





Nurse managers' competencies: A scoping review

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Abstract

Aim: To describe and synthesize scientific literature on nurse managers' competencies.

Background: The key strategy for the success of health organisations currently resides in the capacity of the nurse manager to develop advanced competencies in management. However, there is a lack of systematic reviews that synthesize knowledge about nurse managers' competencies.

Evaluation: A scoping review was conducted using electronic databases including Web of Science, Scopus, PubMed and Cumulative Index to Nursing and Allied Health Literature.

Key issues: After the first analysis, 392 competencies were observed from 76 studies. Finally, 53 competencies were grouped according to their characteristics. The two most-cited competencies were communication and finance.

Conclusions: Knowing the competencies required by nurse managers can help organisations create strategies to develop competent managers. In addition, from the results we can infer what might be the core competencies, since 22 main competencies from the total number were identified.

Implications for Nursing Management: The competencies identified constitute the body of knowledge necessary for nurse managers. In addition, it is possible to generate a pathway for learning and professional development for nurses before they work at the microlevel of management. The starting point for this pathway could be the 22 core competencies.

KEYWORDS

competencies, nurse executive, nurse manager, scoping review

1 | BACKGROUND

A nurse manager is responsible for translating the culture and strategy of an organisation at the operational level, as well as managing resources, coordinating nursing care, planning and contributing

to the evaluation services provided, together with supporting and encouraging teamwork in the relevant units and implementing innovative practices (Carney, 2006; Engle et al., 2017; Holden & Roberts, 2004; Lalleman et al., 2015; Scoble & Russell, 2003). Therefore, nurse managers play a key role, since they not only

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carry out clinical leadership and management, but are also responsible for translating the strategic vision and the values and objectives of the organisation's care actions (Chase, 2010; Ofei et al., 2020). Due to increasing responsibilities of nurse executives, extensive training—including adaptation to complex environments and competencies—is often required, for which a doctoral degree is preferable (Clark, 2012).

Upon conception of this research, direct contact was made with the American Organization of Nurse Executives (AONE), in order to define the different terms related to nurse managers. Thus, with the help of MTM, a member of AONE, the table in Appendix S1 was developed.

Although there is no standard definition of competency, in 1973 McClelland defined it as an underlying characteristic of an individual, which is causally related to effective or superior performance in a job, role or situation (McClelland, 1973). New (1996) defined competencies as those in which nurses are able to collaborate with other people, while Hudak et al. (2000) defined them as the skills, knowledge and capacity necessary to achieve quality health care. Therefore, competency can be defined as the appropriate combination and application of nurse executives' knowledge, attitudes and skills in specific management functions that are observed and measured as behaviours (Gunawan et al., 2020). In order to identify, orient and train the nurse managers, competencies are an essential resource (Meadows & Dwyer, 2015). Thus, competency training in management must go beyond the ambit of nursing and include, for example, business management, artificial intelligence and technology (Baxter & Warshawsky, 2014; Chase, 2010; DeOnna, 2006).

The relationship between economic and sustainability policies with respect to offering quality care in health systems is the starting point to justify the development of managerial competencies; these competencies are necessary for a higher degree of performance and results (Groves, 2011; Kerfoot & Luquire, 2012; MacMillan-Finlayson, 2010). Yoder-Wise et al. (2013) states that the development of an advanced level of managerial competencies is fundamental in achieving the objectives of the organisation. Warshawsky et al. (2020) highlights the capacity of the nurse manager to develop advanced competencies in management as one of the key strategies for the success of health organisations. This development is achieved through postgraduate studies (Institute of Medicine of the National Academies, 2010). Management competencies are an essential resource to identify, guide and train nurse executives (Meadows & Dwyer, 2015).

A review of literature indicates that it is necessary to improve the knowledge about nurse managers' competencies (Meadows, 2016; Scoble & Russell, 2003; Vance, 2009), since their necessary competencies are usually not clearly defined, which could explain the lack of conceptualization of their roles. Previous systematic reviews have only discussed factors and characteristics that could be seen as essential components of the nurse manager role (Gunawan & Aunguroch, 2017; Gunawan et al., 2020). Thus far, to the best of our knowledge, no reviews have been conducted to describe the competencies required for nurse managers. Therefore, there is a need to

synthesize available evidence about competencies for nurse managers which was the purpose of this study.

In addition, for this research, we refer to the term nurse manager in a generic way. Thus, the nurse manager is defined as a nurse who performs the role of nurse executive, middle management role or nurse manager role.

2 | REVIEWED METHODS

2.1 | Aim

This scoping review aimed to describe and synthesize scientific literature on nurse managers' competencies.

2.2 | Design

A scoping review was utilized, incorporating summaries, explanations and interpretations from available quantitative and qualitative studies to address review questions. This method allows a review to extract different data and develop them in a way that is meaningful, transparent and systematic (Grant & Booth, 2009). Reporting followed the PRISMA checklist in the manner indicated by Moher et al. (2009).

2.3 | Search methods

The scoping review was conducted as suggested by Arksey and O'Malley (2005).

- Examining the extent, range and nature of research activity.
- Determining the value for undertaking a full systematic review.
- Summarizing and disseminating research findings.
- Identifying research gaps in the existing literature.

For this review, three research questions were asked:

- What are the competencies of the nurse manager?
- What are the most frequently cited competencies of nurse managers?
- What tools are available for measuring, developing, and evaluating competencies of nurse managers?

Before identifying relevant journal articles, the authors determined keywords based on the research questions and contacted a panel of experts by mail to obtain their opinions on these keywords used in the scoping review process. These experts were DG, LKC and JM.

The electronic databases Web of Science, Scopus, Cumulative Index to Nursing and Allied Health Literature and PubMed were searched for relevant articles published between 2010 and 2020.

Search terms included terms used to refer to nurse managers and competencies (Appendix S2).

The inclusion criteria for papers in this scoping review were as follows: (a) articles published between 1 January 2010 and 31 December 2020. Articles from the last 10 years were included to guarantee the synthesis of updated knowledge, considering that the role of nurse managers has evolved in recent years; (b) articles written in English or Spanish, providing information about competencies of nurse managers; and (c) quantitative and qualitative articles, theses and dissertations, and review articles. The reason for including these sources was to ensure that the research captured all existing knowledge about nurse manager competencies. Exclusion criteria were papers that did not report information about competencies of nurse managers.

2.4 | Search outcome

The selection process is shown in Figure 1. A total of 565 titles were identified by searching through databases and other sources. After screening the titles and abstracts, 170 studies remained for full-text review. Finally, 76 studies were included in this scoping review

(Appendix S2). Three research team members (AGG, SPG and APC) screened the titles and abstracts and then full texts of the remaining articles according to the inclusion and exclusion criteria. Any disagreements were resolved by consensus and consultation with the fourth reviewer (PMG) when required.

Each of the 76 selected full-text papers was read thoroughly, several times by the three authors to capture all relevant information and to ensure that nothing important was missed. The dataset for the paper was constructed by extracting findings that were relevant to the research questions.

2.5 | Quality appraisal

An assessment of literature quality was conducted. Since developed and validated tools for assessing the different methodologies of the included publications are lacking, development of a specific tool to serve this purpose was necessary. To this end, parts of the method presented by Hölbl et al. (2018) were used and modified as appropriate. No papers were excluded in the quality assessment process. The papers received a score based on the criteria presented in Table 1. The score was given as follows: No or Scarcely = 0; Moderately, the

FIGURE 1 Flow chart of study selection process

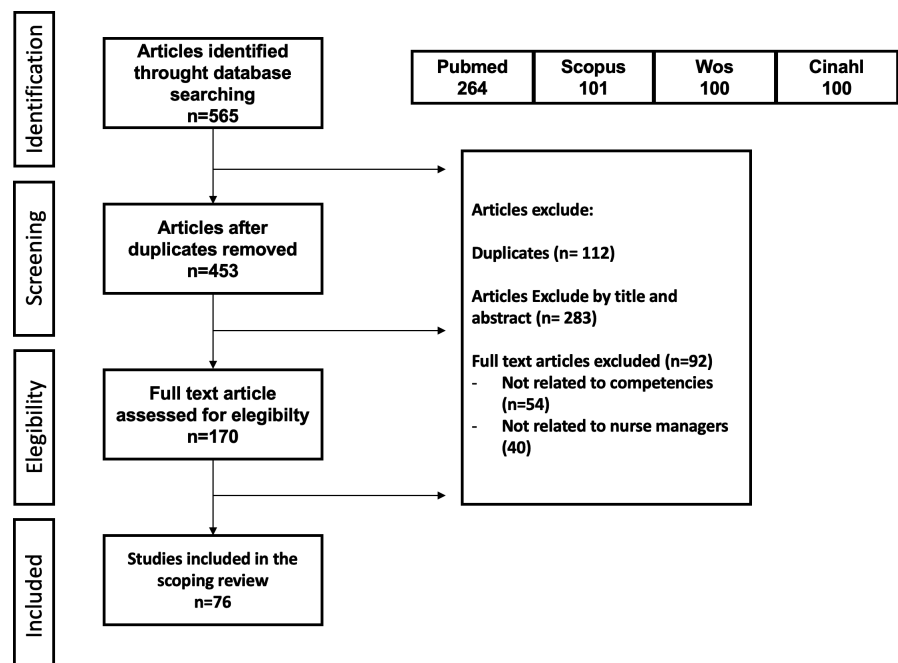


TABLE 1 Quality assessment tool adapted from Hölbl et al. (2018)

Domain	Indicator (0–2)
Q1—Is the nurse manager competency described?	No-Moderately-Yes
Q2—Are the research objectives clearly outlined?	No-Moderately-Yes
Q3—Are the main contributions well described to the nurse management?	No-Moderately-Yes
Q4—How appropriate is the problem solution fit?	No-Moderately-Yes
Q5—Are the proposed solutions feasible (scalable, economical, implementable)?	No-Moderately-Yes

criterion could be interpreted = 1; Yes or Adequately = 2. The process of quality assessment was carried out by reviewer 1 (AGG) and later independently reviewed by reviewers 2–4 (APC, SPG and PMS).

2.6 | Data extraction

Data were extracted by three reviewers (AGG, SPC and APC) using the prespecified data extraction forms. Extracted information included studies, sample size, participant characteristics, countries, competencies, model of competencies and instruments. Data analysis was completed in Microsoft Excel.

Articles and competencies were coded using the following process to correctly identify them:

- Articles: These were encoded with the letter 'A' followed by three digits, beginning with 'A001' as the code to identify the first article.
- Competencies: These were encoded with the letter 'C' followed by three digits, beginning with code 'C001'.

Therefore, for example, the competency encoded as 'C589 A021' can be identified as: competency 589 belonging to article 21.

With this system, we first listed the competencies described in the articles, giving each a code. Second, the competencies were analysed, grouped if identical and counted for frequency of repetition. Finally, we grouped the competences according to common characteristics.

Any disagreement was resolved by consensus or the fourth reviewer (PMS). The expert panel were contacted when required, for example, in cases of lack of understanding of the context, no understanding of the functional role of nurse manager or lack of understanding of the term that referred to a certain competency.

For this review, the terms competency model and domain were defined as:

A competency model provides a conceptual framework defined by the process for achieving outcomes, the critical path to achievement, the related tasks and best practices that people consistently perform to achieve objectives.

A domain is a group of terms with shared defining characteristics.

3 | RESULTS

3.1 | Bibliographic overview

Seventy-six papers were reviewed in the current scoping review (Appendix S3), conducted in 15 countries: United States, Oman, South Africa, Australia, Switzerland, Finland, China, Slovenia, South Korea, Taiwan, Brazil, Iran, Indonesia, Ghana, Spain and Canada.

A total of 680 competencies were identified from 76 studies, 288 were duplicated, so their frequency of repetition was analysed and duplicates were eliminated. After the first analysis, 392 competencies were observed (Table 2). Next, the meaning of each competency was analysed and those that referred to the same competency, described in different ways, were grouped together. Finally, 53 competencies were grouped according to their characteristics (Table 2), for example, decision-making, financial competencies, result orientation, leadership, change management and ethical principles. It was especially relevant that competencies required by nurse managers emerged from the literature belonging to the area of personality, such as emotional intelligence, integrity, diversity and compassion, and those regarding personal and professional balance. The list describes the competencies for the nurse manager in the different functional roles. The competencies come from very diverse health care systems, which makes it convenient to determine their validity in a specific health care system and the nurse manager's role in it. These competencies of nurse managers were grouped into six dimensions based on their defining characteristics (Table 3).

3.2 | Quality assessment

Appendix S4 presents the results of the quality assessment. The maximum number of total points was 10, and the minimum was zero. The total mean score was 6.77 and the average score for each of the sections was $Q1 = 1.32 \pm 0.57$, $Q2 = 1.54 \pm 0.55$ and $Q3 = 1.05 \pm 0.43$ which were lower than $Q4 = 1.62 \pm 0.59$ and $Q5 = 1.24 \pm 0.54$. The quality of the included publications varied with a standard deviation of 1.23 for the total mean score and a range of 4–9.

3.3 | Most-cited competencies and competency aggregation

The selection criterion that was followed for the most-cited competencies was a relative frequency equal to or greater than five, and through this, 22 most frequently cited competencies were identified (Table 4). The two most-cited competencies were communication and finance.

TABLE 2 Analysis of competencies and domains

Domain	First analysis	Final grouped
Management	76	10
Communication and Technology	43	6
Leadership and Teamwork	122	15
Knowledge of the health system	61	7
Nursing knowledge	48	8
Personality	42	7

TABLE 3 Competencies for nurse managers

I. Management Analytical thinking Decision-making Innovation Strategic management Human resources management Legal aspects Organisational management Result orientation Marketing Finance	IV. Knowledge of the health system Care management systems User care skills Health policy Identification and responsibility with the organisation Knowledge of the health environment Quality and safety Quality and improvement processes
II. Communication and technology Communication Feedback Evaluation of information and its sources Listening Information systems and computers Technology	V. Nursing knowledge Clinical skills Standard nursing practice Nurse research Nursing theories Care planning Nursing training planning Professionalism Infection control practices
III. Leadership and team work Relationship management Leadership Career planning Influence Change management Delegate Conflict management Ethical principles Power and empowerment Critical thinking Collaboration and team management skills Interpersonal relations Multi-professional management Team-building strategies Talent management	VI. Personality Serve as a model Awareness of personal strengths and weaknesses Strategic vision Personal and professional balance Compassionate Diversity Emotional intelligence Integrity

In addition, competencies such as change management, conflict management and decision-making also emerged from the literature. Competencies that refer to aspects such as ethics or integrity were also relevant among the articles that make up this review.

The competencies were grouped into six domains. Consequently, in order to name each domain, the most representative terms were selected for all the competencies included in each domain. The results are shown in Table 3.

3.4 | Model of competencies

A competency model provides a conceptual framework defined by the process for achieving outcomes, the related tasks and best practices that people consistently perform to achieve objectives.

After reviewing the literature, nine models of competencies were identified (Table 5). Eleven articles (22%) of those reviewed include the AONE model of competencies.

The following are highlighted for their presence in the literature reviewed: the competency model based on the standards

of management practice established by the American Nursing Association (ANA); Nurse Executive Competencies focused on senior nurse managers; Nurse Executive Competencies: Chief Nurse Executive (CNE) System focused on top nurse managerial representation; nurse manager competencies oriented to logistical and operational management; Lead, achieve, system transformation, engage, develop coalitions Capabilities Framework based on the Canadian College of Health Leaders competency repository; The Managerial Competencies of the Head Nurses originating from the assessment of nurse managers in Taiwan; and The Magnet Model taking into consideration the standards of magnet hospitals.

3.5 | Instruments for measuring competencies

From the reviewed papers, the available instruments for measuring, developing and evaluating competencies were identified. The instruments are (Appendix S5):

- Nurse Executive Assessment Tool (AONE, 2015).
- Nurse Leader Competency Assessment Tool (AONL, 2021).

TABLE 4 Most-cited competencies

Competency	Relative frequency	Absolute frequency (%)
Communication	22	5.60
Finance	18	4.58
Change management	14	3.56
Conflict management	12	3.05
Motivation	12	3.05
Leadership	9	2.29
Negotiation and conflict resolution	9	2.29
Clinical skills	8	2.04
Relationship management	8	2.04
Decision-making	7	1.78
Strategic thinking	7	1.78
Team-building strategies	7	1.78
Time management	6	1.53
Strategic vision	6	1.53
Human resource management	5	1.27
Information systems and computers	5	1.27
Integrity	5	1.27
Legal issues	5	1.27
Power and empowerment	5	1.27
Professionalism	5	1.27
Research and evidence-based practice	5	1.27
Technology	5	1.27

- The Chase Nurse Manager Competency Instrument (Chase, 2010).
- Nurse Managers Leadership and Management Competencies Scale (Kantunen et al. 2015)
- Competency Assessment Scale for Head Nurses (CASHN) (Tongmuangtunyatep, 2015).
- The Human Capital Competencies Inventory (HCCI) (Donaher et al., 2007).
- Nurse Manager Competency Inventory (NMCI) (DeOnna, 2006).

The Nurse Executive Assessment Tool was developed by the AONE as a tool for the evaluation and self-assessment of senior nurse managers and for identifying areas for improvement. Nurse Leader Competency Assessment Inventory Tool was also developed by the AONE and focuses on the assessment of nurse manager competencies at the executive, logistical and operational levels. The Chase Nurse Manager Competency Instrument is oriented to the assessment of competencies required to perform nurse manager functions. Nurse Managers Leadership and Management Competencies Scale aims at detecting the competencies of nurse managers during the performance of their duties. Competency Assessment Scale for Head Nurses focuses on the evaluation of nurse manager performance. The Human Capital Competencies Inventory focuses on the measurement of the nurse manager's human capital competencies. Finally, the Nurse Manager Competency Inventory focuses on the measurement and evaluation of nurse manager competencies at the operational level.

TABLE 5 Model of competencies

Competency model	Author/Year	Focused on	Core of competencies
The Magnet Model	Martin (2009)	Nurse manager	Transformational leadership, structural empowerment, exemplary professional practice, new knowledge, innovations, and improvements, empirical quality outcomes force
The Managerial Competencies of the Head Nurses	Hu (2010)	Nurse manager	Administrative competence, leadership competence, recognition, managerial ability training
LEADS capabilities framework	Canadian College of Health Leaders (2011)	Nurse manager	Leads self, engages others, achieves results, develops coalitions, system transformation
Competency Model	ANA Leadership Institute (2013)	Nurse manager	Leading yourself, leading others, leading the organisation
Nurse Manager Competencies	American Organization of Nurse Executives (2015b)	Nurse manager	Managing the business, the leader within, leading the people
Nurse Executive Competencies: System CNE	AONE Nurse Executive Competencies (2015)	Nurse executive	Knowledge of the health care environment, communication and relationship building, professionalism, leadership skills, business skills
Nurse Executive Competencies	American Organization of Nurse Executives (2015a)	Nurse executive	Communication and relationship building, a knowledge of the health care environment, leadership, professionalism, business skills
Managerial competencies of head nurses	Moghaddam et al. (2019)	Nurse manager	Planning, organising, leadership, control, managerial roles
Model of competencies for nurse managers	González-García et al. (2019)	Nurse manager/middle nurse manager/nurse executive	Relationship management, communication, listening, leadership, conflict management, ethical principles and team management skills

4 | DISCUSSION

This scoping review demonstrates the competencies required for nurse managers identified in scientific literature. This is the first scoping review to describe the competencies of nurse managers at the international level. The strength of this research is its stringent inclusion criteria, the quality assessment approach and the use of a panel of experts to guide the approach to the subject.

We found 392 competencies that are required by nurse managers, although the number was reduced to 53 after individually analysing each competency and grouping them according to their defining characteristics. The Healthcare Leadership Alliance (HLA), since 2005, was created and developed a directory of competencies required for managing health care organisations (Healthcare Leadership Alliance, 2010). It has been updated in the last few years, and we can observe a significant growth in the number of competencies, a trend that can be attributed to the ever-increasing need to be in possession of competencies from disciplines other than health-based ones. In this regard, Deyo et al. (2016) argues that there is a need to develop a suitable set of competencies, as well as a set of risks for the health system if nursing managers do not follow this path of skills development. Following the procedure used by Kirk (2013), we asked ourselves what the basic competencies that a nurse manager must possess are. Generally speaking, nurse managers are focused on clinical and technical aspects, a situation that is not valid for the current needs of patients or health care organisations because of the complexity of data and information management, networking as a standard practice and so forth (American Nurses Association, 2015).

Nurse managers must have solid experience based on the tasks undertaken by nursing professionals, but it is also necessary for them to develop advanced management competencies to address current and future challenges (Kirk, 2013). Our findings align with what the AONE suggests, since this group of competencies also appears within its model of competencies (AONE Nurse Executive Competencies, 2015; American Organization of Nurse Executives, 2015b). As a result, changes in the development of clinical skills in favour of other types of competencies intended for organisations more focused on efficient resource management and quality of service have made it necessary to develop competencies that cut across other fields of knowledge, with a consequent reduction in the weight placed on clinical skills. Thus, clinical skills fall within a broader scope of knowledge required for health care and assistance provided by nurses (Healthcare Leadership Alliance, 2010).

With regard to the classification of competencies in different domains, once the competencies had been identified, they were grouped according to their characteristics via the establishment of six domains: management, communication and technology, leadership and teamwork, knowledge of the health system, nursing knowledge and personality. As a result, similarities can be found between these domains and AONE's model of competencies (which is the most-cited model) such as, communication and relationship building,

knowledge of the health care environment, leadership, professionalism and business skills (AONE Nurse Executive Competencies, 2015; American Organization of Nurse Executives, 2015b). The main difference therefore consists of the interpretation given in this work in relation to the development of leadership. In contrast to the AONE model, we differentiate the development of teams and personality components.

Based on information obtained from the articles, nine models of competencies were identified, although three of them, namely those developed by AONE, are subspecialties of the main framework. In this regard, we find two orientations in the development of the models. On the one hand, there are the models developed by AONE and by Hu (2010), which make the need for the development of financial management competencies very clear, and on the other hand, there are the models developed by the ANA, the Canadian College of Health Leaders, Martin (2009) and González García 2019, in which the emphasis is on leadership, the development of people and personality, and in which there is a confluence around leadership, communication, administration, resource management and organisational knowledge. It is worth mentioning that the model produced by Martin (the magnet model) is fundamental to what the ANA has produced (American Organization of Nurse Executives, 2015a; ANA Leadership Institute, 2013; Canadian College of Health Leaders, 2011; González-García et al., 2019; Hu, 2010; Martin, 2009).

This review also noted the development of seven instruments for measuring, developing and evaluating competencies. Although all articles have used to measure and assess competencies, not one of them mentions used for the process of selecting nurse managers (Lehtonen et al., 2018; Tongmuangtunyatep et al., 2015). For example, the Nurse Leader Competency Assessment Tool was used to perform a self-assessment of competencies, and although the Nurse Managers Leadership and Management Competencies Scale has been developed, its use is not evident from the literature, as is the case for the Competency Assessment Scale for Head Nurses (CASHN). The Human Capital Competencies Inventory (HCCI) indicates its usefulness for selection processes, but no evidence of its use for this purpose has been found.

5 | CONCLUSIONS

Knowing the competencies required from nurse managers can help organisations create strategies to develop competent managers in health care organisations. We identified 392 competencies, which were synthesized into 53 competencies and grouped into six dimensions. In addition, from the results, the most frequently cited competencies emerged, which could be the core competencies for the nurse manager. A total of 22 competencies were identified as being the most cited in the literature included in the review (communication, finance, change management, conflict management, motivation, leadership, negotiation and conflict resolution, clinical skills, relationship management, decision-making, strategic

thinking, skill systematic, team-building strategies, time management, strategic vision, human resource management, information systems and computers, integrity, legal issues, power and empowerment, professionalism, research and evidence-based practice, technology). The two most-cited competencies were communication and finance.

The findings of this scoping review demonstrate nine models of competencies, among which the most referenced competency model was the AONE's Nurse Executive Competency Model. We can also state that the most referenced instrument for evaluating, measuring and developing management skills was the Nurse Executive Assessment Tool, which was also developed by the AONE.

Another important finding of this study is the fact that the literature suggests the use of instruments to develop, measure and assess competencies, although we cannot explicitly state that any of the models has been used for the selection of nurse managers. This implies that these competency models could be included in the process of selecting nurse managers, since a posteriori development can mean inefficiencies for the organisation and therefore for the management of patient care.

The insight of the knowledge gained through this review will add to the body of nursing knowledge in the area of the role of the nurse manager.

6 | IMPLICATIONS FOR THE NURSE MANAGER

This research brings together a series of competencies that could be kept in mind in relation to both the training and selection of nurse managers. The competencies identified undoubtedly constitute the body of knowledge necessary for the work of a nurse manager. Given the large number of competencies, as well as the difficulties in developing all of them, the core competencies identified represents the minimum qualifications that a nurse manager must possess. In addition, it is possible to generate a pathway for learning and professional development for nurses before they work at the microlevel of management, and the starting point for this pathway could be the 22 core competencies. Nurses can then subsequently opt to develop meso-management and senior management functions by developing more advanced competencies or competencies that entail a higher degree of responsibility.

Our findings can also have implications for the selection of nurse managers. There is a need to change the current selection processes of nurse managers that is based on merit and not on skills. It is possible to use the evidence generated in this review to formulate selection processes founded on the above-mentioned competencies. Accordingly, using the most-cited competencies as a starting point, the selection of nurse managers may be carried out according to these competencies and their degree of development. Doing so will ensure that the most appropriate individuals are appointed to management positions.

CONFLICTS OF INTEREST

There are no conflicts of interest.

AUTHOR CONTRIBUTIONS

Data were extracted by Alberto González, Silvia Pérez and Arrate Pinto. Any disagreement was resolved by Pilar Marqués. Alberto González and Arrate Pinto did the statistical analysis. Alberto González, Pilar Marqués, Arrate Pinto and Silvia Pérez prepared the manuscript draft. All authors contributed to the revisions in depth for the manuscript and approved the final manuscript.


ETHICAL APPROVAL

A scoping review not involves human subjects, human material, human tissues or human data. Therefore, the approval of an ethics committee was not necessary.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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