

## Assessment of Nurses' Performance Competency for Patients Undergoing Cholecystectomy

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### Abstract

**Background:** Competency evaluation is a tool that used by healthcare facilities to construct culture of quality affected person care and potentially decrease the incidence of unfavorable results. Therefore; aim of this study was to assess nurses' performance competency for patients undergoing cholecystectomy. Descriptive design has been utilized to carry out this study. The sample consisted of 82 nurses who were working at Surgical Departments of hospitals representing Ministry of Health Hospitals and Assiut University Hospital. Tools used for gathering data were; Nurses interview questionnaire and Nurses' performance Competence Scale. Results revealed that; the highest percent 59.0% of nurses' thier level of competency regarding cholecystectomy was desired to enhance .Conclusion: Nurses' performance competency for patients undergoing cholecystectomy need to be enhanced to reach the excellent level. Recommendation: Continuous inservice training programs are recommended to improve and maintain nursing performance competency for Patients Undergoing Cholecystectomy.

**Key words:** *Nurses performance, Competency & Cholecystectomy.*

### Introduction

Patient protection and positive patients' end results are the first priority in operative and invasive procedure settings as the expectancies of healthcare seekers and different stakeholders maintain to rise regarding to nursing care. Every nurse has both a legal and an ethical obligation to maintain and increase competence over time (OSHA, 2015).

Competency is one's real overall performance of a talent, deliberating institutional or practice derived expectations, While persevering with competence is the capability to perform a role at specified levels of knowledge and skill not only at the time of initial certification but also throughout person's expert profession (Knapp & List's, 2013).

Competency assessment diagnoses difficult issues, serves as a cross reference with the performance appraisal system, determines if reportable quality measures are being met and guarantees compliance with requirements set by organizations. Evaluation of nurse's competence is a two-tiered issue, the first tier focusing on nurse competence at entry into practice and the second tier focusing on continuing nurse competence (Stobinski, 2013).

About 700,000 cholecystectomies are accomplished each 12 months inside the U.S (Hope, 2011). In Assiut, the number of sufferers who performed cholecystectomy during the period 2016 to 2017 was approximately 250 patients in Assiut University Hospital, 98 patients in Al Eman Hospital,

and 116 patient in General Assiut Hospital (Assiut Hospital Records, 2017). The gallbladder is part of the digestive system, a pear-shaped, hollow, saclike organ. The gallbladder store bile; which is composed of water and electrolytes along with significant amounts of lecithin, fatty acids, cholesterol, bilirubin, and bile salts. Management of gallbladder diseases includes medical and surgical management. There are two approaches for surgical management of gall bladder; open and laparoscopic approach (Hinkle & Cheever, 2014).

Nurses being concerned for patients undergoing cholecystectomy spend more time with patients than do every other health care vendors and affected person outcomes are laidlow with nursing care quality. Consequently , enhancement in patient protection maybe finished with the aid of enhanceing nurses' performance (palmier, 2009).

### Significance of the study

Evaluating competence is imperative within the health care environment, all nurses need to practice competently and safely, patients' lives depend on it. So this study would identify nurses' performance competency for patients undergoing cholecystectomy to evaluate the strong and weak points which will be utilized in professional development of nursing care for such group of patients.

### The present study aimed to

Assess nurses' performance competency for patients undergoing cholecystectomy.

#### Research question

-What is the nurses' performance competence for patients undergoing cholecystectomy?

#### Operational definitions

**Competency :** Following standards as outlined in procedures manual regarding cholecystectomy.

**Nurses' Performance:** Refers to competency clusters that will be assess as (perioperative teaching , preoperative care, postoperative care ,wound care, staples and sutures ,and standard precautions)each cluster consists of numbers of competency elements that represent the steps of competency assessment.

### Subjects & Method

#### Research design

Descriptive design was utilized to conduct this study.

#### Setting:

The prevailing study has been carried out at Surgical Departments of El Eman, General Assiut Hospitals that represent Ministry of Health Hospitals and General Surgery Department ( unit B ) at Assiut University Hospitals.

#### Subjects

Nurses (82 ) have been worked in General Surgical Departments of the previously mentioned hospitals and all of them were included in the study ; twenty seven nurses were working in El Eman Hospital, thirty two nurses were working in General Assiut Hospital, and twenty three nurses were working in Assiut University Hospital .

#### Tools of study

##### Tool I: Nurses interview questionnaire

This tool has been designed by the researcher after revising the national and international literatures under supervisors' guidance. It contains:

##### Part 1: Demographic data:

This part concerned with nurses' name, age, gender, marital status, educational level, experience years, and previous training regarding care of patients undergoing cholecystectomy.

##### Part 2: Nurses' knowledge about cholecystectomy:

This part included 14 open and closed end questions related to definition, indications, post cholecystectomy complications, and instructions given to patients before discharge.

##### Scoring system ( part 2 ):

The total score of this part was 28 degree; each question was scored as follow: two degrees for each question that was answered correctly, and one degree for each question that was answered incorrectly. Poor knowledge level is detected when nurses get less than (60%), while good knowledge level for who obtained more than (60%) .

##### Tool II: Nurses' performance Competence Scale . ( Pam & Kathy , 2016).

This scale was modified and utilized to measure nurses' performance competency for patients undergoing cholecystectomy. It consists of clusters each cluster has specific nursing competency elements. The study handled six clusters; perioperative teaching 22 elements, pre-operative care 21 elements, post-operative care 29 elements , wound care 37 elements, staples and sutures 8 elements, standard precautions fourteen elements. This scale has been used three times for nurses' performance competency measuring with one month distance period in each time.

**Scoring system of tool II :** The total score of competency clusters was 131 competency elements, each competency element was scored as follow: two degrees for each step that was done correct, one degree for each step was done incorrect or not done and zero for the step that was not applicable.

##### The competency levels are categorized to:

- Above ninety percent is EXL (Excellent) ,
- Eighty percent to ninety percent is DTE (Desire to Enhance),
- Seventy five percent to eighty percent is COM (Competent),
- Sixty percent to seventy five percent is DEV (Developmental),
- Below sixty percent is NAC (Not applicable).

### Method

1. The current study started by reviewing of recent and old, local and global concerned literatures in the different aspects of the of the study problem.
2. The validity of the content has been developed by panel of seven professionals in the fields of medicine and nursing who revised the tools for reliability of the tools was ascertained with cronbach's alpha =0.77, relevance, comprehensiveness, and applicability, Minor modifications had been carried out .
3. A pilot study was carried out on 10% of the sample size. It was carried out in December 2016 at surgical departments of El Eman, General Assiut Hospitals and Assiut University Hospitals. Data gathered from the pilot study have been assessed to calculate the needed time to gather data; important modifications have been performed before finalization of the study tools.
4. Data were collected from the surgical departments' of Eleman, General Assiut Hospital and Assiut University Hospitals (unit B) during the period (December 2016 until September 2017).
5. The tools filled by researcher by using semi-structured interviews for tool (I) and direct non-participant observation for tool (II), interviews were individual and took twenty minutes on

average. While Observation has been made for about half an hour before and after each interview, the researcher observed three times the level of performance of skills in each competency cluster in the ward where the nurse was working at that time period with one month distance period in each time.

#### Ethical consideration

An official letter has been issued from the Faculty of Nursing Dean to the head of surgery departments of

the above mentioned hospitals. Additionally nurses' agreement to take a part in the research has been acquired after explaining the nature of the research to obtain their cooperation.

#### Statistical Analysis

Entering the data and its analysis has been accomplished by using SPSS version twelve. Data have been presented using descriptive statistics in the form of frequencies and percentages, Statistical significance has been considered at p-value ( $p < 0.01$ ).

## Results

### Demographic characteristics of the studied nurses .

Table(1):Frequency distribution of demographic characteristics of the studied nurses(n=82).

Demographic characteristics	Al- Eman Hospital (n=27)		General Assiut Hospital (n=32)		Assiut University Hospital (n=23)		Total (n=82)	
	N	%	N	%	N	%	N	%
<b>Age groups</b>								
20-<30 years	19	70.4	16	50	16	69.6	51	62.2
30 and more years	8	29.6	16	50	7	30.4	31	37.8
<b>Sex</b>								
Male	5	18.5	14	43.8	2	8.7	21	25.6
Female	22	81.5	18	56.3	21	91.3	61	74.4
<b>Marital status</b>								
Single	20	74.1	31	96.9	15	65.2	66	80.5
Married	7	25.9	1	3.1	7	30.4	15	18.3
Widow/widower	0	0	0	0	1	4.3	1	1.2
<b>Level of education</b>								
Nurse diploma	10	37	14	43.8	11	47.8	35	42.7
Nurse specific diploma	0	0	1	3.1	0	0	1	1.2
Nurse institute	13	48.1	14	43.8	9	39.1	36	43.9
Bachelors	4	14.8	3	9.4	3	13	10	12.2
<b>Years of experience</b>								
Less than one year	11	40.7	5	15.6	4	17.4	20	24.4
one years-<5years	5	18.5	6	18.8	3	13	14	17.1
more than 5 years	11	40.7	21	65.6	16	69.6	48	58.5
<b>Previous-training</b>								
Yes	26	96.3	25	78.1	17	73.9	68	82.9
No	1	3.7	7	21.9	6	26.1	14	17.1

Table (2): Percentage distribution of total nurses' knowledge about cholecystectomy among the three studied hospitals (n=82)

Level of knowledge	Al- Eman Hospital(n=27)		General Assiut Hospital(n=32)		Assiut University Hospital(n=23)		Total		P.value
	N	%	N	%	N	%	N	%	
Good knowledge	22	81.5	30	93.8	22	95.7	74	90.2	0.168 <sup>ns</sup>
Poor knowledge	5	18.5	2	6.3	1	4.3	8	9.8	

Chi-square test .

\*\* Statistically significant difference ( $p < 0.01$ )

**Table (3): Percentage distribution for the three times of total nurses' performance competency regarding cholecystectomy.**

Competency clusters	First time		Second time		Third time		Total	P. value
	N	%	N	%	N	%		
<b>Preoperative care</b>								1.000 <sup>ns</sup>
Excellent	9	3.7%	9	3.7%	9	3.7%	11.1%	
Desire to enhance	35	14.3%	35	14.3%	33	13.5%	42.2%	
Competent	13	5.3%	13	5.3%	13	5.3%	16.0%	
Development	21	8.6%	22	9.0%	21	8.6%	26.2%	
Not applicable	4	1.6%	3	1.2	4	1.6%	14.5%	
<b>Peri operative teaching</b>								1.000 <sup>ns</sup>
Excellent	24	9.8%	24	9.8%	2	9.0%	28.7%	
Desire to enhance	16	6.6%	16	6.6%	16	6.6%	19.7%	
Competent	23	9.4%	23	9.4%	23	9.4%	28.3%	
Development	8	3.3%	8	3.3%	8	3.3%	9.8%	
Not applicable	11	4.5%	11	4.5%	11	4.5%	13.5%	
<b>Post- operative care</b>								1.000 <sup>ns</sup>
Excellent competence	9	3.7%	9	3.7%	9	3.7%	3.7%	
Desire to enhance	35	14.3%	35	14.3%	33	13.5%	42.2%	
Competent	13	5.3%	13	5.3%	13	5.3%	16.0%	
Development	21	8.6%	22	9.0%	21	8.6%	26.2%	
Not applicable	4	1.6%	3	1.2	4	1.6%	4.5%	
<b>Staples and sutures care</b>								1.00 <sup>ns</sup>
Excellent competence	36	14.8%	36	14.8%	36	14.8%	18.9%	
Desire to enhance	33	13.5%	33	13.5%	33	13.	81.1%	
Competent	0	0	0	0	0	0	0	
Development	11	4.5%	11	4.5%	9	3.7%	0	
Not applicable	2	0.8%	2	0.8%	2	0.8%	0	
<b>Wound care</b>								0.99 <sup>ns</sup>
Excellent competence	66	27.0%	66	27.0%	63	25.8%	79.9%	
Desire to enhance	13	5.3%	13	5.3%	13	5.3%	16.0%	
Competent	0	0	0	0	0	0	0	
Development	3	1.2%	3	1.2%	4	1.6%	4.1%	
Not applicable	0	0	0	0	0	0	00	
<b>Standard precaution</b>								0.93 <sup>ns</sup>
Excellent competence	16	6.6%	16	6.6%	14	5.7%	18.9%	
Desire to enhance	66	27.0%	66	27.0%	66	27.0%	81.1%	
Competent	0	0	0	0	0	0	0	
Development	0	0	0	0	0	0	0	
Not applicable	0	0	0	0	0	0	0	

Chi-square test used for these comparisons

\*\* Statistically significant difference ( $p < 0.01$ )

**Table (4): Percentage distributions of nurses' performance competency regarding cholecystectomy among three studied hospitals.**

Variables	Alman hospital		Alshmla Hospital		Assuit University hospital		Total		P. value
	N	%	N	%	N	%	N	%	
<b>Preoperative care competence</b>									
Excellent	0	0	6	2.5%	21	8.6%	27	11.1%	0.001**S
Desire to enhance	12	4.9%	45	18.4%	46	18.9%	103	42.2%	
Competent	30	12.3%	9	3.7%	0	0.0%	39	16%	
Development	39	16.0%	25	10.2%	0	0.0%	64	26.2%	
Not applicable	0	0.0%	11	4.5%	0	0.0%	11	4.5%	
<b>Peri operative teaching</b>									
Excellent	3	1.2%	21	8.6%	46	18.9%	70	28.7%	0.001**S
Desire to enhance	9	3.7%	30	12.3%	9	3.7%	48	19.7%	
Competent	36	14.8%	21	8.6%	12	4.9%	69	28.3%	
Development	24	9.8%	0	0.0%	0	0.0%	24	9.8%	
Not applicable	9	3.7%	24	9.8%	0	0.0%	33	13.5%	
<b>Post- operative care competence</b>									
Excellent	0	0	6	2.5%	21	8.6%	27	11.1%	0.001**S
Desire to enhance	12	4.9%	45	18.4%	46	18.9%	103	42.2%	
Competent	30	12.3%	9	3.7%	0	0.0%	39	16%	
Development	39	16.0%	25	10.2%	0	0.0%	64	26.2%	
Not applicable	0	0.0%	11	4.5%	0	0.0%	11	4.5%	
<b>Staples and sutures care</b>									
Excellent	30	12.3%	63	25.8%	15	6.1%	108	44.3%	0.001**S
Desire to enhance	51	20.9%	27	11.1%	21	8.6%	99	40.6%	
Competent	0	0	0	0	0	0	0	0	
Development	0	0.0%	0	0.0%	31	12.7%	31	12.7%	
Not applicable	0	0.0%	6	2.5%	0	0.0%	6	2.5%	
<b>Wound care</b>									
Excellent	57	23.4%	74	30.3%	64	26.2%	195	79.9%	0.001**S
Desire to enhance	24	9.8%	12	4.9%	3	1.2%	39	16.0%	
Competent	0	0	0	0	0	0	0	0	
Development	0	0.0%	10	4.1%	0	0.0%	10	4.1%	
Not applicable	0	0	0	0	0	0	0	0	
<b>Standard precaution</b>									
Excellent	12	4.9%	18	7.4%	16	6.6%	46	18.9%	0.37 <sup>ns</sup>
Desire to enhance	69	28.3%	78	32.0%	51	20.9%	198	81.1%	
Competent	0	0.0%	0	0.0%	0	0.0%	0	0	
Development	0	0.0%	0	0.0%	0	0.0%	0	0	
Not applicable	0	0.0%	0	0.0%	0	0.0%	0	0	
<b>Total competence</b>									
Excellent	0	0	42	17.2%	28	11.5%	70	28.7%	0.001**
Desire to enhance	75	30.7%	30	12.3%	39	16.0%	144	59.0%	
Competent	3	1.2%	0	0	0	0	3	1.2%	
Development	3	1.2%	24	9.8%	0	0	27	11.1%	
Not applicable	0	0	0	0	0	0	0	0	

**Table (5): Relation between total nurses' competence and total nurses' knowledge regarding cholecystectomy .**

Total nurses' competence	Total nurses' knowledge regarding cholecystectomy					p.v
	N	Mean	Std. Deviation	Minimum	Maximum	
Excellent	70	62.7	6.06	48.00	74.00	0.001**
Desire to enhance	144	62.2	7.06	34.00	75.00	
comptance	3	38.0	.00	38.00	38.00	
development	27	59.6	14.3	24.00	73.00	
Not applicable	244	61.7	8.3	24.00	75.00	
Total	244	61.7	8.34	24.00	75.00	

One way anova t-test

**Table ( 6): Relation between demographic characteristics of studied nurses and their total.**

Variables	Total level of nurses competence										P. value
	Excellent competence		Desire to enhance		Competent		Development		Not applicable		
	N	%	N	%	N	%	N	%	N	%	
<b>Age groups</b>											
20-<30 years	49	20.1%	96	39.3%	3	1.2%	3	1.2%	0	0	0.00**
30 and more years	21	8.6%	48	19.7%	0	0	24	9.8%	0	0	
<b>Sex</b>											
Male	18	7.4%	30	12.3%	3	1.2%	12	4.9%	0	0	0.002*
Female	52	21.3%	114	46.7%	0	0	15	6.1%	0	0	
<b>Level of education</b>											
Nurse diploma	21	8.6%	57	23.4%	0	0	27	11.1%	0	0	0.00**
Nurse specific diploma	0	0.0%	3	1.2%	0	0	0	0.0%	0	0	
Nurse institute	33	13.5%	72	29.5%	3	1.2%	0	0	0	0	
Bachelors	16	6.6%	12	4.9%	0	0	0	0.0%	0	0	
<b>Year of experience</b>											
Less than one year	9	3.7%	45	18.4%	3	1.2%	3	1.2%	0	0	0.00**
one years-5years	6	2.5%	36	14.8%	0	0	0	0	0	0	
more than 5 years	55	22.5%	63	25.8%	0	0	24	9.8%	0	0	
<b>Previous training</b>											
Yes	52	21.3%	120	49.2%	3	1.2%	27	11.1%	0	0	0.02*
No	18	7.4%	28	9.8%	0	0	0	0	0	0	

level of competence

**Table (1):** This table clarify that; (thirty two) nurses are working in General Assiut Hospital, (twenty seven) nurses are working in El-Eman Hospital, and (twenty three) nurses in Assiut University Hospital. According to age; greater than half (62.2%) of nurses their age ranged from twenty to thirty years old .majority of nurses were single and female (80.5%, 74.4% respectively). Greater than half of nurses are obtaining university education (56.1%). More than (58.5%) of nurses are having more than 5 years of experience, and most of nurses (82.9%) ttended previous training programs.

**Table (2):** This table demonstrates that; most of nurses had good of knowledge 90.2% regarding cholecystectomy, while only a few number of nurses had poor of knowledge 9.8 %.

**Table (3):** This table reflects that; there are no significant differences between the three times of nurses' performance competency regarding cholecystectomy.

**Table (4):** This table reveals that; there are significant differences between nurses' level of competence at three hospitals regarding preoperative care, teaching, postoperative care, staples and suture care ,wound care, while there is no significant difference regarding standard precaution. According to total nurses' level of competence among three hospitals; the highest level was desire to enhance among Al-Eman hospitals nurses.

**Table (5):** This table reflects that; there was significant relation between total nurses' competence and their knowledge about cholecystectomy .

**Table (6):** This table demonstrates that; there are significant relation between total nurses level of competence and their demographic data.

## Discussion

The present study was conducted to identify nurses' performance competency for patients undergoing cholecystectomy at surgical departments of hospitals representing Ministry of Health Hospitals (El-Eman, General Assiut Hospital) and Assiut University Hospital.

The prevailing study clarify that more than fifty percent of nurses were single, females, aged between twenty to thirty years old, and their experience years not more than 5 years. This study finding was in the line with a study conducted at surgical department in Assiut

University Hospital by **Ahmed (2013)** who revealed that most of nurses were female, and had less than ten years of experience.

Concerning the educational level, greater than fifty percent of nurses were having university (Bachelors, institute). These results are in accordance with (**Hossny, 2010**) whose findings indicated that majority of the study subjects had obtained a university education (Bachelors degree).

The prevailing research indicated that; most of nurses had good level of knowledge regarding cholecystectomy, while only a few number of nurses had a poor of knowledge regarding cholecystectomy .

Also the result of the present study showed that; there was a significant relation between nurses' knowledge and their competence level in which the highest level of competence was apparent among nurses' who had good level of knowledge.

Several authors reported that possessing and integrating nursing knowledge into practice is essential to nurse competence. **Ramritu & Barnard (2001)** pointed out that "unlike clinical skills, which can be performed with the assistance of another nurse, knowledge of disease, treatments, assessments, monitoring and evaluation" of patients' conditions require a nurse "to possess a sufficient knowledge base to provide safe and adequate nursing care".

The present research study showed that there was no significant distinction among the three times of nurses' performance competency concerning cholecystectomy which showed similar results among three times of assessment this could be because of that there hasn't been external or internal

factors affecting on the assessment process nor nurses' performance. The researcher also observed that the number of nurses decreased in the second and third time as two nurses were in vacation.

(**Said & Desouky, 2018**) were in the same line as mentioned that" The current study illustrated that there is no significant difference between three times of assessment for nurses' performance competency regarding cholecystectomy which showed similar reading among three times of assessment and rationalized this findings; this may be due to there were no external or internal factors affecting on the assessment process nor nurses' performance.

The study data was gathered from two different systems of hospitals, university and representing ministry of health hospitals (Al Eman- General Assiut Hospital). Our study investigated the level of nurses' competence in each hospital. There were significant differences between hospitals concerning their competence level. It has been observed that the common level of total competence was desire to enhance among Al Eman hospital nurses then excellent level comes after among General Assiut Hospital nurses.

On the other hand these hospitals had nurses in the competent and developmental level while all nurses representing University Hospitals showed excellent and desire to enhance level and there was no one less than these levels. The results of the studies that were carried out by **McCaughan & Paraho (2000)** comes in accordance with this finding who clarify that there were significant distinction among the nurses' clinical competence levels in the various clinical settings.

In this study, the higher level of skills of those nurses who were working in two types of hospitals (University & ministry of health hospital) will be attributed to greater included in-carrier training, a better availability of equipment, and better continuing training of employer in those hospitals.

Research by **Memarian et al., (2006)** additionally confirmed that situations and administrative elements, in particular the availability of a powerful educational system, played an essential role in nurses' scientific competence.

The results showed almost similarity among nurses' level of competence in University and representing Ministry of health hospitals, while the later still had nurses in competent and developmental level who need for more training, learning, supervision, experience, and support to attain the higher level of competence .These findings affirm that instances may additionally play a function in competence development **Bahreini et**

al., (2011) stated that circumstances and administrative factors also can affect nurses' clinical competence, including the available educational possibilities, pre-service and in-service education, supervision and control.

Also the results showed that there have been significant distinctions among the level of nurses' competence and their demographic data concerning all categories of performance that include preoperative care, education, postoperative care, wound care, standard precautions, staples and sutures. It was found that female, institutional graduate, and their age between twenty to less than thirty years nurses and attended previous training program their level of competence was between desire to enhance and excellent level.

The data of the study discusses that there have been differences between the level of nurses' competence and their years of experience. These findings are logical and consistent with Benner's Novice to Expert Continuum. A study undertaken by **Montgomery, (2006)** noted that both novice and perioperative nurses with less experience (i.e., not more than five years) concentrate their attention more on performing tasks in routine situations, while perioperative nurses with greater than five years experience emphasize more on performing task in complicated or uncommon conditions.

### Conclusion

Nurses' performance competency for patients undergoing cholecystectomy need to be enhanced to reach the excellent level.

### Recommendations

- Continuous inservice training programs are recommended to improve and maintain nursing performance competency for Patients Undergoing Cholecystectomy
- More researches are needed to determine the best evaluation methods for the different facets of nursing competence.

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