

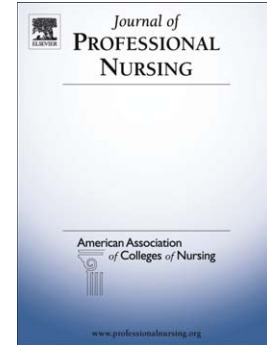
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Clinical Nurse Leader Integration Into Practice: Developing Theory To Guide Best Practice

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Title Page

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Highlights

This study developed a theoretical model of CNL practice and implementation
The model provides a preliminary roadmap of necessary steps for CNL success
The model can be useful to organizations contemplating CNL implementation

ACCEPTED MANUSCRIPT

ABSTRACT

Numerous policy bodies have identified the Clinical Nurse Leader (CNL) as an innovative new role for meeting higher healthcare quality standards. While there is growing evidence of improved care environment and patient safety and quality outcomes after redesigning care delivery microsystems to integrate CNL practice, significant variation in CNL implementation has been noted across reports, making it difficult to causally link CNL practice to reported outcomes. This variability reflects the overall absence in the literature of a well-defined CNL theoretical framework to help guide standardized application in practice. To address this knowledge gap, an interpretive synthesis with a grounded theory analysis of CNL narratives was conducted to develop a theoretical model for CNL practice. The model clarifies CNL practice domains and proposes mechanisms by which CNL-integrated care delivery microsystems improve healthcare quality. The model highlights the need for a systematic approach to CNL implementation including a well thought out strategy for care delivery redesign, a consistent, competency-based CNL workflow, and sustained macro-to-micro system leadership support. CNL practice can be considered an effective approach to organizing nursing care that maximizes the scope of nursing to influence the ways care is delivered by all professions within a clinical microsystem.

KEY WORDS

Clinical nurse leader, theory, practice model, interpretive synthesis, care quality, nursing care delivery

BACKGROUND

Thinking about healthcare has shifted over the last two decades, moving away from a concept of healthcare as medical interventions to treat disease and towards an understanding that healthcare is a complex process of delivering care (including medical interventions) involving multiple disciplines and inter-related activities. This attention to healthcare processes was prioritized after *To Err is Human* (Institute of Medicine, 2000) made clear that medical error was occurring at an alarming rate, but had less to do with clinical 'ineptitude' than with dysfunctional healthcare design and delivery. Healthcare delivery redesign is now considered essential for improving structures and processes that influence care quality and safety.

The nursing profession has been challenged to address this demand for quality healthcare and identify care models that can consistently improve patient outcomes (Institute of Medicine, 2011). One promising model incorporates a new role, the Clinical Nurse Leader (CNL). Policy, executive nurse and education leaders worked together to develop the curriculum framework and end-of-program competencies for CNL education (Bartels, 2005; Harris et al., 2006), including clinical leadership, care environment management, and clinical outcomes management (AACN, 2007). End competencies were developed with an understanding of microsystem dynamics in mind, such as the need for clinical leadership, interdisciplinary collaboration, teamwork, and process improvement (Nelson et al., 2008). An implementation task force, funded in part by the Agency for Healthcare Quality and Research (AHRQ), was subsequently established in 2004 to oversee the evaluation of the first CNL education-to-practice partnerships (Stanley et al., 2007; Tornabeni & Miller, 2008).

The results of these pilot projects and from many other health systems that have subsequently implemented CNL practice are reported in the literature and describe CNL implementation and outcomes. There is growing body of evidence showing improved care environment and patient safety and quality outcomes after redesigning care delivery microsystems to integrate CNL practice. This includes 15 case reports describing the development and implementation of CNL practice in federal, community nonprofit, and for-profit settings with subsequent improvements in staff, physician, and patient satisfaction with care practices, interdisciplinary communication and collaboration, patient care processes, lengths of stay, and nursing sensitive quality indicators such as falls and staff RN certification rates (for an in depth examination of these reports, see Bender, 2014). The evidence also includes two correlation studies associating CNL practice with improved nurse satisfaction, turnover and leadership practices (Guillory, 2012; Kohler, 2010) and two short interrupted time series studies quantifying a moderate-to-strong correlation between CNL implementation and improved care environment and quality outcomes (Bender, Connelly, Glaser, & Brown, 2012; Bender, Murphy, Thomas, Kaminski, & Smith, 2015).

STUDY PROBLEM AND OBJECTIVE

However, variation in CNL implementation, practice and outcomes has been found across reports, making it difficult to causally link CNL practice to the reported outcomes (Bender, 2014). This ambiguity reflects the overall absence in the literature of a well-defined CNL theoretical framework that describes the 'what' and 'how' of CNL practice and explains the connection between CNL practice and quality outcomes. Without a clear

understanding of CNL practice, implementation will continue to vary across organizations with the consequence of varied and potentially unpromising outcomes. To address this important gap in knowledge, the purpose of this study was to develop a theoretical understanding of CNL practice that describes fundamental structures, practices and expected outcomes.

METHODS

Interpretive synthesis design was used to develop a theory of CNL practice, which involves reinterpretation and reanalysis of text-based forms of evidence (Pope, Mays, & Popay, 2007). The texts were identified via purposeful sampling of the literature using CINAHL, PsycINFO, Pubmed, and Dissertations & Theses, from 2000-2012, using the term “clinical nurse leader”. A grey search was performed in Google and identified the Virginia Henderson International Nursing Library, AHRQ Innovations Exchange, and AACN websites as additional sources of CNL texts. Texts were analyzed using Strauss and Corbin’s grounded theory methods (Strauss & Corbin, 2007). This qualitative, comparative approach is well suited to reinterpretation and reanalysis of text based forms of evidence (Pope et al., 2007). Data handling and analysis were conducted in Dedoose, a web-based qualitative and mixed methods analytical application package (dedoose.com). IRB approval was obtained to conduct the study.

RESULTS

The sampling strategy, quality appraisal, and details of included report have been described elsewhere (Bender, 2015). Briefly, the search returned 473 unique documents, of which 295 were included in the synthesis (see Figure 1). The synthesis identified four fundamental domains of CNL practice, (1) preparing for CNL practice, (2) structuring the CNL workflow, (3) CNL practice activities, and (4) CNL outcomes (see Table 1 for details). The following sections describe these domains more extensively.

Preparing for CNL Practice

Systematic preparation for CNL implementation shows organizational commitment to CNL practice success and includes acknowledgment of care delivery deficits, system-wide leadership support and an effective change management strategy. These components are described in more detail in the following sections.

Acknowledgement of Care Delivery Deficits

Knowledge of care delivery deficits and an understanding of how they affect care across the healthcare spectrum is the most important first step for successful CNL implementation.

Organizations with successful CNL practice articulated a clear understanding of their care delivery deficits, which were described as the basis for their decision to redesign care delivery to include the CNL. As one executive leader described it “The floors are so busy that it is sink or swim basically. Our ratios are good, but our patients are really sick. New staff get overwhelmed easily and feel very lost in the system.” (Sherman, 2010) Another wrote: “Among the priorities identified was selecting and implementing a care model that acknowledges the changing climate within healthcare and addresses the future needs for care delivery in the hospitals.” (Harris & Roussel, 2010)

In organizations where CNL practice was less successful, there was resistance to the idea that there were deficits in care delivery. A common belief in organizations that did not emphasize the gaps in care delivery was that problems could be solved by ‘more of the same’, such as more staffing, but without changing the *ways* staff were caring for their patients: “there was skepticism...regarding how it would be helpful to have a nurse overseeing a group of patients. Why not decrease the number we have and give her some patients of her own” (Hartranft, Garcia, & Adams, 2007). Overall, organizations that fully acknowledged their care delivery deficits put considerable effort into identifying their care delivery shortcomings in preparation for CNL implementation, and those that did not were less successful integrating CNLs into practice.

Strong Leadership Support

A necessary structural antecedent to successful CNL practice is the support of organizational leaders with the authority to drive and sustain change across the healthcare system: at the macrosystem from executive leaders, at the mesosystem from department managers/leaders, and at the microsystem from staff and unit/clinic managers. For example, one organization created an organization-wide CNL “Blue Chip Board Initiative” to ensure appropriate leadership would be involved at all levels and stages (Thomas, 2012). Engaging leadership at all levels of the organizational structure helps to ensure (a) there are common goals for CNL practice, (b) that CNL practice priorities are aligned with both organizational and microsystem needs, and (c) the clarity and integrity of CNL practice is sustained across the organization over time.

Effective Change Management Strategy

Synthesis findings highlighted the importance of utilizing proven change strategies with adequate resources when integrating CNLs into practice. CNL narratives repeatedly described the need for a structured, planned approach with appropriate resource commitment when implementing CNL practice to overcome the inevitable hiccups and barriers that can arise when changing care structures and processes. Change strategies included: Lewin’s Change Theory; Lean Six Sigma; Kotters’ eight steps for change; Horak’s Quality Based Strategic Planning; and Roger’s Diffusion of Innovation. Effective change management strategies should systematically

outline how care delivery systems will be redesigned, how the redesign will be rolled out, how CNLs and staff will be educated prior to CNL implementation, and how ongoing refinement and improvement of CNL practice as barriers are overcome will be managed.

Structuring CNL Practice

Adequate preparation for CNL practice is only the first step of successful CNL implementation. It is also necessary to create a structure for CNL practice that ensures consistency and effectiveness. This includes care delivery redesign with a CNL competency-based consistent workflow. These components are discussed in more detail in the following sections.

Microsystem Care Delivery Redesign

CNL practice should be integrated into a thoughtfully redesigned care delivery system, not added onto an existing staffing model. One report put it this way: “As functions change, so must the form or model for the delivery of care. Redesigning nursing care delivery is at the core of the CNL pilot project: the context of how nurses practice has changed, and the work of nursing needs to be realigned to reflect this” (Gabat, Hilton, Kinnaird, & Sherman, 2008). All workflow needs, staff activities, and expectation for practice should be accounted for when redesigning microsystems. Many reports highlighted the ways they involved staff and other disciplines in the redesign of care delivery. For example, one organization formed “a design team of multidisciplinary staff [who] worked for several weeks to identify the core care processes and care activities. The care team roles were all clarified and distinct responsibilities were identified for each job” (Drenkard & Cohen, 2004). This process helps to orient microsystem staff to the reasons for redesign and the roles clinicians will have in the newly redesigned delivery system. This also ensures CNL practice is aligned with microsystem needs and does not overlap with other nursing care roles.

Competency based CNL workflow

CNL practice should be based on core CNL competencies, which are clinical leadership, care environment management and clinical outcomes management (AACN, 2013). Clinical leadership is described in more detail in the next section. Care environment management involves assessing the elements and working dynamics of multidisciplinary care processes to identify inconsistencies, gaps and/or variability as the basis for improvement. One report highlighted this understanding that a “CNL studies at the microsystem level and can assess the patient population and synthesize processes, patterns, as well as the needs of professionals to deliver the resources and care for the patient.” (AHRQ, 2010)

CNLs should also be accountable for a predetermined set of clinical outcomes (i.e. clinical outcomes management). This was the case for every single CNL implementation described in the literature. The outcome data provide objective benchmarks for CNL success and

create a positive feedback loop for the microsystem team, showing how collaborative efforts directly impact outcomes in the short and long term. Microsystem outcome measures were typically chosen based on microsystem assessment and macrosystem benchmarking priorities, such as patient satisfaction, nursing sensitive quality indicators, and Joint Commission core measures. Many organizations included a financial metric as a way to measure CNL practice return on investment. Common financial outcomes included length-of-stay and nurse turnover. Microsystem-specific outcomes were more generally related to unit-based quality improvement projects facilitated by CNL practice, and changed over time as completed projects showed sustained improvement and new projects were started.

It is important to note that CNL workflow did not include administrator or staff nurse functions. The most common reason cited in the literature by CNLs struggling to thrive in their practice was a lack of organizational understanding of CNL competencies and how they are enacted to produce CNL workflow. Many reports described a situation where CNLs were routinely ‘taken out’ of their CNL workflow to ‘fill in’ other nursing roles that were not consistent with CNL competencies. For example, one CNL reported “the manager viewed me as her ‘assistant charge nurse’ and attempted to delegate a lot of her managerial duties to me. She also had expectations that I ‘be available’ to take patients in a ‘911 situation.’ Unfortunately, these ‘911 situations’ happened far too regularly” (Moore & Leahy, 2012). One CNL vividly described the lack of understanding of CNL workflow and the barriers it created: "I feel like I am getting a lot of roadblocks. The nurse manager said to me, you know you are competition now... The staff thought that I was put there as a spy (chuckles), sent by the director to make them work harder and to see how come things were so bad on the floor” (Sorbello, 2010). Another report describes a similar situation: “One CNL remembers being confronted by staff with the question “what are you doing here? You don’t have a patient assignment: are you the chart police” (Sherman, 2010). It is interesting to note that ambiguous or inconsistent CNL workflow was found more in reports where care delivery redesign was not considered necessary for implementation, which presented a significant barrier to CNL practice success.

CNL Practice Activities

The synthesis identified continuous clinical leadership as the fundamental practice of CNLs. Continuous clinical leadership includes four core activities, (1) facilitating effective ongoing communication, (2) strengthening intra and interprofessional relationships, (3) building and sustaining teams, and (4) supporting staff engagement. Continuous clinical leadership and its relation to CNL practice success is complex, and is described in more detail elsewhere (Bender, 2015). Briefly, by communicating information across professions, building intra and interprofessional relationships, facilitating effective teamwork, and harnessing frontline staff knowledge of care deficits and their ideas for improvement through a consistent CNL workflow, CNLs put the pieces in place to change the microsystem focus away from individual tasks and towards a broader understanding of how everyone plays a part in complex care processes to provide quality patient care. These complex dynamics, mediated by CNL practice, are theorized

as the fundamental mechanism of action for CNL-linked improvements in care environments and quality.

Outcomes of CNL Practice

Redesigning microsystem care delivery to incorporate CNL practice not only improves care quality and safety outcomes, but, as articulated above, also mediates a change in the dynamics of care delivery, which improve the microsystem overall. These improvements are discussed in more detail below.

Improved Care Environments

Improved care environments resulting from CNL practice were reflected through numerous reports of enhanced microsystem communication, teamwork and satisfaction with care processes. This was attributed to a significant change in the microsystem's workflow patterns made possible by CNL practice. One report connected their environmental change specifically to better interdisciplinary understanding of care practices facilitated by the CNL: "a significant change in unit culture has been noted as members of the interdisciplinary team are now able to verbalize measures, rationales, and take accountability for their part in its success" (Jones, 2011). One report described a dramatic transformation of their care environment attributed to CNL practice: "The RN turnover rate was 40% before CNL introduction and now the rate is 3.1% ... This unit had the reputation as the worst unit in the hospital, now there is a waiting list of nursing trying to get on our unit" (Gerard & O'Neil Meyers, 2011). Another report highlighted the sense of community CNL practice generated: "nursing staff express that the [CNL-led] huddles have created a sense of "community" and that they have increased the morale on the nursing unit" (Caiazzo, 2012). Another report describes staff comments such as, "I feel safer knowing you [the CNL] are here; it is great to be able to bounce ideas off you" (Hartranft et al., 2007).

An important finding was that CNL practice resulted in a shift in expectations for ALL staff towards more communication and engagement across ALL professions, not just nursing. One report stated this very clearly: "Interestingly, once the CNLs secured the trust and respect of the administrative, nursing, ancillary and medical staff, there was a synergistic effect in terms of new staff entering the unit: they seemed to take other's trust and respect as a cue to feel secure enough to collaborate and communicate with the CNLs and other team members without reservation. Group cohesion was created, with a sense of interdisciplinary competence in each other, which new employees could immediately become a part of, and take part in" (Bender, Connelly, & Brown, 2013).

Improved Care Quality

Improvements in standardized healthcare quality metrics were reported across all reports. Improvement focused on nursing-sensitive quality indicators such as fall rates, pressure ulcer rates, restraint use, nursing turnover, nursing hours per patient day, and nursing certification

rates. National quality benchmarking outcomes included Joint Commission core measures and patient satisfaction. Organizations attributed these diverse improvements in care quality to CNL practice, specifically their role in accountability and follow-through, as mirrored in this excerpt: “staff nurses saw the CNLs as bringing follow-through with processes, guiding tests of change and reducing wasted steps and time” (Kaack, 2010). It is important to note that reports stressed the fact that improvements in care quality were not because of more staff or resources ‘thrown at the problem’, but through the systematic implementation of CNL practice including thoughtful redesign of care delivery, which ultimately improved collaborative decision making and transformation of microsystem care patterns.

DISCUSSION

This study advances understanding of CNL practice by synthesizing a theoretical model of CNL practice domains, which differentiates CNL practice from existing nursing roles and practices, and proposes mechanisms by which a CNL-integrated care delivery model can positively influence care environments and care quality outcomes. This preliminary CNL practice model describes what is needed to structure microsystem care delivery to support CNL clinical leadership practices that facilitate communication, collaboration, teamwork, and staff engagement, all of which ultimately enhance the microsystem work environment and improve care quality outcomes. The model highlights the need for a systematic approach to CNL implementation, including a well thought out strategy for care delivery redesign, CNL workflow and integration into practice, and sustained macro-to-micro system leadership support. This aligns with the literature on organizational readiness for change, which stresses that the amount of executive *commitment* to change will influence the magnitude of organizational effort to implement change (Weiner, 2009). Strong leadership and utilization of theory-driven change strategies are also considered evidence-based approaches to change (Rhydderch, 2004), so it is not surprising to find they are fundamental to CNL success.

The synthesis describes the interlinking domains of CNL practice and the complexity involved in planning, implementing and integrating CNL practice to ensure practice success. CNL practice is not about placing an ‘extra set of hands’ into a dysfunctional care delivery system and hoping they will solve entrenched care problems, but rather a systematic process of planning and implementation that requires multilevel organizational input, significant resource allocation, and commitment to care delivery redesign from leaders and practitioners across organizational levels. Furthermore, CNL practice must be structured around CNL competencies and have a consistent workflow to influence microsystem practice dynamics and produce consistent care quality and safety outcomes.

LIMITATIONS AND FUTURE RESEARCH

This study synthesized all available CNL evidence reported in the literature to-date, but it is recognized that synthesis is an interpretive endeavor and that other interpretations of the data

are possible. It is therefore important to prospectively validate this study's findings with a national sample of certified CNLs in a CNL role and managers, leaders and change agents involved in a CNL initiative. Prospective validation will confirm and/or refine CNL practice domains and provide more information about fundamental CNL practice components necessary for implementation success. A prospectively validated CNL practice model will provide a solid framework to identify and/or develop measures of CNL practice domains that can be used to quantify CNL practice *and* CNL-specific influence on care environments and quality, which is necessary to produce a generalizable evidence base for the effectiveness of CNL practice.

CONCLUSIONS

Nurses are the largest sector of the healthcare workforce and represent a dynamic and enabling opportunity to transform care environments at the point-of-practice, where most care decisions are made. This study advances theoretical understanding of an innovative care delivery model that integrates CNL practice to improve healthcare quality and safety. The model can be useful to organizations and leaders contemplating CNL implementation, helping to frame an implementation strategy that addresses domains of CNL practice, and providing a preliminary roadmap of necessary steps and milestones for CNL practice success.

FIGURE LEGENDS

Figure 1. Literature search workflow

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Table 1: Domains and Components of CNL practice

Domain	Component	What it means	What it looks like	Potential influence on CNL practice
Preparing for CNL practice	Clearly understand current care delivery deficits	Suboptimal care related to dysfunctional practice patterns	Care variation, workarounds, low documentation adherence, adverse events Reactive, task based care	CNL role can be viewed as 'redundant' with continued belief in traditional models
		Discipline-centered 'silo' approach to patient care	Limited understanding of care complexity and consequences of activities across care spectrum	CNL goal of care integration across disciplines can be viewed as threatening, overwhelming, too challenging
		Lack of tools and support to work safely Hierarchical leadership patterns	Staff shortages, part time staff Culture of blame, power imbalances, professional 'jealousy'	Continued distrust of CNL practice if misunderstand clinical leadership functions
Structuring CNL practice	Strong leadership support	Macrosystem and microsystem leadership accountability for CNL practice success	Set CNL priorities and objectives important to organization and microsystem	CNL credibility facilitated/hindered by level of macro-micro agreement of goals
		Iterative process of support (not one-off)	Commitment to maintaining clarity and integrity of role	Ongoing support helps remove barriers to CNL practice as they arise
		Effective change management strategy	Multiple stakeholder involvement	Staff and departmental involvement in CNL role development Awareness across organization of CNL
Structuring CNL practice	Microsystem care delivery redesign	Appropriate and adequate resources allocated for CNL	FTEs allotted/re-conceptualized for CNL	Financial commitment signal of support and credibility
		Evidence of current care pattern deficits drives redesign	Partnership with academia for CNL continued education and support Staff career paths includes CNL role	CNL mentorship reduces perceived isolation as role first introduced CNL seen as professional advancement opportunity
		Account for all staff activities and workflow needs	Clarity of tasks, activities and functions for all microsystem staff	Lack of clarity impedes effective care delivery: nursing, CNL, support staff etc.
Structuring CNL practice	Microsystem care delivery redesign	No administrative duties	Minimal time away from the patient-healthcare interface	Time away from clinical setting reduces productively

Domain	Component	What it means	What it looks like	Potential influence on CNL practice
		Daily consistent microsystem presence	Daily presence allows for immersion into work patterns across disciplines and departments	Dependable presence and consistency of role builds trust and legitimacy
		No direct patient-care assignments	Easily accessible for immediate care/microsystem needs Available for complex coordination activities	There to provide follow-through
		Responsible for care coordination of appropriate patient load	Microsystems are scaled accordingly	Patient load balance is critical for ability to perform adequately Can only know so many patient 'stories' at once
	Competency based workflow	CNL White Paper delineated competencies	Written into job description as 'tasks' of practice	Focus on CNL competencies reduces opportunity for role overlap or confusion
		1. Care environment management: Microsystem is the unit of assessment	Root problems impacting patient care are identified across disciplines and departments	Facilitates meaningful changes in processes that impact care quality
		2. Clinical Leadership: Find and reduce practice variation	Lead the development of guidelines, clinical checklists, information sheets, databases, clinical pathways, etc.	Facilitates culture of performance
		3. Clinical outcomes management: Data used as basis for EBP and QI implementation and maintenance	Microsystem processes based on evidence, not cultural norms	Evidence based standards reduce risk of adverse events
		Clear job description	Role clarity and distinctness from other care roles CNL consistency across microsystems	Pathways tailored to each microsystem for optimal fit and effectiveness Variation creates ambiguity about CNL-specific productivity and outcomes Mixing roles (such as patient assignments, charge RN duties) limits role productivity
	Accountable for a defined set of outcomes	All CNL activities measured	Measures created based on microsystem assessment and improvement needs Track data and compliance to processes in real-time Interpret data meaningfully to show relationship between practice and results	Objective benchmark for success Tracking and disseminating outcomes provides basis to show CNL ROI Provides positive feedback for multidisciplinary staff on goal attainment

Domain	Component	What it means	What it looks like	Potential influence on CNL practice
		Clinical accountability creates CNL authority for action	Don't accept status quo	Provides authority and momentum for leading change
CNL Practice Activities	See Bender, 2015 for a detailed description			
Outcomes of CNL Practice	Improved care environment	Shared sense of power/responsibility	Staff start challenging status quo, empowered to look for ways to improve (themselves, the unit, patient care)	Collaboratively developed changes are meaningful to all
		Staff perceive ownership of environment	Expectation for collaboration and teamwork becomes the standard	Improves daily workflow
				Provides motivation to sustain change
				Greater points of contact and relationships makes change possible
		Shared sense of values	Goal of practice becomes patient care, not discipline-centered care	Shared decision making provides a richer understanding of the problem and how to fix it
		Increased sense of community, group cohesion	Positive, ongoing peer feedback	Focus becomes what is best for patient, rather than how to get tasks done quicker
	Improved staff satisfaction	Engaged staff who like being on the unit	Removes the isolation that exists in current care practices	
		Physicians who want patients to be on CNL units		
Improved patient outcomes		Improvement in patient quality indicators (falls, pressure ulcers, infections, adverse events, etc.)	Less variation in collaboratively developed care processes	Data of positive gains provides evidence of improvement that staff can see and feel motivated by
		Improved patient satisfaction with their care	Patients engaged with their care team	Bringing practice up to national mandated quality standards

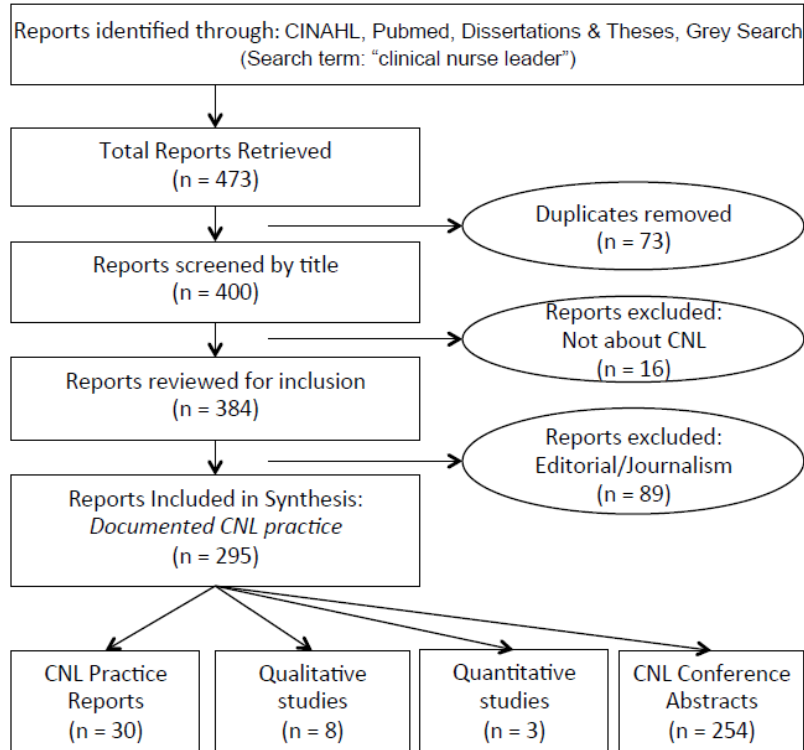


Fig. 1