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Original Article

Patients' Knowledge and Self-care Practice regarding Laparoscopic Cholecystectomy

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ABSTRACT

Background: Laparoscopic cholecystectomy is the best surgical and least problematic procedure for symptomatic treatment of gallbladder disease worldwide. **The study aimed** to assess patients' knowledge and self-care practice regarding laparoscopic cholecystectomy. **Design:** Descriptive study design was utilized. **Study subjects:** A purposive sample of 100 adult patients was included. **Setting:** The study was done at surgical department at Gastro Intestinal Surgery Center, Mansoura University. **Subject:** The study was included convenient adult patients (n=100) who are available during the time of data collection. **Tools:** Two tools were used; Tool I Structure interview questionnaire and Tool II Patients' self-care practice checklist. **Results:** The current study reported that almost of patients had unsatisfactory knowledge and self-care practice level about laparoscopic cholecystectomy. **The study concluded** that studied patients needed to be provided with educational guidelines to improve patients' knowledge and self-practice. **Recommendations:** Providing training programs and periodical follow up for improving patients' knowledge and skills.

Key words: laparoscopic Cholecystectomy, Patients' Knowledge and Self-care Practice

Introduction:

Gallbladder disease is one of the most common conditions in the United States. It affects approximately 20 million people and about 10%-20% of Americans have gallstones and as many as one third of these people develop acute cholecystitis**.** Annually about 300,000 of patients who complained of cholelithiasis and cholecystitis, have cholecystectomy procedures and 80% to 90% of them are candidates for laparoscopic cholecystectomy **(Wang, & Afdhal, 2021)**.

Cholecystitis is inflammation of the gallbladder and often occurs as a result of obstruction of the small intestine, resulting in retention of bile. Cholesterol and bilirubin remain in the gallbladder, where they harden and form gallstones that settle in the bile ducts, causing backups. As a result, the gallbladder can become inflamed (**Merck Manual Professional Edition, 2022)**.

Some predisposing factors make a person more susceptible to cholecystitis. These factors include female sex, pregnancy, hormonal therapy, older age, obesity, family history, diabetes and losing or gaining weight. Cholecystitis is commonly caused by gallstones that block the cystic ducts (**Ferri, 2022).** Additionally, infection from other diseases as certain viral infections can develop gallbladder inflammation. Also, diseases that decrease blood flow to gall bladder as diabetes mellitus leading to cholecystitis **(Jones, Genova, & O'Rourke, 2020).** Laparoscopic cholecystectomy can be performed using a medical device called a laparoscope. It is a surgical procedure that takes a short time, about 1-2 hours, and is considered to have the best results and least complications. It does not require a long recovery period. Also, it is considered better in terms of wound healing, less pain and bleeding, and better cosmetic results than open cholecystectomy (**Borzellino, Khuri, & Pisano, 2021)**.

The indications of laparoscopic cholecystectomy include cholecystitis, symptomatic cholelithiasis, biliary dyskinesia, Acalculous cholecystitis, gallstone pancreatitis, gallbladder polyps, porcelain gallbladder and patients who require extreme caution as pregnant women and elderly **(Hassler et al., 2020).** Also, it is contraindicated for patients can't tolerate general anaesthesia, uncontrolled coagulopathy, portal hypertension, peritonitis, sepsis, patients with sever obstructive pulmonary disease, liver cirrhosis, congestive heart failure and gallbladder cancer (**American College of Surgeons, 2020).**

Patient education is a vital item of nursing care. It usually has a great impact in decreasing complications, side effects and improving patients' condition. The patients need to know the right way of home self-care. Nurses are responsible for teaching the patients self-care after hospitalization discharge. They must be qualified enough to

provide the education that will satisfy the patients' needs. They should have the ability to overcome problems and barriers that may face them in the patient educational process **(Vaccari, Cervellera, & Lauro, 2020).**

Aim of the study:

It aimed to assess patients' knowledge and self-care practice regarding laparoscopic cholecystectomy.

Methodology:

Research Design: Descriptive study design was utilized.

Setting: This study was carried out in the surgical department of Gastrointestinal Center, Mansoura University Hospital, Dakahlia Governorate, Egypt.

Subject of the study: A purposive sample of 100 adult patients of both sexes.

Tools: Two tools were used in this study for data collection.

Tool 1: Patients' Interview questionnaire Sheet.

This tool was developed based on literature review and considered of two parts:

Part 1: Socio-demographic characteristics of studied patients

It used for assess personal data of the study sample including gender, age, marital status, education level, residence and working status.

Part 2: Patient's Medical History:

It was used to assess past and present medical history of the patients and their families including disease onset, manifestations, current medication, presence of chronic disease and family history.

Part 3: Patient's knowledge questionnaire sheet:

It included of 13 questions in the form of closed ended questions. It was used to assess patients' information regarding to cholecystitis as definition, causes, predisposing factors, signs and symptoms. It also discussed laparoscopic cholecystectomy as (definition, difference between open and laparoscopic cholecystectomy, investigations, pre-procedure perpetrations, complications, hospital stay, post-operative warning signs, and post-operative care. **The scoring system's** answers were: Each correct answer received one mark, while an incorrect answer received a zero. These scores were converted into a percentage, and divided into two groups including ssatisfactory level at total grade ≥75% and un-satisfactory level at total grade <75%.

Tool II: Patients' self-care practice checklist:

It was used for assess patients' care skills undergoing laparoscopic cholecystectomy which included of (8) sub main parts covering all laparoscopic cholecystectomy care and these parts consisted of (47) items. It was discussed wound care, pain management, deep vein thrombosis prophylaxis, breathing exercise, diarrhea, nausea, and vomiting control.

The scoring system's answers were: Each correct answer received one mark, while an incorrect answer received a zero then summed, turned into a percentage, and divided into two sections including satisfactory including ssatisfactory level at at total grade ≥75% and un-satisfactory level at total grade <75% of total practice score.

ata collection:

Stage I: Preparatory stage:

- **Administrative Design:** The study was approved by the Research Ethics Committee, Faculty of Nursing, Mansoura University. A director of Gastro intestinal Center, Mansoura University Hospital given the researcher an official written permission to conduct the study.
- **Validity:** The research tools were tested for validity by a commission of five experts; two professors and three assistant professors from Faculty of Nursing, Mansoura University. They analyzed the tools for purity, importance, inclusiveness, applicability, simplicity. Some adjustments were performed related to their propositions and commentaries.
- **Reliability:** The questionnaires were tested and demonstrated good reliability through the Cronbach's Alpha test to be (α = 0.913, 0.893 & 0.886 respectively) and they were considered "very good".
- **Pilot study:** The study was done on ten patients. They were selected randomly from all available patients in the surgery department in order to ensure the clarity and the extent to which it can be applied. Modifications were done based on pilot study results. Patients that were selected were excluded from the study subject.

Stage II: pursuance stage (Implementation stage):

The researcher interviewed each patient individually and provided a simplified and brief overview of the subject and purpose of the study after obtaining verbal consent to gain their

participation in the study. Data collection was within the time plan of their operation time on the day of the admission as the patient entered to the **hospital** the day before the operation and discharged the second day. The researcher was present all the time while, the patient filled the questionnaire sheet. It took between 20- 30 minutes and was performed in the surgical department. It took three months from mid-May to mid- August 2022. The patient's information and self-care practice was assessed through tool I part 2 and tool.

Ethical consideration:

The study was approved by the Research Ethics Committee, Faculty of Nursing, Mansoura University. A verbal informed consent was taken from the studied patients before starting data collection. The confidentiality of the collected data was emphasized, while giving the patient the choice to accept or to refuse to be included in the study.

Statistical analysis:

Data were entered and analyzed using IBM-SPSS software (IBM Corp. Released 2020. IBM SPSS Statistics for Windows, Version 27.0. Armonk, NY: IBM Corp). Quantitative data were initially tested for normality using Shapiro-Wilk's test with data being normally distributed if $p>0.05$. Quantitative data were expressed as mean and standard deviation.

Results

Table (1) shows that, sixty-four percent of the studied patients were females and most of them were married (78%). Regarding the age, 50% patients were aged between 30 to < 40 years. As regard the level of education, slightly less than two-third of them (61%) had intermediate education level. Two-third of the studied patients had an active work status (66%).

Table (2) shows that the majority of the studied patients (91%) complained of severe right upper quadrant pain. Slightly less than two-third of them complained of nausea, vomiting (62%) and fever (61%) while the lowest percentage of them (15%) complained of jaundice.

Figure (1) reveals that more than half of the studied patients (53%) had chronic diseases. Cardiovascular and endocrine diseases were the most common (32% & 24% respectively) while the lowest rate was (4%) for each of orthopedic, renal and respiratory diseases. Furthermore, 22% of the studied patients had a surgical history particularly orthopedic surgery (11%).

Figure (2) illustrates total patients' knowledge levels. It was noted that the majority (87%) of studied patients had unsatisfactory knowledge level.

Figure (3) illustrates total patients' self-care practice levels. It was noted that the majority (95%) of studied patients had unsatisfactory self-care practice level compared with only (5%) of patients had satisfactory level.

Table (1): Personal characteristics of the studied patients (n=100).

Characteristic	N	%
Sex		
▪ **Male**	36	36%
▪ **Female**	64	64%
Age group (years)		
▪ **20 > 30**	21	21%
▪ **30 > 40**	50	50%
▪ **40 > 50**	19	19%
▪ **50 > 6٠**	10	10%
Education level		
▪ **Illiterate**	22	22%
▪ **Intermediate education**	61	61%
▪ **University education**	16	16%
▪ **Postgraduate**	1	1%
Marital status		
Single	22	22%
Married	78	78%
Occupation		
▪ **Working**	66	66%
▪ **Not working**	34	34%
Residence		
▪ **Rural**	55	55%
▪ **Urban**	45	45%

Notes Data is count (N) and percentage (%)

Table (2): Distribution of the studied patients related to their complaints.

Characteristic	N	%
▪ Severe right upper quadrant pain	91	91%
▪ Fever	61	61%
▪ Nausea and vomiting	62	62%
▪ Abdominal distension (bloating)	59	59%
▪ Jaundice	15	15%
▪ Fatigue	32	32%

Notes Data is count (N) and percentage (%)

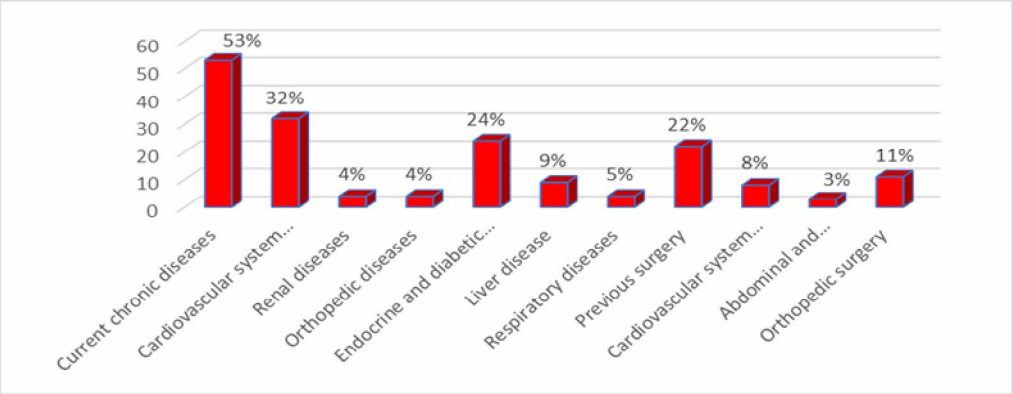

Figure (1): Distribution of the studied patients related to medical data (chronic diseases and previous surgeries).

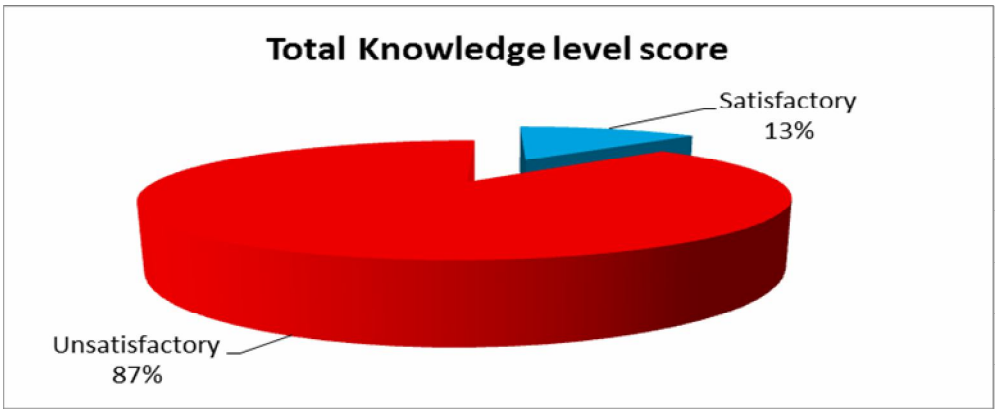

Figure (2): Total Patients' knowledge level regarding laparoscopic cholecystectomy.

Figure (3): Total Patients' Self-care practice Level Regarding laparoscopic cholecystectomy.

Discussion

Laparoscopic cholecystectomy is the gold standard surgical treatments for gallbladder diseases. Even though it is considered very safe, there may be some complications. Some of these complications can be avoided by teaching patients' post-operative self-practice in order to improve outcomes (**Nitta, Kataoka, & Ohta, (2020)**. Therefore, patient education is an effective element of modern health care. Nowadays, providing patients with enough knowledge and proper self-care techniques is a one of the very important roles for nurses. Nurses should be able to assess patients' needs, diagnose of the problems, set a plan to solve them and involve the patient in his rehabilitation plan (**Abbasnia et al., 2023)**.

The study findings revealed that the majority of studied patients were females. This is in harmony with the study of **(Magdaleno, Tarragó, & Casas, 2018)**. The female predominance in calculous cholecystitis may be due to several reasons; including hormonal changes, repeated pregnancies, open appetite, and lack of adherence to a healthy diet. On the contrary to **Li et al., (2021)** who showed that most of the study sample was male.

Additionally, it was noticed that most of studied patients were married and has an active work status and this is similar to the results of (**Toğaç, & Yılmaz, 2021)**. study. This result may be due to the rapid rhythm of life, which urges work, including spending most of their time outside the home and relying on eating fast food that can lead to overweight and hormonal disturbances. As regards age groups, half of the patients included in the study aged from 30 to less than 40 years. This comes in agreement with (**Maarof et al., 2023)** study who showed that most of patients ages ranged between 34 to 48 years. Nevertheless, (**Toğaç, & Yılmaz, 2021)** reported that the average age of the study patients was 48.6, years and older which is inconsistent with our study.

Regarding the education, above two-third of study sample had intermediate educational level while nearly one-thirds was illiterate. Although this was in line with (**Maarof et al., 2023)** study, this contradicts the study conducted by (**Nyundo, Kayondo, & Gasakure, 2023)** which showed that most of their patients included in the study were university graduates.

Concerning the patients' complaints, it was noticed that the majority of patients in this study complained of pain in the right upper quadrant of the abdomen, nausea and discomfort followed by abdominal bloating. These findings were supported by (**Ouyang, Zhang, & Cao, 2023)** who reported that most of their patients suffered from biliary colic. Additionally, this study showed that jaundice had the lowest percentage compared to other symptoms and this was in contrary with (**Weledji, Ndono, & Zouna, 2021)** who reported that mild to moderate jaundice was frequently seen in patients with acute cholecystitis.

According to the patient medical history, cardiovascular diseases, diabetes mellitus and endocrine disorders were the most common reported chronic diseases. This is close to (**Taki-eldin & Badawy, 2018)** results who reported diabetes mellitus in most of their study sample. They also reported that coronary artery and valvular heart diseases were the least common, however, our study stated that orthopedic and renal diseases were the least reported ones. Finally, it was found that patients who have a highly satisfactory level of knowledge and practice were very low according to total numbers of patients and this is similar to **(Elmongy, Shebl, & Abo Bakr, 2018)**.

Conclusion:

The results of this study shown that, there is a need to provide patients with educational guidelines and practice regarding laparoscopic cholecystectomy and it is necessary to keep them up to date with new and rapidly growing knowledge and practice.

Recommendation

A simple and comprehensive health education guideline should be provided to patients and should be clearly explained.

Patients' evaluation for their information and skills periodically to identify the training programs effectiveness.

It is recommended that further research be conducted to evaluate the impact of health education guidelines for laparoscopic cholecystectomy and their outcomes over a large geographic area.

References:

Abbasnia F., Aghebati N., Miri H., & Etezadpour M. (2023). Effects of Patient Education and Distraction Approaches Using Virtual Reality on Pre-operative Anxiety and Post-operative Pain in Patients Undergoing Laparoscopic Cholecystectomy. Pain Manag Nurs; 24(3):280-288.

American College of Surgeons. (2020). Cholecystectomy. https://www.facs.org/education/patient-education/patient-resources/operations

Borzellino G., Khuri S., & Pisano M, et al. (2021). Timing of early laparoscopic cholecystectomy for acute calculous cholecystitis: a meta-analysis of randomized clinical trials. World J Emerg Surg ; 16:16.

Elmongy ME., Shebl AM., & Abo Bakr HM. (2018). Impact of Pre- Admission Education on Recovery Period Following Laparoscopic Cholecystectomy. Master Thesis, Nursing Faculty, Alexandria University.

Ferri. (2022). Cholecystitis. In: Ferri's Clinical Advisor. https://www.clinicalkey.com.

Hassler KR., Collins JT., Philip K., & Jones MW. (2020). Laparoscopic Cholecystectomy. (https://www.ncbi.nlm.nih.gov/books/NBK448145/).

Jones MW., Genova R., & O'Rourke MC. (2023). Acute Cholecystitis. National Library of Medicine. PMID: 29083809.https://www.statpearls.com/as/gastrointestinal/19448/) StatPearls.

Li S., Bai J., Wei W., Liu X., & Shen Y. (2021). Effect of systematic nursing on the stress response and recovery of gastrointestinal function in patients undergoing laparoscopic cholecystectomy. Am J Transl Res;13(8):9647–9654.

Maarof SR., Ahmad CA., Atkins L., Devol EB., & Hussain A. (2023). The effects of listening to the Qur'an in the postoperative management of the patients undergoing laparoscopic cholecystectomy in the day surgery unit. J PeriAnesthesia Nurs.;38(1):58-62.

Magdaleno HS., Tarragó AC., & Casas CO, et al. (2018). Evaluation of the impact of preoperative education in ambulatory laparoscopic cholecystectomy. A prospective, double-blind randomized trial. Cirugía Española (English Ed ;96(2):88-95.

Merck Manual Professional Version. (2020). Postoperative Care. (https://www.merckmanuals.com/professional/special-subjects/care-of-the-surgical-patient/postoperative-care).

Nyundo M., Kayondo K., & Gasakure M., et al. (2023). Patient-reported outcome, perception and satisfaction after laparoscopic cholecystectomy in Kigali, Rwanda. *Surg Open Sci*. Published online 2023.

Nitta T., Kataoka J., & Ohta M, et al. (2020). Laparoscopic cholecystectomy for cholecystitis using direct gallbladder indocyanine green injection fluorescence cholangiography: A case report. Ann Med Surg ;57:218-222.

Ouyang B., Zhang L., & Cao Y, et al. (2023). Laparoscopic Cholecystectomy Based on Laennec Approach via the Cystic Plate with Lymphadenectomy in Calot's Triangle for Gallbladder Neoplasms: initial experience and technical details.

Taki-Eldin A., & Badawy AE. (2018). Outcome of laparoscopic cholecystectomy in patients with gallstone disease at a secondary level care hospital. ABCD Arq Bras Cir Dig (São Paulo) ;31(01):e1347.

Toğaç HK., & Yılmaz E. (2021). Effects of preoperative individualized audiovisual education on anxiety and comfort in patients undergoing laparoscopic cholecystectomy: randomised controlled study. Patient Educ Couns;104(3):603-610.

Vaccari S., Cervellera M., & Lauro A, et al. (2020). Laparoscopic cholecystectomy: which predicting factors of conversion? Two Italian center's studies. Minerva Chir;75:141-152. 10.23736/s0026-4733.20.08228-0.

Wang DH., & Afdhal NH. (2021). Gallstone disease. In: Feldman M, Friedman LS, Brandt LJ, eds. Sleisenger and Fordtran's Gastrointestinal and Liver Disease. 11th ed. Philadelphia, PA: Elsevier;chap 65.

Weledji EP., Ndono DN., & Zouna F. (2021). A case of obstructive jaundice without biliary stones in a low resource setting. Clin Case Reports; 9(6):e04163.