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Care of the Criticall Ill Adult

Effect of a multi-level intervention on nurse–patient communication in the intensive care unit: Results of the SPEACS trial

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ABSTRACT

Objective: To test the impact of two levels of intervention on communication frequency, quality, success, and ease between nurses and intubated intensive care unit (ICU) patients.
Design: Quasi-experimental, 3-phase sequential cohort study: (1) usual care, (2) basic communication skills training (BCST) for nurses, (3) additional training in augmentative and alternative communication devices and speech language pathologist consultation (AAC + SLP). Trained observers rated four 3-min video-recordings for each nurse–patient dyad for communication frequency, quality and success. Patients self-rated communication ease.
Setting: Two ICUs in a university-affiliated medical center.
Participants: 89 intubated patients awake, responsive and unable to speak and 30 ICU nurses.
Main results: Communication frequency (mean number of communication acts within a communication exchange) and positive nurse communication behaviors increased significantly in one ICU only. Percentage of successful communication exchanges about pain were greater for the two intervention groups than the usual care/control group across both ICUs ($p = .03$) with more successful sessions about pain and other symptoms in the AAC + SLP group ($p = .07$). Patients in the AAC + SLP intervention group used significantly more AAC methods ($p = .002$) and rated communication at high difficulty less often ($p < .01$).
Conclusions: This study provides support for the feasibility, utility and efficacy of a multi-level communication skills training, materials and SLP consultation intervention in the ICU.

Introduction

Communication difficulties are a common problem for mechanically ventilated patients in the intensive care unit (ICU) that causes distress, fear, and anger[1–9] for patients and is a source of frustration and stress for ICU staff.[10,11] Critical care nurses receive little or no training in communication assessment or the use of augmentative and alternative communication (AAC) techniques with intubated patients.[11,12] Moreover, nurses report inconsistent availability of AAC communication materials and speech therapy consultation in the ICU.[11–14] Few solutions have been offered or systematically tested with intubated ICU patients.[15–17]

The only published randomized controlled trial of an AAC intervention in a critical care setting examined the use of communication boards in 50 post-operative cardiac surgical patients.[17] Patients in the experimental group ($n = 20$) reported significantly higher satisfaction during the early postoperative period than did those who received usual care.[17] Specific electronic communication devices were tested for use with ICU patients in several pilot feasibility studies.[18–22] Patients initiated communication more often when using electronic devices and ease of communication

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ratings improved; however, observed patient use of the devices was sparse and inconsistent.[19,21] These studies employed small samples and lacked comparison groups.[18–22] Physical and cognitive fluctuation or deterioration during critical illness, physical restraint use, inconsistency in nurse–patient assignments, and staff lack of knowledge or access to AAC tools are barriers to the widespread use of AAC techniques and devices in the ICU.[14,19,21,23,24] There have been no large scale controlled trial studies of AAC tools in the ICU and no studies have tested the effectiveness of providing nurses with education on communication strategies to use with intubated ICU patients.

We developed a two-tiered, multi-faceted, interdisciplinary intervention. This paper reports results from a 3-phase clinical trial to measure the impact of these interventions on the frequency, quality, success, and ease of communication interactions between nurses and intubated ICU patients. Phase 1 was a usual care, control group. Phase 2 intervention consisted of nurse communication training and the provision of AAC materials. Phase 3 added electronic AAC devices and speech language pathologist (SLP) consultation to the intervention. We hypothesized that observations of communication frequency, success, quality and ease would improve between phases, as the level of intervention strategies increased.

Methods

Design

The Study of Patient-Nurse Effectiveness with Assisted Communication Strategies (SPEACS) was a quasi-experimental clinical trial, employing a 3-phase sequential cohort design. Study design and methods have been previously published in detail.[25–28] Fig. 1 shows a summary of each phase. All procedures were approved by the University Institutional Review Board. Nurses and patients or their decisional surrogates provided written informed consent for participation.

Setting

The study was conducted in the 32-bed medical intensive care unit (MICU) and 22-bed cardiovascular-thoracic intensive care unit (CT-ICU) of a large tertiary care medical center in the Mid-Atlantic region. Recruitment began in July, 2004 and ended in June, 2008. We report results with unit names removed to preserve anonymity of participants.

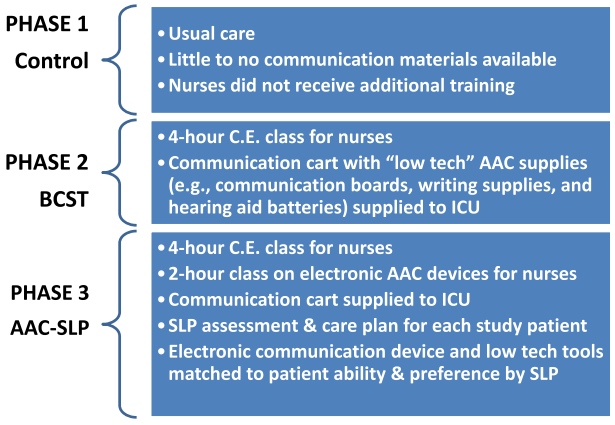

Fig. 1. Intervention Description by Phase. BCST = Basic Communication Skills Training; AAC = Augmentative and Alternative Communication; SLP = Speech Language Pathologist, C.E. = continuing education, SLP – speech language pathologist. Reprinted with permission from Broyles LM, Tate JA, Happ MB. Am J Crit Care, 2012; 21(2):e21-32.

Sample

Inclusion criteria for nurses were a minimum of one year critical care practice experience and regularly working two consecutive day shifts in the study unit. Nurses were excluded if they had a hearing or speech impairment. Eligible nurses who met criteria were identified from the staffing schedule and selected using stratified random sampling procedure to achieve 10 nurses (5 per ICU) in each phase of the study (See Fig. 2).[25] The target enrollment (10 nurses per phase) was specified by the study design and a priori sample size calculation.[25] For each phase, 10 new nursing staff were recruited and past participants were excluded to maintain independence of the sample for each phase. Nurses received $150 in grocery store gift cards at the conclusion of study participation.

Eligible patients were identified when enrolled study nurses' were scheduled to work two consecutive day shifts. Patient inclusion criteria included: endotracheal or tracheal intubation without ability to vocalize; predicted by clinicians to remain intubated for 2–3 days after study enrollment; awake and responding to commands; and understands English. Exclusion criteria included: GCS < 13; previous hearing or speech impairment seriously interfering with communication function as measured by National Outcome Measurement System subscale score <3[29]; or previous diagnosis of dementia. We included patients who were delirious or who had received sedation in order to maximize generalizability.

Intervention

During Phase 1, assistive communication materials available were primarily pen and paper and, less commonly, alphabet letter boards or materials (e.g., dry erase boards) supplied by patients' families (Fig. 1).[27] SLPs were consulted only for dysphasia and swallowing evaluations.

In Phase 2, nurses were provided a 4 h basic communication skill training aimed at improving their knowledge and skill in assessing the communication abilities of intubated ICU patients and in applying AAC strategies. Content was consistent with the principles of augmentative and assistive communication[30] and relationship-centered care.[31] Each nurse participant received an instructional binder and pocket-reference algorithm to guide communication assessment and strategies. "Low tech" communication materials (e.g., spiral notebooks, felt-tip pens, clipboards, hand grip writing aids, a variety of communication boards featuring alphabet, pictures, or phrases, and hearing aid batteries) were supplied to the units in "communication carts" when training commenced.[32] Carts were inventoried and re-stocked weekly.

In Phase 3, nurses received the basic communication skills training and additional 2 h training in electronic communication devices. The dedicated SLP, specially trained in AAC for the acute care setting, provided a 45–60 min individual evaluation and AAC intervention for each patient in this study group with daily follow-up during the two-day observation period. A communication care plan was devised that included both a low tech and electronic communication device option which was matched to individual patient ability and preference. The communication care plan also highlighted appropriate nurse communication strategies and potential communication topics.[33]

Data collection

Outcome evaluation

For each nurse–patient dyad (i.e., pair), four observations were video recorded twice daily (morning and afternoon) during two consecutive days, for each nurse–patient dyad. A minimum of 3 min was recorded to ensure adequate and equal opportunities for