

Feasibility of an iPad to Facilitate Communication in Postoperative Patients With Head and Neck Cancer

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Purpose: *To measure the feasibility of a communication application and an iPad to facilitate communication in postoperative patients with head and neck cancer.*

Design: *A prospective feasibility study.*

Methods: *This IRB-approved study was conducted in the postanesthesia care unit at an urban comprehensive cancer center. The participants included patients with head and neck cancer who underwent surgery that resulted in altered communication. Questionnaires were developed and administered to measure feasibility and patient satisfaction at different time points (preoperative, postoperative, and 1 to 4 days postoperatively).*

Findings: *Of 38 patients in the study, 25 (66%) were able to use the customized iPad. Of these 25 patients, 15 (60%) were satisfied or somewhat satisfied with it. 84% found the customized iPad to be very or somewhat helpful for communication after surgery.*

Conclusions: *Patients were satisfied with the customized iPad, and the study found that using technology such as this was feasible in the immediate postoperative period.*

Keywords: *communication, technology, augmentative and alternative communication (AAC), mobile device, postoperative, patient satisfaction.*

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Conflict of interest: None to report.

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NURSES ARE OFTEN FACED with difficult challenges in trying to assist patients toward optimal recovery.¹ Patients who are scheduled for a procedure that impacts communication (such as a tracheostomy or a laryngectomy) encounter obstacles during their recovery period that vary in degree of emotional, psychological, and physical demands on their bodies.² An iPad (computer tablet; Apple Inc, Cupertino, CA) is a tool that may be able to bridge communication between these patients and staff in the immediate postoperative period, with the ultimate goal of providing a safe environment for patients who are recovering from anesthesia.

Background

Communication between patients and health care providers in the immediate postoperative period can be challenging. Nurses routinely provide dry erase boards with markers, try to interpret patient's facial/hand gestures, use verbal *yes* and *no* questions to solicit responses, and use a translator (if applicable) as their primary methods of communication. Unfortunately, these forms of communication are not very effective. The inability to verbally communicate has been associated with psychological distress, fear, and anger among patients with temporary or permanent speech impairment during their postoperative care.^{1,3,4} Although health care institutions are increasingly adopting technology to improve patient care, our literature review for this study identified a gap in the utilization of technology for this patient population. The investigators of this study came together to research available technology to bridge this gap.

One of the most terrifying situations for a patient emerging from anesthesia after surgery is to be mechanically ventilated and unable to communicate. Head and neck surgery may often lead to compromised communication. Various types of surgeries result in the need to provide alternative ways for patients to communicate. For instance, a total laryngectomy, which may lead to immediate and permanent loss of the ability to speak, can be psychologically devastating to the patient and family.² What methods do patients have to communicate after surgery if they are unable to speak? During the early postoperative period, writing and mouthing are the usual methods of communication, but

the latter is not always readily understood, and written communication can be difficult after anesthesia.

A patient's initial recovery period can be complicated by pre-existing factors, such as age, visual, hearing, and language barriers.⁵ Leveraging a customized tablet as an effective communication tool could alleviate some of the difficulties in trying to assist a patient unable to speak during recovery. A customized tablet has the benefit of offering a patient an alternate way for them to express themselves, creating an enhanced outcome, and adding value to postanesthesia care unit (PACU) care services.⁶

The study team used the Systems Development Life Cycle model as a path to discover the iPad and mobile device application as a potential solution.⁷ The Systems Development Life Cycle model is often used within nursing informatics and comprises several phases. Different variations of the model exist, but all essentially proceed through common stages, including planning, analysis, design, development, testing, implementation, and maintenance. After this, the framework allowed for a thorough understanding of the problem and how best to implement the proposed solution without negatively impacting nursing workflow or patient experience.⁶

Augmentative and alternative communication (AAC) is a broad term that encircles the communication technique used to replace speech or writing for those with impairments in the production or understanding of spoken or written language.⁸ This intervention can serve as a temporary means of compensating for a lack of verbal communication and can enhance a patient's quality of care during their stay in a PACU.⁴ AssistiveWare (Amsterdam, The Netherlands) is a leader in innovative assistive technology software and the first company to release a full-featured AAC solution for iPads. Their application, Proloquo2Go, provides assistance to people who have impaired communication and could be a useful tool in hospital and rehabilitation settings. The iPad was first released in 2010 and has grown in popularity as a mobile device.⁹ The use of the iPad and Proloquo2Go (ie, customized tablet) will make it possible for patients to express their needs with ease, provides naturally sounding text-to-speech voices, and the

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