

 <p>INNOVATIVE JOURNAL ЮНКВУТ</p>	<p>Contents lists available at <a href="http://www.innovativejournal.in">www.innovativejournal.in</a></p> <p><b>INTERNATIONAL JOURNAL OF NURSING DIDACTICS</b></p> <p>homepage: <a href="http://innovativejournal.in/ijnd/index.php/ijnd">http://innovativejournal.in/ijnd/index.php/ijnd</a></p>	 <p><b>IJND</b> ISSN: 2231-5454</p>
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## Designing and Validating a Competency Assessment Scale for Head Nurses' Competences in General Inpatient Units at Main Mansoura University Hospital

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DOI: <http://dx.doi.org/10.15520/ijnd.2017.vo17.iss7.235.40-49>

**Abstract: Background:** Today, hospitals have demanded professionals with competencies that permit high performance in working toward organizational goals. The head nurse plays an important role in health services. She is responsible for the management of nursing services with a view to deliver quality care.

**Aim:** The aim of the present study is to design and validate a relevant, feasible, and reliable competency assessment scale (CAS) for head nurses' competences at Main Mansoura University Hospital (MMUH). **Methods:** A Descriptive study design was used in the present study. The study was carried out in all general inpatient units at (MMUH). The study subjects include all head nurses (42 head nurses) in all inpatient units at (MMUH). There are also jury group who included 12 head nurses at Mansoura University Hospital and 13 academic staff from Faculty of Nursing at Mansoura, Ain shams, Cairo, Banha, Damanhour and Zagazig Universities. Three tools were used for data collection namely; Interview Questionnaire Sheet, an Observation Check list and a Validity Form. **Results:** The result revealed that most of head nurses agreed upon the proposed head nurses' competency requirements. The proposed (CAS) for Head Nurses' competences is valid to be used in all inpatient units at (MMUH)

**Conclusion and recommendation:** The study findings indicated that the proposed (CAS) for Head Nurses' competences approved by majority agreement of a group of jury and is valid to be used in all inpatient units at (MMUH). It is recommended to disseminate of the proposed scale among head nurses improved their competences in general inpatient units.

**Keywords:** Scale, Competency, Head Nurses , Professional Nursing Practice, Knowledge, and Skills.

### INTRODUCTION

Head nurses perform a basic role in health services; they are in a managerial position and impact the gaining of health care organizations (Ray, 2017). Their main duties include evaluating the performance of staff nurses, providing feedback, developing education programs, interviewing and hiring nurses, developing departmental budgets, and maintaining inventory of medicines, equipment and supplies. Also speak about their nursing staff when a hospital manager makes decisions that involve the nursing unit. In this situation, head nurses' serve as an attorney and promote the best interests of their staff and the patients they care for (Babaeipour-Divshali et al., 2016 & Dehghani, Nasiriani, & Salimi, 2016).

Health care organizations have called head nurses with competencies that develop better performance, collaboration in achieving organizational goals, and high quality care (Tzeng and Ketefian, 2003). Competency is of great importance to the nursing profession. It is a professional issue and a key to the transmission of quality health care services (Nursing Council of Hong Kong, 2012). Nurses' competence provides direction on structuring work environments and staff development interventions to provide adequate care (Meretoja, Leino-Kilpi, and Kaira, 2004). It comprises essential relations in reducing medication errors, nosocomial infections, mortality, postoperative complications, safe performance, quality care and patients' satisfaction (Negarandeh & Khosravinezhad, 2013 & Lakanmaa et al., 2014).

The American Nurses Association reckons that the nurse alone is responsible and accountable for maintaining professional competence, the nursing profession's responsibility to form and direct all processes for confirming nurse competence. On the other hand, the hospital is responsible and accountable to provide an environment contributory to competent practice and the public has a right to expect nurses to demonstrate professional competence throughout their careers (American Nurses Association, 2014).

The World Health Organization strategy of enhancing nursing care quality comprises developing the competencies for nurses applying this at both the college and bachelor study levels. The goal of the competency requirements is to assure safe and high-quality patient care (Nuntaboot, 2016). Therefore, the purpose of nursing education is to produce a competent practitioner, consequently protecting the general public from incompetence and maintaining professional criteria (Edwards, Chapman, & Nash, 2001).

The competencies are not tasks, but are behavioral actions that seek nurses to use a profundity and expansion of knowledge; skill and judgment that help them safely practice and competently referee adjust to changes in the health care environment (College of Nurses of Ontario, 2014). Competence is a reversal of knowledge, critical thinking, interpersonal and technical skills that professional people gets to any professional practice situation (Ghahrisarabi et al., 2016).

The competency of a head nurse is identified as their behavior resulting from employing both knowledge and skills to achieve success at work by practicing nine essential general competencies for head nurses. They comprise management, leadership, evidence based practice, communication, safety, professionalism, quality improvement, informatics and technology and teamwork and collaboration (Tongmuangtunyatep et al., 2015, & Nuntaboot, 2016). Head nurses are to possess specific competencies such as knowledge, skills, and attitudes, to provide high-quality service based on both patient's and staff's appeals (Lee and Seomun, 2016).

Recently, the main categories within nursing competency were identified by (Bradley and Benson, 2015 and American Organization of Nurse Executives, 2015) communication and interpersonal skills (effectively communicate with patients, families and members of the health care team to ensure quality, safe patient care), leadership (personal accountability, career planning and relationship management), management (unit management, patient care management, and staff management), teamwork (function effectively within nursing and inter-professional teams, fostering open communication, mutual respect, and shared decision), professionalism (active membership in professional organizations and advocate for ethical practice), quality (utilizing data to follow up the care processes results and use improvement methods to prepare and test changes with the aim of promoting both the quality and safety of health care systems).

Also, many studies include some major categories in the frame of nursing competency. This includes evidence based practice (integrate best current evidence with clinical expertise and patient or family preferences and values for delivery of optimal health care), safety and informatics, safety (minimize risk of harm to patients and providers through both system effectiveness and individual performance), informatics (the use of information and technology in communication, managing knowledge, mitigating error, and enhancing decision-making and professionalism) (Kajander-Unkuri et al, 2014 and, Liou, and Cheng, 2014). Furthermore, Nuntaboot (2016) states that the domains of nursing competency includes nursing care practice competencies, management and professional development competencies, together with legal and ethical competencies.

Assurance of competence is the divided into the responsibility of the profession, nurses, organizations, credentialing and certification entities, regulatory agencies, employers, and other stakeholders (American Nurses Association, 2014). Head nurses competence assessment is specified as highly essential for maintaining professional standards, identifying areas of professional development, educational needs and care safety (Bahreini, et al 2011 and Meretoja, Isoaho, and Leino- Kilpi, 2004). So the aim of the present study is to design and validate a relevant, feasible, and accountable (CAS) for head nurses' competences at (MMUH).

## METHODS

### *Significance of the Study:*

Head nurse is a key position in health care team in hospital; their position has greater authority and responsibility. Head nurses need to develop several competencies that will empower them to effectively perform the five common management functions of planning, organizing, directing, controlling, and assembling resources. The success of an organization, the satisfaction of the staff, and the quality care for clients depends on the competencies of head nurses. Also, hospitals have demanded professionals with competencies that enable high performance and collaboration in working toward organizational goals. There is no competency assessment scale for head nurses competencies in (MMUH) Hence, the present study aims to design and validate a relevant, feasible, and reliable competency assessment scale for head nurses' competences at (MMUH)

### *Research Questions:*

1. What are the competency requirements for the head nurses in all general inpatient units at The MMUH?
2. What are the extent of head nurses have competences requirements at MMUH to achieve the adopted competency assessment scale?

### *Aim of the study:*

The aim of the present study is to develop and validate a relevant, feasible, and reliable a CAS for head nurses' in all general inpatient units at MMUH through:

1. Determining head nurses competency requirement from their point of view
2. Designing scale based on literature review, head nurses' observation and head nurses opinion.
3. Examining the proposed scale validity based on experts opinion.

## SUBJECTS AND METHODS

### *Design:*

A descriptive study design was used in the present study.

### *Setting:*

The study was carried out in all general units at the Main Mansoura University Hospital (MMUH) as medicine, surgery, orthopedic, neuro-surgery, obstetric and gynecological, and antenatal care orthopedic, and dialysis. This hospital is affiliated to teaching university hospital with total bed capacity is 1860 beds with general and special units.

### *Subjects:*

The subjects of the present study include two groups, namely jury group and head nurses group.

- **Jury group.** This group used to confirm validating of the developed (CAS) for head nurses' in all general inpatient units. It consists of 13 academic staff from Faculty of Nursing; Mansoura, Ain shams, Banha, Damanshour and Zagazig Universities and, 12 middle and top nurse managers from (M M U H).

- **Head nurses group.** This group served to assess the extents of head Nurses' competences at (MMUH), and to determine its requirements for head nurses' competences. It includes all head nurses working at (MMUH) (42 subjects).

#### **Tools of Data Collection:**

Three tools were used for data collection, namely: Interview Questionnaire Sheet, an Observation Check list and a Validity Form.

**I. Interview Questionnaire Sheet.** This questionnaire sheet was developed to evaluate the proposed requirement for head nurses' competences as perceived by head nurses. The questionnaire consisted of two parts.

**The first part:** It was used to identifying demographic data of the head nurses as, department, age, educational qualifications, and years of experience.

**The second part:** It was developed by American Academy of Ambulatory Care Nursing (AAACN), 2017, Roczynski et al, 2010, Brown and Crookes, 2016, Liou, and Cheng, 2014, Tongmuangtunyate, 2015, American Association of Colleges of Nursing, 2008 and Anderson, 2016. It is aimed at measuring competency requirements for the head nurses which includes 68 items categorized under nine dimensions: Management includes (11 items), Professionalism includes (10 items), Leadership includes (12 items), Informatics and technology includes (3 items), Communication includes (10 items), Teamwork and collaboration includes (5 items), Safety includes (8 items), and quality improvement includes (5 items). Lastly, evidence-based practice includes (4 items). It was measured the response of head nurses were scored on a five-point, Likert-type scale ranging from strongly agree (5 points) to strongly disagree (one point).

**II. Observation check list:** This tool was developed based on American Academy of Ambulatory Care Nursing (AAACN), 2017, Roczynski et al. 2010, Brown & Crookes, 2016, Liou, and Cheng, 2014, Tongmuangtunyatep, 2015, American Association of Colleges of Nursing, 2008 and Anderson, 2016 to assess nursing activities performed by each head nurses related to the requirements for head nurses' competency. It includes 68 sub-items which categorized under 9 areas and these items of this part are the same items of the second part of the interview questionnaire sheet. In this part of the questionnaire, the researcher counts the number of sub-items marked "met" and their percentage was calculated by dividing their total by the total number of sub items of the competency items. This was also done for the "partially met" items.

**III. Validity form:** The Validity form was developed by the researchers based on literature review Burns, & Grove, 1993 and LoBiondo-Wood & Haber, 1999 who proven that the face validity is intuitive type of validity in which jury group are asked to read the developed format and agree on its content in terms of whether it appears to consider the concept the study purposed or not. It was consisted of 68 which categorized under nine dimensions to assess the general content of the proposed head nurses competency scale and these items of this part are the same items of the second part

of the interview questionnaire sheet. For each of the 68 sub items, the jury group has to respond on the face validity (does it look like a scale), and its content validity (is it observable, measurable, achievable, desirable, understandable, applicable, and written in academic context).

Statistical analysis was done to obtain the valid items of the standards, which obtained a percentage of the jury group agreement of 60% or more (Richard, 2005).

#### **Methods of Data Collection:**

1. Formal permission to conduct the study was obtained from the Director of Mansoura University Hospital as well as the Director of nursing administration. This was achieved after clear illustration of the aim and nature of the study in addition its expected outcomes. Ethical approval was obtained from all study subjects. After explaining the objectives of the study, as well as defection from the study is one of their rights
2. Data collection forms were developed by the researchers after reviewing the related, scientific literatures
3. The developed tools were tested for content validity by presenting the tools to experts in the field of nursing administration and medical surgical nursing.
4. Cronbach alpha coefficient was used to assess the reliability of the tools. For the content of the competency questionnaire, it was 0.95 and for the observation check list, it was 0.96
5. A pilot study was carried on randomly selected five head nurses from orthopedic medicine, surgery and obstetric units at (MMUH) in order to ascertain clarity and feasibility of the research tools and to indicate the time required for data collection. Accordingly the necessary modification was done. Subjects who shared in the pilot study were excluded from main study sample.
6. Researchers met every head nurse in the sample to explain the purpose of the study, and ask for verbal consent to participate. The questionnaire sheet was handled to everyone; it took about 40 minutes for fill it.
7. The 42 head nurses were observed in all units during 3 working shifts.
8. The developed (CAS) was tested for its face and content validity by jury group members. Total time taken for data collection was three months, starting July 2016.

#### **Statistical analysis:**

Data entry were done using Epi-Info 6.04 computer software package, while statistical analyses were done using the statistical package for social science (SPSS), version 14.00. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables. Qualitative variables were compared using Chi-square test, whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead, in larger than 2x2 cross tables, and no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Cronbach alpha coefficient was calculated to assess the reliability of the developed tools. Statistical significance was considered at p-value <0.05.

## RESULTS

**Table 1** describes demographic characteristics of the head nurses and jury group. It was revealed that highest percent of jury group was 36.0 % ranged age from 40 to less than 50 years old and 52.0% of them were academic staff. And 32.0% of jury group works as an assistant professor followed by 24% works as a supervisor and 52.0% of the sample had a working experience ranged from 15 to 20 years .While, highest percent of head nurses was 54.8 ranged ages between 30 and 40 years old, and the majority of them 78.5% had Bachelor of Science in Nursing. The highest percent of head nurse was 69.0% had less than 15 years of nursing experience.

**Table 2** illustrates jury group agreement and validation proposed CAS for head nurses' competences. The face validity of CAS for head nurses' competences was 96.29%. And, face validity of scale ranged between 99.20 % and 93.66 %. All the proposed CAS for head nurses' competences was agreed by the majority of the jury group members. The highest agreement upon the head nurses communication, team work and collaboration 99. 20% followed by 98% and 97.45% for evidence-based practice and management respectively.

**Table 3** shows no statistically significant difference between academic staff and nurse managers' groups agreement for proposed CAS for head nurses' competences ( $p < 0.05$ ). The overall academic staff agreement upon proposed CAS for head nurses' competences was 95.47% of maximum score and 97.18% of maximum score for nurse managers. The highest maximum score was 100.00 % as perceived by academic staff for team work and collaboration and 100.00 % for communication as perceived by nurse managers.

**Table 4** shows number and percent of the head nurses' competences as perceived by them. This table indicates that half head nurses (50%) agree on head nurses' competences and only (23.8%) of them disagree on head nurses' competences. The percentages of agree on head nurses' competences ranged between 47.6% and 16.7%. Furthermore, the highest percent was 47.6% for professionalism followed by 45.2%, for safety as perceived by the head nurses for head nurses' competences.

**Table 5** shows the number and percentage of fulfilling proposed head nurses' competences as observed by the researcher. This table shows most of head nurses' competences were neither not met nor partially met. The percentages of fully met head nurses' competences ranged between 14.3% and 2.4%. Furthermore, some head nurses' competences were observed to be not met as informatics and technology, and evidence based practice. The highest percent was 95.2% as observed by the researcher for head nurses' competences to be partially met conveyed to professionalism and safety.

Table 6 demonstrates comparison between assessing the extent of fulfilling proposed head nurses' competences as perceived by head nurses with those observed. In this table there were statistically significant differences between proposed head nurses' competences as perceived by head

nurses with those observed  $p < 0.05$ . The overall head nurses' competences observed were 30.63%, while 80.07% of the head nurses' competences were required as perceived by head nurses in the table the highest maximum score was 85.32% for management, followed by 84.007% and 83.61% for leadership and team work and collaboration as perceived by head nurses respectively. Also the highest maximum score was 47.29% for management, followed by 36.42% and 33.43% for team work and collaboration and leadership as observed by the researcher. While, the lowest maximum score was 72.02% for evidence based practice as perceived by head nurses .Also the lowest maximum score was 3.174 % for informatics and technology as observed by the researcher

## DISCUSSION

Head nurses in a hospital work to maintain the quality of nursing care and ensure that staff nursing skills are up-to-date. So, the researcher hypothesized that the head nurses would be more competent (Lin et al., 2009). The Joint Commission suggested that competency is the elucidated ability to conduct the basic responsibilities of the job which indicated in the "essential duties and responsibilities" of the job description and hospitals must appraise all staffs' ability to cope with performance expectations as present in the job description, and to ensure that an individual is qualified to enter the worksite (University of Medicine & Dentistry of New Jersey, 2012). So, the aim of the present study is to design and validate a relevant, feasible, and reliable CAS for head nurses' competences at MMUH

In the present study, validation of the developed competency assessment scale for head nurses' competences was done through a jury group to assess about practicability and applicability of the scale. The jury group confirmed face and content validity of the developed scale. The results of the present study revealed there no statistical significance difference between agreement of academic staff group and nurse managers group regarding proposed scale for head nurses' competences at MMUH. Also, findings of the present study revealed that there a significant difference between head nurses perception of head nurses competences with those observed by the researcher.

According to findings of the present study, the majority of the jury group members agreed that the head nurses competency in communication, team work and collaboration, followed by evidence-based practice and management represented a higher percentage of face validity. As regard to the jury group members agreed upon content and face validity related to head nurses competency in communication, and team work and collaboration. This may be due to that the knowledge and experience of the academic staff and nurse managers' about then effect of communication and collaboration on staff relationships, staff satisfaction and turnover, and patient outcomes of care, including adverse events, medical errors, equalization in patient safety, poor quality care, and links to preventable patient mortality and the importance of uses current evidence to modify practice.

The previous result is agreed with Disch (2007) who stated that the Joint Commission noted that safety and quality of

patient care is dependent on teamwork, communication and a collaborative work environment. Collaboration among team members is a main responsibility of all health care team members. Also, Jeans and Rowat (2008) pointed that head nurses development requires competencies such as communication skills. Indeed, this will characterize leadership success. Additionally, Flin, Fletcher, and McGeorge (2003) indicated the importance of nursing communication. In addition, he indicated that more than one-fifth of patients hospitalized in the United States reported hospital system problems, including staff providing conflicting information and staff not knowing which physician is in charge of their care.

Findings of the present study revealed the jury group members agreed upon content and face validity related to head nurses competency in evidence evidence-based practice. This result may be due to that the knowledge and experience of the academic staff and nurse managers about the need of uses current evidence to modify practice, head nurses participation in data collection and other research activities, apply research in practice, and plan continuous education for nursing team . The study found agreed with American Nurses Association's Leadership Institute (ANALI) (2013) which indicated that the nurse leader is to integrate evidence and research findings into practice. For the (ANALI), evidence-based practice and research are embodied in the work and are also shown in competencies of business acumen, systems thinking, and learning capacity.

Again, the jury group members agreed upon content and face validity related to head nurses competency in management. This result may be due to that a head nurse has three main areas that comprise her or his role namely; patient care management to ensure that patient total needs are met; staff management to utilize, guide, evaluate, and correct staff nurses in their nursing practice, and finely, unit management ensure its smooth running to fulfill hospital goals. The result of the study supported by Chase (2010) who delineated that the nurse manager competencies in the areas of management includes financial management, human resource management, performance improvement, foundational thinking, technology, and strategic planning.

Findings of the present study revealed there was no statistically significant difference between academic staff and nurse managers' groups' agreement for proposed (CAS )for head nurses' competences. The highest academic staff agreement upon proposed CAS for head nurses' competences goes to head nurses' competency in team work and collaboration. It appeared in that the academic staff emphasize the important of develop and promote effective work relationships with the staff nurses giving them positive feedback about their performance, developing and revising unit objectives describing the desirable behaviors and their impact on the outcome of patient care . This is the same view of Hamoda, Badder, and Hermina (2003) that estimated the head nurse as the leader in the units and holds them as responsible for creating, stimulating and sustaining an appealing social work environment that expands for development and job satisfaction for the team member.

Findings of the present study revealed the highest mean percentage of maximum score of nurse managers' agreement goes to communication. It appeared in that the nurse managers' possessed a relative level of life experience, professional maturity and nursing management practice in the hospital and their experience in administrative processes and work relations, that include the important of communication in exchange information, ideas, orders and facts, permitting the accomplishment of coordinated actions, minimizing differences and approximating people towards common goals. This result supported by Santos et al (2011) that suggested that head nurses communications' is a basic work tool, constituting an act ingrained in their endeavor for preferring and bordering nursing staff and other health professionals' actions on their way to plan and achieve their objectives.

As regard to assessment the extent of fulfilling proposed head nurses' competences as observed by the researcher. It was observed that the highest percent of head nurses' competences to be partially met conveyed to professionalism and safety as observed by the researcher. This may be contributed to some head nurses elucidate a positive image of nursing as good role model, advocate for nurses and patients, educate the nursing staff with ethics and principle to clinical practice, participate in continue education, treats health care team with justice and ethics, provide and receives feedback to staff, promote staff to use safety resource, apply infection control measures in the unit, and discuss clinical scenarios to reduce risk to patients and staff.

Together with World Health Organization (2014); which stated that the successful leaders are those who are aware of how to produce a workplace culture in which the safe and high quality care of patients is important, a culture that promotes inter-professional teamwork, sets goals for patient safety, supports efforts within the organization to fulfill improvement goals, avails resources for strengthening systems, removes hurdles for clinicians and health-care staff that interfere with safe care, and requires and maintains higher performance of health-care providers.

Furthermore, some head nurses' competences were observed to be not met as informatics and technology, and evidence based practice. This may be related to head nurses not used the computer and managed files, do not guide nurses about health care technologies, and not uses information technologies to document care. This result is supported by Westra and Delaney (2008) who suggested that historically, nursing education never included informatics competencies; thus, current managers, administrators, or nurse executives are adequately prepared for using them or leading change in the use of health information technologies. In fact, healthcare organizations have begun to emphasize the need for informatics competencies appropriate for leadership roles. Health care leaders must be prepared to select, adopt, and apply electronic health record as well as other health information latest technologies.

Findings of the present study revealed there was a statistically significant difference between proposed head nurses' competences as perceived by head nurses with those

observed. The highest maximum score was for management as perceived by head nurses and observed by the researcher. This may be related to head nurses' knowledge related to three main areas that constitute her role. They are: patient care management to ensure that patient total needs are met, staff management to utilize, guide, evaluate, and correct staff nurses in their nursing practice, as well as unit management to ensure its smooth running to fulfill hospital goals. This result is supported by Mostafa et al., (2007) who developed job description for the head nurses her study revealed that patient, staff, and unit management were considered the essential role of the head nurses.

On the other hand findings of the present study indicated the lowest maximum score was for evidence based practice as perceived by head nurses'. This may be due to head nurses not have knowledge about how to use current evidence to modify practice, how to participate in research activities and how to apply research in practice. This result is supported by Malcolm K, (2016) who noted that "although there is a detonation of scientific evidence to guide clinical practice, the implementation of evidence-based care by health professionals is typically not the standard in many healthcare systems.

As regards findings of the present study related to informatics and technology competency was reported the lowest maximum score as observed by the researcher. This may be due to head nurses do not guide nurses about health care technologies, and do not use information technologies to document care. This result supported by Jelec et al., (2016) who investigate the application of modern technology in nursing and how it affects the nursing profession, what competencies are required for the introduction of technology and the role of nurses in the process and indicated that implementation of technology in health care has become a global trend and nursing increases nurses' efficiency. Also they concluded that the modern technology in the nursing profession is in its infancy, a lot of factors are contributing to slower development such as high cost, a shortage of nurses and training of medical staff to work with the new technology.

## CONCLUSION AND RECOMMENDATIONS

**Conclusion:** Upon the study findings, it is concluded that the majority of head nurses working in MMUH agree upon the requirements of head nurses competences; nonetheless, in most cases, their performance of these competences is not adequate. The proposed CAS for Head Nurses' competences (face and content) has been validated and approved by majority agreement of a group of jury. Together with that, there has been a major difference between proposed head nurses competences as perceived by head nurses with those observed. Practically, spreading of the scale among head nurses has largely improved their competences.

### **Recommendations:**

Based on the finding of the study, the following is recommended

1. Develop competence assessment in all nursing fields to facilitate the appraisal process and support continuing professional development .
2. Nurses' managers must be aware and use the validated developed CAS for head nurses competences through head nurses evaluation at Mansoura University Hospitals.
3. Performance appraisal of head nurses should be based on the competences on leadership, management, evidence-based practice, professionalism, communication, informatics and technology, safety, quality improvement, teamwork and collaboration that promote effectiveness in the head nurses role.
4. Application of the CAS for head nurses competences allows both the identification of the main dimensions of competences and measuring their impact, contributing to effective care management.
5. Head nurses' competencies improvement programs must be included in sustaining nurse managers' competencies.
6. Holding periodical meetings to figure out the problems facing head nurses' competencies and suggested alternatives to overcome them.
7. Availing up to date head nurses' knowledge about competencies and creative methods enhance them through workshops, continuous learning education programs and participating in national and international conferences.

**RESULTS**

Table 1: Demographic characteristics of the study subjects

Demographic Characteristics	Head nurses (n=42)		Jury group(n=25)	
	No.	%	No.	%
<b>Age</b>				
25-<30	14	33.3	5	20.0
30-<40	23	54.8	6	24.0
40-<50	3	7.1	9	36.0
≥ 50	2	4.7	5	20.0
<b>Academic staff</b>	----	----	13	52.0
<b>Nurse manager</b>	----	----	12	48.0
<b>Educational Qualification</b>				
Doctorate	----	----	13	52.0
Master	----	----	----	----
Bachelor	33	<b>78.5</b>	12	48.0
Secondary Nursing Diploma	9	21.4	----	----
<b>Job Position</b>				
Professor	----	----	2	8.0
Assist professor	----	----	8	32.0
Lecturer	----	----	3	12.0
Director	----	----	1	4.0
Assistant director	----	----	1	4.0
Supervisor	----	----	6	24.0
Head nurse	42	100	4	16.0
<b>Years of experience</b>				
< 15	29	69.0	5	20.0
15-	7	<b>16.6</b>	13	52.0
>20	6	14.2	7	28.0
<b>Marital status</b>				
Married	38	90.4	23	92
Single	4	9.5	2	8

Table 2: Jury group agreement and validation proposed CAS for Head Nurses' competences (n=25)

Competency assessment scale	Mean rating score	Face validity
Leadership	11.24	93.66
Professionalism	9.52	95.20
Communication	9.92	99.20
Safety	7.52	94.00
Quality improvement	4.76	95.20
Evidence-Based Practice	3.92	98.00
Team work and Collaboration	4.96	99.20
Informatics and Technology	2.92	97.33
Management	10.72	97.45
Total	65.48	96.29

Content validity index =62.84

Table (3): Comparison between academic staff and nurses' manager's agreements of proposed CAS for Head Nurses' competences

competency assessment scale	Jury group		t	p
	Academic staff(n=13)	Nurse managers(n=12)		
	**Mean ± SD	**Mean ± SD		
Leadership	90.384±10.675	97.222±4.103	.39	.158
Professionalism	92.307±11.657	98.333±3.892	.33	.112
Communication	98.461±3.755	100.000±.000	.28	.080
Safety	95.192±8.130	92.708±8.356	.15	.024*
Quality improvement	95.384±8.770	95.000±9.045	.02	.001*
Evidence-Based Practice	98.076±6.933	97.916±7.216	.01	.000*
Team work and Collaboration	100.000±.000	98.333±5.773	.21	.045*
Informatics and Technology	97.435±9.245	97.222±9.622	.01	.000*
Management	97.902±3.986	96.969±5.921	.09	.009*
Total	95.475±3.771	97.181±1.324	.29	.087

\*Significant p<0.05      \*\* Means percentage from maximum score

Table (4) : Number and percent of the head nurses competences as Perceived by them (n=42)

Head nurses competency	Disagree		Neutral		Agree	
	No	%	No	%	No	%
Leadership	10	23.8	15	35.7	17	40.5
Professionalism	13	31	9	21.4	20	47.6
Communication	11	26.2	13	31	18	42.9
Safety	13	31	10	23.8	19	45.2
Quality improvement	13	31	16	38.1	13	31
Evidence-Based Practice	12	28.6	11	26.2	19	45.2
Team work and Collaboration	16	38.1	19	45.2	7	16.7
Informatics and Technology	13	31	17	40.5	12	28.6
Management	10	23.8	20	47.6	12	28.6
Total	10	23.8	11	26.2	21	50

Table (5): Number and percent of the head nurses attained competences as observed by the researcher (n=42)

Head nurses competency	Not Met		Partially Met		Fully Met	
	No	%	No	%	No	%
Leadership	0	0.0	37	88.1	5	11.9
Professionalism	0	0.0	40	95.2	2	4.8
Communication	0	0.0	37	88.1	5	11.9
Safety	0	0.0	40	95.2	2	4.8
Quality improvement	5	11.9	36	85.7	1	2.4
Evidence-Based Practice	9	21.4	33	78.5	0	0.0
Team work and Collaboration	1	2.4	35	83.3	6	14.3
Informatics and Technology	34	81	8	19	0	0.0
Management	0	0.0	36	85.7	6	14.3
Total	0	0.0	41	97.6	1	2.4

Table (6): Comparison between assessing the extent Head Nurses' competences as perceived by the head nurses with those observed.

Head nurses competency	Head nurses perceptions	Observation by researcher	t	P
	**Mean±SD	**Mean±SD		
Leadership	84.007±11.617	33.432±15.521	17.88	.000*
Professionalism	78.381±7.978	32.738±11.272	16.98	.000*
Communication	77.809±9.865	33.571±14.024	18.30	.000*
Safety	78.690±9.487	20.833±14.781	21.33	.000*
Quality improvement	73.619±14.598	18.095±12.923	8.26	.000*
Evidence-Based Practice	72.023±13.662	12.500±8.282	22.58	.000*
Team work and Collaboration	83.619±7.274	36.428±16.203	19.65	.000*
Informatics and Technology	77.460±14.572	3.174±6.623	28.61	.000*
Management	85.324±8.369	47.294±17.244	12.37	.000*
Total	80.070±6.678	30.637±7.161	33.50	.000*

\*Significant p<0.05    \*\* Means percentage from maximum score

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