

Proposed Protocol for Health Needs Management among Patients Having Day Case Laparoscopic Cholecystectomy Surgery

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Abstract

Aim: This study aimed to propose a protocol for health needs management among patients having day case laparoscopic cholecystectomy (LC) surgery . **Subjects and Method :** A descriptive exploratory design was utilized for the conduction of this study in the Outpatients` Clinics and Surgical Departments at El- Demerdash Hospital affiliated to Ain Shams University and Naser Institute Hospital affiliated to Health Insurance . A purposive **sample** of 120 adult and old age patients involved from both genders having laparoscopic cholecystectomy surgery and were taken from the above mentioned settings . **Tools** of data collection: 1) Patients' interviewing questionnaire (pre surgery) to determine patients' health needs regarding day case laparoscopic cholecystectomy surgery . 2) An observation checklist (pre surgery) to evaluate studied patients' practices in relation to care activities of laparoscopic cholecystectomy surgery and care given for them morning of the surgery. 3) Numerical pain scale (pre surgery) to assess pain severity level. 4) Hamilton's anxiety rating scale (pre surgery) to determine patients' levels of anxiety. **Results:** More than half of the studied patients were female, married and with secondary education. Moreover, they had higher health needs added to elevated pain and anxiety levels pre surgery at both hospitals . **Conclusion :** On light of the current study results , it can be concluded that more than two thirds of the studied patients had physical, psychological, social, spiritual and educational health needs pre surgery with a statistically insignificant differences between both studied hospitals . Furthermore, less than one third of them had satisfactory level of practices in care activities of LC surgery added to , lower level of care given morning of the surgery . **Recommendations :** Further research study should be done to implement and investigate effect of such proposed protocol for LC surgery on reducing incidence of complications post surgical technique .

Key words: Day case laparoscopic cholecystectomy - Patients' health needs management - Proposed protocol.

Introduction

Gallstones diseases represent the major cause of morbidity and mortality throughout the world. Cholecystectomy is

the treatment of choice for symptomatic gallstones, because it removes the organ that contributes to the formation of gallstones, so preventing further complications. Laparoscopic cholecystectomy (LC) is the golden

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standard approach for benign gallbladder disease requiring surgery, added to its feasibility as a day case procedure. It require only a small wound which causes relatively less pain, allows for early ambulation, shorter hospital stay , early return of intestinal movement and lower occurrence of incision hernia (**Ahi kuldip et al., 2017 & Sellbrant et al., 2015 & Sato et al., 2014**) .

In the US, more than 800.000 cholecystectomies are performed each year, in 90% of these patients the operations were done laparoscopic ally. In developed countries, about 10% of adults and 20% of people over 65 yr have gallstones. The prevalence of gallstone disease differs not only between countries but also between ethnic groups, added to age and gender (**Singh et al., 2017 & Neylan et al., 2016**) . According to statistical department at El – Demerdash surgical Hospital in Cairo **2016**, the incidence of LC procedures were approximately 1600 through this year.

The most common complications of cholecystectomy are bleeding and wound infection. In some procedures, the bile duct is injured and can result in bile leakage into the abdomen which may require a separate procedure for repair. Gallstones can develop in the bile long after Cholecystectomy requiring endoscopic retrograde cholangiopancreatography to remove them. Some individuals may develop chronic diarrhea after gallbladder removal

((**Bowling et al., 2017, Mostafa, 2014 & Phillips et al., 2012**).

The needs were defined as ‘the requirements of individuals to enable them to achieve, maintain or restore an acceptable level of social independence or quality of life. The World Health Organization (WHO) defined health as a “state of complete physical, mental and social wellbeing not merely the absence of disease or infirmity”. This definition indicates that it is not only the physical needs of ill patients that need to be addressed but also their psychological, social, spiritual, and environmental needs . Needs assessments are required to guide care planning in part because many patients do not communicate concerns to their clinicians. In addition, it provides a rich opportunity to more fully understand experiences of the patients. Moreover, careful assessment of patients’ needs is central to the whole process of providing care (**Dewit et al., 2016 and Hinkle & Cheever, 2014**) .

Patients with LC are affected physiologically, psychologically and socially by the negative way, so it is important for such patients to assess their needs for improving the quality and value of the care for them. These needs include: physical (activities of daily living, physical preparation, correct diet and exercises), Psychological (reducing anxiety, fear from pain and complications and information about emotional health lifestyle), Social (increase social

activities, work adjustment, positive coping and social support), spiritual (satisfaction, increase religious activities and motivation) and educational (information about surgical technique, investigations and treatment, postoperative pain management, control of postoperative side effects, complications management, wound care, follow – up and self- care post discharge) (Lewis et al., 2014 , Tao et al., 2012 & Marks et al., 2011).

Significance of the study:

Today, day-case LC is motivated in part by the drive to contain healthcare costs and relieve the strain on inpatient hospital beds. Indeed, many studies have documented the safety and feasibility of day-case LC in selected patients. Day surgery includes concepts of care other than immediate discharge of patient after initial recovery from the anesthesia. It is becoming increasingly common throughout the world. A combination of new developments in surgical technique and technology, changes in hospital resources allocations and patient demands for quicker, added to more effective treatments have placed day surgery at the forefront of modern patient management. Moreover, patients want treatment that is safe, efficient and effective and which provides the least possible disruption to their lives, so day surgery gives these patients -focused care. Patients' needs assessment has a positive effect by improving staff nurses' perception toward

the care, helping to collect subjective data, building a trusting relationships with patient and coordinate the work with other health team members (Ahi kuldip et al., 2017 & Ramez et al., 2014).

Aim of the Study:

This study aimed to propose a protocol for health needs management among patients having day case laparoscopic cholecystectomy (LC) surgery. This aim was achieved through the following:

- Identifying the health needs of studied patients pre surgery which included : Physical , psychological, social, spiritual and educational.
- Assess the practices of studied patients as regards the surgery.
- Assess the care given for the studied patients morning of the surgery
- Assess studied patients` pain and anxiety levels

Research questions:

- What are the health needs among patients having day case laparoscopic cholecystectomy (LC) surgery?
- What are the practices of studied patients as regards the surgery?
- What are the cares given for

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studied patients morning of the surgery?

Institute Hospital affiliated to Health Insurance Hospitals.

- What are the level of pain and anxiety among the studied patients?

Subjects:

A purposive sample of (120) adult and old age patients from both genders having laparoscopic cholecystectomy (LC) surgery and were selected according to the sensitive analysis in relation to the number of patients with LC within the year 2016 in the previous settings, according to the statistical department which affiliated to the settings . They were recruited from the above mentioned settings as follows:

- Patients were taken from El - Demerdash Hospital (n = 60).
- Patients were taken from Naser Institute Hospital (n = 60).

2. Subjects and Methods:

Operational definitions:

Having: means pre surgery (patients listed to surgery up to morning of the surgery)

Patients' needs: means physical, psychological, social, spiritual and educational needs.

Day case surgery: means performance of a surgical procedure that occurs without overnight admission of the patient prior to or following the intervention.

Protocol: Is a set of "Rules" and "Regulations" for sending and receiving Information, by using the standard protocols.

Research design:

A descriptive exploratory design was utilized to conduct this study.

Setting:

The present study was conducted in the Surgical Outpatients` Clinics and Surgical Department at El Demerdash Hospital affiliated to Ain Shams University Hospitals and Naser

Inclusion criteria:

- Conscious adult and old age patients who need laparoscopic cholecystectomy surgery and with the same management protocol
- No gallstone complications (e.g. obstructive jaundice and pancreatitis)
- No history of prior abdominal surgery causing dense scar tissue,
- No severe obstructive pulmonary disease or congestive heart failure which may not tolerate carbon

dioxide

- No co-morbid conditions
- Accept to participate in the study.

Tools of data collection:

1- Patients' interviewing questionnaire (pre surgery) , that was designed by the researchers after reviewing the related literature and consulting the experts to determine patients' health needs regarding day case laparoscopic cholecystectomy (LC) surgery. It was written in simple Arabic language and divided into the following parts:

- Characteristics of the study subjects namely age, gender, marital status, income, educational level and smoking.

- Patients' medical records to identify past, present medical and surgical history, diagnosis, investigations and treatment.

- Patients' needs assessment sheet , it composed of the following items:
Physical needs including: Resuming physical activities, follow prescribed diet, perform exercises, maintain hygienic measures, sufficient sleeping hours and relieving tiredness.

Social needs including: Increasing social support/ relations, encourage recreational activities, sexual activity

changes, work adjustment, assistance with traveling / transferring, and decrease financial burden).

Psychological needs including: Reducing anxiety, sense of safety and security, coping with health conditions, health education, and positive insight toward the surgery.

Spiritual needs including: Feeling of usefulness, increasing satisfaction, improving religious practices, positive vision for the future and sense of inner peace

Educational needs including: Definition, causes of cholecystitis, signs and symptoms of cholecystitis, management , advantages of laparoscopic cholecystectomy, health education and discharge instructions

Scoring system:

Answers of the studied Patients' regarding the presence of their needs (scored as two marks) or absence (scored as one mark), were categorized into either yes or no. The total items of patients needs = 37 item, whereas absence of the needs were considered from (1– 37) and presence of the needs from (37 – 74).

II - An observation checklist (pre surgery)):

It was adopted from (Lewis et al., 2014 , Gurusamy et al., 2013 & Saad, 2012) , developed and filled by the researchers to evaluate :

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- Studied patients' practices in relation to care activities of LC pre surgery (wound care, ambulation, pain relieve, position, hygiene, physical activities, breathing , coughing and extremity exercises.
- Care given for the studied patient's morning of the surgery (medications, physical preparation and investigations).

Scoring system:

A correct practice was scored as (1), while the incorrect (zero). It was scored into either inadequately done (less than 70%) or adequately done (70% and more).The total score was categorized as satisfactory = 70 – 100, or unsatisfactory = less than 70.

III- Numerical pain scale: (pre surgery). It was based on Jacques (2011) to measure pain severity. It was composed of a line divided by numbered points from (0-10). Patients' responses were classified as follows: no pain (zero), mild pain (0 - less than 4), moderate pain (4-less than 7) and severe pain (7 - 10).

IV. Hamilton's Anxiety Rating Scale (pre surgery): It was developed by Hamilton (1959) and modified by the researchers. This scale formed of thirteen variables: anxious mood, tension, insomnia, cognitive changes, depression, somatic (sensory), cardiovascular, respiration, gastrointestinal,

genitourinary, autonomic symptoms, somatic (muscular) and the behavior at the interview.

Scoring system:

Answers were (0-3) scores and total score ranged from 0-39, the following categorization were adapted: no anxiety (zero), mild anxiety (0 - less than 23), moderate anxiety (23 - less than 29) and severe anxiety (29 - 39).

Validity and reliability:

Content validity was ascertained by a group of experts from General Surgery, Medical– Surgical Nursing and Community Health Nursing. Their opinions were elicited regarding to the tools format layout, consistency and scoring system. Contents of the tools were tested regarding to the knowledge accuracy, relevance and competence. In addition, content validity was done also for the proposed protocol to test its consistency, accuracy, applicability, relevance and feasibility.

Testing reliability of patient's needs items was done using alpha cronbach test: Physical needs = 0.92, social needs = 0.87, psychological needs = 0.89, spiritual needs = 0.84 and educational needs = 0.92.

Testing reliability of the observation checklist items was done using alpha cronbach test = 0.87.

Testing reliability of numerical pain scale using alpha cronbach test = 0.81 and Hamilton's anxiety rating scale = 0.83.

Ethical considerations:

In the planning stage approval was obtained from directors of the above mentioned setting. All patients were informed about the study and their rights according to medical research ethics that they were free to decide whether or not they would participate in the study. Then a written informed consent was obtained from each patient who agreed to participate in the study.

Pilot study:

A pilot trial was carried out on 10% of the total study sample to test the clarity and practicability of the tools, in addition to subjects and settings. Pilot subjects were later included in the study as there were no radical modifications in the study tools .

Procedure:

- Sampling was started and completed within 6 months.
- The study purpose was simply explained to the patients who agreed to participate in the study prior to any data collection .
- The researchers started to collect data from the studied patients in the Outpatients` Clinics and Surgical Departments using the pre

constructed tools as follows: .

- On the same day of diagnosis pre surgical technique when patients came to the out patients` clinics using (needs assessment sheet and psychometric assessment sheet, added to an observation check list to assess patients` practices regarding LC surgery).
- On day of the surgery using an observation check list to assess care given for patients (morning of the surgery).
- Filling in the tools was done by the researchers according to the patients' understanding and health condition.
- Data were collected by the researchers 2 days/ week at the morning shifts .
- All patients were assessed individually using the previously mentioned study tools according to their physical and mental readiness.
- The proposed protocol was designed based on analysis of the actual patients' needs assessment and their practices level by using the pre constructed tools.
- Content of the proposed protocol was consistent with the related literatures (national and international).
- The proposed protocol covering the

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following items: patients' assessment, care pre-surgery, morning care of the surgery.

- Testing validity of the proposed tools using face and content validity.

Statistical Design:

The data collected were organized, sorted, tabulated and analyzed using Statistical Package for Social Sciences (SPSS). They were presented in tables and charts using numbers, percentages, means, standard deviations and T – test. Level of significance was threshold at 0.05.

Results:

Table (1): Reveals characteristics of patients under study. Findings indicated that more than half of them had the age above 40 years , married from urban area and male (65.8, 60.0 , 57.5 & 54.2 respectively) . Concerning body mass index (BMI) and education , about one fifth of them were overweight and with university education (20.8 & 18 .4 respectively). Regarding the job, more than two thirds (70.0) of the study patients were working.

Table (2): Clears physical needs pre surgery. Studied patients with LC surgery had higher needs with a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital

(49.5± 6.1 & 49.8±5.8 respectively) with $t = 0.3, p > 0.05$. Moreover, reliving tiredness and resuming physical activities were representing the highest percent.

Table (3): Shows psychological needs pre surgery. Studied patients with LC surgery had higher needs with a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital (49.8± 3.3 & 50.0±2.8 respectively) with $t = 0.4, p > 0.05$. Moreover, anxiety reduction and sense of safety and security were representing the highest percent.

Table (4): Clarifies social needs pre surgery. Studied patients with LC surgery had higher needs with a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital (47.3±3.8 & 47.3±4.5 respectively) with $t = 0.13, p > 0.05$. Moreover, work adjustment and financial burden were representing the highest percent.

Table (5): Reveals spiritual needs pre surgery. Studied patients with LC surgery had higher needs with a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital (45.6±2.9 & 45.5±3.4

respectively) with $t = 0.2$, $p > 0.05$. Moreover, increase satisfaction and sense of inner peace were representing the highest percent.

Table (6): Reveals educational needs pre surgery. Studied patients with LC surgery had higher needs with a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital (43.3 ± 6.9 & 43.7 ± 6.7 respectively) with $t = 0.3$, $p > 0.05$. Moreover, signs and symptoms of infection and cholecystitis treatment were represent the highest percent.

Table (7): Shows satisfactory practices for LC care pre surgery. Studied patients had lower level with a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital (13.8 ± 2.6 & 13.8 ± 3.4 respectively)

with $t = 0.4$, $p > 0.05$. Moreover, bathing and hygienic techniques were representing the highest percent.

Table (8): Reveals satisfactory care given morning of the surgery for studied patients. There was a statistically insignificant difference between both hospitals, whereas mean number of Naser Institute Hospital was near to El – Demerdash Hospital (13.8 ± 2.6 & 13.8 ± 3.4 respectively). Moreover, about two fifths of them had physical preparation (38.3 & 40.0 respectively) and less than one third of them had psychological preparation (26.7 & 25.0 respectively).

Figure (1): Clarifies studied patients' anxiety and pain levels at two hospitals. Concerning pain and anxiety levels, 66.6 of them had severe pain and 74.2 had severe anxiety. In addition, minority of them had mild level of pain and anxiety (9.2 & 10.8 respectively).

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Table (1): Characteristics of patients under the study (n=120)

Items	No	%
Age / yrs		
≤ 40 years	41	34.2
>40 years	79	65.8
Gender		
Male	65	54.2
Female	55	45.8
Marital status		
Single	48	40.0
Married	72	60.0
BMI		
Under weight (<18.5kg)	67	55.9
Normal weight (18.5 – 25 kg)	28	23.3
Over weight (>25)	25	20.8
Residence		
Urban	69	57.5
Rural	51	42.5
Education		
Illiterate/ Primary	61	50.8
Secondary	37	30.8
University	22	18.4
Job		
Not working	36	30.0
Working	84	70.0

Table (2): Presentation of physical needs among studied patients at both hospitals (n=120)

Items	Patients			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Resume physical activities	51	85.0	52	86.7
Follow prescribed diet	55	91.6	54	90
Perform exercises	49	81.7	50	83.3
Maintain hygienic measures	50	83.3	49	81.7
Sufficient sleeping hours	38	63.3	39	65
Relive tiredness	54	90.0	55	91.6
Mean No ± SD	49.5± 6.1		49.8±5.8	
% of Mean	82.5		83.0	
T – test value	T = 0.3 , p > 0.05			

* Insignificant at $p > 0.05$

Table (3): Presentation of psychological ` needs among studied patients at both hospitals (n=120)

Items	Patients			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Anxiety reduction	54	90.0	55	91.7
Sense of safety and security	52	86.7	51	85.0
Coping with health conditions	50	83.3	48	80.0
Health education	47	78.3	49	81.7
Positive body image	45	75.0	47	78.3
Positive insight toward surgery	51	85.0	50	83.3
Mean No ± SD	49.8± 3.3		50.0±2.8	
% of Mean	83.0		83.3	
T – value	T = 0.4 , p > 0.05			

* Insignificant at $p > 0.05$

Table (4): Presentation of social ` needs among studied patients at both hospitals (n=120)

Items	Patients			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Increase social support/ relations	44	3.3	43	71.6
Increase recreational activities	45	75.0	46	76.7
Sexual activity changes	49	81.7	48	80.0
Work adjustment	52	86.7	53	88.3
Assistance with traveling/transferring	43	71.6	42	70.0
Financial burden	51	85.0	52	86.7
Mean No ± SD	47.3±3.8		47.2±4.5	
% of Mean	78.8		78.7	
T – value	T = 0.13, p > 0.05			

* Insignificant at $p > 0.05$

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Table (5): Presentation of spiritual needs among studied patients at both hospitals (n=120)

Items	Patients			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Feeling of usefulness	46	76.7	45	75.0
Increase satisfaction	48	80.0	50	83.3
Improving spiritual practices	45	75.0	43	71.7
Positive vision for future	41	68.3	40	66.7
Sense of inner peace	48	80.0	49	81.7
Mean No ± SD	45.6±2.9		45.5±3.4	
% of Mean	76.0		75.8	
T – value	T = 0.2, p > 0.05			

* Insignificant at $p > 0.05$

Table (6): Presentation of educational needs among studied patients at both hospitals (n=120)

Items	Patients			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Definition / Causes of cholecystitis	44	73 .3	43	71.7
Sings /Symptoms of cholecystitis	41	68 .3	42	70.0
Treatment of cholecystitis	51	85 .0	52	86.7
Advantages of laparoscopic cholecystectomy	39	65 .0	41	68 .3
Health information about :				
• Smoking	26	43 .3	27	45.0
• Diet	45	75 .0	46	76 .7
• Clothes	41	68 .3	43	71.7
• Skin care and hygiene	44	73 .3	42	70.0
• Infection control	39	65 .0	41	68 .3
Discharge instructions :				
• Wound care	50	83 .3	51	85 .0
• Sings / symptoms of infection	52	86.7	53	88.3
• Follow - up	45	75 .0	43	71.7
• Drugs	51	85 .0	50	83 .3
• Exercises	39	65 .0	38	63.3
Mean No ± SD	43.3±6.9		43.7 ±6.7	
% of Mean	72.2		72.8	
T – value	T = 0.3 , p > 0.05			

* Insignificant at $p > 0.05$

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Table (7): Presentation of studied patients` satisfactory practices for LC care activities pre surgery

Items	Satisfactory patients` practices (n=120)			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Ambulation / transferring measures	14	23.3	15	25.0
Wound care method	10	16.7	9	15.0
Exercises technique	15	25.0	14	23.3
Bathing /hygienic techniques	16	26.7	17	28.3
\bar{X} No \pm SD	13.6 \pm 2.6		13.8 \pm 3.4	
% of Mean	22.7		23.0	
T – value	T = 0.4 , p > 0.05			

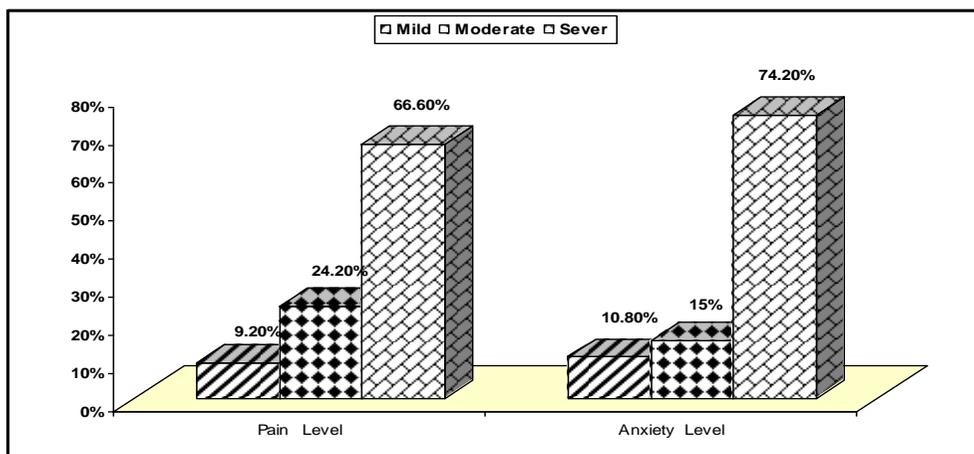
* Insignificant at $p > 0.05$

Table (8): Presentation of the care given among the studied patients on morning of the surgery (n = 120)

Morning of surgery	Patients (n=120)			
	Naser Institute Hospital (n = 60)		El – Demerdash Hospital (n = 60)	
Physical preparation	23	38.3	24	40.0
Psychological preparation	16	26.7	15	25.0
Investigations	32	53.3	33	55.0
Medications	36	60.0	35	58.3
\bar{X} No \pm SD	26.7 \pm 8.9		26.8 \pm 9.2	
% of Mean	44.5		44.7	
T – value	T = 0.06 , p > 0.05			

*Insignificant at $p > 0.05$

Figure (1) : Presentation of anxiety and pain levels among studied patients at both hospitals (n=120)



Discussion:

Gallstones are the major cause of morbidity and mortality throughout the world. Cholecystectomy is the treatment of choice for symptomatic gallstones because it removes the organ that contributes to both the formation of gallstones and the complications ensuing from them. Day-care surgery has many advantages to the patient as well as to the doctor. Patients receive treatment that is suited to their needs and which allows them to recover in their own home (Ahi kuldip et al., 2017 & Cariati et al., 2014). The current study aimed to propose a protocol for health needs management among patients having day case laparoscopic cholecystectomy (LC) surgery

In relation to characteristics of the study patients, more than half of them had the age more than 40 yrs. Muneer et al. (2010) stated that, the mean age of patients with cholecystectomy surgery was 41.7 ± 10.4 yrs and gallbladder stones become 4 to 10 times more likely in older patients. In the same

context concerning the gender, female had the higher percent among the studied patients. Mostafa (2014) mentioned that more than half of the studied subjects were females and form stones due to the underlying mechanism of sex hormones, pregnancy, oral contraceptive and estrogen replacement therapy (Disturbance in estrogen causing increased cholesterol secretion and progesterone that result in bile stasis).

Concerning studied patients' physical needs, results revealed insignificant difference among the previously mentioned hospitals. Kuy et al. (2011) & Chao (2010) found that, pre surgery one fifth of patients experienced pain with no limitation on their daily activities. Just about half of them experienced pain causing occasional limitation and about one third of patients experienced pain preventing daily activities before the surgery. In addition, Navez et al. (2012) & Chao (2010) stated that all patients had a low level of energy and daily activities pre surgery because they fear from usual activities, pain and complications. Physical preparation for patients with day

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surgery to provide a major effective form of care with a high quality of services is very important. **Saad (2012)** recommended that, the nurse must assess patients' ability on daily activities to determine independence level in self-care and health education. Furthermore, preoperative assessment must assess patients' ability to maintain own safe environment, any problems linked to respiratory, diabetes, heart or kidney and drugs to be utilized.

Regarding patients' psychological needs, results revealed insignificant difference among the previously mentioned hospitals. Patients' psychological needs pre surgery were higher as reported by many patients and the needs were: answers their queries, information about post surgery period and emotional effect on surgery. These findings may be due to short stay of patients in the hospital on day case surgery and no psychological preparation by the nurses. **Kathryn & Michaelene (2015) and Edwards et al. (2010)** reported that, psychological preparation play a vital role in the successful outcome of surgery and psychological assessment should be made to assist in relieving any fear among patients. **Ramez et al. (2014)** stated that, patients expressed need for tranquilizers and were worried about the surgery and potential complications, added to memory deficit which experienced result in not remembering important information given by the surgeon.

In relation to patients' social needs, results revealed insignificant difference among the previously mentioned hospitals whereas, patients' social needs pre surgery were higher. According to **Ahmed et al. (2011)**, living with gallstone problems was described to affect working and social life. Most of the patients expressed anxiety and feelings of being socially handicapped because they

did not know when the attacks would come. **Sellbrant et al. (2015)** recognized that more than half of the patients in day surgery reported no relation with health care team. **Bowling et al. (2017)** recognized that, building up relationships with patients will allow discussing the problems confidentially. So it is essential to use an efficient interaction with patients stayed for a short period in the hospital.

Considering spiritual needs, results revealed insignificant difference among the previously mentioned hospitals whereas, patients' spiritual needs pre surgery were higher. **Muneer et al. (2010)** recognized that majority of patients undergoing LC surgery had low satisfaction, physical effort at work; their expectation of slow recovery and financial loss. Patients pre surgery need spiritual preparations to attain satisfaction and improve quality of care.

Concerning educational needs, results revealed insignificant difference among the previously mentioned hospitals whereas patients' needs were higher pre surgery. **Hinkle & Cheever (2014)** reported that patients should have appropriate and adequate information before surgery to enhance their life after LC surgery. **Gurusamy et al. (2013)** stated that, three fifths of the patients with a great need to understand the characteristics of laparoscopic surgery, its results, post surgical incision, complications prevention, postoperative discomforts, treatment strategy and dietary regimen. In addition, patients should be provided with better instructions on how to care for their wounds, skin discoloration and bruising (**Kathryn & Michaelene, 2015**).

In addition, **Ahi kuldip et al. (2017)** reported that patients need for adequate knowledge about technical equipment, surgery, pain relieve,

hospitalization period, postoperative discomforts and discharge instructions. **Lewis et al. (2014)** emphasized that patients should be informed to report the following immediately to physician: Jaundice, chills, fever, redness, swelling, increasing pain, pus, foul smell at incision site, dark / rust-colored urine, clay-colored stool or light color and abdominal pain. **Dewit et al. (2016)** reported that breathing and coughing exercises post surgery prevent developing pulmonary complications such as atelectasis or pneumonia. Leg, ankle and foot exercises every 1 to 2 hours while awake maintain good blood circulation.

In the current study regarding (psychometric assessment) anxiety and pain, more than half of the studied patients had severe anxiety and pain in pre surgery. This result may be related to lack of psychological preparation and fear from procedural complications, added to disease manifestations for pain. **Mostafa (2014) & Saad (2012)** stressed on value of the preparations preoperatively in reducing anxiety that results when patients are unable fully to comprehend the world around as regards the procedure.

Conclusion:

On light of the current study results, it can be concluded that more than two thirds of the studied patients had physical, psychological, social, spiritual and educational health needs pre surgery with a statistically insignificant differences between both hospitals under the study. Furthermore, less than half of them had satisfactory level of practices for LC surgery care activities added to, lower level of care given morning of the surgery.

Recommendations:

Based on results of the present study, it can be recommended that:

- The proposed protocol of patients' needs management that's evidence – based should be implemented and evaluated in relation to the incidence of LC surgery complications.

- Further research study should be done to implement and investigate the effect of the proposed protocol for LC surgery on decreasing the incidence of complications after the surgical technique.

- An orientation program should be prepared for the patients undergoing LC surgery.

- Patients are in need to a simplified illustrated and comprehensive Arabic booklet including information about LC surgery.

Based on findings of the present study, health needs management protocol has been proposed (Appendix I).

Appendix I

A developed health needs management protocol for patients undergoing day case LC surgery.

Dewit et al. (2016), Lewis et al. (2014), Hinkle & Cheever (2014) and Saad (2012)

Purpose: To outline nursing responsibilities on needs management pre LC surgery

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<p>Expected patients` outcomes:</p> <ul style="list-style-type: none"> •Regain sufficient health to maintain routine activities of daily living •Patient will experience reducing level of anxiety and pain. • Patient will follow prescribed preoperative care and safety precautions 	<p>5. Provide health teaching about :</p> <ul style="list-style-type: none"> ❖ Immediately period after the surgery : ○ Patient in (semi or high fowler’s or side-lying) position ○ Vital signs taken frequently ○ Administer analgesics
<p>Clinical assessment:</p> <ul style="list-style-type: none"> • Check physical assessment sheet (neurologic, respiratory, cardiovascular and abdominal assessments). • Assist doctor on examining patients. • Assure that no co morbid condition is found. • Reviews operative procedure with the patients, answering their questions and telling them what to expect after the surgery. • Follow preoperative protocols in preparing and transporting patients to surgical room. 	<ul style="list-style-type: none"> ○ Checking patient’s level of consciousness , skin color and condition , dressings for color and odor and IV infusion at correct rate ❖ Ongoing care after the surgery : Correct position , wound care , ambulation , pain management, hygienic measures , physical activities, coughing and extremity exercises, deep breathing and discharge instructions.
<p>Implementation:</p> <p>Pre Surgery:</p> <ol style="list-style-type: none"> 1. Review medical orders, history and physical examination. 2. Check diagnostic testing orders has been completed and available. 3. Explain procedure to the patient 4. Give explanation about the purpose of enemas or laxatives pre surgery. 	<p>Correct positions</p> <ul style="list-style-type: none"> ○ Attain supine position on the bed until fully awake ○ Lying on back with hips elevated on several pillows ○ Attain semi Fowlers `position during breathing exercises <p>Oral fluid and food intake</p> <ul style="list-style-type: none"> ○ Start oral fluid intake after 4-6 hours after surgery ○ Start a clear liquid diet gradually at the first day of surgery when able to swallow

Pain control measures

- Ask for pain analgesics
- Use position changing and distraction
- Use relaxation technique as deep breathing exercises

Ambulation and activity

- Move feet off the bed and push body up to a sitting position.
 - Sit on side of the bed for few minutes before stand up.
 - Walk for short distances around surgery evening
 - Sit in a chair at the bedside when alert
 - Avoid any strenuous movement or activity
- Deep breathing and coughing exercises
- Attain sitting position
 - Support site of incision with hands or folded towel
 - Take slow and deep breathing through the mouth, place hands on chest and push hands out
 - Exhale slowly and evenly against pursed lips while tightening the abdominal muscles
 - After several deep breaths, cough if there is no spontaneous cough with supporting the incision

Extremity exercises

- Flex and extend each joint, particularly the hip, knee, and ankle joints.
- keep the lower back flat as the leg is lowered and straightened
- Move each foot in a circular motion

Wound care

- Keep the incision site clean and dry
- Avoid restrictive clothes that cause irritation with wound
- Check dressing and palpate it for bleeding

Discharge guidelines

- Signs and symptoms of wound infection , bathing and medications , follow up visits , return to work , sexual condition , traveling preparations, diet regimen, religious practices, physical activities, follow – up visits and complications .
- Unusual signs of immediate doctor advice such as (Jaundice , chills , fever, redness, swelling, increasing pain , pus , or a foul smell at the incision site, dark or rust-colored urine , stool that is clay-colored or light in color instead of brown and increasing abdominal pain) .

Night of the surgery:

- Stop eating & drinking for prescribed time as doctor order
- Prepare the operative skin site using antibacterial soap.

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○ Follow preoperative drug instructions as prescribed

Day of the surgery (Morning) :

- Ensure patient's identification
- Check that diagnostic testing has been completed and available.
- Encourage patient to express his/her feelings and fears.
- Patients do morning care before surgery
- Tell patient about IV line, Foley catheter and nasogastric (NG) tube that will be inserted to him
- Check that preoperative consent is signed
- Check vital signs
- Remove all accessories & personal items pre surgery
 - Assess for loose teeth and caps
 - Check for removing any dentures, makeup, eye lenses and hair pins.
- Do not use scented products (perfume, aftershave, powder, spray) and eye or face make-up
- Help patient to put on surgical gown
- Remind patient of food and fluid restrictions before surgery
- Ask patient to empty bladder and bowel before surgery
- Start an IV line as ordered

○ Complete preoperative checklist and record patient's preoperative preparation

- Document the location of the operative site in the medical record
- Administer preoperative medications
- Reviewing the post-operative instructions with the patients
- Help patient to move from the bed to the transport stretcher
- Preoperative events and measures are documented
- Prepare the environment for receiving the patient after surgery
- Document the procedure in nursing record

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