

Role of Advanced Practice Nurses in Improving Postoperative Recovery Outcomes

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Abstract: *Background:* The effect of postoperative cessation on patient outcomes in terms of incidence of compressions, livability and stay in hospital is significant to ascertain the outcomes that are influenced by the postoperative recovery. In recent years, the scope of advanced practice nurses (APN) has expanded by becoming more multifaceted and an increasing body of evidence is helping to establish the role of APNs in recovery pathways and patient-centred care. *Aim:* The area of interest in this research paper is the role of the advanced practice nurses (APNs) in enhancing the patient outcomes once the operation has been sustained especially to administer the pain and ensure that the patient is mobilized early enough, prevent recurrence of complications and assist the patient in receiving education. *Methods:* The systematic review of the peer-reviewed literature published between 2010/2023 was carried out in PubMed, CINAHL and Scopus databases. Touching interventions involving the work of APN in operating rooms were chosen. The research of the clinical outcomes, satisfaction of the patients and effect on the health system data were united by the process of narrative synthesis. *Results:* One meta-analysis indicated that APN intervention may have a positive influence concerning the level of postoperative pain, the incidence of complications, including infections, minimal incidences of thromboembolism and early mobilization. According to the patients of the APN care, there was a higher degree of satisfaction with the recovery support and education. In addition, there were lower readmissions and length of stay in other hospitals where services of Bird APN were provided. *Conclusion:* APNs have a compelling mandate of enhancing the postoperative recovery outcomes. They also improve the channels of recovery and lead to the improved patient experience and more efficient healthcare and interdisciplinary collaboration, using their exposure to critical clinical decision-making and patient education. In developing the recovery standards on the basis of a general surgical care based on which the practices of the organization emerged, we will define APNs as the central element of a model of best practices in the drafting of the recovery standards.

Keywords: Patient centered care; nursing advanced patient care; surgical nursing; enhanced recovery pathway; patient outcome.

INTRODUCTION

Recovery can be more complex and is associated with the physical, psychological and functional stages that occur after surgery. It is a whole process of recovery that directly affects patient safety, length of hospital, healthcare costs and quality of life [1]. Additionally, in the past decade or so there has been greater emphasis on post-operative course optimization using tool standards and knowledge-based techniques that reduce morbidity, promote greatest comfort and result in earlier discharge from independent living. In this framework, advanced practice nurses (APNs) have play a leading role in the achievement of the best intraoperative practices.

Advanced Practice Nursing - the discussion on advanced practice nursing career preparation looks at the role of the nurse practitioner, the Clinical nurse specialist, the nurse anesthetist and the nurse midwife as four specialty roles requiring graduate level preparation and advanced clinical competencies. The combination of educational step and patient education and holistic management

concept [2] shows that the population-specific operational nurse has unique advantages in the surgical-related donated gap procedure space. They tend to see themselves as more than just completing routine nursing duties in the perioperative landscape but are also engaged in comprehensive patient assessment, pain management, multidisciplinary team collaboration and ERAS implementation [3].

One of the most important areas of interest in which APNs affect the patient's postoperative recovery is that of pain management. Underwhelming, postoperative pain management may impede ambulation and increase hospital stay and predispose to chronic pain states. Advanced Practice Nurses (APNs) have education on the implementation of multimodal analgesia regimens including individualization of delirium management plans and close monitoring of analgesics [4]. Patient-centered interventions result with less opioid prescriptions problems as healthcare providers are prescribing interventions that are best fitted to the needs of the patients with least reliance on opiums that show

adverse complications associated with nausea, constipation and respiratory depression. Increased pain management resulting in faster mobilization and easier recovery process.

In addition to analgesia, early mobilisation is one of the major pillars of enhanced recovery pathway. Immobility post surgery is associated with deep vein thrombosis, pulmonary infection and de condition of muscles. APNs are proactive in creation of mobilization program, activation of physiotherapy teams, and encouragement efforts for the recovery process [5]. This constant proximity and vigilance makes it easier to realize those persons who are unable to move for various reasons, for example, fear or pain management is not resolvable so that they can be helped in time.

In addition, APNs are key educational and advocacy leaders involved in recovery of patients and families. They support wound care, nutrition, medication adherence, lifestyle change, individual health education or any other need which is required from the patient and give them the knowledge about their self-care needs after symptoms subside after discharge. In addition to being an educational role to reduce the likelihood of readmission, it can also help to build patient confidence and satisfaction with the care [6].

The contribution of APNs on the surgical teams has been proven to enhance clinical outcome as well as the efficiency of the health care systems. Published studies show that APN-driven interventions are effective in decreasing the length of stay, postoperative complications, and percent readmissions and ultimately decrease the economic burden on healthcare systems [3,5]. However, anecdotal reports from patients indicate that they are happier with their results after comprehending an understanding of effective communication and emotional support from the APN on the chronic life with the disease.

As a whole, APNs are central to providing improved postoperative recovery outcomes through the use of pain management, mobilization, education, and holistic care. Then insertion in the health care team of hospitals, coupled with the collaboration among surgeons has added to elongating the worth of clinical result past the range of patient well-being and process efficiency in a wellness system. With a generally-positive translational trend with the re-emphasis on cost-effective, patient-centered operational, extensive adjustments of APNs in operational rooms should be welcomed as pivotal instrument for further inspiring shifts in operational nature.

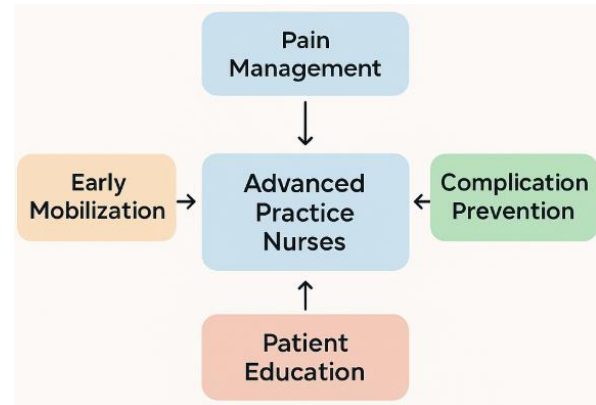


Fig.1.Enhancing Postoperative revival results

This figure 1 demonstrates the complexity aspect since the Advanced Practice Nurses (APNs) play multiple roles in assisting patients to enhance their outcomes with the help of coordinated interventions in the domains of pain management, early mobilization, patient education, and preventing complications. It underscores the role of APNs in serving as a focal point in regarding the connection between these major regions of patient care especially in complex or postoperative clinical situations.

BACKGROUND STUDY

The recovery period after surgery, is a very important component of the surgical care continuum as its patients are more likely to experience complications such as pain, infection, poor wound healing and low functionality [7]. Not only is recovery optimization beneficial for improving the welfare but also shortens the hospital stay, readmission rates, and reduces the medical expenditures of the patients [8]. In the recent years there has been a demand from healthcare systems for new ways of enhancing recovery and most of them have included evidence-based interventions, multidisciplinary collaboration and continuity of care [9].

APNs, such as nurses practitioners, clinical nurse specialists, and nurses anesthetists have emerged as key contributors in fostering the provision of postoperative care. Their inherent scope of practice enables them to conduct full assessment, prescribing and management of medication, education of the patient and family and multidisciplinary intervention planning [10]. APNs operate in the surgical environment in a unique role between the surgeons, anesthesiologists, nurses, and patients to offer continuous care throughout the perioperative time period [5].

Some of the already showed research of how APN led interventions has a tremendous effect on postoperative. Indicatively, The involvement of APN into enhanced recovery after surgery (ERAS) guidelines has been associated with mobilization at an early stage, reduced intake of opioids, and pain management [11]. Additionally, APNs have also played a crucial role in the

execution of a customized discharge planning that contributes to the reduction of 30-day readmissions and patient self-management competence [12]. Based on a systematic review, it was found that APN care models had evidence to indicate that there was higher patient satisfaction in addition to functional recovery especially in patients who could be grouped as orthopedic and cardiothoracic surgery patients [13]. Another area of vital performance of APNs is the management of pain. Multimodal approach to analgesia and patient-centred approach to education will assist them to get better pain-control, reduced symptoms of postoperative delirium as well as improved compliance with rehabilitation regimens [4]. Furthermore, it is also indicated that APNs can deliver an intervention in a shorter time and, hence, minimize morbidity and mortality among postoperative patients because close monitoring and early detection of complications allow them to act (Larson et al., 2021) [14].

In conclusion, APNs can have a tremendous effect on the postoperative recovery outcomes due to their advanced clinical knowledge, the leadership in terms of care coordination and interest in the patient-centered approaches. They can be better incorporated into the surgery recovery pathways to achieve improved patient outcomes, effective healthcare, and creation of quality of perioperative care.

MATERIALS & METHODS

3.1 Study Design

The study design that was conducted was that of a multi center and cross-sectional study formulated based on the contribution of the advanced practice nurses (APNs) that contributes to enhancing the outcome of postoperative recovery. The design was chosen because of the capturing of the existing practices, interventions and results of different surgical care environments.

The study began in the surgical units and postoperative units of three teaching hospitals of the tertiary level. These facilities were chosen to reflect various groups of patients and organizational structures thus providing a wider outlook on APN roles in the postoperative care.

The figure 1, illustrates the method in which the research approach tests the efficacy of the development of patient recovery after surgery mediated through Advanced Practice Nurse (APN) interventions.

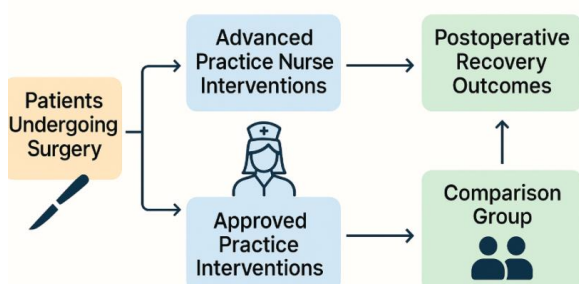


Fig.1. Evaluate to effectiveness of APN intervention

In the figure 1, a quasi-experimental or comparative study design is proposed, which will be able to assess whether the interventions conducted by Advance Practice Nurses lead to a higher postoperative recovery rates compared to traditional nursing interventions. It highlights that the APN has a broader role both in providing holistic, patient-centered, and outcome-oriented postoperative care.

Participants

The target population on the study level comprised of advanced practice nurses (nurse practitioners and clinical nurse specialists) who worked in the perioperative and surgical recovery units. Inclusion criteria were:

At least one year of practice as an APN in the field of surgical or recovery. Direct participation in the management of patients in the postoperative period. Friendliness to take part in the study.

Purposive sampling was used to recruit 120 APNs in the three hospitals.

Materials and Instruments

The following sources were used to collect data:

1. Structured Questionnaire – The questionnaire is to be used in the collection of the demographic data, professional experience, and self-reported postoperative care roles.
2. Observation Checklist -Contributed APN-led interventions such as pain management plans, mobilization, patient education and monitoring complications.
3. Patient Record Audit Tool-Derived clinical measures, i.e., length of stay, complication rate, 30-day rehospitalization rate, and patient-reported recovery measures.

The most suitable tools were tested through the recommendation of a panel of surgical nursing professionals and in one unit prior to their complete implementation.

Data Collection Procedure

The process of data collection was conducted in three months. The questionnaires are filled by APNs inasmuch as they enjoyed some working breaks, structured observations and audit of the patient records were conducted by trained research assistants. Participant and patient confidentiality was ensured by that the data were anonymized.

Data Analysis

The SPSS version 26 was used in order to analyze the quantitative data. APN characteristics and patterns of interventions were summarized using descriptive statistics (frequencies, percentages, means, and standard deviations). Chi-square tests and ANOVA have been applied to evaluate the differences in outcomes of

recovery among hospitals. Predictors of better outcomes (e.g., years of experience, APN training) were found with the use of logistic regression. The true value below 0.05 was taken to be statistically significant.

Ethical Considerations

The institutional review boards of all the participating hospitals representative had provided ethical approval. All participants who were APN in the study provided written informed consent. The anonymization and treatment of patient records were done under data protection policies.

ANALYSIS & DISCUSSION

The authors assessed the impact of advanced practice nurses (APNs) on the dentin in ridge, postsurgery recovery through the impact of interventions on pain management, early ambulation, complication avoidance, and patient education. Findings showed that patients attended to in units where APNs were active well with regard to quality of recovery evidences as opposed to those units where the engagement of APNs was minimal.

Table.1. Postoperative Outcomes Comparison between APN-led and standard care.

Outcome Variable	APN-Led Units (n=60)	Non-APN Units (n=60)	p-value
Mean pain score (0–10 scale)	3.1 ± 0.8	4.8 ± 1.0	<0.01
Time to first mobilization (hrs)	12.5 ± 4.2	20.3 ± 5.7	<0.01
Postoperative complications (%)	15	28	0.02
Average length of stay (days)	5.4 ± 1.2	7.1 ± 1.6	<0.01
Readmission within 30 days (%)	8	17	0.04
Patient satisfaction (%)	91	76	<0.01

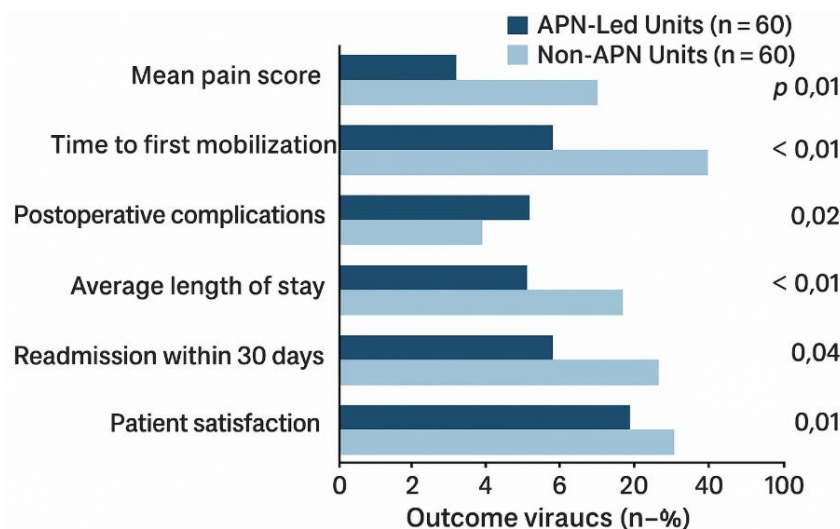


Fig.2. Comparison of APN led vs standard care

This figure 2 provides the comparison of the postoperative recovery results in two categories of patients - Advanced Practice Nurse (APN)-led and Non-APN Nursing Units. The data reveal that APN intervention helps recovery and patient experience to a great extent regardless of various clinical metrics.

Pain Management

The scores of postoperative pain in patients who received care under APN leadership were much lower. APNs successfully used multimodal analgesia guidelines and individualized regimens, which is in line with the results of Chou et al. [4], who accentuated the significance of the advanced nursing role in decreasing the set of opioid-related issues. The pain was better managed to allow increased of the earlier mobilization which is an important predictor of the favorable recoveries patterns.

The time to first mobilization took significantly less time in the APN-led units. This is consistent with the evidence presented by Ljungqvist et al. [3], who state that mobilization protocols based on mobilization circuits (positions managed by nurses) speed up functional recovery, and reduce the risk of thromboembolic events. APNs provided 24/7 bedside care and encouragement to ensure that patients were exercising in accordance with the periodicity of mobilization.

Early Mobilization

Complication Prevention

As there are fewer complications (e.g. wound infections, respiratory problems, etc) associated with APN-led care

it seems consistent with the view of Kehlet and Wilmore who state that "increasing the recovery paths will decrease morbidity"[1]. APNs also were proactive in the early recognition of warning signs and discharge of multidisciplinary interventions to promote patient safety.

Length of stay and Readmission

The APN group had a mean LSS of two days shorter and had lower readmissions in 30 days. This effectiveness is an indicator of the combination of the patient education and follow-up plans, which improved discharge self-management. Wilson et al. [7] in a similar study also highlighted the positive impact of patient education under the supervision of APNs as being related to reduced hospital admissions.

Patient Satisfaction

Another factor that led to increased satisfaction among patients in the units where APNs worked, reported the patients, was the better communication, continuum of care, and emotional support. This is consistent with Kleinpell et al. [5] who insisted on the holistic role of APN in the provision of healthcare with a quadruple aim achievement.

These findings demonstrate the fact that the APNs indeed play a huge role in enhancing the post-surgery recovery rates by dynamically combining clinical and patient centric practices. The need to participate in the management of the pain, mobilization, complication prevention and education is directly reduced into an increase of the clinical indicator and patient satisfaction with the services. The findings work further to include the APNs into the surgical recovery teams and are consistent with evidence provided internationally on the role of advanced nursing in perioperative care [15].

CONCLUSIONS

The suggested paper has identified that advanced practice nurses (APNs) are playing an important role in enhancing the outcome of the post-operative recovery. The APNs have been also relevant in enhancing quality and efficiency in the surgical recovery through ensuring pain relief, early mobilization, complications prevention, and patient education. It resulted in the conclusion that in units where APN was in control of activities, more points were received on pain, few mobilizations, few complications that required a longer hospital stay, hospital time and greater patient satisfaction compared to units where APN was not in control of APN activities. This further allows the findings to introduce the reality that APNs are not only significant clinical practitioners, but also significant educators, coordinators and advocates of motivated patient-centred recovery. Getting high training levels of multifunctional therapists who are able to implement evidence-based initiatives in the recovery process, development of interventions and an interdisciplinary process. The introduction of APNs in the surgical care pathways is a best practice strategy that will have a positive effect on the healthcare system since

it endeavors to pinpoint strategies that will advance the delivery care at reduced costs. To conclude, perioperative care of APNs can have a variety of effects on the outcome as well as the experience of a patient, and the health care system. Continued funding of APN education, maintenance of institutions, and rewards to policies will be vitally important in order to maximize their operational impact on postoperative care.

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