

Factors that affect the development of nurses' competencies: a systematic review

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KEYWORDS

Competences;
Nurses;
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Education

Abstract

Objective: To investigate factors affecting the development of nursing competency based on a review of the literature.

Method: A systematic review was utilized. The articles were taken from the databases of ProQuest, ScienceDirect, SpringerLink, and Scopus. They were retrieved using the following keywords: *nursing competence*, *nurse competencies* and *clinical competence*. Twenty-one papers were selected.

Results: Competence development is a continuous process of improving knowledge, attitudes and skills, and is influenced by a myriad of factors. Six factors were identified that affected the development of nursing competence in our systematic review: (1) work experience, (2) type of nursing environment, (3) educational level achieved, (4) adherence to professionalism, (5) critical thinking, and (6) personal factors. Work experience and education were shown to significantly influence the development of competency of nurses.

Conclusions: Nurse managers need to support staffing competence through ongoing education, mentoring-preceptorship training, and case-reflection-discussion teaching programs.

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Introduction

Nursing services make a significant contribution to the quality of healthcare services. They are performed over 24-hour periods and are divided into shifts that are performed three times a day, seven days a week¹. They should be implemented in accordance with nursing ethical codes and career ladder of competence^{2,3}. Competent nurses impact on patient safety. Therefore, it is important that nurses' competencies are developed.

Nursing competency remains a considerable issue in health care⁴. The assumption is that nurses have to be competent but

perceptions are that this is not always the case⁵. Nevertheless, nurses are expected to deliver quality care and services⁶. It has been evaluated in many studies. It is defined as the ability to perform tasks that result in an anticipated outcome⁷. Nurses' competencies encompass all aspects of nursing, and include knowledge, attitude, and skills⁸. In order to acquire optimal competencies, nurses must have critical thinking skills⁹.

The competence of nurses has a significant impact on quality of care and is closely associated with job performance, satisfaction, and absenteeism^{2,8}. The dynamic development of nurses' competencies is influenced to a large extent by the environment¹⁰.

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It is critical that nurses develop competencies. Nevertheless, there are a myriad of factors, both internal and external, that might prevent nurses from acquiring competency. By contrast, some factors enhance the development of nurses' competencies. Thus, the study objective was to investigate factors that affect the development of nursing competence based on a review of the literature.

Method

A systematic review was conducted. Both newly graduated and experienced clinical nurses at hospitals were included in the study. The articles were taken from the ProQuest, ScienceDirect, SpringerLink, and Scopus databases. They were retrieved using the following search keywords: *nursing competence*, *nurse competencies* and *clinical competence*.

Literature selection was determined by the following inclusion criteria: (1) articles that focused on the development of clinical nurses' competencies in hospitals, (2) articles that were published between 2006 and 2016, (3) articles that were published in English, (4) articles that included nursing competency in the study title and abstract, (5) articles in which the study sample was nurses at hospitals, and (6) those in which the methodology that was used was cross-sectional, experimental, or qualitative. Exclusion criteria were articles that focused on specific or particular competencies, such as cultural, safety, or information technology competencies; and those in which the study sample was anyone other than nurses; for example, nursing students.

Results

Initially, 5860 articles in ScienceDirect, 4667 papers in ProQuest, 393 papers in SpringerLink, and 1800 papers in Scopus were found in the systematic review. Of the 12 720 articles selected during the search, 21 papers met the inclusion criteria and were subsequently included. Details of the article selection process are shown in Figure 1.

From the analysis of 21 papers, six factors were found to affect the development of nurses' competencies. Nearly

half of the sample (43%) indicated that personal factors influenced the development of nursing competency (Table 1). The factors were classified according to the study design used. Details of the study design are provided in Table 2.

Work experience

Work experience is the learning process encountered by nurses in the healthcare industry¹¹. It was shown to significantly influence the acquisition of nurses' competencies ($r = 0.272$; $p = 0.001$)¹². In addition, it was observed to help newly graduated nurses to develop competencies^{11,13-15}. Nurses who had experience in making diagnoses were also seen to improve their knowledge and skills in this way, and to develop subsequent professional competencies¹⁶.

Type of nursing environment

The type of nursing environment in which the nurses were employed (i.e., hospitals with good morale, readily available medication and equipment, and which were technologically advanced and efficiently run) was another factor that influenced nursing competency⁸. A statistically significant relationship between nursing competency and an efficiently managed organization was observed ($\eta^2 = 0.4$, $p = < 0.010$)¹⁷. Access to adequate technology and good morale were also seen to be positive factors^{13,18}.

Educational level achieved

It has been reported that the level of education attained by nurses is essential to the development of nursing competency¹². It was demonstrated in several studies in the review that education had a significant effect on enhancing nurses' competencies ($p = < 0.001$)⁹. It was also found following post-hoc comparison (Scheffé) that average competency for nurses with a Master's degree was significantly higher than that for nurses with a Bachelor's degree or diploma (mean, 46.50; standard deviation [SD] = 3.48)⁹. Twelve months after the first assessment, the average of competency increased in nurses with a Bachelor's degree ($SD = 0.87$) and decreased in those who held a diploma ($SD = 0.73$)¹⁹.

Adherence to professionalism

Patients have demanded professional care in the healthcare services. Professionalism, in many ways, could improve the

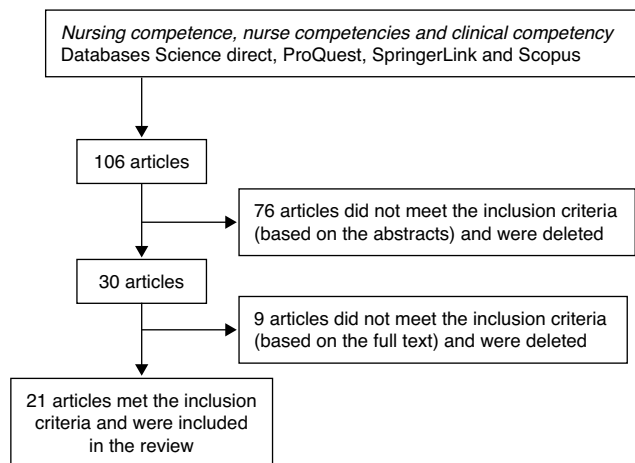


Figure 1 The article selection process.

Table 1 Factors affecting the development of nursing competency (n = 21)

Factors	n	%
Personal	9	42.86
Work experience	8	38.10
Adherence to professionalism	7	33.33
Type of nursing environment	5	23.81
Educational level achieved	4	19.05
Critical thinking	3	14.28

Table 2 The classification of articles according to study design (n = 21)

Factors	Review	Cross-sectional	Experimental	Qualitative	Total
Personal factors ^{8,10,12,13,16,20,24-26}	3	3		3	9
Work experience ^{2,11-16,20}	1	5		2	8
Adherence to professionalism ^{10,12,13,18,20-22}	1		2	4	7
Type of nursing environment ^{8,10,13,17,18}		2		3	5
Educational level achieved ^{9,11,12,19}	1	3			4
Critical thinking ^{9,23,27}		3			3

nurses' competences^{10,13,18,20}. Preceptorships, an integral to the professionalism development, provide guidance for newly graduate nurses to improve knowledge, skills, and attitudes^{12,21}. In addition, mentorships from seniors could give effects to the development of nurses competences²².

Patients demand professional care from healthcare services. Adherence to professionalism was seen to improve nursing competency in several studies^{10,13,18,20}. Preceptorships, which are integral to the development of professionalism, guided newly graduated nurses as to how to improve their knowledge, skills, and attitudes^{12,21}. In addition, senior mentorship positively influenced the development of nursing competence²².

Critical thinking

Nurses are exposed to various complex issues in healthcare settings. Therefore, they require critical thinking skills to manage a broad range of issues. The ability to think critically was seen to be a significant factor that contributed to the development of nurses' competencies ($r = 0.32$, $p < 0.001$) on one study²³. A positive and significant correlation between critical thinking ability and nursing competency was also demonstrated in other research ($r = 0.32$, $p < 0.001$), suggesting that higher critical thinking ability equated to greater competencies⁹. In addition, the ability to think critically was a major predictor of competency in each category and of overall competency.

Personal factors

Personal factors, such as age, sex, confidence, knowledge, attitudes, and health were identified as having an impact on the competence of nurses. It was indicated in the systematic review that age, along with work experience, positively affected the development of nurses' competencies^{8,24}. In addition, the knowledge and attitudes of nurses was also influential¹⁶. Confidence²⁵, and physical and emotional health¹⁰, were respectively proven to increase and enhance the competence of nurses in the workplace. Male nurses were demonstrated to have higher competency than their female counterparts²⁶.

Discussion

It was shown in our systematic review that six factors affected the development of nursing competency. These were later reclassified as internal and external factors.

Work experience helped to improve nurses' competencies. Nursing work experience, in conjunction with managerial guidance, had a considerable influence on enhancing nursing capabilities¹⁴. Capacity building is crucial for newly graduated nurses who lack work experience. This ensures that the care that is provided is in accordance with the nursing ethical code and the organization's internal standards. It was found in one study that the competency level of nurses was higher for those with ≥ 5 years working experience compared to that for those who did not¹¹.

Education in this study referred to formal (tertiary) education, e.g., a diploma, Bachelor's degree and Master's degree. Our study showed that nurses from diploma degree had lower competences than that of nurses from bachelor degree¹². Nurses with a Master's degree were well equipped to care for patients compared to those with a Bachelor's or diploma⁹. The role of education in developing nurses' competencies was shown to be vital in our study¹¹.

The ability to think critically was a contributory factor to the development of nursing competency and helped nurses to provide safe nursing care to patients²⁷. An increase in critical thinking abilities corresponded with an improvement in the competency level of the nurse^{9,23}.

The provision of preceptorships and mentorships were an integral component of professional nursing care and nursing services. Preceptorships encouraged the nurses to develop enhanced capabilities, as well as professionalism. They also helped new nurses to gain basic knowledge, skills, and a professional attitude²⁸ and encouraged them to promote patient safety^{21,29}. Senior nurse mentorships helped to develop the abilities of new nurses²². The mentorship programs also provided newly graduated nurses with increased nursing care experiences, while helping them to manage anxiety and improve their knowledge.

Male nurses were found to be more competent than their female counterparts in one study²⁶. This translated to better quality care being attributed to the male nurses and better quantity care being provided by the female nurses.

Age was another contributing factor to the development of nurses' competencies, primarily because it was usually a reflection of a longer working duration and learning experience. Senior nurses were found to have more working experience and better resultant competencies. Older nurses and those with more working experience were found to be more competent^{8,24}. Confidence was also seen to influence the advancement of nursing competence. By contrast, nurses with low self-esteem and anxiety were less ready to perform their duties and were not as competent in performing nursing care²⁵.

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