
ROLE OF NURSING INTERVENTIONS IN PREVENTING POSTOPERATIVE COMPLICATIONS

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ABSTRACT

Background. Postoperative complications refer to pathological conditions that deviate from the normal course of the postoperative period and are not a consequence of the progression of the underlying disease.

Aim. To analyze the number of nursing interventions in the postoperative period aimed at preventing complications, as well as to evaluate the results of a patient survey regarding the nurse's role in postoperative care.

Materials & Methods. This study is based on an analysis of the number of nursing interventions performed in the postoperative period. A total of 2,913 patients underwent surgical interventions on abdominal organs for conditions such as cholelithiasis, appendicitis, acute intestinal obstruction, hernia, acute pancreatitis, and perforated gastric or duodenal ulcers. The survey included 65 patients from the surgical department. Its purpose was to assess the role of nurses in caring for patients after abdominal surgery (35 (53.8%) men and 30 (46.2%) women).

Results. One hundred percent of nurses fulfill doctors' prescriptions, 96.9% prepare patients for diagnostic and treatment procedures, and 95.4% assist with personal hygiene. Additionally, 96.9% of patients expressed satisfaction with the work of nurses. In the future, the focus will be on identifying the main types of postoperative complications and their causes, as well as formulating measures aimed at preventing such complications.

Conclusions. It was found that nurses play a very important role in providing care to patients after abdominal surgery. The nurse is the closest assistant to the doctor, and the success of treatment often depends on her. Correct and timely implementation of medical prescriptions, as well as a compassionate attitude towards the patient, create conditions for a speedy recovery. In the future, the focus will be on identifying the main types of postoperative complications and their causes, as well as formulating measures aimed at preventing such complications.

Keywords: *nurse, abdominal surgery, postoperative care.*

Introduction

Postoperative complications refer to pathological conditions that deviate from the normal course of the postoperative period and are not a consequence of the progression of the underlying disease [1]. These complications are usually caused by concomitant pathology, overestimation of the patient's ability to undergo surgery, non-compliance with the hospital regimen, or technical and tactical errors [2]. Complications

can arise intraoperatively, including organ and tissue damage, anesthesia-related complications, thromboembolic events, and bleeding. Additionally, postoperative complications may affect the operated organs and systems, leading to purulent infiltration, secondary bleeding, wound dehiscence, and dysfunction of the affected organ or system [3].

Postoperative complications affecting organs and systems are classified into early (occurring during the early and late postoperative stages) and late (arising during the rehabilitation stage) [4].

Early postoperative complications develop during the patient's hospitalization and result from surgical trauma, the effects of anesthesia, and prolonged immobilization. To minimize the risk of early postoperative complications, the nurse prepares a functional bed based on the nature of the

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surgery and type of anesthesia. For instance, to prevent complications related to anesthesia, the patient is placed in a supine position without a pillow, with the head turned to the side for two hours. After local anesthesia, precautions should be taken to prevent vomiting. One of the most serious postoperative wound complications is secondary bleeding. To prevent this, the nurse follows a specific care plan. An ice pack is applied to the wound area, and the patient's condition is assessed every 30 minutes, including skin and mucous membrane color, respiratory rate, blood pressure, and pulse. Additionally, the dressing is monitored for signs of bleeding. All observations are documented in the patient's medical record and promptly reported to the physician. A disposable transfusion system and hemostatic medications should be readily available.

In addition, nursing interventions in the postoperative period aim to prevent infection in the surgical wound area, reduce inflammatory responses (such as fever and elevated body temperature), enhance the body's resistance to diseases, optimize oxygen saturation, and prevent pulmonary congestion. To minimize complications, nurses also monitor the patient's vital signs, including blood pressure, body temperature, respiratory rate, and heart rate [5].

Late postoperative complications may develop after the patient is discharged from the hospital, affecting the organs on which the surgery was performed. These complications include gastric ulcer disease, adhesive disease, and phantom pain following limb amputation. Additionally, complications related to the postoperative wound may occur, such as a ligature fistula, postoperative hernia, or keloid scar. These conditions are typically managed on an outpatient basis by a polyclinic surgeon, although some cases (e.g., postoperative hernia or keloid scar) may require reoperation [6; 7].

Thus, one of the most critical challenges in modern surgery is the prevention of complications and the implementation of advanced methods for their early diagnosis and treatment.

The **aim** of the study was to analyze the number of nursing interventions in the postoperative period aimed at preventing complications, as well as to evaluate the results of a patient survey regarding the nurse's role in postoperative care.

Material and Methods

This study is based on an analysis of the number of nursing interventions performed in the postoperative period in the surgical department of the Municipal Non-Profit Enterprise "Municipal Clinical Multidisciplinary Hospital No.25" of the Kharkiv City Council in 2024. A total of 2,913 patients underwent surgical interventions on abdominal organs for conditions such as cholelithiasis, appendicitis, acute intestinal obstruction, hernia, acute pancreatitis, and perforated gastric or duodenal ulcers.

The study used the sociological method (questionnaire). We used our own questionnaire. The survey included 65 patients from the surgical department. Its purpose was to assess the role of nurses in caring for patients after abdominal surgery (35 men (53.8%) and 30 women (46.2%)). Only the percentage of responses to the questionnaire was statistically calculated. Before the survey, the patients signed an informed consent form.

Results

The professional responsibilities of nurses in the surgical department include prevention of postoperative complications. The most frequently performed nursing interventions were application and replacement of dressings on postoperative wounds (3,057 times) and drainage care and replacement (2,980 times). The application of an ice pack to the postoperative wound was performed for all operated patients (2,913 times). Nurses assisted in early mobilization for 2,270 patients, applied elastic bandages to the limbs to prevent thrombosis in 2,159 patients, and performed urethral catheter replacement in 846 patients.

In response to the question, "Does the nurse perform hygiene procedures?", 62 patients (95.4%) answered "yes," while 3 patients (4.6%) answered "no."

Table. Nursing interventions for the prevention of postoperative complications

Name of intervention	Number
Application and replacement of dressings on postoperative wounds	3,057
Drainage care and replacement	2,980
Application of an ice pack to the postoperative wound	2,913
Assistance in early mobilization of patient	2,270
Application of elastic bandages to the limbs for thrombosis prevention	2,159
Urethral catheter replacement	846

Thus, 95.4% of nurses were reported to assist patients with personal hygiene.

Regarding the question, "Does the nurse place an inflatable rubber ring under the sacrum?", 60 patients (92.3%) responded affirmatively, while 5 patients (7.7%) responded negatively.

In response to the question, "Does the nurse perform massage?", 15 patients (23.1%) answered "yes," 10 patients (15.4%) answered "sometimes," and 40 patients (61.5%) answered "no".

Regarding the question, "Did your nurse prepare you for diagnostic and treatment procedures?", 63 patients (96.9%) answered "yes," and 2 patients (3.1%) answered "no".

In response to the question, "Does the nurse monitor blood pressure, body temperature, pulse, diuresis, and administer medications?", all 65 respondents (100%) answered "yes". This indicates that 100% of nurses fully comply with doctors' prescriptions.

Regarding the question, "Are you satisfied with the work of the nurse?", 63 patients (96.9%) reported being satisfied, while 2 patients (3.1%) were dissatisfied.

It was found that nurses play a significant role in providing care to patients after abdominal surgery. One hundred percent of nurses fulfill doctors' prescriptions, 96.9% prepare patients for diagnostic and treatment procedures, and 95.4% assist with personal hygiene. Additionally, 96.9% of patients expressed satisfaction with the work of nurses.

References

1. Velickovic J, Feng C, Palibrk I, Velickovic D, Jovanovic B, Bumbasirevic V. The Assessment of Complications After Major Abdominal Surgery: A Comparison of Two Scales. *J Surg Res.* 2020;247:397-405. DOI: 10.1016/j.jss.2019.10.003. PMID: 31676144.
2. Zhu YH, Wang F, Zhao Y, Zhu T. Research Updates: Standardized Reporting and Evaluation Instruments for Postoperative Complications. *Sichuan Da Xue Xue Bao Yi Xue Ban.* 2022;53(2):342-8. DOI: 10.12182/20220360506. PMID: 35332740.
3. Kim SH, Hwang HK, Lee WJ, Kang CM. Comprehensive Complication Index or Clavien-Dindo Classification: Which is Better for Evaluating the Severity of Postoperative Complications Following Pancreatectomy? *World J Surg.* 2021;45(3):849-56. DOI: 10.1007/s00268-020-05859-7. PMID: 33191470.
4. Coll AM, Jones R. Role of the nurse in the assessment and management of post-operative pain. *Nurs Stand.* 2020;35(4):53-8. DOI: 10.7748/ns.2020.e11530. PMID: 32175702.
5. Ding S, Lin F, Marshall AP, Gillespie BM. Nurses' practice in preventing postoperative wound infections: an observational study. *J Wound Care.* 2017;26(1):28-37. DOI: 10.12968/jowc.2017.26.1.28. PMID: 28103161.
6. de Araujo Martins-Romeo D, Rivera Dominguez A. Complications after abdominal surgery. *Radiologia (Engl Ed).* 2023;65(Suppl_1):S99-108. DOI: 10.1016/j.rxeng.2022.09.012. PMID: 37024236.
7. Zaydfudim VM. Postoperative complications after major abdominal operations. *Surgery.* 2021;169(5):1017. DOI: 10.1016/j.surg.2020.10.006. PMID: 33190918.

Conclusions

The nurse is the closest assistant to the doctor, and the success of treatment often depends on her. In the postoperative period, all efforts are aimed at restoring the patient's physiological functions, normalizing the surgical wound, and preventing possible complications. Correct and timely implementation of medical prescriptions, along with a compassionate attitude toward the patient, create the conditions for a speedy recovery.

Prospects for future research

In the future, the focus will be on identifying the main types of postoperative complications and their causes, as well as formulating measures aimed at preventing such complications.

DECLARATIONS:

Disclosure Statement

The authors have no potential conflicts of interest to disclosure, including specific financial interests, relationships, and/or affiliations relevant to the subject matter or materials included.

Statement of Ethics

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Data Transparency

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