

# Nurses Performance Regarding Care of Patients Undergoing Laparoscopic Cholecystectomy

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**Abstract:** Laparoscopic cholecystectomy is a gold standard procedure for management of gallbladder stone. Gallstones (cholelithiasis) are the most common cause of biliary tract disease in adults. The single most important protective strategy for the surgical nurse is to be a knowledgeable, had positive attitude and safe practitioner (surgical Procedure), of nursing and to meet the standards of care with all patients. Aim: of this study was to assess knowledge, practices and attitude of nurses' performance regarding care of patients undergoing laparoscopic cholecystectomy. Design: A descriptive exploratory design was used Setting: Surgical department at Saied Galal in Bab ElSharia and ElHussein Hospital affiliated to Alazhar University Sample: A convenient sample of all available nurses (50 nurses) from both sex working in surgical department Tools for data collection: Tool I: Self-administered interview questionnaire, consists of two parts: Part I (sociodemographic characteristics and part II nurses' knowledge of the (anatomy and physiology of gall bladder.....etc.) Tool II: Attitude of the nurses working with the patient undergoing laparoscopic cholecystectomy. Tool III: Observational checklist sheet to assess level of nurses' practice. Results: Most of the nurses included in the study had unsatisfactory level of knowledge, incompetent practice and negative attitude toward care of patient undergoing Laparoscopic cholecystectomy .In addition there was a highly statistically significant difference between nurses' socio-demographic characteristics and their knowledge, reported practice and attitude. Conclusion: Nurses` knowledge, practice and attitude regarding nursing care of patient undergoing Laparoscopic cholecystectomy are at a poor and inadequate level and need developing nursing care standards to improve nurses` knowledge and practice .There was a positive correlation between nurses' knowledge, total reported practice and their attitude. Recommendations: - Individualized Education programs (IEP) for nurses should be established about proper pre and post-operative care for patients undergoing laparoscopic cholecystectomy in advanced and comprehensive manner.

**Keywords:** Laparoscopic, cholecystectomy, nurses performance.

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## 1. INTRODUCTION

The biliary system (liver and gallbladder) and pancreas secrete enzymes and other substances that promote food digestion in the stomach and small intestine. When these organs do not work properly, the person has impaired digestion, which may result in inadequate nutrition. Collaborative care for patients with problems of the biliary system and pancreas includes the need to promote nutrition for healthy cellular function (*Barre, et al., 2017*).

Gallstones are composed of substances normally found in bile, such as cholesterol, bilirubin, bile salts, calcium, and various proteins. They are classified as either cholesterol stones or pigment stones. Cholesterol calculi form as a result of metabolic imbalances of cholesterol and bile salts. They are the most common type found in people in the United States (*Di Ciaula & Portincasa, 2019*).

Cholecystitis is an inflammation of the gallbladder that affects many people, most commonly in affluent countries. It may be either acute or chronic, although most patients have the acute type. Two types of acute cholecystitis can occur: calculous and acalculous cholecystitis (*Singh ,et al., 2019*).

Laparoscopic cholecystectomy (LC) has become the gold standard treatment for benign gallbladder disease since it was first introduced by Mühe in 1985, followed by Mouret in 1987. This procedure has gradually replaced open surgical treatment to become one of the most common surgical procedure performed worldwide, nevertheless they are still compared in their mortality rates, hospital stay, as well as their incidence of biliary tract injury (*Ece ,et al., 2017*).

Current techniques for diagnosing gallbladder disease are less invasive and allow patients to recover more quickly than was the case with earlier diagnostic procedure. Although the incidence of cholelithiasis is quite high in the U.S., few patients present with symptoms. This can complicate and prolong the diagnosis. CBC, liver-function testing, and serum amylase and lipase. The diagnosis of cholelithiasis, cholecystitis, and other gallbladder diseases can be confirmed via a number of different imaging techniques (*Chen, et al., 2018*).

Medical-surgical nursing, sometimes called adult health nursing, is a specialty practice area in which nurses promotes, restore, or maintain optimal health for patients. The practice of medical-surgical nursing requires “specialized knowledge, clinical skills and good attitude to manage actual or potential health problems that affect patient. The role of the nurse in these settings includes care coordinator, caregiver, patient educator and patient and family advocate (*Willis, 2018*).

Post-operative care of patient who had cholecystectomy as with major surgery involve assess the patient's oxygen saturation level frequently until the effects of the anesthesia have passed and monitoring of vital signs especially respiratory rate monitor for the nausea and/or vomiting administer an antiemetic drug, such as ondansetron hydrochloride (Zofran). Because effect of general anesthesia and, early ambulation also promotes absorption of the carbon dioxide give necessary medication as need, fluid are giving intravenously for 24-48 hour after surgery and discharge from hospital with in three to five day, with return for follow up approximately four to six week after procedure (*Okungbowa, 2019*).

### Significance of the study

Cholecystectomy procedure are performed annually in the United States and 80% to 90% of them are candidates for laparoscopic cholecystectomy (*Trikudanathan, 2014*). In Egypt, the incidence of laparoscopic cholecystectomy in Gastroenterology Surgical center at El mansoura University were approximately 796 procedure through the year 2013 (*Statistical Department at El demerash Surgical Hospital, 2014*) reported that, approximately 1200 cholecystectomy procedure were done through the year 2014. statistical department at Saied Galal in Bab El Sharia reported that, approximately 960 cholecystectomy procedure were done through the year 2017 and 50% to 60% of them are candidates for laparoscopic cholecystectomy. Preoperative and postoperative care is important to reduce hospital stays and contain costs and enhance the healing without complication (*Dirksen et al., 2018*).

### AIM OF THE STUDY

This study aimed to: Assess nurses' performance regarding care of patients undergoing laparoscopic cholecystectomy .

## 2. SUBJECTS AND METHODS

**Design:** A descriptive exploratory design was utilized for the conduction of this study.

**Subjects:** A convenience sample of all available nurses (50 nurses) from both sex working in surgical department.

**Setting:** This study was conducted at surgical department at Saied Galal in Bab Sharia and El Hussein hospital affiliated to Alazhar University, Egypt.

### Tools of Data Collection:

*Data were collected using the following tools:*

**Tool I: Self-administered interview questionnaire** it was developed by the investigator based on the relevant and recent scientific literature review and was written in simple Arabic to suite level of nurses. To assess the nurse's demographic characteristics and knowledge regarding caring of patient undergoing laparoscopic cholecystectomy. It included the following parts:

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**Part 1: Demographic characteristics of nurses such as** (Gender, age, level of education, years of experience. etc. )

**Part 2: Nurses' knowledge regarding care of patient undergoing laparoscopic cholecystectomy:**

This include (anatomy and physiology of gall bladder, definition, indications, contraindications, risk factors, advantages, disadvantages, complications, role of nurse in preparing patient for laparoscopic cholecystectomy, causes, signs and symptoms of gall stones...etc. ) Satisfactory knowledge if score  $\geq 75\%$ . Unsatisfactory knowledge if score from  $< 75\%$ .

**Tool II: Attitude of the nurses working with the patient undergoing laparoscopic cholecystectomy and adapted from (Mahmoud, 1994).** It is consists of 10 questions of Likert scale about nurses attitude and nurses responses were categorized in to the following responses :(absolutely disagree, disagree, neutral, agree, very agree) attitude like (Is listening to patient complain is important, I think answering patient questions before operation decrease his fear ,.. etc). Positive attitude if score  $\geq 60\%$ . - Negative attitude if score  $< 60\%$ .

**Tool III: Observational checklist sheet**

It was adapted from (Abd-Elhafiez,2016) ,developed and filled by the the investigator to assess level of nurse's practice regarding care for patient undergoing laparoscopic cholecystectomy with gallbladder disease (acute cholecystitis). It included the following items (pre and post-operative care, wound care, pain management, ..... etc.). Competent if score  $\geq 80\%$ . Incompetent if score  $< 80\%$ .

**Filed work will include the following;**

- The actual fieldwork for the process of data collection of this study was started and completed within six months from February (2019) to the end July (2019).
- First, the investigator introduced herself to the studied nurses and gave them a brief explanation about the study and its purpose prior to any data collection.
- Each nurse was interviewed individually to gather the necessary data of the study.
- The nurses were asked to give a verbal agreement to participate in the study.
- Data collection was being done 2 days/week by the investigator in the morning and afternoon shifts.
- The required time to collect data from each nurse about 30-40 minutes.
- Self –administered Questionnaire sheet for assessment nurses' knowledge and attitude was be filled by the nurses who were caring for patient before and after laparoscopic cholecystectomy .
- Observational checklist sheet for assessment nurses practice regarding care of patient before and after laparoscopic cholecystectomy was be filled by investigator.
- The studied nurses were assured that the information collected would be treated confidentially and that it would be used only for the purpose of the study.

**I. Assessment phase:** This includes:

1- Interview with available nurses individually before collection of data to explain the aim and objective of the study and take their approval to participate in the study prior to any data collection then basic assessment was be done and data was be collected from all nurses.

2- Assess nurse's knowledge and attitude regarding care of patient undergoing laparoscopic cholecystectomy.

### Administrative design

An official permission for this study was obtained by submission of official letter issued to the Dean of the faculty of Nursing, Helwan University, and Director of the previously mentioned study setting. The investigator then met the two hospital directors before starting data collection to obtain their approval and assistance in conducting the study and explained the purpose and the methods of data collection.

**Ethical considerations:**

The research approval was obtained from the study setting and scientific ethical committee of faculty of nursing at Helwan University using a written informed consent obtained from each participant prior to data collection. Official permission considerations were obtained using proper channels of communications.

**The ethical research considerations include the following:**

- Verbal approval was obtained from every nurse before inclusion in the study; a clear and simple explanation was given for nurses according to their level of understanding about the research purpose and aim of the study.
- The investigator assured maintaining anonymity and confidentiality of the subject data and used for research purpose only.

**Statistical analysis:**

Data collected from the studied sample was revised, coded and entered to computer percentages. It was analyzed with the program (SPSS) statistical package for social science under windows version 23. The collected data were organized, revised, analyzed, tabulated using number and percent distribution. Data were presented using descriptive statistic in the form of frequencies and percentage. Chi-square test ( $\chi^2$ ) was used for comparisons between qualitative variables and correlation sufficiency (Spearman's rank test) was used to test correlation between variables. Statistical significant was considered at  $p\text{-value} \leq 0.05$ . Statistical insignificant difference was considered when  $P > 0.05$ , while it was a statistical significant difference when  $P < 0.05$ , and statistical highly significant difference was considered when  $P < 0.0$

**3. RESULT**

**Table (1)** shows that, about two thirds (64%) of the study sample were females. Regarding age of the study sample, more than half (52%) of them were in the age between (20-<30 years old) with mean age (**31.4±2.8**). In relation to educational qualification of them, it was found that less than half (48%) of them have Technical Institute of nursing while, less than half (40%) of studied sample had from 5 to less than 10 years of experience in surgical department with the mean of (**9.18±8.4**).

**Table (2)** clarifies that, less than three quarters (70%) of the study sample said that acute and chronic bile duct infections are the diseases that affect the gallbladder and the same percentage said that, abdominal colic is the most symptoms of post - cholecystectomy syndrome. Nearly about one third (32%) of the study sample said that, obesity is the factor that increase cholecystitis. In addition to less than half (42%) of them reported that malignant tumors of the gall bladder is the most complication of gallbladder stones. Also It was found that more than half (54%) of them had total un satisfactory knowledge regarding factors that increase cholecystitis, complications and symptoms of post - cholecystectomy syndrome.

It is apparent from **Table (3)** that, more than half (52%) of the study sample reported that, the presence of stones in the gallbladder is the most indications of LC and the morbid obesity is the most contraindication of the LC. Moreover, nearly less than two third (60%) of them said that, the most benefit of LC is the wound is smaller and without distortions and less than half (40%) of them mentioned that the most complications of the laparoscopic cholecystectomy are Infection of surgical incisions and abscess formation.

**Figure (1)** Illustrates that, more than one third (36%) of the study sample had total satisfactory knowledge regarding care of patients undergoing LC. while, nearly two third (64%) of them had total unsatisfactory knowledge.

**Table (4)** clarifies that, less than two third (60%) of the study sample had competent practice in ensure that the informed consent had been signed and dated, more than half (52%) of them had explained procedure to the patient. While, less than three quarter (72%) of them had incompetent practice in Provide teaching about: exercises, breathing and coughing exercises, turning in bed, pain management and follow dietary/fluid restriction. The same table shows that, only (44%) of study sample had total competent practice .Meanwhile, more than half (56%) of them had total incompetent practice regarding day before LC..

It is apparent from **Table (5):**that more than half (56%) of study sample had competent practice in administering medication as ordered, meanwhile, about three quarter (76%) of them had incompetent practice in Providing back

massage to relive pain. Also, it was obvious that, more than one third (36%) of them had total competent practice regarding pain management.

**Table (6):** clarifies that, more than half (56% & 54%) had competent practice in explaining procedure to the patient & gather necessary equipment's respectively. While, more than three quarter (78%) of them had incompetent practice in reviewing medical orders for wound care and preparing a sterile work area and open needed supplies. Also, it was found that, more than one third (36%) of them had total competent practice regarding wound dressing. While, more than two third (64%) of them had total incompetent practice.

**Figure (2):** illustrates that, less than one third (30%) of the study sample were competent in their practice regarding care for patients undergoing LC. while, more than two third (70%) were incompetent in their practice.

**Figure (3):** shows that, As regards the total level of nurses' attitude this table and figure clear that, less than half (44%) of them had positive attitude regarding care for patients undergoing LC. on the other hand, more than half (56%) of them had negative attitude.

**Table (7)** reveals that, there was ahightly statistically significant correlation between total nurses' knowledge and their demographic characteristics (educational Qualification & Years of Experience) (P value $\leq$  0.01). Also, there was statistically significant correlation between nurses' demographic characteristics (age & Training courses) and their total knowledge regarding care of patients undergoing LC p value < 0.05.

**Table (8):** indicates that, there was ahightly statistically significant relation between nurse's demographic characteristics (educational qualification& years of experience) and their total practices regarding care of patients undergoing laparoscopic cholecystectomy (P value <0.01). While, there was statistically significant relation between nurse's demographic characteristics (Age & Training courses) and their total practices regarding care of patients undergoing laparoscopic cholecystectomy (P value <0.05.).

**Table (9)** represents that, there was a highly statistically significant difference with positive correlation between total nurse`s knowledge, practice and attitude as regard statistically significant difference (p value <0.01).

**Table (1): Frequency and percentage distribution of the studied sample regarding their socio-demographic characteristics (n=50).**

Variable	N	%
<b>Gender</b>		
Female	32	64
Male	18	36
<b>Age (year)</b>		
20-<30	26	52
30-<40	14	28
$\geq$ 40	10	20
<b>Mean SD</b>	<b>31.4<math>\pm</math>2.8</b>	
<b>Educational qualification</b>		
Diploma Nurse	14	28
Technical Institute	24	48
Bachelor of Nursing	8	16
Post Graduate Studies	4	8
<b>Years of Experience</b>		
< 5	8	16
5-<10	20	40
10-<15	12	24
$\geq$ 15	10	20
<b>Mean SD</b>	<b>9.18<math>\pm</math>8.4</b>	
<b>Training courses on nursing care for patients undergoing laparoscopic cholecystectomy</b>		
Yes	22	44
No	28	56
<b>If yes, how many times? (n=22)</b>		

One	14	63.6
Two	6	27.3
Three or more	2	9.1
<b>Has your performance improved as a result (n=22)</b>		
Yes	15	68.2
No	7	31.8

Table (2): Frequency and percentage distribution of nurses` knowledge regarding factors that increase cholecystitis, complications and symptoms of post - cholecystectomy syndrome (n=50).

Variable	N	%
<b>The diseases that affect the gallbladder:</b>		
Acute and chronic bile duct infections.	35	70
Stones.	30	60
Tumors.	22	44
<b>The factors that increase cholecystitis:</b>		
Obesity.	16	32
Rapid weight loss.	12	24
Contraceptive methods.	14	28
<b>The complications of gallbladder stones:</b>		
Burst or gangrene gall bladder.	20	40
Chronic cholecystitis.	18	36
Malignant tumors of the gall bladder.	21	42
Obstructive Jaundice.	17	34
Biliary Colic.	15	30
<b>The symptoms of post - cholecystectomy syndrome</b>		
Abdominal colic.	35	70
Dyspepsia and abdominal distension.	24	48
Diarrhea	12	24
Jaundice	28	56
Hyperthermia.	18	36
Sever vomiting.	17	34
<b>Total</b>	<b>N</b>	<b>%</b>
<b>Satisfaction</b>	23	46
<b>Un satisfaction</b>	27	54

Table (3): Frequency and percentage distribution of nurses` knowledge regarding indications, contraindications, benefits and complications of the laparoscopic cholecystectomy (n=50).

Variable	N	%
<b>Indications of laparoscopic cholecystectomy:</b>		
Cholecystitis.	19	38
Pancreatitis caused by gallstones.	15	30
Stones in the gallbladder.	26	52
Stones in the bile duct.	18	36
Inflammation of the bile duct.	22	44
Continuous vomiting with high temperature.	14	28
Severe abdominal pain.	15	30
Colic results from inflammation of the bile ducts.	21	42
<b>Contraindications of the Laparoscopic cholecystectomy :</b>		
Pregnant woman.	24	48
Cirrhosis or liver failure.	20	40
Morbid obesity.	27	52
The inability to tolerate general anesthesia.	24	48
Renal failure.	19	38
Upper abdominal surgery.	14	28
Recent Stroke.	23	46

<b>The benefits of laparoscopic cholecystectomy :</b>		
Small openings in the abdomen.	29	58
Less pain after operation.	23	46
Early discharge.	20	40
Smaller wound without distortions.	30	60
Return to normal activities a week after surgery.	16	32
<b>The complications of the laparoscopic cholecystectomy:</b>		
Inflammation of the gallbladder.	15	30
Infection of surgical incisions and Abscess formation.	20	40
Bleeding after 24 hours.	18	36
Urinary tract infection.	17	34
Hernia.	13	26
Tachycardia.	12	24
Bowel or liver injury.	15	30
Injury of the diaphragm .	16	32
<b>Total</b>	<b>N</b>	<b>%</b>
<b>Satisfaction</b>	21	42
<b>Unsatisfaction</b>	29	58

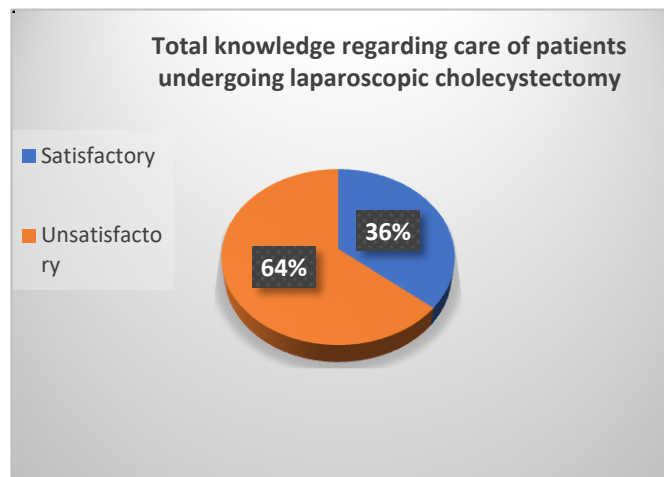


Figure (1): Percentage distribution of the study sample as regards to their total knowledge about care of patients undergoing LC (n=50).

Table (4): Frequency and percentage distribution of the study sample regarding to their practice in the day of pre-operative care for patients undergoing LC (n=50).

Variable	Done		Not done	
	N	%	N	%
Review medical orders, nursing database, history and physical examination.	16	32	34	68
Gather the necessary equipment.	21	42	29	58
Perform hand washing.	18	36	32	64
Explain procedure to the patient.	26	52	24	48
Keep privacy of the patient.	25	50	25	50
Ensure that the informed consent has been signed and dated	30	60	20	40
Provide teaching about: exercises, breathing and coughing exercises, turning in bed, pain management and follow dietary/fluid restrictions.	14	28	36	72
Tell the patient that IV line, Foley catheter will be inserted to him.	20	40	30	60
Ask the patient to bathe with antiseptic solution and clean the surgical site.	15	30	35	70
Explain purpose of enemas or laxatives to the patient before surgery.	19	38	31	62
Check administration of medications regularly.	17	34	33	66
Perform hand washing.	15	30	35	70

Document procedure in nursing record.	22	44	28	56
<b>Total</b>	<b>N</b>		<b>%</b>	
<b>Competent</b>	22		44	
<b>Incompetent</b>	28		56	

Table (5): Frequency and percentage distribution of the study sample regarding to their in pain management for patients undergoing LC (n=50).

Variable	Done		Not done	
	N	%	N	%
Assess severity, frequency and characterisctis of pain using appropriate assessment tool and measuring scale.	18	36	32	64
Administer medication as ordered.	28	<b>56</b>	22	44
Monitor and record vital signs.	21	42	29	58
Provide directional activities such as (reading newspaper, watching TV, etc.....)	14	28	36	72
Assist patient to change position frequently.	16	32	34	68
Provide back massage to relive pain.	12	24	38	<b>76</b>
Document procedure in nursing record.	22	44	28	56
<b>Total</b>	<b>N</b>		<b>%</b>	
<b>Competent</b>	18		36	
<b>Incompetent</b>	32		64	

Table (6): Frequency and percentage distribution of the study sample regarding to their practice in post- operative wound care for patients undergoing LC (n=50).

Variable	Done		Not done	
	N	%	N	%
Review medical orders for wound care.	11	22	39	78
Gather necessary equipment's.	27	54	23	46
Perform hand washing and put on gloves.	15	30	35	70
Explain procedure to the patient.	28	56	22	44
Administer appropriate prescribed analgesics.	15	30	35	70
Place a waste receptacle or bag for use during the procedure.	14	28	36	72
Adjust bed at comfortable height.	12	24	38	76
Assist the patient to a comfortable position.	18	36	32	64
Cover any exposed area other than the wound.	22	44	28	56
Place a waterproof pad under wound site.	17	34	33	66
Carefully remove soiled dressings.	14	28	36	72
Assess characteristics of old dressing.	13	26	37	74
Inspect the wound site for size, appearance, and drainage.	20	40	30	60
Check status of sutures, adhesive closure strip and drains or tubes if present.	19	38	31	62
Prepare a sterile work area and open needed supplies.	11	22	39	78
Open sterile cleaning solution.	15	30	35	70
Put on sterile gloves.	13	26	37	74
Clean the wound once the wound is cleaned dry area using gauze sponge in the same manner.	14	28	36	72
Apply layer of dry and sterile dressing over the wound.	17	34	33	66
Remove and discard gloves apply tape or roller gauze to secure the dressing.	18	36	32	64
Label dressing with date and time.	24	48	26	52
Return patient in comfortable position with side rail up.	20	40	30	60
Perform hand hygiene	17	34	33	66
Document time, date and characteristics of the wound.	18	36	32	64
<b>Total</b>	<b>N</b>		<b>%</b>	
<b>Competent</b>	18		36	
<b>Incompetent</b>	32		64	



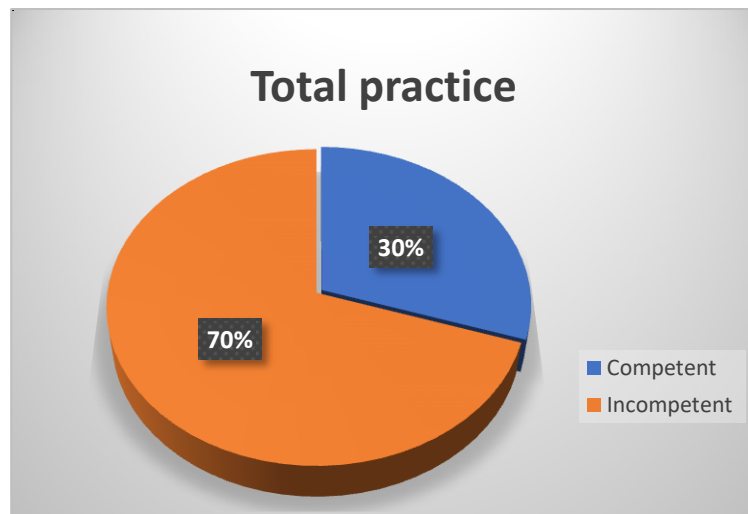


Figure (2): Percentage distribution of the studied of the study sample regarding to their total practice in care for patients undergoing LC (n=50).

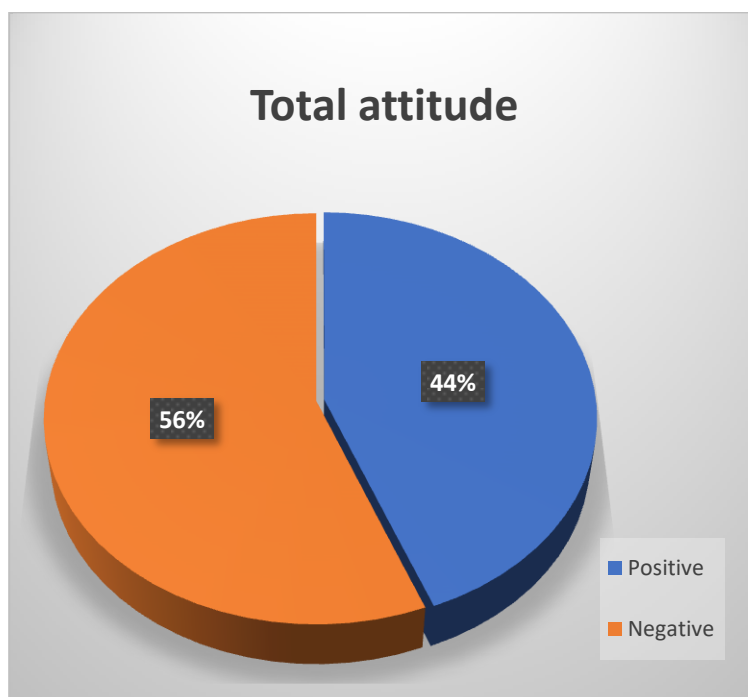


Figure (3): Percentage distribution of the studied nurses according to their total attitude about care for patients undergoing LC (n=50).

Table (7): Correlation between socio-demographic characteristics of the studied sample and their total knowledge regarding care of patients undergoing laparoscopic cholecystectomy (n=50).

Variable		Total Knowledge				X2	P-Value
		Satisfactory (n=18)		Unsatisfactory (n=32)			
		N	%	N	%		
Age (year)	20-<30	4	22.2	22	68.7	9.170	0.012*
	30-<40	6	33.3	8	25		
	≥40	8	44.5	2	6.3		

Gender	Female	10	55.5	22	68.7	1.920	0.635
	Male	8	44.5	10	31.3		
Educational qualification	Diploma Nurse	2	11.1	12	37.5	14.28	.001**
	Technical Institute	4	22.2	20	62.5		
	Bachelor of Nursing	8	44.5	0	0.0		
	Post Graduate Studies	4	22.2	0	0.0		
Years of Experience	< 5	0	0.0	8	25	15.04	.001**
	5-<10	2	11.1	18	56.3		
	10-<15	6	33.4	6	18.7		
	≥15	10	55.5	0	0.0		
Training courses	Yes	16	88.9	6	18.7	8.015	0.02*
	No	2	11.1	26	81.3		

\*significant at p < 0.05.

\*\*highly significant at p < 0.01.

Table (8): Relation between socio-demo graphic characteristics of the studied sample and their total practice regarding car of patients undergoing laparoscopic cholecystectomy (n=50).

Variable		Total practice				X <sup>2</sup>	P-Value
		Competent (n=15)		Incompetent (n=35)			
		N	%	N	%		
Age (year)	20-<30	3	20	23	65.7	8.430	0.023*
	30-<40	4	26.7	10	28.6		
	≥40	8	53.3	2	5.7		
Gender	Female	10	66.7	22	62.9	1.301	0.670
	Male	5	33.3	13	37.1		
Educational Qualification	Diploma Nurse	0	0.0	14	40	13.81	.002**
	Technical Institute	4	26.7	20	57.1		
	Bachelor of Nursing	7	46.6	1	2.9		
	Post Graduate Studies	4	26.7	0	0.0		
Years of Experience	< 5	0	0.0	8	22.9	16.74	.000**
	5-<10	3	20	17	48.6		
	10-<15	2	13.3	10	28.5		
	≥15	10	66.7	0	0.0		
Training courses	Yes	14	93.3	8	22.9	7.992	0.023*
	No	1	6.7	27	77.1		

\*significant at p < 0.05.

\*\*highly significant at p < 0.01.

Table (9): Correlation between the nurse`s knowledge, practice and attitude.

Variable	Nurse`s knowledge	Nurse`s practice
Nurse`s practice	r =0.372 p =. 000**	
Nurse`s attitude	r = 0.314 P = 0.001**	r = 0.438 P =. 000**

(\*) Statistically significant at p<0.05 (\*\*) highly significant at p<0.01

#### 4. DISCUSSION

The aim of the present study was to assess performance of nurses for patient undergoing laparoscopic cholecystectomy through assessing the level of knowledge, practice and attitude of nurses working in surgical department caring for patient undergoing laparoscopic cholecystectomy.

Regarding the demographic characteristics of the studied sample caring for patients undergoing laparoscopic cholecystectomy, the present study showed that, nearly about two third of them were female and more than half of them were at the age of (20-30) years with mean age nurses of was  $(31.4 \pm 2.8)$ . This finding was supported by *Eldeen, (2016)*, which about "assessment of nurse's knowledge about nursing management for Patients undergoing cholecystectomy in Elmak Nimer University Hospital" mentioned that, more than three quarters of the studied group were age between (25-30) Year and the majority of gender of the study group were females.

Concerning educational qualifications of the studied sample, the present study clarified that, nearly half of them were technical institute and less than half of them had (5-10) years of experience with mean  $9.18 \pm 8.4$ . This result is in accordance with *Abdelhafeiz, (2016)* who study was about "developing nurses performance guideline for patient undergoing cholecystectomy based on needs assessment" who found that more than half of the studied nurses had un satisfactory knowledge level about risk factor of cholecystitis .

The current study was in disagreement with *Eldeen, (2016)*, who conducted a study about "Assessment of nurses' knowledge about nursing management for patients undergoing cholecystectomy in Elmak Nimer University hospital "and mentioned that, less than half of the studied nurses had (1-3) years and less than three quarters were bachelor of nursing.

Regarding risk factors of cholecystitis, complications of gallstone and symptoms of post - cholecystectomy syndrome, the present study revealed that, more than half of them had un satisfactory knowledge level.

As regard the complications of laparoscopic cholecystectomy, this study reported that the studied nurses had unsatisfactory knowledge level. Meanwhile; this finding wasn't in line with *Carter, (2015)* who stated that most of nurses had knowledge about complications of laparoscopic cholecystectomy and only 28.2% of them didn't know.

The current study results clarified that, nearly about two third of the studied nurses had un satisfactory of their total knowledge regarding care of patients undergoing laparoscopic cholecystectomy. This was consistent with *El baka ,et al. (2019)* "which about "Health needs of Patients with cholelithiasis undergoing laparoscopic cholecystectomy" and mentioned that, the majority of the studied patients had poor level of knowledge regarding disease nature, pre-operative care, post-operative care and complications and self-care following discharges, There was statistically significant positive correlation was found between patients' level of knowledge and, nurses as a source of knowledge and advices. This was disagreement with *Lawiński et al. (2016)* whose study was about "The level of nurses knowledge about the complications of gallstone disease following laparoscopic cholecystectomy" and concluded that ,the nurses demonstrated a sufficiently high level of knowledge. Also it was in line with *Dewit, et al., (2016)* who listed that surgical ward nurses had poor knowledge level in cholecystectomy surgery.

As regard to nurses' practice in pre-operative care for patients undergoing cholecystectomy, findings of the present study revealed that more than half of the studied nurses had incompetent practice according to their practice regarding day before laparoscopic cholecystectomy This finding was supported by *Abdelhafiezz, (2016)* who study was about: "Developing nurses performance guideline for patient undergoing cholecystectomy based on needs assessment "and mentioned that, concerning the practice level in pre-operative care for patients with laparoscopic and open cholecystectomy the study showed that more than two third of the studied nurses had un satisfactory level of practice.

The current study clarified that, nearly two third of the studied nurses had incompetent level of practice regarding pain postoperative care for patients undergoing laparoscopic cholecystectomy .This was disagreement with *Zeb et al. (2019)* which about "Nurses knowledge regarding post-operative pain management" and reported that, majority of nurses working in surgical units had good knowledge of post-operative pain management. The level of knowledge was divided into poor, average, good and excellent categories. Percentage score of categories was, poor (0 %); average (6.7%); good (71.7%); and excellent (21.7%)

The current study revealed that, slightly two third of nurses had incompetent level of practice regarding wound care in post-operative for patients undergoing laparoscopic cholecystectomy. These findings were similar with *Atiyah et al. (2012) & Waston, (2007)* who stated that nurses established in adequate practices concerning post-operative wound infection.

Based on the investigator point of view, all nursing staff in surgical wards should be enrolled in training sessions to improve their interventions for patient toward post-operative laparoscopic cholecystectomy. Further studies need to be conducted to explore barriers and factors affecting their practice regarding post-operative pain the current study results illustrated that, less than three quarter of the studied nurses had total incompetent practice regarding care for patients undergoing laparoscopic cholecystectomy. This finding was in accordance with *Kadhim, (2014)* which entitled "Assessment of postoperative nurses' interventions for the patients with laparoscopic cholecystectomy at Baghdad teaching hospitals" the findings of the study indicated that there was a weak assessment of postoperative nurses' interventions for the patients with laparoscopic cholecystectomy at Baghdad teaching hospitals. *Ahmed et al. (2013)* study which about "Assessment of nurses knowledge and practice regarding postoperative open cholecystectomy patients at Assiut university hospital" mentioned that all nurses had inadequate level of total practice scores in all skills items about care of cholecystectomy. This was supported by *Yogoub, (2013)* who cleared that more than half of the of the studied nurses had fair level of practice toward pre/post-operative regarding care for patients undergoing cholecystectomy.

*Mohammed, (2018)*; was in the same line with the current study which revealed that "the majority of nurses had unsatisfactory practice level pre implementing teaching protocol".

The current study results showed that, nearly more than half of the studied nurses had total negative attitude regarding care for patients undergoing laparoscopic cholecystectomy. This was supported by *Cawich et al. (2019)* which about "healthcare workers' attitudes toward laparoscopic surgery for gallbladder disease in the Caribbean" and mentioned that the HCWs (nurses etc...)' attitudes in this setting are not favorable if 56% opposed elective LC for benign gallbladder disease. This was contraindicated with *Amer, Taha & Zaton, (2015)*. Which about "Nurses knowledge and practice regarding gastrointestinal endoscopy and suggested nursing guidelines" It revealed that the majority of nurses (80%) had satisfactory attitude.

As regard relation between socio- demographic characteristics of the studied sample and their total knowledge regarding care of patients undergoing laparoscopic cholecystectomy, the present study revealed that, there was a highly statistically significant difference between nurses' demographic characteristics (educational level and years of experience) and their total knowledge regarding LC, at p value <0.01. Meanwhile, there was statistically significant difference between nurses' demographic characteristics (age and training courses) and their total knowledge regarding LC, P <0.05 .This finding was in line with *(Eldeen, 2016)*, whose study was about "Assessment of nurses' knowledge about nursing management for patients undergoing cholecystectomy in Elmak Nimer university hospital". Finally the study revealed that, there was a highly statistically significant relationship between the years of experience and the knowledge of study group. This was in accordance with *Anderson et al., (2019)* who believes that education has a significant impact on the knowledge and competencies of the nurse. *Evans & Donnelly, (2015)*, in another study also discovered that knowledge could be obtained through basic and continuing education, training, personal experience, and in-service training programs. This disagreement with *Ibrahim et al., (2019)* which entitled "Assessment of nurses' knowledge regarding nursing preparations for ultrasono-graphy examinations in general in hospitals at Port Said city and it was found that no statistically significant relationship between nurses' knowledge and their socio-demographic data were detected.

Regarding relation between socio- demographic characteristics of the studied sample and their total practice regarding care of patients undergoing laparoscopic cholecystectomy, the present study showed that, there was a high statistically significant difference between nurses' demographic characteristics (educational level and years of experience) and their total practice regarding LC, at p value <0.01 .Meanwhile there was statistically significant difference between nurses' demographic characteristics (age and training courses) and their total knowledge regarding LC, P <0.05 .This was consistent with *Said, et al. (2018)* whose study was about "Comparative study: postoperative nurses' competency regarding cholecystectomy at university and non-University hospitals" and concluded that, his data showed significant differences between total nurses' competence and their demographic data.

And also supported by *Kadhim, (2014)* which about "Assessment of postoperative nurses' interventions for the patients with laparoscopic cholecystectomy at Baghdad teaching hospitals" who mentioned that, there was significant relationship between the level of education, sharing in training sessions which established (by the hospital, by other hospitals, or by other institutions), duration of the training session, number of training sessions and assessment of postoperative nurses' interventions. *Bertleff et al. (2018)* who noted that nurse's Original article knowledge and practice improved immediately after attending to the training programs. *Church, (2016)* Nursing is a practice discipline that requires theoretical knowledge to be translated into clinical practice.

The current study indicated that, there was a highly statistically significant differences with positive correlation between total nurse's knowledge, attitude and practice with statistically significant differences regarding care of patients undergoing laparoscopic cholecystectomy This results was in agreement with *Fegghi, (2016)* which about "Relationship between attitude and practice of nurses in the care of drug-dependent patients admitted in public hospitals of the city of yasouj, Iran" and mentioned that ,there was a significant positive correlation between attitude and practice of nurses. This was in agreement with *Haq et al., (2017)* which about "Assessment of nurse's knowledge, attitude and practice regarding hepatitis-B Infection in tertiary care public hospital in Quetta Pakistan" and mentioned that there were a significant positive linear correlations between knowledge-attitude ( $r=0.361$ ,  $p<0.01$ ) knowledge-practice ( $r=0.246$ ,  $p<0.01$ ) and attitude-practice ( $r=0.213$ ,  $p<0.01$ ) were observed.

## 5. CONCLUSION

Based on the results of the current study, it can be concluded that, nearly two third of studied sample had unsatisfactory knowledge regarding care of patients undergoing laparoscopic cholesectomy in surgical department. Less than half of the studied sample had positive attitude regarding care of patients undergoing laparoscopic cholesectomy in surgical department. Less than three quarters of studied sample had total incompetent practice regarding care of patients undergoing laparoscopic cholesectomy in surgical department. On the same line, there is a highly statistically significant positive correlation between total nurses' knowledge, attitude and their practice.

## 6. RECOMMENDATION

On the light of the current study, the following recommendations were suggested:

- 1-Individualized Education programs (IEP) for nurses should be established about proper pre and post-operative care for patients undergoing laparoscopic cholecystectomy in advanced and comprehensive manner .
- 2-Increase the positive attitude of nurses in order to improve health services.
- 3-Pay more attention to the affiliation of the material in higher education and in-service training.

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