



Exploring the Contribution and Impact of Master's Education for Leadership Development in Adult General Nursing:

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Exploring the contribution and impact of master's education for leadership development in adult general nursing: A scoping review[☆]

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ABSTRACT

Aim: The aim of this scoping review was to explore the evidence relating to master's education for leadership development in adult/general nurses who are not in advanced practice or leadership roles and its impact on practice.

Background: The importance of effective, clinical leadership in nursing and health care, has been highlighted following failings reported by Public Inquiries both nationally and internationally. While initiatives have been implemented to address these, the provision of safe, quality care remains problematic. Complex care requires highly skilled professionals to challenge and lead improvements in practice. Master's education results in graduates with the skills and confidence to make these changes and to become the clinical leaders of the future.

Methods: An *a priori* scoping review protocol was developed by the review team. This was used to undertake searches across CINAHL Ultimate; Medline (Ovid), Scopus and ProQuest Complete databases, chosen due to their relevance to the subject area. Articles were limited to those in the English Language, peer reviewed and published since 2009. Citation chaining *via* the reference lists of frequently identified articles were also searched. A further search for relevant grey material using the same relevant keywords and phrases was performed using the limited, Trip Database and Google Scholar.

Results: Eight articles were selected for data extraction, and these were published between 2011 and 2019. The articles were predominantly from the UK and Europe, with a focus either on master's education or on aspects of leadership in nursing and healthcare. Themes identified: a) The need for clinical leadership; b) master's education for clinical leadership skills; and c) master's education for professional and organisational outcomes.

Conclusions: The scoping review identified that there is a need for strong clinical leadership in the practice setting. Evidence shows that effective nursing leadership can improve patient outcomes as well as enhancing workplace culture and staff retention. The review has shown that the skills required for clinical leadership are those produced by master's education. Studies of the impact of master's education are often self reported and tend to focus on nurses in advanced practice roles. More research is required into master's education for adult/general nurses not in advanced roles and in examining the link between master's education and improved patient, professional and organisational outcomes.

1. Introduction

Concerns about the supply and retention of nursing staff have increasingly attracted attention in the NHS (Public Health England, 2017, House of Commons Health and Social Care, 2022), The precarious

nature of the nursing workforce has been further emphasised by the COVID-19 restrictions (Moscelli et al., 2022) and a cost-of-living crisis exacting previously unimagined, industrial action by nurses in the UK (Collingridge, 2023). Given the global rise in nursing workforce shortages (International Council of Nurses ICN, 2023) and the consequent

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adverse impact on the ability of services to deliver high quality patient care, it is imperative that stakeholders commit to initiatives that improve retention and development of new graduates (Lovejoy, 2018, Brook et al., 2019). Additionally, healthcare is becoming increasingly complex and requires advanced education to ensure the provision of appropriately skilled healthcare professionals, equipped to meet the challenges of leading safe, high quality and efficient health care in line with population needs (Massimi et al., 2017).

The importance of strong leadership especially in nursing, to deliver effective clinical practice has been emphasised by several public inquiry reports including Garling (2008), Francis (2013) and Kirkup (2015). This type of clinical leadership which, Al-Dossary (2017) differentiates from the traditional view of leadership associated with formal nursing roles, involves nurses at the bedside, problem-solving, advocating, coordinating and collaborating in the delivery of direct patient care. The evidence base shows that care is improved when delivered by master's educated nurses who have developed analytical thinking and decision-making skills (Massimi et al., 2017). Empowered to challenge poor practice, these nurses or 'change agents', can lead and act to transform care in the pursuit of optimal patient outcomes (Clark et al., 2015 and Hole et al., 2016).

A literature review by Brown et al. (2015) emphasised a lack of coherence in the integration of clinical leadership skills teaching within the undergraduate pre-registration nurse curricula. This was confirmed by the Willis Commission (2018), who acknowledged that a new nurse at the point of registration is not 'the finished product' and that the development of these skills and competencies, needs to be given greater priority to better meet the increasingly challenging demands of health care. New graduates then, are essential to and need invested in, for the future of nursing. Recent studies, however, have found that almost half of new graduate nurses have considered leaving their position within the first twelve months of employment (Labrague et al., 2020). The education and support that newly qualified nurses receive as they transition into the workforce is critical for developing and consolidating a suitably qualified workforce equipped to meet the needs of future populations (Doughty et al., 2018).

Whilst the literature supports positive gains for both patients and nurses when this education is at master's level, there are a wide variety of programmes and modes of delivery of leadership education for nurses. Additionally, the creation of roles which demand a specialist master's qualification such as that of Advanced Practice Nurse or Clinical Nurse Leader (introduced in the US in 2007), have further highlighted the importance of undertaking not just master's level study but the completion of a full master's degree. There is, however, a dearth of research, focusing on how master's education for nurses is valued generally in clinical settings. Whether or not such programmes result in a quantifiable impact on leadership skills development has yet to be ascertained and needs to move beyond the realm of anecdotal evidence (O'Connor et al., 2018; Zahran, 2013). Furthermore, there is a lack of evidence on the availability of educational opportunities to the wider cohort of nurses including those recently graduated, to develop clinical leadership skills, which will not only enhance patient outcomes but also improve professional and organisational outcomes such as recruitment and retention. This paper aims to address some of these issues and the paucity of associated evidence available.

2. Methods

Scoping reviews are used to synthesise a range of evidence types including both peer reviewed and grey literature, across a range of disciplines, on topics, where there is a need to map or chart the existing literature available (Munn et al., 2018).

An *a priori* scoping review protocol was developed by the review team and with reference to stage one of the Arksey and O'Malley (2005) methodological framework, the research question was identified as: "What is the contribution and impact of master's education for leadership

development in Adult/General Nurses, delivering direct care to patients employed by health and/or social care organisations?"

2.1. Search strategy

Initially, limited searches of the CINAHL and Medline (Ovid) databases were performed to identify relevant Medical Subject Headings (MeSH) and keywords contained in the title, abstract and subject descriptors of suitable literature. This also included a review of the index terms used to describe the articles, which led to the identification of two main concepts for searching, master's nursing education and leadership. Identified MeSH terms and synonyms used for master's nursing education included Education Nursing Master's, Students, Nursing, Master's and master's Prepared Nurses and Education, Nursing graduate with the identification of keywords of Nursing master's degree program, education and master's degree, program and education. Truncation of both the term master's and programme were included as authors were found to use a variety of versions of these.

The leadership search identified no MeSH terms to further refine the term leadership and therefore a keyword search for "clinical leader" or "leadership development" or "leadership skills" with the use of truncation again was undertaken. These identified terms and synonyms were then used in an extensive search of the literature for peer reviewed journal articles, across four selected databases. Databases selected were CINAHL Ultimate; Medline (Ovid), Scopus and ProQuest Complete due to their relevance to the subject area, as well as the frequency of update and size of content coverage.

Proximity searching, using the appropriate proximity operator for each database, was also included to widen the search to include those articles where keywords occurred within a distance of three words from each other. Citation chaining via the reference lists of frequently identified articles were also searched. A further search for relevant grey material using the same relevant keywords and phrases was performed using the limited, free Trip Database and Google Scholar.

2.2. Inclusion/exclusion criteria

The inclusion criteria required that studies selected for the review would include as a population: registered, adult, or general nurses employed in the delivery of direct patient care in health and/or social care organisations. The search date was limited to 2009 as this aligns to changes made by the Nursing and Midwifery Council (NMC) in the UK in relation to the degree status of new registrants and reflects international perspective for degree requirements for registration. While nursing is of a global nature and much previous research conducted across Asia, Europe and the United States (Aiken et al., 2012) relates to similar topic areas, only sources of evidence published or readily available in the English language were to be considered for inclusion.

Exclusion criteria included: nursing registrants who were not graduates, those not involved in delivering direct patient care (for example administration or education); master's preparation programmes for registered advanced practice nursing roles such as Advanced Practice Nurses (APN/ANP), Clinical Nurse Leaders (CNL) and Clinical Nurses Specialists (CNS) and master's programmes in specific clinical areas, for example cardiology or critical care. Residency and transition programmes; brief leadership development, stand alone, short courses or interventions offered within programmes; and postgraduate education not resulting in the award of a master's degree, were also excluded.

2.3. Selection process

A total of 336 articles were identified through the intensive search of the electronic databases, with a further 12 sourced through citation chaining and a grey literature search. A total of 140 duplicates were removed initially using the reference management software and then manually. Screening of the articles titles and abstracts of the resulting

208 documents against the inclusion criteria was undertaken by the scoping review team consisting of lead author (OC) and 3 academic team members. The lead author had oversight of all papers which were divided up equally across the team. Conflicts were resolved by a third reviewer (SMc, DB, TMc) or by discussion where a consensus was not easily reached. One further article included in the title and abstract review was excluded as only the abstract was in English and translation of the complete paper was unavailable. Full text screening reduced the 24 in the abstract and title review by 17, leaving just 8 to be included in the final scoping review. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram was used to record the screening process at each of the steps of the review process for visual representation (Fig. 1).

2.4. Data extraction and charting

Data charting was performed using a data extraction template (Table 1) informed by the agreed *a priori* (Arksey and O'Malley, 2005). Data were extracted independently by two reviewers (OC and TMc) and disagreements mediated by the other two reviewers (DB and SMc). Data extraction involved the charting of general data, methodological data (where present) and key findings that relate to the research question. This extraction process allowed identification and clarification of

patterns, commonalities to enable critical analysis of the data.

3. Results

The eight articles selected for extraction were published between 2011 and 2019 and included 4 primary research articles, one evaluation report presenting the findings and potential amendments to a leadership fellowship scheme, two literature reviews and one discussion article. Whilst the studies were internationally spread, there was a focus from UK and Europe, including Ireland (n = 2), UK (n = 2), Italy (n = 2), Hong Kong (n = 1) and USA (n = 1).

All four of the primary research papers documented self-reported and self-assessed views by the master's students but only one of these focused primarily on examining the issue of leadership development as a result of completing the master's degree in nursing (Drennan, 2012). The other three studies looked at the impact of master's education more generally in terms of knowledge and skills acquired; the relevance and applicability of these to practice, as well as the quality of the course and the implications of master's study for the professionalisation of nursing (Massimi et al., 2016; Massimi et al., 2017; Ho et al., 2019).

One article described the evaluation of a pilot Fellowship scheme in Scotland (UK) where graduate nurses of 2 years or less, undertook a part time master's programme as a required element of the initiative (Rae,

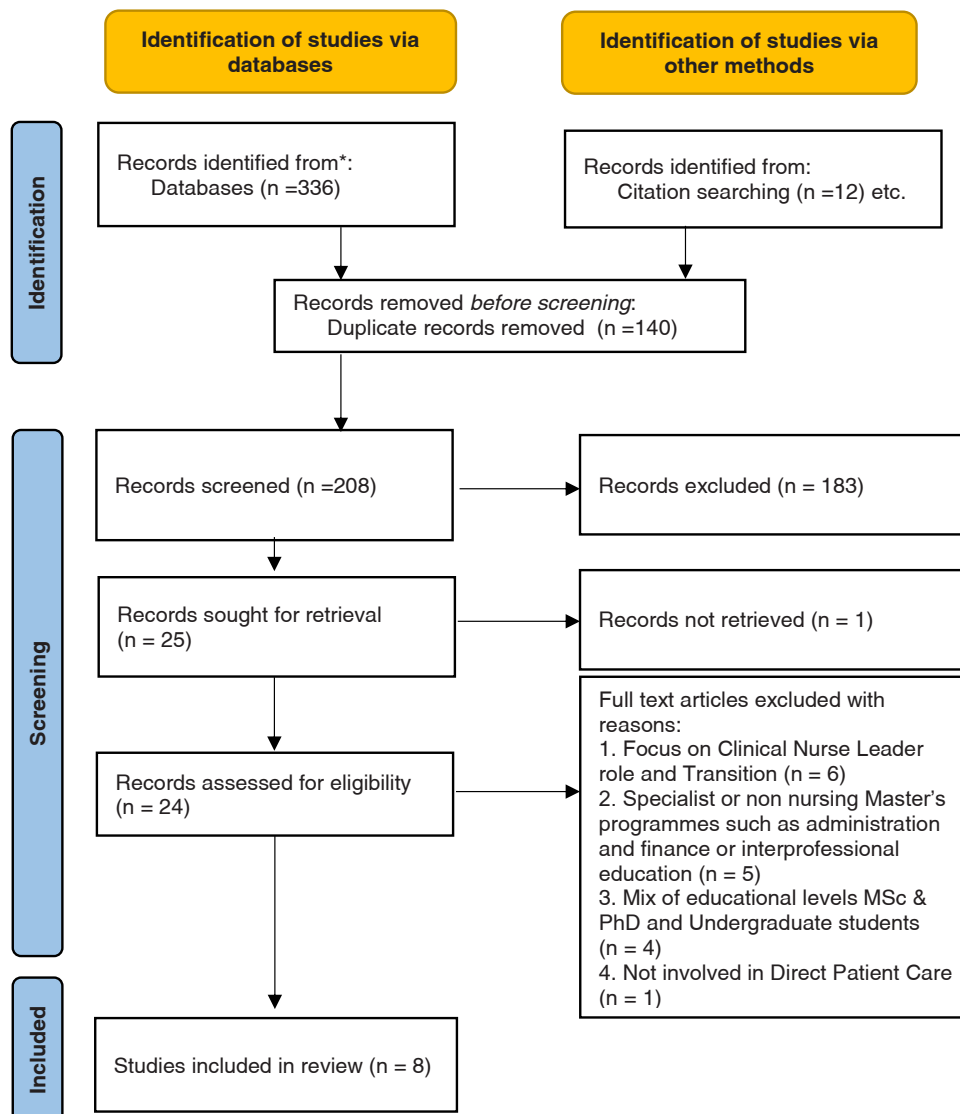


Fig. 1. PRISMA flowchart of included articles.

Table 1
Extraction data.

Authors	Year	Country	Population/ Sample Size	Aim/Purpose	Evidence Source	Design and Methodology	Key Themes that relate to the review question
Clark, L. Casey, D; Morris, S.	2015	UK	N/A	To explore some of the themes emerging from the literature on the potential value of Master's-level study for registered nurses	Literature Review		Empowerment of nurses, critical thinking and decision making in practice, master's qualification and clinical credibility; improved care delivery and/or patient outcomes Master's nurses under used Importance of clinical leadership and therefore nurse development
Curtis, E. A.; Sheerin, F. K.; De Vries, J.	2011	Ireland	N/A	Focused on the role and impact of different types of nursing leadership education. It explores the manner in which it can be related to training needs and asks what other steps healthcare organizations need to take to promote such leadership.	Literature Review		Leadership an essential part of nursing practice; Leadership not fully taught in preregistration level; Variety of modes of leadership education including masters. Master's would improve employability
Drennan, J	2012	Ireland	140 masters in nursing Graduates from 6 universities in Ireland.	To measure the leadership and management capabilities of graduates after the completion a master's degree in nursing. Leadership capabilities were operationalized by three measures: ability to change practice, communication/teamwork and problem-solving capabilities.	Primary Research	Retrospective pre-test design using a Cross-sectional postal survey	Master's level education effective in developing Leadership and Management. Graduates have increased ability to change practice. Communication/ Teamwork and problem solve skills enhanced. Higher educational Level – more likely to use effective leadership skills.
Gerard, S.O.; Kazer, M.W.; Babington, L.; Quell, T.T.	2014	US	N/A	To examine the move toward interprofessional education at a private university, using clinical partnerships to revise the master's program. The goal of this revision is to empower students with the expertise required in today's health care environment to improve the delivery of care.	Discussion Paper		History of master's education Need for clinical leadership. Curriculum Development for master's education related to societal demands. Increased accountability demanding quality standards and quality of care. Interprofessional collaboration and education
Ho, K.H.M.; Chow, S.K.Y.; Chiang, V.C.L. Wong, J.S.W. Chow, M.C.M.	2019	Hong Kong	12 master's prepared nurses with a minimum of 5 years post registration experience.	To explore the meanings of master's education in the professionalization of nursing from the perspective of nurse participants; and to describe the core attributes that nurse participants gained through master's study.	Primary Research	Narrative Inquiry Design – Unstructured Interviews	Master's level education instrumental to the professionalisation of nursing; master's for professional growth in the nursing career structure; choice of course important master's nurses demonstrated effective clinical leadership acting as change agents; Skills developed included problem solving, evidence-based change, decision making, self awareness and reflexivity and quality improvement.
Massimi, A.; Marzuillo, C.; Di Muzio, M Vacchio, M. R.; D'Andrea, E.; Villari, P; De Vito, C.	2016	Italy	36 graduates who obtained the master's degree in nursing in 2010/11	To test a specific questionnaire aimed at monitoring the activities of nurses after receiving the master's degree. In particular, the questionnaire interrogates the level of knowledge and skills acquired during the degree course. ii) the level of implementation at work of knowledge and skills acquired during the degree course;	Primary Research	Electronic questionnaire Pilot	Knowledge and skills for future job Career advancement Critical thinking and decision making Low implementation of skills Master's confers credibility which exercises influence.
Massimi, A.; Marzuillo, C.; Di Muzio, M Vacchio, M. R.; D'Andrea, E.; Villari, P; De Vito, C.	2017	Italy	426 nurses who obtained a Master of Science Degree in 2010/11 from 23 Italian Universities.	To evaluate how nurse graduates view the quality, relevance and applicability of the knowledge and skills acquired during the Master of Science in Nursing (MSN) degree	Primary Research	Online Questionnaire	Knowledge and skills for future job Acquisition and implementation Professional advancement Educational, management and research skills rather than clinical skills Professional Credibility
Rae, A	2011	UK		To present some of the findings of an evaluation of the Early Clinical Career Fellowship programme being piloted in Scotland.	Evaluation of pilot report.		Early Investment in nurses' careers for those with Leadership potential Promotion to higher grades earlier Not always valued by peers Drive improvements developed

(continued on next page)

Table 1 (continued)

Authors	Year	Country	Population/ Sample Size	Aim/Purpose	Evidence Source	Design and Methodology	Key Themes that relate to the review question
							practice locally. Entering leadership roles in the future

2011). One literature review presented the literature around the value of master's degrees for nurses (Clark et al., 2015), while the other presented literature on the need for leadership development of nurses across a range of educational models including master's programmes (Curtis et al., 2011). The final article discussed the topic of clinical leadership in relation to the historical development of master's curricula (Gerard et al., 2014). Three key concepts were identified from the reviewed studies. These included the need for clinical leadership; master's education for clinical leadership skills; and thirdly, master's education for professional and organisational outcomes.

3.1. The need for clinical leadership

The topic of leadership in nursing was noted to a greater or lesser extent, across all eight articles with six of the eight articles using the terms clinical leadership, leadership, or clinical leader. Clark et al. (2015) highlights the impact that the lack of clinical leadership, especially at ward level, can have on practice, as reported by the Francis report (2013). The crucial role that nurses play in healthcare organisations, in leading the care environment and liaising with patients, families and staff was raised in the literature review by Curtis et al. (2011). However, despite the demands for clinical leadership in what was described by six of the eight papers, as an ever increasingly complex healthcare environment, the term clinical leadership, was not clearly defined in any of the selected papers. Leadership pertaining to skills and development, was paired with the word management in most articles, although management was differentiated by some (Curtis et al., 2011) as relating to specific tasks such as staff scheduling, finance reporting and human resources.

Drennan (2012), in his retrospective pre-test design study proposed that leadership capabilities could be measured by examining the ability to change practice, to communicate and work as part of a team and the ability to problem-solve. These were used as the basis for the development of the study's master's in nursing Outcomes Evaluation Questionnaire (MNOEQ) (Drennan, 2012). In Ho et al. (2019) study into the professionalization of nursing following completion of master's education, clinical leadership is associated with change management and the ability to apply the evidence to quality improvement processes.

The deepening need for nurses to develop leadership skills in response to the growth in health care complexity, was evident throughout the selected literature (Clark et al., 2015; Drennan, 2012; Massimi et al., 2017). Gerard et al. (2014) relate the development of advanced practice roles and associated education, directly to the change in patient care needs. It was identified in both the literature reviews by Clark et al. (2015) and Curtis et al. (2011), that the evidence recommends that these leadership skills should be taught at all levels of nurse education, however it was acknowledged that this was, more than often, not the case. It was reported by participants in Ho et al. (2019) that while leadership concepts such as critical thinking and evidence-based practice were introduced at undergraduate level; it was at master's level that this moved from searching for evidence to support pre-determined answers to the search for real and relevant clinical practice solutions.

3.2. Master's education for clinical leadership skills

Whilst the literature alludes to the link between leadership capability development and master's education, Drennan's retrospective study

(2012) is one of the few studies to note a measurable difference. This difference was a self-reported change, with participants rating their abilities before and after the programme, within the master's in nursing Outcomes Evaluation Questionnaire (MNOEQ) developed by Drennan, using a retrospective, pre-test design. Graduates were found to have enhanced their ability to change practice, communicate and work as part of a team and to problem solve (Drennan, 2012).

The ability to problem solves is a key aspect identified by Drennan (2010), in his definition of critical thinking, or what Massimi et al. (2016) term as higher order thinking skills. Ho et al. (2019), narrative inquiry with 12 nurses in senior positions who undertook master's education, found that participants displayed critical thinking and an improved ability to search for and apply evidence to problems. Participants attributed this change in informed decision making directly to their master's education which unlike pre-registration preparation, had encouraged them to seek undetermined answers and to widen their perspective to include disciplines other than nursing (Ho et al., 2019).

Increased confidence, self-esteem and assertiveness is raised by Clark et al. (2015) as a result of postgraduate nurse education and may be the reason why master's graduates are best placed to challenge poor practice. Notably, Clark et al. (2015) further suggests that the characteristics which whistle-blowers are deemed to possess to enable them 'to speak out' and raise concerns, are also those which have been attributed to master's education. Increased focus on quality care standards and outcomes of healthcare organisations for protecting the public and vulnerable patients, Gerard et al. (2014) say, requires master's prepared nurses with an awareness of personal and professional accountability.

Driving quality care improvements, despite challenges in practice, was reflected by participants described in Rae (2011) report of the evaluation of the Early Clinical Career Fellowships (ECCF) pilot in Scotland, which included registration on a part time master's programme for nurses graduated 2 years or less. Gerard et al. (2014), noted that employers were keen to recruit master's educated nurses as they considered that they possessed 'systems thinking' and the capacity to apply appropriate research findings to practice. This ultimately has an impact on their ability to provide successful leadership, thereby enabling safe and high-quality healthcare (Gerard, 2014). Nurses' ability to initiate and lead continuous improvement in pursuit of this, is essential in clinical leadership which Ho et al. (2019) attribute to the reflexivity of master's education with participants viewing themselves as change agents.

Taking the lead in organisational teams tasked with changing processes requires nurses to communicate and collaborate with patients and other healthcare professionals (Ho et al., 2019). The importance of good communication especially for team working was mentioned in 6 of the 8 articles, with Clark et al. (2015) identifying relationship building as a key leadership skill. Both Drennan (2012) and Ho et al. (2019) highlight the importance of this for interprofessional cooperation on quality improvement processes. Ho et al. (2019) study credits master's education for producing graduates with enhanced decision-making skills, through improved communication and collaboration with, other healthcare professionals. Gerard et al. (2014) and Massimi et al. (2017) also describe the growing interest in progressing this improved communication through interprofessional education particularly at master's level.

3.3. Master's education for professional and organisational outcomes

Evidence quoted by both Gerard et al. (2014) and Drennan (2012) demonstrate that employers regard master's educated nurses as possessing the competencies required by the clinical leaders of the future. In concluding the evaluation of the ECCF pilot, Rae (2011) suggests that greater investment in nurses early in their careers, like other, non-nursing, graduate schemes, is recommended, in preparation for successful, leadership careers ahead. This paper was the only one with a focus on newly graduated nurses and Rae (2011), acknowledged the reluctance of some managers who think there is a need for more consolidation of skills following registration. This could lead to a culture of "occupational socialization" that Clark et al. (2015) identified as problematic for patients and practice; leading to instances as Ho et al. (2019), described, where participants were pressurized by peers for taking time to make considered, evidence-based, decisions for their patients.

Findings of anti-intellectualism in nursing were documented in two of the papers (Drennan, 2012, Clark et al., 2015), even though Massimi et al. (2017) describes completion of a master's programme as reinforcing the credibility of nurses who have the potential to become clinical leaders. Ambivalence in senior nurses' views on whether master's education is relevant for wider recruitment of nurses or should be limited to advanced practice nurses has also been found in other studies, although Clark et al. (2015) emphasized that there is evidence to suggest that many advanced practice nursing skills were transferable to more mainstream healthcare delivery.

Of the 426 master's graduates surveyed in the multicentre, cross-sectional study by Massimi et al. (2017), over 80% stated that they had acquired new knowledge and skills because of their programme. Participants however, also acknowledged that opportunity for implementing these skills in practice was limited (Massimi et al., 2017). Adequate matching of master's educated nurses with clinical posts was highlighted by Ho et al. (2019) as a vital component in the process of appropriately managing change in the clinical environment. Clark et al. (2015) review suggests there is difficulty, but also an increasing need in healthcare, to identify and use the full potential of master's graduates to support wider organisational outcomes.

Rae (2011) noted the need for investment in "talented nurses" for clinical leadership and described the detailed recruitment process for the fellowship being evaluated. In examining the professionalization of nursing following master's education, participants stated that choice of master's programme was crucial and directly related to the opportunities for promotion and career progression (Ho et al., 2019). This was reinforced by Drennan (2012) who found that participants with the largest changes across the three measures of leadership, reflected the strands within the master's in nursing programmes on which they were enrolled.

While Curtis et al. (2011) highlighted literature which links organisational leadership with retention of staff and improved patient safety and outcomes, the debate over whether master's educated nurses make a difference to clinical practice outcomes continues. Clark et al. (2015) contend, this is due to the lack of adequate research, rather than an absence of positive findings. Nurse curriculum developments have been described by Gerard et al.'s (2014) discussion paper on master's nurse education, as reacting to ongoing changes in the healthcare landscape. They state that one of the current drivers for higher education, is the need for accountable, safe, patient-centred healthcare (Gerard et al., 2014) and although almost a decade on, this remains and is increasingly, the case.

Evidence has also identified that the resultant skills of master's graduates have an impact on patient satisfaction as well as reducing patients' symptoms and the length of hospital stays (Clark et al., 2015). Drennan (2012) and Ho et al.'s (2019) studies support that master's education produces graduate nurses with the required skills however employers need to take responsibility for actively supporting master's

prepared nurses to implement their skills to their full potential (Ho et al., 2019; Clark et al., 2015). Stakeholder interest in pursuing a definitive link between master's education and improved outcomes is highlighted but remains unresolved across the literature.

4. Discussion

This scoping review has shown that currently, there is no evidence base exploring the impact of master's education on leadership development in adult/general nurses. Despite most professional development being offered at postgraduate level, implying that it contributes to improved patient care, Clark et al. (2015), states that the link between the two, has not been well explored.

The evidence from the scoping review has highlighted that research into the impact of master's education is focused on the areas of advanced practice and specialist nursing (Drennan, 2012, Gerard, 2014, Ho et al., 2019,). Competition for and appointment to these more senior roles, leads to an expectation that applicants have or are working towards a master's level education, despite the absence of an associated professional body requirement (Ho et al., 2019). Furthermore, Page et al. (2021) found that research into leadership education in clinical practice, tends to focus on nurses who already work in these higher positions or are established clinical leaders.

Clark et al. (2015) acknowledge that the value of master's educated nurses in healthcare organisations in delivering high quality care, has not received enough scrutiny. Their literature review provides research examples linking master's education in advanced nursing practice, with improved patient outcomes (Clark et al., 2015) and this Massimi et al. (2016), suggest is further demonstrated by the increase in numbers of graduate nurse specialists. Nurses in advanced roles, such as nurse practitioner (NP), practice more autonomously; assessing, diagnosing, managing and where permitted, prescribing for patients with acute and chronic conditions.

In the United States, master's prepared Clinical Nurse Leaders (CNL), described as advanced generalists in the clinical setting, are focused on care management and coordination in collaboration with other disciplines, liaising with nursing administration and developing risk assessments for patient groups at a unit level. The review highlighted the differing concepts of management and leadership and while Harrington (2021), suggests that nurse leaders may not always be in a specific role within the hierarchy, Cummings et al. (2021) systematic review, highlights that the literature frequently defines leaders as nurses in senior management roles. This reinforces the need to expand opportunities for all nurses to obtain leadership skills and competence, to contend with rapidly changing, health care (Horowitz et al., 2022).

Developments in health technologies and health promotion which have a positive impact on patient outcomes and longevity of life, also equate with rising incidence of chronic illnesses and co-morbidities requiring healthcare input (Divo et al., 2014). Hajat and Stein's (2018) narrative review state that three out of four adults in developed countries, are living with more than one chronic condition. The resultant need for increased services has a significant impact on expenditure, which in turn demands greater transparency and accountability from health care organisations (Gerard et al., 2014). These factors, combined with rapid technological advancements in health care, create increasing demands for high quality and complex care provided by competent and well educated, nursing staff (Ge et al., 2015; Massimi et al., 2017).

Reports into the failures of healthcare organisations such as Garling (2008) in Australia and Francis (2013) and Keogh (2013) in the UK, have been compounded by the findings of more recent other UK-based inquiries, such as Kirkup (2015) and Ockenden (2022). These reports have again exposed the lack of clinical leadership, despite numerous initiatives in response to previous recommendations. Daly et al. (2014) suggest that existing research has primarily focused on evaluation of leadership frameworks, educational programmes and interventions, rather than their impact on clinical leadership and its outcomes.

Identification of the need for clinical leadership at the patient's bedside, has become even more relevant, as those being looked after in general hospital wards and in the community are sicker and have more complex care needs, than ever before (Al-Dossary, 2017). The ability of nurses in clinical areas to manage increasingly complex, person-centred care, requires skills at a level which Massimi et al. (2017) acknowledges is over and above that of the newly registered, graduate nurse.

The burden of non-communicable disease and multiple comorbidities in health care, have been further exacerbated by the COVID-19 restrictions, which introduced new dilemmas to already stretched global, health care services (World Health Organisation WHO, 2020). The pandemic resulted in an increasingly unstable workforce with high levels of absenteeism and redeployment, often requiring the recruitment of retired nurses and students to boost the ailing frontline (Daly et al., 2020; Foster et al., 2023). Changes to the delivery of existing services and the creation of COVID-19 related initiatives, resulted in nurses being treated as a "commodity" (Daly et al., 2020). Demands on nurses to work longer and more frequent shifts in overwhelming conditions and in the absence of patients' relatives, has placed huge strain on nurses' mental and physical wellbeing (Foster et al., 2023). That negative working environments are associated with poor outcomes for nurses as well as patients, has been widely recognised (Cummings et al., 2021). Dissatisfaction and lack of engagement of nursing staff are reflected in rates of adverse events and standards of patient care in the clinical setting (Daly et al., 2014); and can lead to increased turnover and intention to leave (Nunstedt et al., 2020).

With the full impact on staff of caring in the pandemic yet to be realised, the need for stable, clinical leadership, which is compassionate, collegiate and collaborative to support those working in uncertain, clinical environments, is even more relevant (Harrington, 2021; Daly et al., 2014). Key clinical leadership skills outlined by the scoping review, such as communication, problem solving, relationship building and collaboration for successful continuous improvement processes, are those associated with a transformational style of leadership (Harrington, 2021). An integrative review by Page et al. (2021), found that staff who engaged in leadership education had improved job satisfaction, which has a positive impact on staff turnover and retention, leading to enhanced patient care and satisfaction. That these skills and other attributes such as enhanced self-confidence, self-esteem and assertiveness are developed through master's education, endorses the argument for investment in master's education for leadership development in nurses (Clark et al., 2015).

Master's education for nurses can fulfil the innate needs described by Deci and Ryan (2000) as autonomy, competence and relatedness, which must be satisfied to ensure an individual's effective functioning and psychological wellbeing. In the clinical area, lack of influence on ways of working and care delivery can have an impact on staff motivation and action by undermining autonomy and competence (Deci and Ryan, 2000). Development of confident, assertive nurses who can challenge practice, lead improvements in care and influence change, reinforces feelings of having control and making an impact. Critical thinking in pursuit of evidence-based solutions to problems, in collaboration with patients, families and others in the health care team can enhance nurses' feelings of relatedness in the workplace. Graduates' fulfilment of these will lead to nurses motivated to achieve their full potential, furthering professionalisation (Ho et al., 2019) and credibility of master's education for clinical nurse leadership.

5. Limitations

This scoping review is limited by the small number of papers retrieved even though scoping reviews allow for grey literature to be included. The primary research articles described changes which were self-reported by the participants and therefore these may have biased the findings. The decision was taken during protocol development to exclude specialist master's programmes and those required for specialist

roles such as Advanced Practice/Nurse Practitioners and Clinical Nurse Leaders. Evidence from these and other healthcare master's areas may have provided different perspectives on the potential of master's education for leadership development.

6. Conclusions and recommendations

This scoping review has found that there is a lack of evidence exploring the contribution and impact of master's education for leadership development in adult/general nursing and therefore further research needs to be undertaken in this area. Studies relied on self reporting of changes in skills and practice. Wider evidence base focused on advanced practice and specialist nursing which could be used to inform the discussion is more readily available.

The skills required for clinical leadership include problem solving, decision making, ability to select and apply evidence-based practice for the purpose of leading continuous, quality improvement. Attributes of enhanced self-awareness, self-esteem and the self-confidence to question and challenge practice as well as being able to communicate and collaborate to build relationships have also been described. Available evidence has shown that master's education produces graduates with these required skills. That clinical leadership development should not just be the remit of nurses in senior roles is clear, although research into leadership development is focused on senior nurses.

The shortage of skilled nurses in general and of clinical leaders, specifically, to inspire, motivate and action real change, has amplified the call for clinical leadership development. Workforce pressures due to the increasing complexity of healthcare because of demographic and technological change, has been further exacerbated by the global pandemic. While there is difficulty in defining clinical leadership, the impact that its absence has in the clinical setting, is well documented by public inquiry findings. The need for supportive and nurturing work environments to encourage master's nurses to be able use their leadership skills to full potential is highlighted. Effective clinical leadership can enhance workplace cultures, having a positive impact on patient satisfaction and care outcomes, as well as on staff retention. Investment in master's education for the wider nursing workforce and in particular, new graduates, would provide the leadership capability required, to future-proof health care organisations in the delivery of consistent, safe and effective care. Further research needs to concentrate on directly linking master's clinical leadership development of nurses at the patient's bedside, to improved patient, professional and organisational outcomes.

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