

# Use of a Speech-Generating Device for Hospitalized Postoperative Patients With Head and Neck Cancer Experiencing Speechlessness

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**H**ospitalized patients recovering from surgery for head and neck cancer may find themselves suddenly speechless and without a mechanism to reliably communicate their needs. Sudden speechlessness may occur when structures essential to speech are removed (laryngectomy) or disabled (tracheal intubation) as a result of surgery. Patients are unable to verbalize normal comfort and care needs (e.g., pain relief, need for repositioning, toileting) and are powerless to communicate even critical needs (e.g., difficulty breathing, immediate need for suctioning or blocked airway, inadvertent disconnection of ventilators or oxygen, bleeding from disconnected IV lines) (Happ, 2000; Rodriguez, 2003).

In an effort to communicate, speechless patients and nursing staff draw on their own ingenuity to identify alternate face-to-face communication strategies. However, the strategies typically are slow, energy-draining methods such as mouthing words; nodding to a series of *yes* or *no* questions; and use of writing pads, alphabet boards, hand signals, and facial gestures. In addition, speechless patients are limited to using electronic intercom systems to verbalize their needs when staff members are not present (Rodriguez, 2003). Clearly, current practice does not adequately address this population's need for communication with nurses to prevent and rapidly treat dangerous situations and lessen frustration, anxiety, fatigue, and dissatisfaction with provided care (Ashworth, 1984; Happ, 2000; Patak, Gawlinski, Fung, Doering, & Berg, 2004; Rodriguez, 2003; Stovsky, Rudy, & Dragonette, 1988).

Communication issues may be solved effectively with programmable speech-generating devices (PSGDs). Commonly used to facilitate communication for people experiencing chronic speechlessness, some devices allow for use of recorded messages that can be matched with a symbol graphically representing each message. The speechless patient then is able to play a message on command by selecting or activating the associated symbol. Although PSGDs are a standard approach to facilitate the communi-

**Purpose/Objectives:** To test the feasibility of using a programmable speech-generating device (PSGD) in hospitalized adults with head and neck cancer experiencing speechlessness.

**Design:** Time-series design.

**Setting:** Tertiary care institution, inpatient setting.

**Sample:** 9 female and 12 male postoperative patients ( $\bar{X}$  age = 62 years) experiencing speechlessness as a result of a surgical intervention to treat head and neck cancer.

**Methods:** Patients participated in a communication intervention that incorporated use of a PSGD during their hospital stay. Data about PSGD use and functionality- and technology-related issues were collected. Satisfaction and usability of the PSGD were rated with the Satisfaction and Usability Instrument.

**Main Research Variables:** Use of, satisfaction with, and usability of the PSGD.

**Findings:** Participants demonstrated significant improvement in ability to use the PSGD over a four-day period for all communication functions assessed. Results indicated that participants were "quite satisfied" with using the device and considered the technology to be "quite important" during the postoperative period. PSGD messages generated by participants via the hospital call system were understood by clerks. However, participants admitted to intensive care units experienced issues associated with accessibility of the device.

**Conclusions:** Participants demonstrated proficient and independent use of the PSGD to communicate programmed messages; however, other strategies were necessary to meet their communication needs as the postoperative period progressed. Additional research on technologic communication options and strategies to tailor technology to meet the needs of speechless patients is warranted.

**Implications for Nursing:** PSGDs may offer a more reliable option to facilitate communication between patients and nurses during the postoperative period. Technology should be tailored to meet speechless patients' unique needs as they progress through the rehabilitation process.

cation process for individuals with a chronic impairment, limited research studies have focused on use of PSGDs for hospitalized postoperative patients with head and neck cancer experiencing sudden speechlessness.