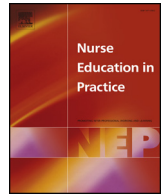




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The effect of educational intervention on nurses' knowledge, attitude, intention, practice and incidence rate of physical restraint use

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ABSTRACT

The use of physical restraint exposes patients and staff to negative effects, including death. Therefore, teaching nursing staff to develop the improve knowledge, skills, and attitudes regarding physical restraint has become necessary. A quasi-experimental pre-post design was used to evaluate the effect of educational intervention on nurses' knowledge, attitude, intention, practice and incidence rate of physical restraint in 12 wards of a hospital using a self-reported questionnaire and a restraint order form in Malaysia. The educational intervention, which included a one-day session on minimising physical restraint use in hospital, was presented to 245 nurses. The results showed a significant increase in the mean knowledge, attitude sand practice score and a significant decrease in the mean intention score of nurses to use physical restraint after intervention. There was a statistically significant decrease in the incidence rate of physical restraint use in the wards of the hospital except geriatric-rehabilitation wards after intervention.

1. Introduction

Physical restraint was seen as a reasonable method to control and manage combative and disruptive behaviours in many healthcare organizations for a number of years (Brush and Capezuti, 2001; Evans et al., 2003; Martin and Mathisen, 2005). Today, using physical restraint in healthcare settings is a controversial practice. The dilemma for nurses who are engaged in the decision-making process of using restraints continues due to the many negative outcomes of this procedure. Nursing staff play a central role in the managing process with regard to physical restraint used in hospitals. They usually begin the decision-making process and advise physicians regarding the need to give instructions for the commencement or removal of a physical restraint (Goethals et al., 2012). Earlier, nurses commonly decided on the use and removal of physical restraint based on clinical judgment. However, this changed as a result of the many negative consequences of using physical restraint, including death and strangulation (Berzlanovich et al., 2012; Duke & Mitchell as cited in Janelli et al., 2006; Food and Drug Administration, 2015). Then, many healthcare organizations began to ask hospitals to take action to reduce the use of physical restraint and even to increase the monitoring of restrained

patients (Joint Commission on Accreditation of Health Care Organization, 2002 as cited in Joint Commission, 2015).

1.1. Background

Physical restraint is an arguable procedure because it is a questionable ethical and legal issue that affects the autonomy and dignity of patients (Farina-Lopez et al., 2014). The use of physical restraint not only has an effect on the autonomy and dignity of patients but it also involves severe safety issues for staff, as well as the patients being restrained. Paterson and Duxbury (2007) recommended that the use of physical restraints should be reduced because of the consequent increase in the rate of patient assaults on staff. Increased awareness of the consequences of physical restraint use helps to establish nurses' clinical reasoning process (Mohr, 2010). It seems that most nurses do not have positive feelings about the use of physical restraint so they feel there is a conflict between patients' autonomy and nursing care when they feel restraint is necessary (Möhler and Meyer, 2014). However, restraint continues to be used in all settings in spite of standards of care and clinical protocols for physical restraint usage (Centres for Medicare and Medicaid Services [CMS, 2017]). Nurses apply physical restraint to

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prevent falls or patients' interference with treatment and medical devices (Agens, 2010; Benbenishty et al., 2010; Lane and Harrington, 2011), and to manage and control cognitive impairment disorders and behavioural disturbances symptoms, such as agitation, aggression and confusion (Herrera, 2011; Gastmans and Milisen, 2006). But many studies have found that there is no evidence that the use of physical restraint prevents patients' harm in many cases (Goethals et al., 2012; Neufeld et al., 1999; Strout, 2010). However, it has been linked to increased falls, pressure ulcers, suffocation, negative psycho-sociological outcomes and even death (Berzlanovich et al., 2012; Duke & Mitchell as cited in Janelli et al., 2006; Food and Drug Administration, 2015). Also, previous studies have reported no relationship between reduced rate of pulled-out tubes and catheters and the use of physical restraints (Bassi and Ceresola, 2011).

Several studies have demonstrated that the knowledge of nurses regarding the proper use of physical restraint is not satisfactory (Huang et al., 2009; Kalula and Petros, 2016; Pellfolk et al., 2010). Furthermore, some studies showed that nurses have mixed-feelings about physical restraint use (Chuang and Huang, 2007; Lai, 2007; Suen et al., 2006). In Malaysia, Lian (2003) discovered that most nurses perceived physical restraint in terms of a protective, preventive, supportive and therapeutic device. The knowledge, attitudes and intentions of nurses towards physical restraint use are essential factors that may contribute to this practice (De Roza, 2004; Eskandari et al., 2017). The best approach to improve knowledge and attitudes towards the use of physical restraint is through educational interventions (Suen et al., 2006). There are some research studies that demonstrate the effectiveness of education interventions on the knowledge, attitude, and practice of nurses towards physical restraint and the frequency of physical restraint use in hospitals (Huang et al., 2009; Koczy et al., 2011; Lan et al., 2017; Pellfolk et al., 2010). In contrast, a few studies have reported no change in the frequency of the use of physical restraint after implementing an educational program and no difference in nurses' attitudes between pre- and post-intervention (Huizing et al., 2009). The duration of education programs varied in the 1 h to 12 weeks (Huang et al., 2009). Additionally, cultural and working milieu differences may impact on the effectiveness of education program regarding physical restraint use. Furthermore, to our knowledge, this study is the first to examine the effect of education on physical restraint in health care settings in Malaysia. Therefore, the purpose of this study was to determine the effect of an educational intervention for nurses on the nurses' knowledge, attitude, intention, practice and incidence rate of physical restraint use. Two hundred and forty five nurses who were working in 12 inpatient wards participated in the study. Incidence rate of physical restraint use were assessed in the same twelve wards. TiDieR and Consort checklist were used to guide the next section on the study's method to ensure adequate information is included when reporting this intervention study.

2. Method

2.1. Design and setting

A quasi-experimental pretest-posttest one group design was carried out in twelve inpatient wards of a large teaching hospital in Kuala Lumpur. Nurses who were working in neonatal, paediatric and operation units were excluded from the study due to the complexity of definition and application of physical restraint among them. All nurses (N = 309) except head nurses from intensive and critical care units (n = 83), medical-surgical wards (n = 112), neurology-neurosurgery (n = 52), geriatric and rehabilitation (n = 32) and psychiatric wards (n = 30) completed the knowledge, attitude, intention and practice questionnaire. These wards were selected based on the incidence survey which indicated these wards as having the higher incidence rate compare to other wards. The inclusion criteria used to select the participants for the study which encompassed being willing to participate

in the study. During implementation of intervention phase, 64 out of 309 nurses were exempted from the study due to transfer to outpatient units, study leave, long-term medical leave, or retirement. Overall, 80 percent of nurses of each ward participated in the education intervention and post-assessment phase of the study. Therefore, the educational intervention was introduced to 245 nurses over three months. Data on the pre-assessment incidence rate of physical restraint were collected in the study wards (n = 12) by the researcher between July 2013 and January 2014 and then compared to post-assessment incidence rate of physical restraint after nurses' education for six month in same wards. All parts of design development, data collection, development and implementation of intervention have been done by researcher.

2.2. Data collection

Two set of instrument was used to collect data were knowledge, attitude, intention and practice of nurses (KAIP) towards physical restraint questionnaire and incidence rate of physical restraint use. The knowledge, attitude and practice parts of the questionnaire were initially developed by Janelli et al. (1991) in the U.S.A for nursing homes; in 2006 they were adopted for all hospital units by the original developers (Janelli et al., 2006). The intention domain of the questionnaire (5 items) was developed by Werner and Mendelsson (2001) in Israel. The questionnaire consisted of three parts with 67 items. Twenty-two items assessed the demographic and professional characteristics of participants and there were 45 items on the knowledge, attitude, practice and intention questionnaire with a summed Likert-scale on 3 to 4 point response categories that ranged from 1 (I don't agree at all) to 4 (I agree completely), for the knowledge and attitude parts, 1 (Never) to 3 (Always) for the practice part and 1 (Definitely no) to 4 (Definitely yes) for the intention part. The questionnaire was translated from English to the Malay language using the forward-backward translation technique. High similarity in meaning for each item was found between the back translated version and the English version of the questionnaire by an expert panel of three bilingual clinical and academic nurses. Then, a panel comprising ten bilingual experts was appointed to assess face and content validity of the questionnaire. The content validity (CVI) index was 80%, which indicates good content validity for the instrument (Polit and Beck, 2008). The internal consistency of the questionnaire was 0.85, which demonstrated sufficient internal consistency. The test-retest reliability coefficient on the total questionnaire score was 0.88, which indicated acceptable stability over a one month period. The construct validity on all construct accomplished by AMOS showed satisfactory fit statistics (Chi-squared = 1053.9, df = 445, SRMR = .037, CFI = .948, AGFI = .80, GFI = .824, RMSEA = 0.068). Although an ideal RMSEA score is 0.05 or less, a value of about 0.068 indicates acceptable fit (Chen et al., 2008).

Data on incidence rate of physical restraint use were collected from a restraint order form, verified by the hospital, on which nurses record when the restraint is being used and when discontinued for patients who were restrained. This form was completed by nurses and signed by doctors who were in charge of these patients. In this study, the type of physical restraint used consisted of leg and wrist restraint, belts, vests, constricting chair and mitten. Bedrails were excluded from the present study because they were not considered a physical restraint in hospital policy at the time. In this current study, the incidence rate was the number of new cases of physically restrained patients over 6 months divided by the number of people at risk during those 6 months before and after educational intervention. All hospitalized patients in mentioned wards had been considered as a population at risk of exposure to physical restraint. The post intervention data regarding knowledge, attitude, intention and practice of nurses towards physical restraint use was completed one month after educational intervention.

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