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STUDY ON FACTORS AFFECTING POSTOPERATIVE QUALITY OF RECOVERY FOR PATIENTS UNDERGOING SURGERY IN A TERTIARY CARE HOSPITAL.

General Surgery

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ABSTRACT

BACKGROUND: Quality of recovery (QoR) after surgery is an important measure of the early postoperative health status of patients. The recovery phases after surgery can be categorized as early, intermediate and late. The early postoperative recovery phase has been defined as the first 24 h or the first seven days. Recovery after surgery and anaesthesia is a complex process that could be influenced by many factors that effect on its quality. **OBJECTIVES:** This study aims to assess the predictive factors affecting postoperative quality of recovery for patients undergoing surgery through assessment of the postoperative quality of recovery in patients undergoing surgery and also predictive factors affecting the same. **MATERIAL AND METHODS:** It was a cross-sectional descriptive research done between July 2020 to December 2020 at Hind Institute of Medical Sciences. Purposive samples of 100 patients who were admitted to the previously mentioned settings and fulfilled the inclusion criteria were included in the study. Quality of Recovery Score Questionnaire (QoR-40) translated into Hindi language and then back translated by the researchers in order to assess postoperative health status of the patient. **RESULTS:** The results showed that 36% of patients had good total quality of recovery, 19% had excellent recovery, 39% had acceptable quality of recovery, while 6% only had poor quality of recovery. There were highly statistically significant differences between total quality of recovery and age, gender, type and duration of surgery and presence of other diseases. **CONCLUSION:** It was concluded that there are several factors affecting the postoperative quality of recovery for patients undergoing surgery such as patient's gender, age, type of surgery, duration of surgery, presence of other diseases, as well as pain control.

KEYWORDS

Quality of recovery, Postoperative, Surgery..

BACKGROUND:

Quality of recovery (QoR) after surgery is an important measure of the early postoperative health status of patients. Surgery and anaesthesia have certain inevitable negative impacts on the quality of life of patients, manifest as various discomforts after surgery even without specific complications [1]. The time immediately following a general anaesthetic is a critical period for patient recovery, requiring intensive observation by nurses to enable early detection of complications from surgery [2].

Recovery may be viewed and assessed as an endpoint or a process. Recovery may also be viewed as absolute or relative. Therefore, it is not necessarily obvious whether a patient has 'recovered' from their operation as the definition of 'recovered' can vary [4]. The recovery process therefore extends from the end of the anaesthetic and can continue over a period of several months after discharge, and occasionally not even returning to preoperative baseline. It is also clear that recovery is also a multidimensional process that includes: emotional (support, independence); physical (symptoms, function); psychological (cognition); social and habitual patterns (daily activities). When assessing the quality of post-operative recovery, it is critical that each of these dimensions be assessed by the scale [3].

The recovery phases after surgery can be categorized as early, intermediate and late. The early postoperative recovery phase has been defined as the first 24 h or the first seven days. The speed and extent of recovery in the early phase is influenced most by pain, nausea, peri-operative medications and delirium. The intermediate phase of postoperative recovery has been defined as the first 28 or 60 days, during which the patient awaits readiness for home discharge. The extent of recovery in the intermediate phase is influenced most by pain, anxiety and depression, physical impairment and cognitive dysfunction. The late postoperative recovery phase has been defined as the first six weeks or three months, it comprises the time from discharge until the patient reaches the level of preoperative health and well-being. Symptoms that afflict the early and intermediate phases of recovery can persist into this extended period [4, 5].

During the past decade, a number of comprehensive and relevant instruments have been developed to assess quality of recovery in postoperative setting [8]. One of the most commonly used and promising assessment tools is the quality of recovery score questionnaire (QoR-40). The QoR-40 is a generic postoperative recovery instrument developed by Myles et al. in 1999 to assess the quality of recovery from surgery and anaesthesia from patients' perspectives [9].

Recovery after surgery and anaesthesia is a complex process that could be influenced by many factors that effect on its quality. These factors may include age of the patient, the patient's pre-operative health status, type of surgical procedure performed, type and length of anaesthesia, pre-existing diseases or other medical conditions and the stability of vital signs as well as the presence of any of numerous adverse sequels [2, 7]. Nutritional status, hyperglycaemia, hypoglycaemia and insulin resistance are also variables that may affect quality and duration of recovery from surgery [12].

AIM AND OBJECTIVES:

This study aims to assess the predictive factors affecting postoperative quality of recovery for patients undergoing surgery through:

(1) Assessment of the postoperative quality of recovery in patients undergoing surgery.
(2) Assessment of predictive factors affecting the postoperative quality of recovery in patients undergoing surgery.

MATERIAL AND METHODS:

It was a cross-sectional descriptive research done between July 2020 to December 2020. This study was conducted in the general surgery wards at Hind Institute of Medical Sciences Mau Atariya.

Purposive samples of 100 patients who were admitted to the previously mentioned settings and fulfil the following selection criteria were included in the study. Inclusion criteria included the following: adult patient, age was 18 years or older, from both genders, undergoing different types of surgery, minimally 24 hours postoperatively, alert, not suffering from any psychiatric disorders or hearing and cognitive impairment and agree to participate in the study. The sample size calculation was done based on power analysis with type I error with

significant level (α) =0.5, type II error by power test (1-B) =90%, found the minimum number should be 100 patients.

Quality of Recovery Score Questionnaire (QoR-40): This questionnaire was adopted from Myles et al., 1999 [9] and translated into Hindi language and then back translated by the researchers in order to assess postoperative health status of the patient.

The quality of recovery score has 40 items; these items were categorized in five dimensions including **emotional state** (9 items), **physical comfort** (12 items), **patient support** (7 items), **physical independence** (5 items) and **pain** (7 items). All items are rated on a five-point Likert scale ranged from one (worst) to five (best), where 1= none of the time, 2= some of the time, 3= usually, 4= most of the time, 5= all of the time. All negative items were reversed to ease the interpretation. The maximum score of the scale is 200 degree which represents excellent quality of recovery from surgery, while the minimum score is 40 and represents extremely poor quality of recovery. The description of the quality of recovery calculated as following: ≤ 40 degree was considered very poor QoR, > 40 -80 was poor QoR, > 80 - 120 was considered acceptable average QoR, >120 - 160 was good QoR and > 160- 200 was excellent quality of recovery.

The research approval was obtained from the institutional ethics committee before initiating the study. The researchers also clarified the purpose and aim of the study to patients included in the study. Oral consent was obtained from patients to ensure willingness to engage in the study.

All Data were collected, tabulated and subjected to statistical analysis. Statistical analysis is performed by SPSS version 17, also Microsoft office Excel is used for data handling. Quantitative variables are described by the Mean, Standard Deviation (SD) and the Range (Maximum – Minimum). Qualitative categorical variables are described by proportions and Percentages. One way analysis of variance (ANOVA) is used for comparing the means of more than two groups in the study sample. Independent samples t test is used for comparing the means of two groups in the study sample. Pearson correlation coefficient is used for correlation analysis of quantitative variables. Significance level is considered at $P < 0.05$ (S); while for $P < 0.01$ is considered highly significant (HS).

RESULTS:

Regarding demographic characteristics of the studied patients, table 1 shows that the mean age of the patients under study was 45.59 ± 15.50 and their age ranged from 18-80 years. As regard to gender, 60.0% of patients were males and 78% of them were married. In relation to level of education, 16% of patients were illiterate and 24% read and write. Also, 50% of patients have mental effort occupation and 22% were housewife. Regarding to residence, 55% of the studied patients live in rural area and the mean of patients' body mass index was 29.90 ± 5.57.

Table 1: Demographic characteristics of the studied patients (N=100)

Patient characteristics	No	%
Age group(years)		
<25	10	10
25-40	30	30
39-60	40	40
>60	20	20
Mean ± SD (Range)	45.59±15.50 (18-80)	
Gender		
Male	60	60
Female	40	40
Level of education		
Illiterate	16	16
Read and write	24	24
Secondary	39	39
Bachelor	21	21
Marital status		
Single	10	10
Married	78	78
Widowed	12	12
Divorced	00	00
Residence		
Urban	55	55
Rural	45	45
BMI		
Mean ± SD (Range)	29.90±5.57 (16.45-45.32)	

As regard to present surgical history of patients under study 77.0 % of the studied patients underwent general surgery. Regarding the surgery duration, 40% of patients, their surgery last for 2-4 hours and 35% of them lasts for less than 2 hours. Moreover, the time of postoperative assessment of patients, 52% of patients were postoperatively 1-2 days and 59.0% of them received general anaesthesia during surgery.

Table 2 shows that, the majority (85%) of the studied patients had unsatisfactory knowledge regarding postoperative problems and the recovery process. Also, there was significant positive correlation between total patients' knowledge and postoperative total quality of recovery.

Table 2: Percentage distribution of total patients' level of knowledge regarding postoperative problems and the recovery process and its correlation with postoperative total quality of recovery (N=100)

Percentage distribution of total patients level of education				Correlation of total patients' knowledge and total quality of postoperative recovery	
Satisfactory		Unsatisfactory		r	P value
N	%	N	%		
15	15	85	85	0.32	0.05

Table 3 shows that 10% of patients had poor quality of recovery in the physical comfort category, 20% of patients had poor quality of recovery in the physical independence category. In addition, 46% of patients under study had an excellent quality of recovery in the pain category, 70% of them had an excellent quality of recovery in patient support category. Regarding total quality of recovery, 36% of patients under study had good total quality of recovery, while 10% only of them had poor total quality of recovery.

Table 3: Percentage distribution of postoperative quality of recovery level of the studied patients (N=100)

Total quality of recovery & its categories	Quality of recovery levels					Mean	Std Deviation
	Very poor	Poor	Acceptable	Good	Excellent		
Physical comfort	09	10	29	40	12	67.5	18.95
Emotional status	06	04	10	45	35	69.91	21.30
Pain	00	04	26	24	46	71.34	20.95
Patient support	00	05	10	15	70	80.56	18.27
Physical independence	05	20	25	28	22	49.10	22.75
Total quality of recovery	00	10	35	36	19	67.51	14.65

DISCUSSION:

Recovery from surgery and anaesthesia is a continual process that requires the nurse to assess the patient in all its phases. Postoperative recovery is complete when function is restored and adverse symptoms have resolved. The recovery of health and function means different things to different people. This may be because they have had different operations, but it may also be because different things constitute health and function. So that it is important to assess the quality of recovery after surgery from patient's perspectives. The quality of recovery may be influenced in different ways. Understanding factors affecting post-operative recovery is of great importance of efforts to reduce morbidity and mortality after surgery. This study was conducted to assess the predictive factors affecting postoperative quality of recovery for patients undergoing surgery [4]. The present study revealed that the mean age of patients under study was 45.39 ± 15.65 and their age ranged from 18-80 years and two thirds of them were males and one third were females. These results are in agreement with Stark, Myles and Burke, (2013) [7] who stated that the mean age of patients evaluated postoperatively were 56 ± 16 that ranged from 18-85 years, and more than two thirds of them were males.

Identifying patients at postoperative risk in advance seems beneficial. The identification work can be done by nurses through preoperative screening or a pre-admission appointment, and the support may consist of preoperative education or a close postoperative follow-up at which the management of pain or other clinical management and self-care are advised [13]. Also, better preparation of patients for their recovery

preoperative information, screening of patients and information are suggested to be priority interventions for surgery nurses [14]. The present study showed that majority of the studied patients had unsatisfactory knowledge regarding postoperative problems and the recovery process. This may be because patients didn't receive any awareness or instructions from health care members regarding the recovery process and the problems that may present during the postoperative period as a result of surgery and anaesthesia. This may be attributed to that the health care members either nurses or physicians didn't have time to provide instructions for patients due to shortage of staff or overload with activities during their working hours in our hospital.

CONCLUSION:

The results of this study concluded that few patients had poor QoR, approximately two fifths had acceptable QoR, more than two thirds of them had good quality of recovery and one fifth had excellent quality of recovery postoperatively. Also, there are several predictive factors affecting the postoperative quality of recovery for patients undergoing surgery such as patient's gender, age, type of surgery, duration of surgery, presence of other diseases, as well as pain control.

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LIMITATIONS:

As it is a single centre study with a relatively small study population, results cannot be generalized to the entire population.

REFERENCES:

[1] S. Poitras, P. E. Beaule and G. F. Dervin, Validity of a short-term quality of life questionnaire in patients undergoing joint replacement: the quality of recovery- 40, J Arthroplasty; 27, 2012, 1604-8.e1.
[2]. N. M. Phillips, E. Haesler, M. Street and B. Kent, Post-anaesthetic discharge scoring criteria: a systematic review, JBI Library of Systematic Reviews; 9(41), 2011, 1679-1713.
[3]. S Sikhakhane, Quality of recovery and the measuring scales, School of clinical medicine: Discipline of anaesthesiology and critical care; October (3), 2015, 1-26.
[4]. A. J. Bowyer and C. F. Royse, Postoperative recovery and outcomes – what are we measuring and for whom?, Anaesthesia; 71 (Suppl.1), 2016, 72–77.
[5]. K. Berg, Postoperative recovery in day surgery: Evaluation of psychometric properties and clinical usefulness of a questionnaire in day surgery, thesis, Department of medical and health sciences linköping university, Sweden, 2010, 1-46.
[6]. C. F. Royse, F. Chung, S. Newman, J. Stygall and D. J. Wilkinson, Predictors of patient satisfaction with anaesthesia and surgery care: a cohort study using the Postoperative Quality of Recovery Scale, Eur J Anaesthesiol; 29(00), 2012, 1-5.
[7]. P. A. Stark, P. S. Myles and J. A. Burke, Development and psychometric evaluation of a postoperative quality of recovery score: The QoR-15, The American Society of Anesthesiologists, Inc. Lippincott Williams & Wilkins, Anesthesiology; 118(6), 2013, 1332- 40.
[8]. C. F. Royse, Z. Williams, S. Purser and S. Newman, Recovery after nasal surgery vs. tonsillectomy: discriminant validation of the postoperative quality of recovery scale, Acta Anaesthesiol Scand; 58(3), 2014, 345–51.
[9]. P. S. Myles, J. O. Hunt, C. E. Nightingale, H. Fletcher, T. Beh, D. Tanil, et al, Development and psychometric testing of a quality of recovery score after general anesthesia and surgery in adults, Anesth Analg; 88(1), 1999, 83–90.
[10]. B. F. Gornall, P. S. Myles, C. L. Smith, et al, Measurement of quality of recovery using the QoR-40: a quantitative systematic review, Br J Anaesth; 111, 2013, 161–9.
[11]. W. K. Lee, M. S. Kim, S. W. Kang, S. Kim and J. R. Lee, Type of anaesthesia and patient quality of recovery: a randomized trial comparing propofol–remifentanil total i.v. anaesthesia with desflurane anaesthesia, British Journal of Anaesthesia; 114 (4), 2015, 663–8.
[12]. A. Bowyer, J. Jakobsson, O. Ljungqvist and C. Royse, A review of the scope and measurement of postoperative quality of recovery, Anaesthesia; 69, 2014, 1266–1278.
[13] M. Brattwall, M. WarrénStomberg, N. Rawal, M. Segerdahl, J. Jakobsson and E. Houltz, Patients' assessment of 4-week recovery after ambulatory surgery, ActaAnaesthesiol Scand; 55 (1), 2011, 92-98.
[14]. K. Berg, K. Arestedt, and K. Kjellgren, postoperative recovery from the perspective of day surgery patients: a phenomenographic study, International journal of nursing studies; 50(12), 2013, 1630-1638.