

## Nurses' Knowledge and Practice Regarding Gynecological Laparoscopy in Maternity Teaching Hospital in Mosul City

Rana Mohammed Jasim AL-Tae\*

Salwa Hazim Al –Mukhtar\*\*

### ABSTRACT

**Background and aim:** Over the past decade, laparoscopy has become the standard surgical approach for a majority of gynecologic procedures, such as ectopic pregnancy management, fallopian tube and ovarian operations, management of cysts, staging of gynecologic cancers, and laparoscopically assisted vaginal hysterectomy. The study aim to assess nurses level of knowledge and practices regarding gynecological laparoscopy, To determine the knowledge defect during gynecological laparoscopy, and to determine the difference between demographic characteristics such as (age, level of education, and training courses) with their knowledge and practices.

**Materials and Method:** The researcher adopted a quantitative design where structured closed-ended questions were formulated for both questionnaires. A questionnaire was administered to the Ward and Theatre Nurses using the convenience sampling technique. The study was conducted in two hospitals ( Al Batool and AL-Khansaa Teaching Hospitals ) located in Mosul city. Statistical Package for Social Sciences (SPSS) version 15 for Windows was used by the Statistician to analyze the data.

**Results:** The findings shows the demographic characteristics of the study sample. The table shows that most of the study sample are from AL-Khansaa Hospital (50.9%). According to the age, the highest percentage was in the age group (18-27 years) (43.6%), and the lowest group are of age (more than 47 years) (8%). According to level of education the highest percentage is of High school (56.4%) (62), and the lowest is (12.7%) (14). In the relation to their Experience, the highest percentage is (74.5%) for the group of (1-10 years), and the lowest percentage is (6.4%) for the group of (more than 30 years).

**Conclusions:** The nurses' had good knowledge about the specific laparoscopic .

**Recommendation:** Ward and theatre nurses should be learn about informed consent taking and the legal implications if not taken correctly and the emphasis on their role and responsibilities during consent taking. This could be done during in-service education.

**Keywords:** Nurses' Knowledge, Practice, Gynecological Laparoscopy.

### INTRODUCTION

The word laparoscopy originates from ancient Greek lapara meaning "flank, side", and skopeó, meaning "to see". It is an operation performed through small incisions (usually 0.5–1.5 cm), with the aid of a camera, within the abdominal cavity. (Apostolou and panieri 2007). Fallopian tube and ovarian operations, management of cysts, staging of gynecologic cancers, and laparoscopically assisted vaginal hysterectomy. In Denmark, 81% of all surgically treated ectopic pregnancies in 2003 were performed by laparoscopy, as compared with 64% in 1996 (Sinha and Gupta 2008).

Laparoscopic surgery caused a major turning point in the surgery during topical years and has become a popular technique used by surgeons. It is a technique used for abdominal surgery whereby minimal access is gained into the abdomen, providing the same results as open surgery (Rothrock, 2007). Minimal persistent surgery is perform with instruments being

manipulated from outside the body by the surgeon (Zinner and Ashley, 2007). This modern surgical technique has altered the practice of surgery making it possible for surgeons to perform major operations through smaller incisions, sometimes less than 1 cm, rather than larger incisions as in habitual open surgery. Laparoscopy is a surgical technique that has been used commonly in treatment over 30 years.

Earlier recovery time, the minimizing of pain, hospitalization and the best aesthetic result are some of the compensations which made laparoscopy very common among patients and surgeons. Also, some practical factors such as the magnification offered by the endoscope throughout the technique and the minor threat of problems caused in the extensive use of laparoscopic surgery in gynecology. Laparoscopy has gained a leading role and appears to be the gold standard method for a soft wide range of gynecologic procedures such as tubal ligation, removal of ovarian cyst or

\* MSc Candidate / College of Nursing / University of Mosul.

\*\* Assistant Professor / College of Nursing / University of Mosul.

adnexa, treatment of ectopic pregnancy, hemorrhagic rupture of a cyst, exploration of chronic pelvic pain, sterility, treatment of endometriosis, removal of fibromyomata, hysterectomy, and lately for treatment of pelvic organ prolapses, urinary incontinence and even in gynecologic cancers. Despite the advantages of laparoscopic procedures, they do not come without risk and complications for the patient. As with laparotomy there is always danger of deep vein thrombosis, inflammation and creation of adhesions. It should be noted though that associated to laparotomy there is a higher risk of injury to the major blood vessels positioned in the pelvis and the urinary system, and that is why patients considered to be subject to laparoscopy should be carefully chosen (Wilmore and kehlet, 2001).

Limitations of laparoscopy In the case of patient selection previous abdominal surgery is the most common reason to exclude a laparoscopic approach, because of the risk of adhesions. For the same reason, patients that have a medical history of appendicitis, rupture of ectopic pregnancy, rupture of an ovarian cyst, or pelvic inflammatory disease should be selected very carefully. Also morbid obese patients (BMI >45) are in a higher risk group for laparoscopy. This is firstly because of the increased adipose tissue, so initial access to the peritoneal cavity is more difficult and also there is a need for longer trocar ports and instruments, and secondly because obese patient will have greater peak airway pressures and often cannot sustain prolonged Trendelenberg position (Sirbaddana, 2010).

The study aim to assess nurses level of knowledge and practices regarding gynecological laparoscopy, To determine the knowledge defect during gynecological laparoscopy, and to determine the difference between demographic characteristics such as (age, level of education, training courses) with theirs nurse knowledge and practices.

## MATERIALS AND METHOD

The researcher adopted a quantitative design where structured closed-ended questions were formulated questionnaires. A questionnaire

## RESULTS

Table (1): Distribution of the Demographic Characteristic of the Study Sample (No=110).

Variables	Frequency	Percentage
<b>Hospital</b>		
AL-Batool	54	49.1 %
AL-Khansaa	56	50.9 %

was administered to the Ward and Theatre Nurses Sampling technique. This study was based on the positivist paradigm which underlies the traditional scientific approach and which assumes that there is a fixed orderly reality that can be objectively studied. The study was conducted in two hospitals ( Al Batool and AL-Khansaa Teaching Hospitals ) located in Mosul city. The researcher was interested in patients who were undergoing laparoscopic surgery and the nurses who had to take care of these patients. The target population comprised of ward nurses and professional nurses working in the operating theatre and in the surgical wards (56 nurse's sample in AL\_Khansaa and 54 nurses' sample in AL\_Batool maternity teaching hospital located in Mosul city ) undergoing laparoscopic surgery in the two selected government aided hospitals. The actual sample comprised of sixty eight (68) ward nurses, forty two (42) theatre nurses. A structured questionnaires were used to collect data. The researcher gave the questionnaire to 10 homogenous respondents, namely, three (5) If questions warranted changes or even removal this needed to be done so as to make the questionnaire user friendly, valid and reliable. Validity was further attained by submission of the questionnaires to (16) experts like the researcher's who had years of experience with patients undergoing laparoscopic surgery so that it could be ascertained whether the information in the questionnaires were relevant and adequately covered the construct being investigated. Reliability was further enhanced because the researcher tried to keep the circumstances the same when respondents answered the questionnaire so that response errors were minimized and conditions were standardized. Permission was requested from all respondents before the questionnaire was given to them. Moreover, pretesting the questionnaire enhanced the reliability as ambiguities were sorted out and all respondents were able to understand the questions asked. Data analysis was done with the assistance of a statistician. The Statistical Package for Social Sciences (SPSS) version 15 for Windows was used by the Statistician.

<b>Age</b>		
18-27 years	48	43.6 %
28-37 years	31	28.2 %
38-47 years	23	20.9 %
More than 48 years	8	7.3 %
<b>Level of Education</b>		
High school of Nursing	62	56.4 %
Institution of Nursing	14	12.7 %
College of Nursing	34	30.9 %
<b>Experience</b>		
1-10 years	82	74.5 %
11-20 years	11	10.0 %
21-30 years	10	9.1 %
More than 31 years	7	6.4 %

**Table (2): Association of the nurse's answer about knowledge questionnaire.**

Q	Statements	Know	Uncertain	Don't know
		%	%	%
1.	Laparoscopic Surgery is a major surgical operation done to diagnose and treatment of medical problems by use of scope through small opening.	90	18	2
2.	Laparoscope parts is tube, camera and screen.	85	11	14
3.	The Laparoscopic Surgery is done in operation theater.	89	19	2
4.	The Laparoscope is used to diagnose of ovarian cysts and tumors	89	15	6
5.	The Laparoscope is used to diagnose of fallopian tube obstruction	82	15	13
6.	The Laparoscope is used to manage of uterus and ovarian adhesions in cases of infertility	86	14	10
7.	The Laparoscope is used to treat of case of ectopic pregnancy	83	17	10
8.	The Laparoscope is used to managements of cystic fibrosis	84	12	14
9.	The Laparoscope is used in suction of fluid from abdominal cavity	91	12	7
10.	One of major contraindications of Laparoscopic Surgery if pelvic infections	86	15	9
11.	Laparoscopic Surgery cannot be used with existence of intestinal obstructions	84	15	11
12.	Laparoscopic Surgery cannot be used with existence of hernias	90	14	6
13.	Fever and bleeding is complications of Laparoscopic Surgery	84	17	9
14.	Opening site of Laparoscopic Surgery in upper of umbilical	87	14	9
15.	Laparoscopic surgery done under General anesthesia	90	12	8
16.	Laparoscopic Surgery couldn't done with local anesthesia	93	15	2
17.	Without laparotomy one of best advantages of Laparoscopic Surgery	91	15	4
18.	The duration of Laparoscopic Surgery is less than laparotomy	81	15	14
19.	HB, GUE, and X ray is investigation refrain for LS.	81	11	18
20.	MRI and ultrasound examination is required before LS	86	19	5
21.	CO2 is used in LS	81	11	18
22.	O2 is used in LS	94	14	2
23.	H2 is used in LS	82	6	12
24.	Fasting is required in day of LS	85	11	14
25.	Gram is used to identify the site of obstructions in fallopian tube	88	20	2
<b>Chi= 88.104 DF = 48, P-Value = 0.001</b>				

**Table (3): Distribution of the nurse's answer about their practice in an infection control.**

Q	Statements	Always	Sometimes	Never
		%	%	%
1.	Well inform patient about Laparoscopic Surgery	94	13	3
2.	Using Hands washing	91	17	2
3.	Using Gloves	94	15	1
4.	Gown	92	13	5
5.	Cleaning of site of surgery	90	14	6
6.	The instrument is sterile	93	16	1
<b>chi= 8.387 DF = 10, P-Value = 0.412</b>				

**Table (4): Distribution of the nurses' answer about their practice in pre laparoscopic surgery.**

Q	Statements	Always	Sometimes	Never
		%	%	%
1.	The patients well informed about LS	94	12	4
2.	Assured from administrative process	92	12	6
3.	Assured from investigation	92	14	4
4.	Check vital signs	90	15	5
5.	Check body weight	89	18	3
6.	Check the stability of Laparoscope	92	15	3
7.	Hand washing	94	14	2
8.	Gloves	90	18	2
9.	Mask	94	13	3
10.	Cleaning the site of sugary	90	17	3
<b>Chi= 21.829 DF = 24, P-Value = 0.997</b>				

**Table (5): Distribution of the nurses answer about their practice in during laparoscopic surgery**

Q	Statements	Always	Sometimes	Never
		%	%	%
1.	Put patients in Correct position	92	15	3
2.	Sterile the site of surgery	90	15	5
3.	Cover the patients correctly	96	12	2
4.	Insert Cather correctly	90	16	4
5.	Use vaginal dieters	90	15	5
6.	Insert cannula	93	11	6
7.	Monitor the laparoscope	91	14	5
8.	Remove the gas	91	15	4
9.	Suturing the site of surgery	90	15	5
<b>Chi= 4.627 DF = 16, P-Value = 0.942</b>				

**Table (6): Distribution of the nurses' answer about their practice post laparoscopic surgery.**

Q	Statements	Always	Sometimes	Never
		%	%	%
1.	Assessment of patient consciousness	90	17	3
2.	Measure and record of RESP rate	91	14	5
3.	Monitor skin color	92	14	4
4.	Measures of pulse rate	91	15	4
5.	Measure and record of TEMP	92	13	5
6.	BP measurement	94	11	5
7.	Check for nausea and vomiting	89	16	5
8.	Check intake and out put	94	13	3
<b>Chi= 3.294 DF = 14, P-Value = 0.998</b>				

**Table (7): Distribution of the nurses' answer about their patient education laparoscopic surgery.**

Q	Statements	Always	Sometimes	Never
		%	%	%
1.	Advice the patient to take fruits and vegetables	90	17	3
2.	Advice the patient to avoid the heavy objects	91	14	5
3.	Advice the patient for rest and comfort	96	12	2
4.	Advice the patient to avoid sexual course for 15 days	90	15	5
5.	Advice the patient for personal hygiene	90	15	5
6.	Advice the patient for don't remove sutures before 7 days	91	14	5

Chi= 3.350 DF = 10, P-Value = 0.972

## DISCUSSION

Table (1) shows that half of the study sample are from AL-Khansaa Hospital (50.9%). According to the age, the highest percentage was in the age group (18-27 years) (43.6%), and the lowest group are of age (more than 47 years) (8%). According to the level of education the highest percentage is of High school (56.4%) (62), and the lowest is (12.7%) (14). In the relation to their Experience, the highest percentage is (74.5%) for the group of (1-10 years), and the lowest percentage is (6.4%) for the group of (more than 30 years).

Table (2) shows that there is a significant differences between nurses knowledge regarding laparoscopic surgery at p value =0.001. While table (3) shows that (94%) of nurses washed their hands correctly before Laparoscopic Surgery ,(91%) of them gloves totally good ,(92%) of nurses observed the site of operation, (90%) assured that surgical instruments is stylized. Table (4) found that there is significant differences between nurses practice in pre Laparoscopic Surgery at p value = 0.997.

Table (5) presented that there is significant differences between nurses practice during Laparoscopic Surgery at p value = 0.942. In addition, table (6) shows that there is significant differences between nurses practice in post Laparoscopic Surgery at p value = 0.998. Finally, table (6) shows that there is significant differences between nurses practice in patients educations about Laparoscopic Surgery at p value = 0.972.

The research undertaken to highlight important and interesting insights into the nurses' knowledge about laparoscopic surgery conducted at the two Government hospitals in Mosul City. This chapter presents a summary of the findings for top management of the two hospitals concerned. The purpose of this study was also to determine whether nurses were sufficiently knowledgeable to disseminate adequate information about laparoscopic surgery

to patients. The preliminary summary of the findings is initially discussed according to the objectives of the study followed by the conclusion and the tentative recommendations made.

Items 1-4 covered demographic data about of the nurses which included age, level of education and years of experience.

Burns and Grove (2009) define demographic variables as the attributes of the subjects that are measured during the study which are used to describe the sample. Although demographic data are not the focus of the study it was used for analysis purposes where cross tabulations can be conducted to interpret the findings. The all nurses were females and between 26-46 years of age, and the majority of both the theatre and ward nurses had between 6-16 years and more experience in nursing. The nurses were knowledgeable and good knowledgeable about laparoscopic surgery. The majority of them thought that patients were well informed about laparoscopic surgery. The nurses mentioned the post-operative complications, whereas the ward nurses did not mention any complications.

Only a few nurses, regarded laparoscopic surgery as safe. The majority of the nurses indicated it as unsafe as a result of the possible complications which may occur during surgery. The majority of nurses would advise patients to choose laparoscopic surgery whereas they themselves preferred open surgery. This is disconcerting as mixed signals are given to the patients which may lead to anxiety. The majority of nurses knows about the advantages of laparoscopic surgery indicating that there were less complications, less infection of the surgical site, improved Cosmesis and a shorter recovery period. All the nurses agreed that the consent should include conversion to open surgery.

Regarding the importance of preoperative hydration the majority of nurses stated that all or some patients needed hydration but 25.6% of



them indicated they did not know whether hydration was essential for the patients. With regard to the complications of laparoscopic surgery, most nurses expected it to be different and less severe. However, 28.2% of the nurses indicated they did not know. The nurses generally expected patients to have less pain which was attributed to the procedure mainly whilst the other nurses attributed it mainly to the incision. The majority of nurses stated that the infection rate in patients undergoing laparoscopic surgery was lower, but 25.6% theatre nurses indicated they did not know whether the infection rate was higher or lower thereby underscoring their lack of knowledge about laparoscopic surgery.

The majority of nurses' educated patients about health care post-laparoscopic surgery, but some said they did not have the time or did not know which is not acceptable as it is their duty to educate patients.

Regarding recovery and discharge of patients most nurses indicated that they recovered faster and were discharged sooner. However, 30.8% nurses did not know if patients were discharged sooner.

Respondents were asked to define laparoscopic surgery. As illustrated by (90%) of nurses defined laparoscopic surgery as a major surgical operation used to diagnose and manage medical problem through using a small opening. A further of nurses reported that laparoscopic surgery as used for the management of ovarian fibrosis, uterus adhesions, suction of abdominal cavity fluid and treatment of ectopic pregnancy respectively.

As shown in Table, the nurses answered that the most contradictions of LS is the existence of pelvic infection, intestinal obstructions and hernias respectively.

(100%), felt that possible conversion to open surgery should be mentioned in the consent form of a patient undergoing laparoscopic surgery, but only (84%) ward nurses felt it was necessary to give informed consent while (87%) ward nurses did not know what laparoscopic surgery was. The ward nurses as well as the theatre nurses felt this was necessary because with laparoscopic surgery one would expect no pain and small scars unlike open surgery where the incision is big and the pain would be increased and this could cause anxiety to the patient. The ward nurses stated that the consent should include possible conversion to open surgery for the prevention of litigation, adherence to patients' rights charter and the right

to make their own decisions based on the information given and being informed about the possible complications if surgery is open so as to prepare them psychologically. The theatre nurses felt the same way with the proviso that intra-operatively, if problems were encountered the conversion to open surgery would be allowed and the patients would have been informed prior to the surgery taking place.

Rothrock (2007:319) struggles that the potential for conversion to an open approach should be conversed with the patient before surgery and accepted by the surgeon on the consent form.

Phillips (2007:648) confirms that when the ward and theatre nurses were asked about the advantages of laparoscopic surgery, they commented on the smaller incisions, faster post-operative recovery, less surgical site infections, less complications and earlier operation if the surgeon was experienced. The nurses answer shows that the advantages of LS are (65) no complications, (72) local anesthesia, (75) less duration than open surgery.

Rothrock (2007:184) reports that patients undergoing laparoscopic surgery experience less abdominal uneasiness due to the small incision(s), less postoperative problems, less possible for surgical site infections, improved cosmetics, smaller recovery period and quicker return to daily activities. When it came to contraindications, respondents failed to answer suggests that they did not know. Philosphe (2003:30-39) states that no problem how expert the surgeon is, the threat of complications in laparoscopic surgery does exist, like anesthetic difficulties, positioning, nerve injuries, injuries due to insertion of needles and Trocars and intra-operative vascular, bowel and urinary tract injuries from electrosurgical equipment. The author further expands that knowing how to manage these complications is important, but avoiding them is prudent and intelligent preventing heartache for both the patient and the surgeon.

Infection control:

This investigation determined the practice of sterile technique among operating room nurses. This contributed to the growing body of knowledge regarding sterile technique. "Uniforms mask, head cover and proper or suit/attire at all times", "Makes sure that instruments, supplies and linens obtained from stock room have been sterilized and wrapped of sterile package", "Observes asepsis in the preparation of sterile instruments and supplies;

arranges instruments in the field to facilitate handling of instruments”, and “Does surgical scrub from hands up to 2 inches above elbows, always keeping the hands higher than the elbows” were theoretical knowledge on principles of sterile technique necessary to provide safe and effective nursing to their surgical client during the intra operative period. This result is value observing since previous study shown advises that, one of the causes impacting agreement with the standard precautions in any hospital settings is sound knowledge on its concepts and principles.

Luo et al (2010). However, result of this research disagrees with the previous studies conducted among nurses and other clinicians regarding knowledge on aseptic technique and standard precautions in hospital settings. Luo et al (2010) examined nurses in China and found out that only partial had knowledge on the subject matter. Melo et al (2006) investigated nurses in one hospital in Goiania, Brazil, and found that only 75.6% understood the standard precautions as protective measures.

B: preoperative phase:

94% of the nurses answered that they well informed the parents about LS. The questions (90) for the pre-operative phase was answered by both the ward and theatre nurses. The analyses are computed hereunder.

shows whether respondents thought that patients were well informed about laparoscopic surgery. Respondents had to give reasons for their answers. Ward nurses who stated that patients were not informed clarified this statement by stating that the potential complications post-operatively were not explained, whereas the theatre nurses concluded that the patients were not informed because some patients although having signed consent for laparoscopic surgery, questioned the nurse continuously about the procedure. Due to their heavy work load and busy schedules, doctors according to the researcher's observation had the tendency to leave out the finer details when explaining the procedure. Consents are taken on the ward by the doctor and witnessed by the ward nurses whilst the theatre nurses check whether the confirmed consent is present in the patient's file when the patient arrives in the operating theatre unit before surgery is performed. Informed consents according to Pera and Van Tonder (2011:72), has two interpretations, namely, one where the patient has to agree with the informed consent and also has to sign it; and the other which refers to

formal procedures that need to be followed before proceeding with diagnostic and therapeutic procedures.

### **Nurses' instruction to patients on surgical approaches**

The nurses answered that they always provide, post-operative advices to patients. Pertaining to the advice the respondent would give to the patient regarding the surgical approach, Table 4. Confirms that (62%) of the ward nurses and (48%) of the theatre nurses indicated that they would advise their patients to have the operation done laparoscopically. The reasons given by some of the ward nurses for their preference for laparoscopic surgery for the patients were that there would be less complications and reduced infection because it would not be an open wound. The theatre nurses indicated less scarring, faster recovery, less hospital stay and less infection post-operatively. The respondents also believed that the pain post-operatively would be less as compared to open surgery.

### **CONCLUSION**

The study concludes that nurses have good knowledge about the specific post-operative complications of laparoscopic surgery were another concern as they were the ones who had to care for these patients post-operatively. The theatre nurses were better informed than the ward nurses about the intra-operative complications of laparoscopic surgery, but both the nurses did not perceive it as safe. Although they were aware of the advantages of laparoscopic surgery, they still preferred open surgery themselves. This could possibly be attributed to the fact that they were afraid of the many possible intra-operative complications due to the instrumentation and also of advanced technology. The results from this study revealed that the professional nurses who participated in this study were sufficiently knowledgeable about laparoscopic surgery to give adequate information to patients who had to undergo laparoscopic surgery.

### **RECOMMENDATIONS**

The study recommends that nurses should be teach about informed consent taking and the legal implications if not taken correctly and the emphasis on their role and responsibilities during consent taking. This could be done during in-service education. Also, nurses should conduct pre-operative visits for patients undergoing laparoscopic surgery so that any

questions that patients have may be answered to reinforce the doctors' information.

In-service education on laparoscopic surgery must be given to nurses by efficient and skilled doctors as well as experienced nurses. Ward nurses caring for patients undergoing laparoscopic surgery should be allowed to watch these procedures in theatre so that learning takes place at coal face therefore improving quality and holistic care that could be given to the patients. The manufacturers of the instrumentation of laparoscopic surgeries should be invited by hospital management to offer workshops in these Hospitals and the target group should be the ward nurses and theatre nurses. In addition, theatre nurses should also be knowledgeable about the post-operative management of the patient, including the health education given on discharge and provision of contact numbers – this type of information can be included in inservice education sessions. Finally, health education pamphlets for patients receiving laparoscopic surgery can be prepared by nurses with the approval of the chief nurse manager and doctors' approval.

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