Comparative study: Postoperative Nurses' Competency regarding Cholecystectomy at University and Non-university Hospitals.*

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Abstract: *nurses play a crucial role in postoperative care. Therefore, assessing nurses' clinical competence is essential to achieve qualified and safe care. Aims; assess postoperative nurses' competency regarding cholecystectomy care and compare the difference between university and non-university hospitals. Research questions; what are the postoperative nurses' competency regarding cholecystectomy?And what are the differences betweenuniversity and non-university hospitals? Descriptivecorrelation research design was utilized. The study was conducted at general surgery departments of university and non-university hospitals of Assiut city. The sample consisted of all available nurses (55nurses) who were currently assigned for giving post cholecystectomy nursing care in the above mentioned hospitals. The instruments employed for data collection were; tool one" nurses' assessment sheet", tool two "nursescompetence advanced self-assessment tool ". Results showed that; all nurses exceeded the competent level &there were significant differences between two settings regarding to their post cholecystectomy nurses' performance competency. Conclusion: nurses have adequate knowledge, skills to adequately meet all the requirements for postoperative competency. Recommendation; the research results can be used for the educational needs assessment of nurses and for modifying the quality of care in hospitals.*

Key words:– *nurses' competency – cholecystectomy- post operative*

I. Introduction:

Nursing competence isa professional issue and is central to patient care outcomes. Health care consumers are sophisticated, knowledgeable, and selective. Patients no longer place blindtrust in health care providers; today's consumers negotiate services and compare quality of care among providers. In order to face these challenges and ensure that the best care is given by nurses, it is necessary to assess the nurses' clinical competence.**(Sue and patricia, 2011)**

There are many definitions in nursing exist regarding competence,alsoit is difficult to separate the concepts of competence and competency as they pertain to nursing. Competency is one's actual performanceof a skill, taking into consideration institutionalor practicederived expectations. **(Schroeter, 2008).**

Meanwhile competence is more complex and involves not only task-based evaluation of job performance but also knowledge and capacity. The confusion between these terms only adds to the struggle of establishing a clear definition of nurse competence**(Axley, 2008; Cowan et al., 2005; Nolan, 1998).**

Disagreement in the definition of the competence led to some difficulties such as the selection of the most effective competence assessment. Various methods and instruments have been identified for assessment of competence in nursing. The most common are the methods based on observation, supervisory assessment, ability and knowledge tests, peer reviews, portfolios and self-assessment. However, no comprehensive and effective measure has been established. **(Bradshaw &Merriman, 2008)**

Assessments of nurses' competence are global challenges; assessing clinical competencies involves the utilization of competency assessment methods to determine if a nurse possesses the ability to perform specific tasks in the clinical setting. With every method having its own advantages and disadvantages.a range of indicators and tools has been developed for competence assessment, but self-assessment has been reported to be the most common **(Masoud et al., 2011).**

Cholecystectomy is the surgical removal of gallbladder that can be done via open or laparoscopic surgeries. Cholelithiasis and cholecystitis are common disorders that can lead to this operation. Postoperative phase is one of perioperative phases that begins immediately after surgery and continues until the patient is discharged from medical care. Post-operative care facilitates recovery from surgery & supports the patient in coping with physical changes or alterations.

Nurses caring for patients undergoing cholecystectomy spend more time with patients than do any other health care providers and patient outcomes are affected by nursing care quality. Thus, improvements in patient safety can be achieved by improving nurses' performance competence **(Abet, 2017)**

Significance of the study:
Up to now, several international and local studies have been carried out regarding assessment of nurses' competency; their limitation was that these studies not handle the nursing performance of clinical skills like basic core competence skills that this study focused on it.and self-assessment method was the most common used. Hence this study would be the first nursing study in this geographical location that focus on core competency like principles that guide nursing care regarding cholecystectomy that was assessed by researcher rather than nurses own assessment to identify postoperative nurses' level of competency regarding cholecystectomy.

Aim of the study:
- To assess postoperative nurses' level of competency regarding cholecystectomy.
- To compare between university and non- university hospitals regarding post cholecystectomy nurses' competency**.**

Research questions:-
- What is the postoperative nurses' level of competency regarding cholecystectomy?
- What are the differences betweenuniversity and non- university hospitals regarding post cholecystectomy nurses' competency?

Operational definitions:
Competency: refers tofollowing standards as outlined in policy and procedure manuals regarding open cholecystectomy.
Postoperative nurses' competency: refers to competency clusters that will be assessedas postoperative nursing care, wound, staple and sutures care. Each cluster consists of numbers of competency elements that represent the steps of competency assessment.
Not applicable (Nac.)
The knowledge, skills, attitudes and critical judgments within the competency do not apply to nurse inher/hiscurrent nursing practice.
Developmental (Dev.):
This means that competency needs to be developed
Competent (com):
Nurse has the knowledge, skills, attitudes and critical judgments to adequately meet all the requirements for this competency.
Desire to enhance (Dte.):
Nurse already competent, and would like to further enhance her/his knowledge, skills, attitudes and critical judgments in this area of professional practice.
Excellent (Exc.):
Nurse has more than basic knowledge, skills, attitudes and critical judgments related to this area of professional practice.

II. Subjects and method
Research design:-
Descriptive correlational research design was utilized in this study.
Setting: -
The study was conducted in general surgery departments of university andnon-university hospitals which representsministry of health hospitals (general Assiut hospital) of Assiut city.
Sample:
All available nurses (55) who were currently assigned for giving post cholecystectomy nursing care at the above mentioned hospitals.

Tools for data collection:-

Tool I:Nurses' assessment sheet:
This sheet was developed by researcher based on the literature review, it consists of two parts:
Part 1: **Nurses' personal characteristics data**:
This part will include nurses' name, age, marital status, educational level, years of experience, and previous training regarding post operative competency.
Part 2: **Nurses' knowledge about cholecystectomy**:
This part included questions for assessing nurses' knowledge regarding post-operative care of patients undergoing cholecystectomy.
Tool II: Nurses' competence advanced self-assessment scale (pam dickerson*&kathychappell*, 2016)
This scale consists ofspecialized nursing competencies that compose of three clusters (post-operative care, wound and drain care, staples and sutures care)which was selected and modified from the main scaleto measurenurses' performance competencyregarding cholecystectomy.
The scoring system was calculated as follow:
The frequency with which the competencies are actually used in clinical practice is indicated on a 3-point scale (0 = not applicable in practice, 1 = not done, 2 = done). The level of competence was identified on a visual analogue scale (vas) (0-100) as follow:

Above 90%   is   exc   (excellent)
80% :90%   is   dte(desire to enhance)
75% :79%   is   com   (competent)
60% :74%   is   dev   (developmental)
Below 60%   is   nac   (not applicable)

The total score of items in each cluster was the indicator of competency of nurses in that cluster and the total scores of all clusters was indicator of the total clinical competency of nurses regarding cholecystectomy.
Operational design:-
It includes preparatory phase, field work phase" implementation phase" and evaluation phase.
Preparatory phase:
This phase started by review of current and past ,local and international related literatures as text books ,articles ,journals, periodicals and magazines was done. Study tools were formulated, and this phase ended by contents validity and pilot study.

Content validity:
 Content validitywas done by five expertise (two nursing staff from medical surgical nursing and three surgeons from general surgery departments of Assiut university hospital) to test contents, clarity and comprehensiveness of the tools.

Pilot study:
Pilot study was conducted on 10% of sample to evaluate the applicability and clarity of the tools, estimate the time needed for data collection, and test the feasibility of conducting the research after analyzing the pilot study results.

Field work "implementation phase":
Data collection employed the following techniques: semi-structured interviews for tool (1) and direct non-participant observation for tool (ii) interviews were individual and took 20 minutes on average. Observation was made for about 30 minutes before and after each interview, the researcher observed three timesthe level of performance of skills in each competency cluster in the ward where the nurse was working at that time periodwith one month distance periodin eachtime.

Ethical consideration:
 The study was approved by the ethics committee of the university. Approval for data collection was obtained from the nursing administrators. All participants were given a letter containing information about the study's aims and procedures. Participants signed consent forms. The voluntary nature of participation and anonymity had been emphasized in the informed consent form.

Data analysis
 Data analysis was done by the statistical package; frequency percentage, mean and standard deviation were used to describe the data. Anova was used for comparing the means and chi-square for comparing the frequency

of using skills. Statistical significance was set at 0.01. The reliability of the instrument was assessed by doing a pilot study and cronbach's α coefficients in 7 categories ranged between 0.75 - 0.89, indicating the favorable internal consistency and high reliability of the instrument.

Table (1) shows that; 32 nurses are workingin generalAssiut hospitalthat represents(non university hospitals) and twenty three nursesare working inAssiutuniversity hospital that represents (university hospitals). The highest percent of nurses in both settings (non university, and university) their age ranged between 20:30 years old (30.9%, 29.1% respectively), according to education; the highest percentof nurses in both settings were having diploma and institute education (25.5%, 20.0% respectively), regarding years of experience; the highest percent of nurses in both settings had an experience more than five years (38.2%, 29.1% respectively). Also the highest percent of nurses in both settings didn't attend any previous training regarding cholecystectomy.

Table (2) reveals that; (29.1%) of the studied nurses working in university hospital, their total knowledge about gallbladder surgery was good while 36.4% of nurses working in non - university hospital their knowledge was poor.

Table 3this table reflects that; there is no significant difference between three times of nurses' performance competency regarding post- operative care, staples and sutures care, or wound care.

Table (4) reveals that, the studied nurses of university hospital have excellent level of competence than non - university hospital in some performance competence categoriesas staples and sutures care& wound care (45.4%, 38.7%), while nurses of non - university have an excellent level of performance competence only in one competence category (wound care 39.3%). There were statistically significant differences among two hospitals as regard to all performance competence categories of postoperative care after cholecystectomy (post-operative care, staples and sutures care& wound care) at p value (p≤0.00, 0.00, 0.003 respictivelly).

Table 5this table illustrates that; female nurses that their age regard from 20-<30year old , having institute education , their experience more than five year in surgical department , attended training program; their level of competence was excellent competence regarding post- operative care. There was a significant difference between nurses' demographic data and post- operative care competence regarding cholecystectomy.

Table 6this table illustrates that, there is a significant difference between nurses' demographic data and staples and suture competenceregarding cholecystectomy.

Table 7reflectsthat; there is a significant difference between nurses' demographic data and cholecystectomy wound care competence.

III. Results:-

Part I. Demographic characteristics of studied nurses

Table (1): percentage distribution of demographiccharacteristics of studied nursesof two hospitals (university & non – university)

Variables	General AssiutHospital (Non - university) n= 32		AssiutUniversity Hospital (University) n= 23		Total
	No	**%**	No	%	
Age groups					
<20 years	0	0	0	0	
20-<30 years	17	30.9%	16	29.1%	32
30 and more years	15	27.3%	7	12.7%	23
Sex					
Male	14	25.5%	2	3.6%	16
Female	18	32.7%	21	38.2%	39
Marital status					
Single	1	1.8%	7	12.7%	8
Married	31	56.4%	15	27.3%	46
Divorced	0	0	0	0	0
Widen	0	0	1	1.8%	1
Level of education					
Nurse diploma	14	25.5%	11	20.0%	25
Nurse specific diploma	1	1.8%	0	0	1
Nurse institute	14	25.5%	9	16.4%	23
Bachelors	3	5.5%	3	5.5%	6
Years of experience					
Less than one year	5	9.1%	4	7.3%	9
One years-5y	6	10.9%	3	5.5%	9
More than 5 y	21	38.2%	16	29.1%	37
Previous training for cholecystectomy					
Yes	7	12.7%	6	10.9%	13
No	25	45.5%	17	30.9%	42

Part II: Nurses' knowledge about cholecystectomy:

Table 2: Percentage distribution ofcholecystectomyknowledgeamong university and non-university Hospital nurses. (n=55)

Nurses' knowledge	General AssiutHospital (Non - university)		Assiut university Hospital (University)		P.value
	N	%	N	%	
Good knowledge	12	21.8%	16	29.1%	0.01*
Poor knowledge	20	36.4%	7	12.7%	
Total	32	58.2%	23	41.8%	55

Table 3: Comparison between three times for measuring nurses' performance competency regarding post-operative care,staple and suture care, and wound care competency (163)

Nurses' performance competency	First time		Second time		Third time		P. Value
	N	%	N	%	N	%	
Post- operative care							1.000 ns
Excellent competence	9	5.5%	9	5.5%	9	5.5%	
Desire to enhance	31	19.0%	31	19.0%	29	17.8%	
Competent	3	1.8%	3	1.8%	3	1.8%	
Development	8	4.9%	9	5.5%	8	4.9%	
Not applicable	4	2.5%	3	1.8%	4	2.5%	
Staples and sutures care							1.000 ns
Excellent competence	26	16.0%	26	16.0%	26	16.0%	
Desire to enhance	16	9.8%	16	9.8%	16	9.8%	
Competent	0	0	0	0	0	0	
Development	11	6.7%	11	6.7%	9	5.5%	
Not applicable	2	1.2%	2	1.2%	2	1.2%	
Wound care							0.99 ns
Excellent competence	47	28.8%	47	28.8%	44	27.0%	
Desire to enhance	5	3.1%	5	3.1%	5	3.1%	
Competent	0	0	0	0	0	0	
Development	3	1.8%	3	1.8%	4	2.5%	
Not applicable	0	0	0	0	0	0	

Ns: not significant

Table 4: Comparison between university and non-university hospitals nurses regarding cholecystectomy performance competency n=163

Nurses' performance competency	General Assiut Hospital (Non- university)		Assiut University Hospital (University)		p.value
	N	%	N	%	
Post- operative care					
Excellent competence	6	3.7%	21	12.9%	
Desire to enhance	45	27.6%	46	28.2%	0.00**
Competent	9	5.5%	0	0	
Development	25	15.3%	0	0	
Not applicable	11	6.7%	0	0	
Staples and sutures care					
Excellent competence	63	38.7%	15	9.2%	
Desire to enhance	27	16.6%	21	12.9%	0.00**
Competent	0	0	0	0	
Development	0	0	31	19.0%	
Not applicable	6	3.7%	0	0	
Wound care					
Excellent competence	74	45.4%	64	39.3%	
Desire to enhance	12	7.4%	3	1.8%	0.003**
Competent	0	0	0	0	
Development	10	6.1%	0	0	
Not applicable	0	0	0	0	

Table 5: Relation between demographic characteristics of studied nurses and post- operative care competence (n=163)

Variables	Post- operative care competence											P. Value
	Exc.		Dte.		Comp.		Dev.		Nac.			
	N	%	N	%	N	%	N	%	N	%		
Age groups												
<20 years	0	0	0	0	0	0	0	0	0	0		
20-<30 years	15	9.2	70	42.9	3	1.8	6	3.7	0	0	94(57.7)	0.00s
30 and more years	12	4.7	21	12.9	6	3.7	19	11.7	11	6.7%	69(32.3)	
Sex												
Male	9	5.5	12	7.5%	6	3.5	10	6.1	11	6.7	48(29.4	0.00**
Female	18	11	79	48.5	3	1.8	25	9.2	0	0	115(70.6	
Level of education												
Nurse diploma	15	9.2	24	14.7	6	3.7	19	11.7	11	6.7	75(46)	
Nurse specific diploma	0	0	0		0	0	3	1.8	0	0	3(1.8)	0.00**
Nurse institute	6	3.7	57	35.0	3	1.8	3	1.8	0	0	69(42.3)	
Bachelors	6	3.7	10	6.1	0	0	0	0	0		16(9.8)	
Year of experience												
Less than one year	3	1.8	21	12.9	0	0	3	1.8	0	0	27(16.6)	
One years-5y	0	0	18	11	3	1.8	6	3.7	0	0	27	0.008 S
More than 5 y	24	14.7	52	31.9	6	3.7	16	9.8	11	6.7	109(66.9)	
Previous training												
No	9	5.5%	12	12.9	6	3.7	3	1.8%	0	0	39(23.9%)	
Yes	18	11.0%	70	42.9%	3	1.8%	22	13.5%	11	6.7%	124 76.1%	0.001**

Table 6: Relation between demographic characteristics of studied nurses and staples and sutures competence (n=163)

Variables	Staples and suture competence										Total	P. Value
	Exc.		Dte.		Comp.		Dev.		nac			
	N	%	N	%	N	%	N	%	N	%		
Age groups												
<20 years	0	0	0	0	0		0		0	0		
20-<30 years	54	33.1	21	12.9%	0	0	19	11.7%	0	0	94 57.7%	0.001**s
30 and more years	24	14.7	27	16.6%	0	0	12	7.4%	6	3.7%	69 42.3%	
Sex												
Male	21	12.9%	21	12.9%	0	0	6	3.7%	0	0	48 29.4%	
Female	57	35.0%	27	16.6%	0	0	25	15.3%	6	3.7%	115 70.6%	0.02*s
Level of education												
Nurse diploma	21	12.9%	3	20.2	0	0	15	9.2%	6	3.	75	0.00**

Variables	Exc. N	Exc. %	Dte. N	Dte. %	Comp. N	Comp. %	Dev. N	Dev. %	nac N	nac %	Total	P. Value
			3	%					7 %	46.0 %		
Nurse specific diploma	3	1.8%	0	0.0%	0	0	0	0.0%	0	0	3 1.8%	
Nurse institute	42	25.8%	15	9.2%	0	0	12	7.4%	0	0	69 42.3%	
Bachelors	12	7.4%	0	0	0	0	4	2.5%	0	0	16 9.8%	
Year of experience												
Less than one year	18	11.0%	3	1.8%	0	0	6	3.7%	0	0	27 16.6%	
One years-5y	12	7.4%	12	7.4%	0	0	3	1.8%	0	0	27 16.6%	0.07ns
More than 5 y	48	29.4%	33	20.2%	0	0	22	13.5%	6	3.7%	109 66.9	
Previous training												
Yes	21	12.9%	6	3.7%	0	0	12	7.4%	0	0	39 23.9%	
No	57	35.0%	42	25.8%	0	0	19	11.7%	6	3.7%	124 76.1%	0.02**

Table 7: Relation between demographic characteristics of studied nurses and wound carecompetence (n=244)

Variables	Wound care										Total	P. Value
	Exc.		Dte.		Comp.		Dev.		nac			
	N	%	N	%	N	%	N	%	N	%		
Age groups												
<20 years	0	0	0	0	0	0	0	0.0%	0	0	0	
20-<30 years	94	57.7%	0	0	0	0	0	0	0	0	94 57.7	0.00**
30 and more years	44	27.0%	15	9.2%	0	0	10	6.1%	0	0	69 42.3%	
Sex												
Male	38	23.3%	0	0	0	0	10	6.1%	0	0	48 29.4	
Female	100	61.3%	15	9.2%	0	0	0	0	0	0	115 70.6	0.00**
Level of education												
Nurse diploma	50	30.7%	15	9.2%	0	0	10	6.1%	0	0	75 46.0	
Nurse specific diploma	3	1.8%	0	0.0%	0	0	0	0	0	0	3 1.8	
Nurse institute	69	42.3%	0	0	0	0	0	0	0	0	69 42.3	0.00**
Bachelors	16	9.8%	0	0	0	0	0	0	0	0	16 9.8	
Year of experience												
Less than one year	27	16.6%	0	0	0	0	0	0	0	0	27 16.6	
One years-5y	27	16.6	0	0	0	0	0	0	0	0	27 16.6	0.006**
More than 5 y	84	51.5%	15	9.2%	0	0	10	6.1%	0	0	109 66.9	
Previous training												
Yes	39	23.9%	0	0.0%	0	0	0	0	0	0	39 23.9	
No	99	60.7%	15	9.2%	0	0	10	6.1%	0	0	124 76.1	0.01*

IV. Discussion:

Identifying post-operative nurses competencies working in general surgery departments is an urgent need, since it can direct the training of future professionals, improve nursing care quality, and provide input to health and nursing services managers in the implementation of new competencies. The study data gathered from two different settings, university &non-university hospitals.twenty three nurses represent university hospital and thirty two nurses represent non- university hospitals.

According to age and marital status of studied nurses;there was equal number of nurses that their age ranged from twenty to less than thirty years old in both settings. While nurses that their age was thirty years and more; university hospital nurses was near half of nurses in non-university hospital. The highest percent in both settings were married. Single nurses in university were more than in non-university hospital.

According toeducation and previous training; the highest percentage in both settings was diploma nurses then institute nurses comes after who were higher in non-university than university and equal number of bachelorsin both. The highest percent did not attend any training regarding cholecystectomy.Pamdickerson, kathychappell, (2016) emphasized that nurses need to participate in additional training to build the knowledge and skills needed to practice safely in their setting.

Regarding nurses' knowledge about cholecystectomy; it was found that level of knowledge among university hospital nurses better than non-universityhospital nurses, this may be due to more integrated in-service education, and better organization of continuing education in that hospital. Tabari-khomeiran et al., (2006), concluded that a competence/learning-promoting environment could be found in university-affiliated hospitals where there are plentiful learning opportunities, dialogue around best practices, and multidisciplinary interaction. Research by Memarian*et al*. (2006) also showed that environmental and organizational factors, especially the availability of an effective educational system, played a crucial role in nurses' clinical competence.

The current study illustrated that there is no significant difference between three times of assessment for nurses' performance competencyregarding cholecystectomy which showed similar reading among three times of assessment this may be due to there was no external or internal factors affecting on the assessment process nor nurses' performance. We observe that number of nurses decreased in the second and third time as two nurses were in vacation mode.

The study data also showed significant differences between nurses of two hospitals according to their level of competence regarding all categories; postoperative care, wound care, staples and sutures competence.all university hospital nurses exceeded the competent level but their level was less than non-university hospital.the researchers suggest that this result may be due to university hospital had higher bed occupancy rate, heavy workload consequently they had lower level than non-university.

This may be interpreted as nurses may have a skills but not using them in practice. Some studies revealed a direct relationship between the level of clinical competence and the frequency of using clinical skills thus a higher level of clinical competence of nurses would result in a higher performance of the nurses' skills (Metrojeal' 2004)

Despite non-university hospital nurseshad higher level of competency it had nurseswho still in the developed level and in need for more skills to be competent. The researchersemphasizethat nurses are at the forefront of recognizing and managing patient situationswhich may be potentially life-threatening. Hence all nurses need to be competent to ensure the delivery of safe patient care.

Tabari-khomeiran et al. (2007).carried out a study in which participants reported that environments with rapid changes in technology and practices encourage nurses to maintain competence, satisfy their self-actualization needs, keep the hope of professional improvement alive, provide them a wholesome and pleasant environment and subsequently inspire them to a greater readiness for learning and keeping up-to-date with professional issues. Additionally, a research of Potter et al. (2005) suggested that nursing work environments should be minimally distracting to prevent shifts in nurses' cognitive focus, which is essential for providing safe,and competent care.

The competency and credentialing institute, (2015) recommended that nurses engage in lifelong learning. Accrediting bodies, schools of nursing, healthcare organizations, and continuing competency educators from multiple health professions should collaborate to ensure that nurses and nursing students and faculty

continue their education and engage in lifelong learning to gain the competencies needed to provide care for diverse populations across the lifespan.

The study data showed significant differences between total nurses' competence and their demographic data. It was found that nurses who were female, their age ranged from twenty to less than thirty years old, having university educations(institute) their experience more than five years & attended previous training program their total level of competence was desire to enhance

All the above mentioned characters of nurses; contribute to higher level of competency. This could be explained by this age group of nurses is young, more active, and motivated while older age nurses engaged in administrative work, according to sex already the majority of the sample consisted of female nurses, as regard to education, institute nurses gives direct nursing care which raised their competence level and bachelors nurses represent head nurses of the departments the main role of them is administrative work rather than contact with patients.

In all clusters the institute nurses showed the higher level of competency this may be due to they already give nursing care for patients while bachelors' nurses mainly engaged in administrative work and non-nursing tasks,in addition to activities related to service organization and coordination.

According to years of experience the highest percentage in both settings was more than five years.Benner (1984) emphasized the importance of experience because theory cannot adequately mimic the complexities of actual clinical practice. Tabari-khomeiranet al.,(2006)found that experience was essential to the development of nurse competence, but not all experience needed to be "direct experience" in order to be beneficial. Tabari-khomeiran et al,(2007) emphasized the benefit of indirect experiences on nurses' knowledge and competence development. An example of indirect experience was given by one nurse who reported "I like to listen to more experienced nurses' stories. They gave me many useful cues".

Limitation:
A limitation of this study is that it was conducted with a small sample size in one community hospital settings. Due to this limitation, the study may not be generalizable to the larger population of nurses practicing in other surgical care hospitals.

V. Conclusion:
The results indicated that; all nurses in university hospitals exceeded the competent level while nurses working in non-university hospital still having nurses in the developmental level who in need for more skills to be competent incomparison to those nurses who were working in the university hospital. Furthermore, the results revealed thatregarding environmental and organizationaldiversity, theeducational needs of nurses in the two hospitals showed differencesthat should be brought to the notice of management. This wouldfacilitate better management of human resources and planningof continuous and effective education in order to improvethe quality of nursing services.

Recommendation:
− Educators are in need of an evidence base of research findings on whichto base programs to meet the competency needs of nursing staff.
− Further development of tools is needed to measure nurse competence.
− Further research is needed to identify educational strategies that will facilitate the continuing of nursing competence.

Acknowledgements:

References
[1]. **American Nurses Association. (2011):**States which require continuing education for rn licensure retrieved from http://nursingworld.org/mainmenucategories/policy-advocacy/state/legislative-agenda-reports/nursingeducation/ce-licensure-chart.pdf
[2]. Abet e, orion f, denimal f et al (2017) Interest of using ropivacaine for outpatient laparoscopic cholecystectomy: prospective randomized trial. World j surg 41:687–692. Doi: 10.1007/s00268-016-3797-2

[3].   *Axley l. (2008):Competency: a concept analysis. Nursing forum, 43(4), 214–222. Doi:10.1111/j.1744-6198.2008.00115.x*
[4].   **Bahreini m., shahamat s., hayatdavoudi p. &mirzaei m. (2011)**Comparison of the clinical competence of nurses working in two university hospitals in iran. Nursing & health sciences 13(3), 282–288.
[5].   **Benner p. (1984):** from novice to expert: excellence and power in clinical nursing practice. Menlo park, ca: addison-wesley.
[6].   **Benner p. (2004):**Using the dreyfus model of skill acquisition to describe and interpret skill acquisition and clinical judgment in nursing practice and education. Bulletin of science, technology & society, 24(3), 188–199. Doi:10.1177/0270467604265061
[7].   *Bradshaw a. &merriman c. (2008): Nursing competence 10 years on: fit for practice and purpose yet? Journal of clinical nursing, 17(10), 1263–1269. Doi:10.1111/j.1365-2702.2007.02243.x*
[8].   **Connecticut state board of education. (2010):** Connecticut's common core of teaching. Hartford, ct: connecticut state board of education. Retrieved from http://www.sde.ct.gov/sde/lib/sde/pdf/educatorstandards/board_approved_cct_2-3-2010.pdf
[9].   **Cowan d., norman i. &coopamah v. (2005):**Competence in nursing practice: a controversial concept—a focused review of literature. Nurse education today, 25, 355–362. Doi:10.1016/j.nedt.2005.03.002
[10].   Creden-tialing institute
[11].   Donilon, donnamarie, (2013)."Nurses perceptions of their competence in managing patient situations in acute care" *open access dissertations.* Paper 13.http://digitalcommons.uri.edu/oa_diss/13
[12].   **Dreyfus s. &dreyfus h. (1980)**. A five-stage model of the mental activities involved in directed skills acquisition. Unpublished report supported by the air force office of scientific research (afsc), usaf, under contract f49620-79-0063 with the university of california. Retrieved from http://www.dtic.mil/cgi-bin/gettrdoc?Ad=ada084551&location=u
[13].   **Lateef, f. (2011):** Patient expectations and the paradigm shift of care in emergency medicine. J emerg trauma shock. 4(2): 163–167.
[14].   **Levine j, johnson j. (2014):**An organizational competency validation strategy for registered nurses. J nurs prof develop. 30(2):58-65.
[15].   **Mccaughan e, paraho k.(2000):**Medical and surgical nurses' perceptions of their level of competence and educational needs in caring for patients with cancer. J. Clin. Nurs.2000; **9**: 420–428.
[16].   **Memarian r, salsali m, vanaki z, ahmadi f, hajizadeh e.(2006):**Factors affecting the process of obtaining clinical competence. Scientific j.zanjan university of medical sciences 2006; **14**: 40–49 (in persian).
[17].   **Meretoja r., leino-kilpi h. &kaira a.m. (2004b):**Comparison of nurse competence in different hospital work environments. Journal of nursing management 12(5), 329–336.
[18].   **Meretoja r., numminen o., isoaho h. &leino-kilpi h. (2015):**Nurse competence between three generational nurse cohorts: a cross-sectional study. International journal of nursing practice21 (4), 350–358.
[19].   **Nolan, p. (1998):** competencies drive decision making. Nursing management, 29(3), 27–29.
[20].   *Pam   dickerson&kathy   chappell,   (2016):*   Principles   of   evaluating   nursing   competence   available   at https://www.td.org/magazines/td-magazine/principles-of-evaluating-nursing-competence
[21].   **Potter p., wolf l., boxerman s., grayson d., sledge j., dunagan c., &evanoff b. (2005):**Understanding the cognitive work of nursing in the acute care environment. Journal of nursing administration, 35(7–8), 327–335.
[22].   **Schroeter k. (2008):** competence literature review. Denver, co: competency and
[23].   **Sue c. Delaune and patricia k. Ladne,(2011): F**undamentals of nursing: standards and practice, ch.(4) fourth edition, delmarcengage learning company, united state 66p.
[24].   **Tabari-khomeiran r., kiger a., parsa-yekta, z. &ahmadi f. (2007): C**ompetence development among nurses: the process of constant interaction. Journal of continuing education in nursing, 38(5), 211–218.
[25].   **Tabari-khomeiran r., yekta z., kiger a., &ahmadi f. (2006).**Professional competence: factors described by nurses as influencing their development. International nursing review, 53, 66–72.