



Short Communication

Effectiveness of a patient education intervention in enhancing the self-efficacy of hospitalized patients to recognize and report acute deteriorating conditions



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ABSTRACT

Objective: To develop and pilot test the effectiveness of a patient education intervention in enhancing the self-efficacy of hospitalized patients to recognize and report symptoms of acute deteriorating conditions.

Method: Using cluster randomization, acute care general wards were randomized to the experimental and control groups. 34 patients in the experimental group received a 30-minute patient education intervention on Alert Worsening conditions And Report Early (AWARE) while 33 patients in the control group received the routine care only. Levels of self-efficacy to recognize and report symptoms were measured before and after the intervention.

Results: The level of self-efficacy reported by the experimental group was significantly higher than the control group ($p < 0.0001$).

Conclusion: The AWARE intervention was effective in enhancing the self-efficacy of hospitalized patients to recognize and report acute deteriorating conditions.

Practical implications: Patient engagement through patient education could be included in the rapid response system which aims to reduce hospital mortality and cardiac arrest rates in the general wards.

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1. Introduction

Early detection of physiological deterioration has been recognized as essential to prevent adverse events including unexpected admissions to the intensive care units, cardiac arrests and deaths [1]. As part of an integrated system of care known as the rapid response system (RRS), strategies such as the early warning scores, critical care outreach teams and educational programs for medical doctors and ward nurses have been implemented in many acute hospitals with the aim to improve the care of patients with deteriorating conditions [2,3]. To enhance the effectiveness of the RRS, interventions that promote the engagement of patients in the

early recognition and reporting of symptoms of acute deteriorating conditions have been proposed [4,5].

There has been substantial evidence to support our study that patients may experience early symptoms of deterioration even before the medical team is able to detect the evolving signs of their deterioration [6,7]. By speaking up about their changes in physiological states, these patients can quickly alert the medical team to their deterioration and lead to earlier initiation of treatments. However, a qualitative study has revealed that many patients were unlikely to verbalize their changes in conditions [4]. The inability to recognize physiological changes in clinical conditions, uncertainty of the significance of symptoms presented and assumption of a passive role in self-monitoring were identified as barriers that prevented the patients from speaking up about their deteriorating conditions in hospitals [4].

We developed a patient education intervention entitled Alert Worsening conditions And Report Early (AWARE) for the hospitalized adult patients. Self-efficacy, which refers to how much

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confidence individuals have in their abilities to deal with particular situations [8], has been identified as an important predictor of numerous health behaviors [9]. This study aimed to evaluate the effectiveness of the AWARE intervention in enhancing patients' self-efficacy to recognize and report symptoms of acute deteriorating conditions.

2. Methods

2.1. Sample and setting

A cluster randomized controlled trial with pretest–posttest design was conducted between October to December 2012 after ethical approval was obtained from an institutional review board. The study was conducted in two general medical–surgical wards at an acute tertiary hospital in Singapore. The two wards were randomized, using coin tossing method, to experimental and control groups and the patients recruited in each ward were considered as clusters. The patients admitted to these two wards were considered eligible for the study if they were: (1) age ≥ 21 , (2) able to obey simple commands and instructions, (3) English-speaking and (4) hospitalized with one or more acute medical conditions. Those who satisfied the inclusion criteria were approached by a nurse researcher at their bedside to participate in the study (Fig. 1).

2.2. AWARE intervention

A patient education intervention known as the AWARE intervention was developed by a multidisciplinary healthcare team from the Rapid Improvement Escalation workgroup based on concepts of patient safety [10,11]. The educational content were

presented using face-to-face interactive teaching and written instructional materials. The face-to-face interactive teaching was conducted by a single nurse researcher (See MTA) in an individualized, one-on-one session that lasted 30 minutes at the patient's bedside. Using multiple learning modalities, the intervention addressed three areas: (1) be alert, (2) recognize worsening conditions and (3) report early (Fig. 2). The educational contents in the AWARE intervention were validated by a panel of four content experts (a nurse educator, an advanced practice nurse, an associate consultant who headed a specialized team involved in acute care initiatives and an academic nurse researcher) for appropriateness and clarity in the presentation style. Intervention fidelity was assessed during a training session by an expert supervisor and maintained through self-monitoring in actual implementation using an intervention checklist.

2.2.1. Be alert

The patients were given information on the importance of early recognition and reporting of deteriorating conditions to prevent delays in treatment. Life-threatening consequences of delayed treatments were highlighted, e.g. lack of adequate oxygen supply to the vital organs. These patients were also told that they are the best person to detect their early symptoms as some of the symptoms were first felt by them rather than detected by the medical team.

2.2.2. Recognize worsening conditions

The patients were presented with common signs and symptoms of deteriorating conditions using the *ABCDE* (Airway blocked, Breathlessness, Cold hands and feet, Dizziness, Extrême pain, and Expel and Excrete blood) mnemonic. They were also given information on the possible causes and accompanying symptoms associated with these deteriorating conditions. To facilitate recall of the common symptoms of deterioration, a mnemonic handout (Fig. 3) was attached at the foot of the patients' beds. The need for fast action to recognize and report their symptoms was reinforced in the handout.

2.2.3. Report early

The patients were taught to use the phrase "I am worried about my condition. I feel. . . ." followed by their experiencing symptoms

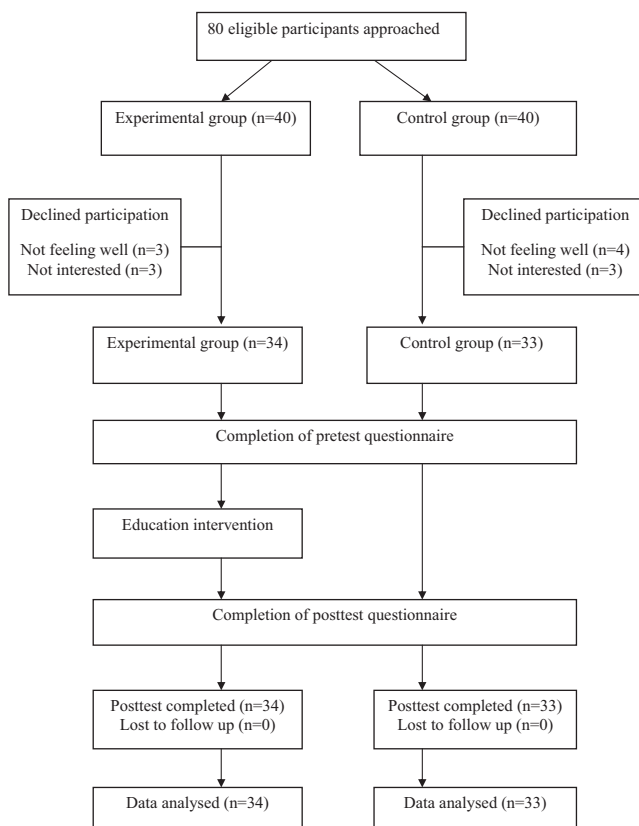


Fig. 1. CONSORT diagram of the flow of participants through the study.



Fig. 2. 3 steps in the AWARE intervention.

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