
▪ **Basic Research**

Developing Nurses` Performance Guidelines for Patients Undergoing Cholecystectomy based on Needs Assessment.

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Abstract

Aim: The present study aimed at developing nurses` performance guidelines for patients undergoing cholecystectomy based on needs assessment. **Methods:** A descriptive exploratory design was utilized for the conduction of this study. This study was conducted in the surgical departments at El demerdash surgical Hospital, affiliated to Ain Shams University. Sample: A convenient sample of 50 nurses from both genders in the surgical wards working with patients undergoing (open and laparoscopic) cholecystectomy. They were recruited from the above-mentioned settings. Tools: 1) Self-administered questionnaire which include sociodemographic data and nurses` knowledge assessment. 2) An observational checklist. **Results:** The mean age of the studied nurses was 43.25 ± 11.01 . There was a highly positive relation between studied nurses` total levels of practices and knowledge. There was a statistically significant relation between nurses` knowledge and practices as regards their demographic characteristics. **Conclusion:** Nearly two thirds of the studied nurses had unsatisfactory level of knowledge and practices in relation to caring of patients undergoing cholecystectomy. On the same line a statistically significant relation was indicated as regards their demographic characteristics and cholecystectomy surgery. **Recommendations:** Further research studies are needed to identify the effect of implementing the developed guidelines on performance of nurses caring for patients undergoing cholecystectomy.

Keywords: Cholecystectomy, Nurses` knowledge and practices, Nursing performance guidelines, Needs assessment.

Introduction:

Gallstone is the most common biliary pathology. Patients with symptomatic gallstones are most presented with biliary colic and its signs and symptoms include episodic severe pain in right upper quadrant region, nausea, vomiting and distention especially after eating heavy meals **(1)**.

Cholecystectomy is surgical removal of the gall bladder as a result of inflammation of gallbladder or gallstones existence. It is one of the most worldwide operations in the past and till now. Now it becomes the gold standard for treatment of symptomatic gall bladder diseases, and it is one of the most suitable management for gall bladder problems **(2)**.

Laparoscopic cholecystectomy is defined as amputation of the gallbladder using a laparoscopic instruments and technique. Most patients are suffering from choledocholithiasis (gallstones in the bile duct), cholelithiasis (cholesterol stones), or acute cholecystitis (inflammation of the gallbladder wall) **(3)**. The major gallbladder disorder is acute cholecystitis and about 90% of patients who have acute cholecystitis also suffering from cholelithiasis. In the United States, laparoscopic cholecystectomy is the second most regularly performed general surgery procedure. The laparoscopic approach is minimally invasive and minimizes risk of infection, length of surgical and recovery time **(4)**.

Traditional open cholecystectomy is described as the surgical incision with several inches long in the right quadrant which produces considerable discomfort and results in many weeks of recovery time **(5)**. Most common, in this surgery the drainage tube which is inserted and secured with a purse-string suture. The disadvantage of open cholecystectomy includes high mortality rate, long hospital stay, recovery and return to normal activities of daily living **(6)**.

The surgical nurses play an important role in caring of patients undergoing cholecystectomy during pre / postoperative time. They should also have proper knowledge and practices to provide proper nursing care, prevent complications and decrease cost of treatment **(7)**. Developing nurses' knowledge and practices will help to prepare a planned nursing care for improving patients' health condition **(8)**.

Significance of the study:

Cholecystectomy surgery was and still the best medical treatment for symptomatic cholecystolithiasis and one of the most spread as well as frequently performed surgeries. Until the late of 1980s, the traditional open cholecystectomy was the gold standard for treatment of symptomatic cholecystolithiasis (9).

Nursing guidelines are important documents to improve knowledge and practice of nurses, and this will improve quality of services which rendered to customers in all health care organizations (1). They contain detailed and concise, clear, measurable information and nursing practices or knowledge (10).

Aim of the study:

The present study aimed at developing nurses' performance guidelines for patients undergoing cholecystectomy based on needs assessment. This aim was achieved through the following:

- Assess nurses' knowledge and practices for patients undergoing cholecystectomy.
- Develop nurses' performance guidelines for patients undergoing cholecystectomy.

Research Questions:

- What are the educational needs of nurses caring for patients undergoing cholecystectomy?
- Is there a relation between developing guidelines and the international guidelines as followed for patients undergoing cholecystectomy?

Subjects and Methods:

-Research design: A descriptive exploratory design was utilized for the conduction of this study.

-Setting: The study was conducted in the surgical departments at El Demerdash Surgical Hospital, affiliated to Ain Shams University.

- Subjects: A convenience sample of (50) nurses working with patients undergoing cholecystectomy at the surgical wards in El-Demerdash Hospital.

Tools of data collection:**Tool (I): Self-administered questionnaire:**

It was developed by the researcher in a simple Arabic language based on recent and relevant literatures to assess nurses' knowledge for patients undergoing cholecystectomy. It included the following parts:

- **Demographic characteristics of the study nurses:** it included (age, sex, qualifications and clinical experience).
- **Nurses' knowledge assessment sheet:** it included the following items:

Anatomy and physiology of gall bladder, definition of cholecystitis and cholelithiasis, risk factors, complications of cholecystitis, manifestations of cholecystitis and cholelithiasis, investigations, medical management, cholecystectomy surgery, complications of surgical management, and nursing care for open and laparoscopic cholecystectomy patient regarding: preoperative preparations, health education, post-operative care and discharge instructions.

Tool (II): An observational checklist:

- It was adopted from **Lynn (2011)** ⁽¹¹⁾, **Taylor et al. (2013)** ⁽¹²⁾ and **Lewis et al. (2014)** ⁽¹³⁾ developed and filled by the researchers to evaluate studied nurses' practices for patients undergoing cholecystectomy (lap and open). It included the following items:
- Pre/ post-operative care, deep breathing, coughing, splinting and leg exercises, hemovac drain care, tubedrain without suction care, removal of drains, pain management and wound care.

Ethical consideration:

Approval was obtained from the Scientific Ethical Committee of Ain Shams University. An informed consent was obtained from nurses to participate in the study. The researcher maintained the confidentiality and anonymity of the subjects. The nurse had the right to withdraw from the study at any time without giving any reason. Ethics, values, culture and beliefs were respected.

RESULTS

Table (1) shows that, more than 30 years old of the study group represented a higher percentage (66.0%) than those who are less than 30 years old (34.0%) with mean number (38.5 ± 9.63). Female represented a higher percentage (90%) of the studied sample. Half (50%) of the nurses had diploma in nursing and three quarters (76%) of them had more than 10 years of clinical experiences with mean number (13.5 ± 3.6). In addition, most (90%) of them had no training courses about caring of patients undergoing cholecystectomy.

Table (2) reveals that, a significant difference between studied nurses' knowledge level (satisfactory and unsatisfactory) about cholecystectomy surgery, whereas unsatisfactory level had a higher mean number compared to satisfactory (36.3 ± 12.8 and 14.0 ± 12.85 respectively).

Table (3) shows that, a significant difference between studied nurses' practices levels (satisfactory and unsatisfactory) for patients undergoing cholecystectomy, whereas unsatisfactory level had a higher mean number compared to satisfactory (41.8 ± 9.76 and 8.1 ± 9.76).

Table (4) illustrates that there was a statistically significant relation between nurses' knowledge level (satisfactory and unsatisfactory) as regards lap and open cholecystectomy ($\chi^2 = 5.28$ & 8.18 respectively) with $P < 0.05$.

Table (5) illustrates that there was a statistically significant relation between nurses' practices (satisfactory and unsatisfactory) as regards lap and open cholecystectomy. ($\chi^2 = 5.03$ & 14.17 respectively) with $P < 0.05$.

Table (1): Socio- demographic characteristics of the studied nurses, (N=50)

Items	No	%
1. Age (years)		
▪ Less than 30	17	34.0
▪ More than 30	33	66.0
Mean ±SD	38.5±9.63	
Items		
2. Gender		
▪ Male	5	10.0
▪ Female	45	90.0
3. Qualifications		
▪ Diploma	25	50.0
▪ Diploma with specialty	13	26.0
▪ Technical health institute	8	16.0
▪ Bachelor (BSc)	4	8.0
4. Years of Clinical Experience:		
▪ 1-3	1	2.0
▪ 3-10	11	22.0
▪ More than 10	38	76.0
Mean ±SD	13.5±3.6	
5. Training Courses		
▪ No	45	90.0
▪ Yes	5	10.0

Table (2): Distribution of studied nurses' knowledge level about cholecystectomy:

Nurses' knowledge about	Satisfactory	Un satisfactory
	Mean±SD	Mean±SD
Cholecystitis and cholelithiasis diseases	19±12.9	31.1±12.7
Risk factors of cholecystitis	19.3±13.6	30.6±13.6
Cholecystectomy surgery	16±13.3	34±13.32
Complications of cholecystectomy	17.6±12.10	32.3±12.2
Nursing management for patients undergoing cholecystectomy	14±12.85	36.3±12.8

Table (3): Distribution of studied nurses' practices level for patients undergoing cholecystectomy:

Nurses' practices about	(Satisfactory) Done correctly	(Un satisfactory) Not done+ incorrectly done
	Mean±SD	Mean±SD
• Pre-admission Preparation	22.3±23.79	26.5±23.79
• Day of surgery (morning)	9±9.6	41±9.6
• Immediate care	22.28±15.8	27.7±15.5
• Ongoing care	8.1±9.76	41.8±9.76

Table (4): Relation between studied nurses' knowledge level as regards lap and open cholecystectomy:

Items	Satisfactory knowledge		Un satisfactory knowledge		Chi-square test	
	N=17		N=33		x ²	p-value
	No.	%	No.	%		
Lap cholecystectomy	6	35.3	22	66.6	5.28	0.039 S
Open cholecystectomy	7	41.2	28	84.8	8.18	0.004* S

x²: Chi-Square test

* Significant ≤0.05

Table (5): Relation between studied nurses' practices as regards lap and open cholecystectomy:

Items	Satisfactory practices		Un satisfactory practices		Chi-square test	
	N=16		N=34			
	No.	%	No.	%	x2	p-value
Lap cholecystectomy	6	37.5	23	67.6	5.03	0.041 S
Open cholecystectomy	5	31.3	30	88.2	14.17	<0.001**

x2: Chi-Square test

* Significant <0.05

DISCUSSION

Gallstone is the most common biliary pathology. Cholecystectomy surgery was and still one of the favorite cures for symptomatic cholelithiasis. Laparoscopic cholecystectomy is the best cure as it has less postoperative complications compared to open cholecystectomy (*Zhu et al., 2012*).⁽¹⁴⁾

As regards nurses' age, the current study has shown that mean age of them was 38.5 ± 9.63 . This finding was supported by *Adib- Hajbaghery et al. (2013)*⁽¹⁵⁾, who reported that the mean age of the studied nurses was 31.5 ± 9.27 with age ranged from 23-50 years.

In relation to studied nurses' gender, as shown female were represent a higher percentage. This finding was supported by *Vickers (2011)*⁽¹⁶⁾ who stated that, majority of the studied nurses were female. This study disagrees with *Wood (2009)*⁽¹⁷⁾ who stated that the majority of the studied nurses were male.

Concerning qualifications, the studied nurses showed that, about half of them had diploma in nursing. *Hesham (2016)*⁽¹⁸⁾ reported that majority of the studied nurses had diploma in nursing, and minority of them had bachelor (BSc) degree in nursing.

Regarding years of clinical experience, the studied nurses showed that three quarters of them had more than 10 years of clinical experience and one fifth of them have (3-10) years of clinical experience. These results were in accordance with *Yagoub (2013)* ⁽¹⁹⁾ who found that more than half of the studied nurses have more than 10 years of clinical experience and one third of them had (6-10) years of clinical experience. *Bhagirathi (2013)* ⁽²⁰⁾ stated that regarding clinical experience, 42.5% of the nurses had 6-10 years of and 50% of them had more than 10 years.

As regards to training courses about caring of patient undergoing cholecystectomy, results of the present study showed that majority of the studied nurses had no training courses. This result may be due to shortage of nurses 'number that didn't let them have time to attend courses or lack of awareness about the effect of training courses on performance of the nurses.

and quality of care that rendered to patients undergoing cholecystectomy. *Bucher et al. (2014)* ⁽²¹⁾ reported that, the majority of the studied sample had not shared in any training sessions, while the minority answered that their participation is less than one week, therefore they did not have enough time or duration of training session. *Atiyah et al. (2012)* ⁽²²⁾ showed that more than half of nurses do not attend any training session after their graduation and during employment years at surgical wards. Based on the researcher's point of view, all nursing staff in surgical wards should be enrolled in training sessions to improve their performance for patients undergoing cholecystectomy.

Considering, cholecystitis diseases the current study showed that more than half of the studied nurses had unsatisfactory level of knowledge about anatomy and physiology of gall bladder, cholecystitis and cholelithiasis definitions, signs and symptoms, complications, medical treatment. This result may be due to most of the studied nurses were diploma graduates and didn't attend training courses about caring of patients undergoing cholecystectomy, in spite that majority of them have more than 10 years of clinical experience and also most of them have more than 30 years old so they have forgotten most of knowledge they have studied. Similarly, these results agree with *Barakos et al. (2010)* ⁽²³⁾ & *Robson et al. (2007)* ⁽²⁴⁾ who stated that general surgical wards nurses have poor level of knowledge.

Regarding risk factors of cholecystitis, the present study revealed that more than half of the studied nurses had unsatisfactory knowledge level. This finding may be due to lack of in service training programs established by the hospital.

Concerning cholecystectomy surgery, this study revealed that more than half (68%) of nurses had unsatisfactory level of knowledge about indications of conversion from lap to open and the advantages of laparoscopic surgery. This result may be related to insufficient structural continues education programs as a result of policy of hospitals. These findings were consistent with **Bhagirathi (2013)** ⁽²⁰⁾ who stated that nurses had unsatisfactory level of knowledge about conversion from laparoscopic to open cholecystectomy and advantage of laparoscopic surgery over open surgery.

As regards the complications of cholecystectomy (open and lap), this study revealed that more than half of nurses had unsatisfactory level of knowledge. This finding disagrees with **Carter (2015)** ⁽²⁵⁾ & **Bhagirathi (2013)** ⁽²⁰⁾ who stated that most of nurses have knowledge about complications of laparoscopic cholecystectomy and only 28.2% of them did not know.

Concerning nursing management for patients undergoing cholecystectomy, this study stated that nearly two thirds of nurses had unsatisfactory level of knowledge. This finding was in agreement with **Aranha (2014)** ⁽²⁶⁾ who mentioned that 16% of samples had poor knowledge, 80% had unsatisfactory knowledge and only 4% had good knowledge regarding preoperative preparation. **Yagoub (2013)** ⁽¹⁹⁾ reported that surgical ward nurses had poor knowledge about pre- and post-operative care regarding cholecystectomy patients.

As regards to nurses` practices, findings of the present study revealed that more than two thirds of them had unsatisfactory level off practices of caring for patients undergoing cholecystectomy. This result may be due to lack of training and unavailability of procedure books.

Concerning the practices level in pre- operative care (preadmission preparation and day of surgery) for patients with lap and open cholecystectomy, this study revealed that more than two thirds of them had unsatisfactory level of practices.

This could be linked to the unsatisfactory level of knowledge which reflects negatively on the practices level along with lack of orientation program in surgical wards to newly graduated nurses. Moreover, shortage of nurses' number and lack of facilities in governmental hospitals. Also lack of facilities like, unavailability of guideline books, procedure book about care of patient in surgical wards, lack of job description, unavailability of online books, the

uninteresting of nurses to attend workshops, seminars and conferences, all these factors contributed to the unsatisfactory practices level.

On the same line, most of the studied nurses with more than 10 years of experience and more than 30 years old had unsatisfactory level of practices. These findings were similar with *Atiyah et al. (2012)*⁽²²⁾ & *Watson (2007)*⁽²⁷⁾ who stated that older nurses established inadequate practices concerning postoperative wound infection. Great emphasis should be directed with respect toward construction of educational and training programs that may motivate their orientation of wound care.

Moreover, majority of them with diploma nursing who caring for patients all over the time. This finding agreed with *Kadhim (2014)*⁽²⁸⁾ who found that (44%) of the studied samples are contrasted with secondary school graduation. *Desoky et al. (2009)*⁽²⁹⁾ & *Bushra (2007)*⁽³⁰⁾ stated that nurses had inadequate practices level about pre-operative nursing care. *Lee (2013)*⁽³¹⁾ reported that nearly half of nurses did not provide all the necessary preoperative information to patients. *Yagoub (2013)*⁽¹⁹⁾ cleared that more than half of the studied nurses had fair level of practice toward pre / post-operative care of patients undergoing cholecystectomy.

Concerning, the practices level in post-operative care (immediate and ongoing care) for patients with lap and open cholecystectomy. This study revealed that nearly two thirds of them had unsatisfactory level. These findings were similar to *Watson (2007)*⁽²⁷⁾ who reported that most of the assessment were weak toward postoperative intervention and related to insufficient structural continues education programs as a

result of the policy of the hospitals and ministry of health for nursing education, insufficient resources like nursing library, online resources and nursing journals.

In addition, finding of the current study reported that nurses had unsatisfactory level of practices in documentation. *Moreljwab & Musa (2014)*⁽³²⁾ stated that the studied nurses were poor in the documentation of nursing care actions. Also, these findings agree with *Radhi & Tawfiq (2016)*⁽³³⁾ who

mentioned that nurses have inadequate level of practices and documentation of findings at the end of every nursing procedure.

Regarding relation between lap and open cholecystectomy and the total knowledge and practices level among studied nurses, the present study revealed that there was statistically significant relation between nurses' knowledge (satisfactory and unsatisfactory) related to lap and open cholecystectomy. These findings disagreed with *Yagoub (2013)* ⁽¹⁹⁾ who stated that there was no statistically significant relation between cholecystectomy and the total knowledge and practices level of the studied nurses.

CONCLUSION

Based on results of the current study it can be concluded that, nearly two thirds of the studied nurses had unsatisfactory level of knowledge and practices in relation to caring of patients undergoing cholecystectomy. On the same line a statistical significant relation was indicated as regards their demographic characteristics and cholecystectomy surgery (lap and open).

RECOMMENDATIONS

Based upon the results of the current study, the following recommendations are suggested:

An educational program must be developed for nurses caring for patients undergoing cholecystectomy.

- Standard nursing procedures booklet should be available at the surgical wards.
- Nurses should be updated on their knowledge through attending seminars, workshops, lectures and reviewing research.
- An orientation program for newly graduated nurses in surgical wards should be prepared.
- Supply nurses with simple, detailed, clear Arabic nursing performance guidelines include all needed information about cholecystitis, cholelithiasis, cholecystectomy and nursing management for those cases.

- Further studies are needed to identify the effect of implementing the developed guidelines on performance of nurses caring for patients undergoing cholecystectomy

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الملخص العربي

مقدمة: إلتهاب الحويصلة المرارية الحاد او المزمن وتكوين الحصى المرارية هما أكثر الأمراض إنتشارا في الدول المتقدمة. قد تكون النتائج المصاحبة لهم أسوأ بكثير في الحالات المرضية الأتية : مرضى السكرى أو السيدات الحوامل حيث وجد أن معدل الوفيات بها عاليا. ولذلك فإنه من الضروري تقييم معلومات وممارسات الممرضات الخاصة برعاية المرضى الخاضعين لإستئصال الحويصلة المرارية لتحديد نقاط الضعف والقوة ولتوفير المعلومات اللازمة من خلال إرشادات الأداء التمريضية لتقديم أعلى جودة من الرعاية الصحية لهؤلاء المرضى. **الهدف:** هدفت هذه الدراسة الي تطوير إرشادات الأداء التمريضية للمرضى الخاضعين لإستئصال الحويصلة المرارية بناءاً على تقييم الإحتياجات من خلال: تقييم المعلومات والممارسات التمريضية للمرضى الخاضعين لإستئصال الحويصلة المرارية وتطوير إرشادات الأداء التمريضية للمرضى الخاضعين لإستئصال الحويصلة المرارية. **الأسئلة البحثية:** 1- ما هي الإحتياجات التعليمية للممرضات للعناية بالمرضى الخاضعين لإستئصال الحويصلة المرارية؟ 2- هل هناك علاقة بين الإرشادات العالمية للأداء والإرشادات المطورة كما هو متبع للعناية بالمرضى الخاضعين لإستئصال الحويصلة المرارية؟ **نوع البحث:** تم استخدام دراسة وصفية إستكشافية في هذا البحث. **طريقة البحث:** تضمنت الدراسة 50 ممرض وممرضة يعملن في أقسام الجراحة في مستشفى الدمرداش مع المرضى الخاضعين لإستئصال الحويصلة المرارية (الإستئصال المفتوح والمنظار) في الفترة من أغسطس 2015 حتى يناير 2016. تم استخدام أداتان لجمع البيانات أولاً: إستبيان للممرضين تم تصميمه بواسطة الباحثة بلغة عربية بسيطة بعد الإطلاع علي المراجع المختلفة وإشتمل على الخصائص الديموجرافية لعينة البحث (السن، النوع، المؤهلات، الخبرة العملية والدورات التدريبية) ومعلومات الممرضين الخاصة بتشريح وفسيولوجيا الحويصلة المرارية، وتعريف التهاب الحويصلة والحصى المرارية، عوامل الخطر، مضاعفات إلتهاب الحويصلة المرارية وعلامات وأعراض المرض، الفحوصات، العلاج الطبي/ الجراحي، مضاعفات العلاج الجراحي، العناية التمريضية وتشمل: العناية ما قبل وما بعد الجراحة والتثقيف الصحي وإرشادات الخروج. ثانياً: قائمة ملاحظة للممرضين تم إقتباسها من المراجع الحديثة لتقييم ممارسات الممرضين لرعايه ا لمرضى الخاضعين لإستئصال الحويصلة المرارية وقد إشتملت علي الأتي: الرعاية التمريضية قبل وبعد الجراحة، تمارين التنفس والساق وإسناد الجرح والعناية به، الدرنة(شفط/ بدون شفت، إزالتها) و التحكم في الألم. **النتائج:** وجد أن متوسط عمر الممرضين الذى شارك في هذه الدراسة هو 38 سنة. وجدت علاقة ذات دلالة إحصائية بين المعلومات والممارسات لدي الممرضين بالنسبة لخصائصهم الديموجرافية: السن، الخبرة، المؤهلات، الدورات التدريبية. وجدت أيضاً علاقة ذات دلالة إحصائية بين معلومات الممرضين وممارساتهم. **الخلاصة:** نستخلص من هذه الدراسة أن أكثر من ثلثي الممرضين الخاضعين للدراسة لديهم مستوى غير مرضي من الممارسات عن العناية بالمرضى الخاضعين لإستئصال الحويصلة المرارية. بالإضافة إلى وجود علاقة ذات دلالة إحصائية بين خصائصهم الديموجرافية وجراحة إستئصال الحويصلة المرارية (الإستئصال المفتوح والمنظار). **التوصيات:** 1- يجب وضع برنامج تعليمي للممرضات عن رعاية المرضى الخاضعين لإستئصال الحويصلة المرارية. 2- يجب عمل كتيب إرشادي للإجراءات التمريضية للممرضات العاملات في أقسام الجراحة المختلفة. 3- يجب علي الممرضات تحديث معلوماتهن من خلال حضور الندوات وورش العمل والمحاضرات ومراجعة الأبحاث. 4- وضع برنامج توجيهي للممرضات حديثي التخرج في أقسام الجراحة المختلفة.