

Role of mobile applications for the success of enhanced recovery after surgery programme

Sir,

The enhanced recovery after surgery (ERAS) programme is slowly gaining momentum in our nation. Nevertheless, an editorial in the Indian Journal of Anaesthesia has questioned the successful implementation of the ERAS programme in India.^[1] A survey conducted amongst the anaesthesiologists practising in India to examine the existing state of knowledge and obstacles to the introduction of ERAS protocols in perioperative surgical care concluded that although most anaesthesiologists were aware of the ERAS pathways, there was a huge heterogeneity in its practice and implementation.^[2]

This means that some newer strategies have to be adopted to improve the implementation of ERAS in India and improve the quality of perioperative care in our setup.^[3] In recent years, clinicians are using a lot of mobile applications to keep a follow-up of patients once discharged from the hospital. This reduces the overall discomfort caused due to travelling, prolonged waiting periods, and the time by the family members to come along with the patient.

A patient-centric, mobile app technology can be effectively used in the ERAS programme because patients can be effectively followed up in terms of the wound and drain output management by involving them directly in the process and enhancing their sense of well-being. With proper training and instructions, the patients or family members can identify the problems and consult the clinician after discharge. Armstrong *et al.*^[4] randomised 65 patients undergoing breast reconstruction surgery (32 in mobile app group and 33 received in-person follow-up). The authors used the QoC (Quality of Care) Health Inc mobile app (<https://qochealth.com/>). The authors concluded that with mobile app follow-up, the patient convenience scores improved, although complication rates and patient-reported satisfaction remained the same.

Tolins *et al.*^[5] prospectively enrolled 100 patients who came to the emergency department after sustaining various types of injuries. On discharge,

they were followed up using a smartphone-based app mPOWER (mobile Postoperative Wound Evaluator, <https://www.mpowercare.org/>). There was better satisfaction and compliance among the recruiters in this prospective, observational study. Kneuert *et al.*^[6] enrolled 50 patients with lung cancer who were scheduled for robotic lung resection surgery in a study by offering them the SeamlessMD mobile App (<https://seamless.md/>). The app was customised to cover almost all the requirements of the ERAS pathways. The authors concluded that the app effectively recorded patient-related outcomes, satisfaction, and also ensured patient participation in the overall perioperative period. Timmers *et al.*^[7] conducted a multicentric, randomised-controlled trial involving 213 patients undergoing total knee arthroplasty (114 patients in the app group and 99 in the control group that is, standard, in-person postoperative care). Using the Patient Journey App (Interactive Studios, Rosmalen, The Netherlands: <https://patientjourneyapp.com/>), the parameters analysed were level of pain, physical activity, quality of life, the performance of physiotherapy exercises and activities of daily self-care, satisfaction with information, perceived involvement by the hospital, and health care consumption. All variables were measured using self-reported online questionnaires through the app. On analysis, the authors concluded that by involving patients in the journey of postoperative recovery, there was significantly less postoperative pain, early rehabilitation and recovery, and better satisfaction.

The American Association of Nurse Anesthetists also recommends using apps to follow-up patients after the surgery and discharge in their ERAS practice options (<https://www.aana.com/practice/clinical-practice-resources/enhanced-recovery-after-surgery>). In the ERAS pathway, early discharge is the target and with this kind of technology at hand, clinicians will feel comfortable sending the patient home as their progress will be monitored. This will facilitate the lesser cost of treatment, early availability of beds for prospective, wait-listed patients, better satisfaction for patients and family members, and more empowerment to the patient for their rehabilitation and overall recovery.

There are several apps available on various platforms such as iOS and Android. The selection should be based on departmental choices, availability of a particular app in that geographical area, cost-effectiveness, ease of understanding of the interface, and data backup

facility. The use and implementation of these apps can bring greater success to the ERAS programme.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Abhijit Nair, Shabib Al Kalbani¹

Department of Anaesthesiology, Ibra Hospital, Ministry of Health-Oman, Ibra, ¹Department of Hospital Dietetics and Catering, Directorate General of Specialized Medical Care, Sultanate of Oman

Address for correspondence:

Dr. Abhijit Nair,
Department of Anaesthesiology, Ibra Hospital, Ministry of Health-Oman, P. O. Box 275, Ibra-414, Sultanate of Oman.
E-mail: abhijitnair95@gmail.com

Submitted: 29-May-2021

Revised: 03-Dec-2021

Accepted: 04-Dec-2021

Published: 22-Dec-2021

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Access this article online	
Quick response code	Website: www.ijaweb.org
	DOI: 10.4103/ija.ija_471_21

How to cite this article: Nair A, Al Kalbani S. Role of mobile applications for the success of enhanced recovery after surgery programme. *Indian J Anaesth* 2021;65:914-5.

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