strategy with character limits

delegation AND ("unlicensed assistive personnel" or "nursing assistants" or "nurse aides") AND (nurse or nurses or nursing) AND ("quality of care" OR "patient satisfaction" or "missed care" or "job satisfaction" or "nursing staff satisfaction" or "quality of health care" or "outcome assessment")

Grey literature with Keywords only due to further character limit restrictions

delegation, nurse, clinical nurse specialist, unlicensed assistive personnel, patient care associate, patient care technician, nurse's aides, quality of care, RN staff satisfaction, missed care, nursing staff satisfaction

Appendix III: MAStARI critical appraisal tool for randomised control trial / pseudo-randomised trial

Design: Randomised Control Trial / Pseudo-randomised Trial

Criteria	Yes	No	Unclear	Not Applicable	Comment
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?	○	○	○	○	

Include Undefined

Reason

Appendix IV: JBI-MAStARI - Data extraction instrument

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

Intervention 1 _____ Intervention 2 _____ Intervention 3 _____

Interventions

Intervention 1 _____

_____

Intervention 2 _____

_____

Intervention 3 _____

_____

Clinical outcome measures

Outcome Description	Scale/measure

Study results

Dichotomous data

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

Continuous data

Outcome	Intervention ( ) mean & SD (number)	Intervention ( ) mean & SD (number)

Authors Conclusions

_____

_____

_____

_____

Comments

_____

_____

_____

_____

Appendix V: List of excluded studies

1. Anthony MK, Vidal K. Mindful communication: A novel approach to improving delegation and increasing patient safety. Online Journal of Issues in Nursing [Internet]. 2010 May 30 [cited 2011 May 25] 2010;15(2).
   Reason for exclusion: No match with the inclusion criteria; Qualitative study

2. Kleinman CS, Saccomano SJ. Registered nurses and unlicensed assistive personnel: an uneasy alliance. The Journal of Continuing Education in Nursing. 2006;37(4):162-170.
   Reason for exclusion: No match with the inclusion criteria; Qualitative study

3. Gillen, P, Graffin, S. Nursing delegation in the United Kingdom: The Online Journal of Issues in Nursing [Internet]. 2010 May 31 [cited 2010 June]. 2010;15(2).
   Reason for exclusion: No match with the inclusion criteria; Qualitative study

4. Cipriano, PR. Overview and summary: delegation dilemmas: standards and skills for practice. The Online Journal of Issues in Nursing [Internet]. 2010 May 31 [cited 2011 June 9] 2010;15(2)
   Reason for exclusion: No match with the inclusion criteria; Qualitative study

5. Bittner, NP, Gravlin, G. Critical thinking, delegation and missed care in nursing practice. JONA. 2009;39(3),150-150.
   Reason for exclusion: No match with the inclusion criteria; Qualitative study

6. Nyberg, D. Successful delegation skills enhance patient care. AORN Journal. 1999;6(4),851-856.
   Reason for exclusion: No match with the inclusion criteria; Qualitative study

7. Kalisch BJ, Lee KH. The impact of teamwork on missed nursing care. Nursing outlook. 2010;58:233-241.

   Reason for exclusion: No match with the inclusion criteria; Qualitative study

8. Aiken LH, Clarke SP, Sloane DM. Hospital restructuring: Does it adversely affect care and outcomes. Journal of Nursing Administration. 2000;30(10):497-505.

   Reason for exclusion: No match with the inclusion criteria; Qualitative study

9. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital staffing and patient mortality, nurse burnout and job dissatisfaction. The Journal of the American Medical Association. 2002;288(16):1987-1993.

   Reason for exclusion: No match with the inclusion criteria; Qualitative study

10. Potter P, Deshields T, Kuhrik M. Delegation practices between registered nurses and nursing assistant personnel. Journal of Nursing Management. 2010;18:157-165.

    Reason for exclusion: No match with the inclusion criteria; Qualitative study

11. Eastaugh SR. Hospital nursing technical efficiency: nurse extenders and enhanced productivity. Hospital Health Services Administration. 1990;35(4):561-573.

    Reason for exclusion: No match with the inclusion criteria; Qualitative study

12. Badovinac CC, Wilson S, Woodhouse D. The use of unlicensed assistive personnel and selected outcome indications. Nursing Economics. 1999;17(4):194-200.

    Reason for exclusion: No match with the inclusion criteria; Qualitative study

Appendix VI: Methodological quality of included studies

Number of studies included and excluded

Number of studies included	Number of studies excluded
2	0

Randomised Control Trial / Pseudo-randomised Trial

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Tourangeau, 1999	N/A	Y	N	Y	N	Y	Y	Y	N	Y
Jennings L., Yeadokpo AS., Affo J., Agbogbe M., Tankoano A., 2011	N/A	N	N	N	N	Y	Y	Y	Y	Y
%	N/A	50.0	0.0	50.0	0.0	100.0	100.0	100.0	50.0	100.0

Appendix VII: Tables of included studies

Author/year/ country	Design/ Study Sample	Types of Interventions	Outcome measures	Major Findings	Authors Conclusions	Limitations
Jennings (2011) [46] Benin, Africa	Quasi-Experimental, non-inferiority methodology. Intervention group: Counselled by lay nurse aides (UAP), N=72 lay nurse aides, 203 patients Control group: counselled by nurse-midwives n=48 RN nurse-midwives, 206 patients	Task shifting of antenatal counselling of pregnant women from nurse-midwives to lay nurse aides. Training sessions included concepts of task delegation, peer and group role-playing, interpersonal communications, and quality of care.	Quality of care measure: Quality of counselling, provider perceptions of task delegation, women's knowledge of maternal newborn care. This study did not measure patient satisfaction.	Communication by lay nurse aides with appropriate training, supervision and job aids was found to be non-inferior to that of nurse-midwives with significant gains in maternal knowledge following antenatal consultation	The importance of communication training, supervision and job aids were elements found to give the lay nurse aides the same level of counselling techniques compared to the nurse-midwives. Positive perceptions from providers was also encouraging. Authors found patients had a better understanding of maternal knowledge when counselled by the lay nurse aides. Communication by the lay nurse aides was associated with better outcomes.	Limitations included: the lack of randomisation of the patients and the small sample size; language barriers and health literacy; educational level of women being counselled.

Author/year/ country	Design/ Study Sample	Types of Interventions	Outcome measures	Major Findings	Authors Conclusions	Limitations
Tourangeau (1999),[16] Toronto, Canada	Quasi-experimental study using a pre- and post-test study design. The study was conducted on three medical-surgical floors in a 258 bed acute care community hospital.	Implementation of an RN- UAP partnership nursing care delivery model, consisted of a team of two RN's and one UAP, to improve patient, caregiver and system outcomes. Delegation intervention included a four hour educational session that covered topics of legal accountability for delegating and supervising principals of change theory, and reasons for change. RN's given time to practice assignment, delegation, and supervision skills.	Six measured quality of care outcomes: patient knowledge of IV therapy, adverse IV therapy events, patient falls, medication incidents, patient initiated call bell use, nurse job activity analysis. RN job satisfaction outcome.	Quality of care: Patient knowledge of IV therapy improved post intervention. The five other quality of care outcomes were not significantly impacted by the implementation of the RN-UAP care delivery model. There was no improvement in RN staff satisfaction after the implementation of the partnership model. RN's lacked delegation skills resulting in tension and conflict.	Authors conclude that there is few benefits in implementing this RN-UAP care model and recommend further research. Authors report role confusion and conflict with the UAP role. It was suggested that a system is needed to ensure competency of the UAPs through role clarification and effective education and communication.	Limitations include: low statistical power, lack of reliability and validity of the model implementation. Measurement of two outcome variables, patient falls and medication incidents, depended on nurse reports. Inconsistency with rigor and accuracy with nurse reports. Lack of opportunities for feedback. Lack of ongoing evaluation of role mastery. The description of the delegation intervention was unclear and vague.