Knowledge, Attitude, and Practice on Pressure Ulcer Prevention Among Nurses in Bangladesh

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ABSTRACT

Pressure ulcer is one of the most common complications for bed-ridden patients in hospital. This study was aimed to examine nurses’ knowledge, attitude, and practice regarding pressure ulcer prevention in Bangladesh and to examine the relationship between staff nurses’ knowledge, attitude, and practice. Subjects were recruited from one medical college hospital in Bangladesh. Ninety-one nurses working in pressure ulcer related units returned the questionnaires (84.26% response rate). Data were analyzed by using descriptive and Pearson product-moment correlation coefficient statistics. The findings showed that the level of nurses’ knowledge regarding pressure ulcer prevention was at very low (M = 57.79%, SD = 9.20%), the levels of attitude and practice were at moderate (M = 78.31%, SD = 6.61%, and M = 77.55%, SD = 11.00), respectively. The nurses’ attitude was positive and moderately correlated with their practice (r = .34, p < .01). However, knowledge was not correlated with their attitude (r = .14, p > .05) and practice (r = .14, p > .05) regarding pressure ulcer prevention. These findings suggest that nurses need to enhance their attitude and increase knowledge on pressure ulcer prevention in order to improve nursing practice in this area.

Key words: pressure ulcer prevention, nurses’ knowledge, nurses’ attitude, nurses’ practice

Background and Significance of the Problem

Pressure ulcers are common problems in healthcare system and produce a significant burden on patients, relatives and caregivers (Bours, Halfens, Abu-Saad, & Groll, 2002). According to Brain and Lyder (2004), it was estimated that 60,000 deaths occurred each year in the United States of America (USA) due to pressure ulcer related complications. Recent study in Europe, USA, Canada, and Australia estimated that pressure ulcer prevalence in hospital was ranged from 8.3% to 25.1% (Hulsenboom, Bours, & Halfens, 2007). According to National Pressure Ulcer Advisory Panel (NPUAP, 2001), the incidence of pressure ulcer in...
the USA ranged from 0.4% to 38% in acute care settings, 2.2% to 23.9% in long term care, and 0% to 17% in home care. The incidence of pressure ulcer in Asian countries was considered high, ranging from 2.1% to 31.3% in ICU (Suriadi et al., 2007). Few records about pressure ulcer prevalence and incidence in the hospitals of Bangladesh have been available. However, Hoque, Grangeon, and Reed (1999) conducted a study among paralyzed patients in Bangladesh and found that 94 out of 247 patients (38%) had developed pressure ulcers.

Pressure ulcer occurs as a result of a combination of both intrinsic and extrinsic factors and one important extrinsic factor were related to inadequate knowledge and practice of healthcare professionals (Bliss, 1990). Poor or inadequate knowledge and practice, and negative attitude of nurses led higher prevalence of pressure ulcers (Ayello & Meaney, 2003). Pressure ulcer prevention is the responsibility of all health care professionals who involve in patient care. Knowledge, attitude, and practice are necessary to provide nursing care effectively (Cully, 1998). It has been proposed that quality of nursing care is related to nurses’ knowledge and positive attitude in that particular area (Maylor, 2001). In this regard, nurses must have knowledge of risk factors and preventive strategies of pressure ulcer development (Panagiotopoulou & Kerr, 2002). Not only the nurses’ knowledge, but also attitude towards pressure ulcer prevention is important. Currently, there is no evidence on Bangladeshi staff nurses’ knowledge, attitude, and practice regarding pressure ulcer prevention.

Objectives

The aims of this study were to assess the level of staff nurses’ knowledge, attitude, and practice regarding pressure ulcer prevention and to investigate the relationships among the level of staff nurses’ knowledge, attitude, and practice regarding pressure ulcer prevention.

Technical Terms

Nurses’ knowledge of pressure ulcer prevention refers to the level of nurses’ remembering, understanding, and applying of pressure ulcer prevention in the following contents: factors related to pressure ulcer development, risk assessment, skin care, nutrition to maintain healthy skin, management of mechanical loads, and educational program for patients, family, and staff. Nurses’ knowledge was assessed by self-report questionnaire developed by the researcher. The higher scores indicated the higher level of knowledge.
Nurses’ attitude of pressure ulcer prevention refers to the level of nurses’ receiving, responding, and valuing of pressure ulcer prevention in the following areas: factors related to pressure ulcer development, risk assessment, skin care, nutrition to maintain healthy skin, management of mechanical loads, and educational program for patients, family, and staff. Nurse’s attitude was assessed by self-report questionnaire developed by the researcher. The higher scores indicated positive attitude.

Nurses’ practice of pressure ulcer prevention refers to the level of nurses’ imitation, manipulation, and precision of pressure ulcer prevention in the following areas: factors related to pressure ulcer development, risk assessment, skin care, nutrition to maintain healthy skin, management of mechanical loads and educational program for family, patient, and staff. Nurses’ practice was assessed by self-report questionnaire developed by the researcher. The higher scores indicated higher level of practice.

**Framework of the Study**

The conceptual framework of this study was based on taxonomy of educational objectives developed by Bloom (1956) and modified by Anderson and Krathwohl (2001), and based on literature reviews of risk factors of pressure ulcer development. Taxonomy of educational objectives consisted of three domains: cognitive, affective, and psychomotor. Knowledge, attitude, and practice represent those three domains respectively (Anderson & Krathwohl, 2001; Bloom). Knowledge, attitude and practice of pressure ulcer prevention at the first three levels of each domain was covered by the contents of (1) factors related to pressure ulcer development, (2) risk assessment, (3) skin care, (4) nutrition to maintain healthy skin, (5) management of mechanical loads, and (6) educational program for family, patients and staff respectively. Therefore, in this study, knowledge, attitude and practice were the key concepts representing nurses’ development of care to prevent pressure ulcer formation.

**Research Methodology**

This study was conducted in one medical college hospital in Bangladesh. The study was carried out from November, 2009 to January, 2010. A sample size was estimated by using power analysis with alpha = .05, power = .80, and effect size = .30 (Polit & Hungler, 1999), yield a sample size of 88. To prevent sample attrition, a total of 108 nurses working in medical, surgical, neuro-medicine, neuro-surgery, orthopedics and coronary care wards were recruited. Ninety-one subjects returned questionnaires with a response rate of 84.26%.
After obtaining approval from the Institutional Review Board, Prince of Songkla University, Thailand and granting permission from the target hospital, the Nurses’ Knowledge Questionnaire, Nurses’ Attitude, and the Nurses’ Practice Questionnaires were distributed to 108 sample nurses. Those three questionnaires were translated into Bengali language using back translation technique and were tested for content validity from 3 experts and for internal reliability, yielding the Cronbach’s Alpha coefficient of 0.74 for Knowledge Questionnaire, 0.73 for Attitude Questionnaire, and 0.73 for Practice Questionnaire. Subjects were asked to answer a multiple choice of knowledge questions and were asked to rate the five-level of attitude and three-level of frequent practice for the prevention practice of pressure ulcer. The knowledge, attitude, and practice scores were categorized into percentage of five levels: very low (<60%), low (60% - 69.99%), moderate (70% - 79.99%), high (80% - 89.99%), and very high level (90% - 100%).

Data were analyzed using computer software. Subjects’ demographic characteristics, level of knowledge, attitude, and practices regarding prevention of pressure ulcer were analyzed using frequency and percentage. Pearson product-moment correlation coefficient (r) was used to examine the relationship between nurses’ knowledge, attitude, and practice regarding the prevention of pressure ulcer.

Results

Sample Characteristics

The mean age of the nurses was 40.03 years old (SD = 5.75) with a minimum and maximum range of 30 to 54 years old. The majority of them had diploma degree in nursing (78%). The average length of service experience of nurses was 12.9 years (SD = 7.92). However, almost all staff nurses had not received any formal training on pressure ulcer prevention (98.9%).

Nurses’ Knowledge

The findings showed that the average percentage of overall nurses’ knowledge regarding pressure ulcer prevention was at very low level (M = 57.79%, SD = 9.2%) and four out of six sub-dimensions of nurses’ knowledge were also found at very low levels. Those four sub-dimensions were: factors related to pressure ulcer prevention (M = 50.27%, SD = 25.68%), risk assessment tool (M = 50.32%, SD = 18.94%), nutrition to maintain healthy skin (M = 55.67%, SD = 25.36%), and management of mechanical load (M = 57.87%, SD = 24.76%). Only the sub-dimension of skin care (M = 61.75%, SD = 18.29%) was at a low level.
and sub-dimension of educational program for patient, family, and staff (M = 84.65%, SD = 25.48%) was at a high level.

Nurses’ Attitude

The nurses had perceived moderate level of overall attitude regarding pressure ulcer prevention with mean percentage of 78.31% (SD = 6.61%) and three out of six sub-dimensions were at the moderate levels. Those three sub-dimensions were: factors for pressure ulcer formation (M = 74.90%, SD = 10.56%), risk assessment tool (M = 76.57%, SD = 8.80%), nutrition to maintain healthy skin (M = 78.18%, SD = 13.34%). However, three sub-dimensions of attitude regarding pressure ulcer prevention including skin care (M = 81.75%, SD = 10.53%), management of mechanical loads (M = 80.76%, SD = 14.92%), and educational program for patients, family, and staff (M = 89.23%, SD = 18.92%) were at a high level.

Nurses’ Practice

The staff nurses perceived a moderate level of overall practice regarding pressure ulcer prevention (M = 77.55%, SD = 11.00%) and five out of six sub-dimensions were at the moderate levels. Those five sub-dimensions were: identifying factors for pressure ulcer formation (M = 77.65%, SD = 20.06%), risk assessment tool (M = 74.17%, SD = 15.61%), nutrition to maintain healthy skin (M = 77.41%, SD = 16.68%), management of mechanical load (M = 77.65%, SD = 12.41%), and educational program for patient, family, and staff (M = 75.09%, SD = 16.17%). In contrast, only one sub-dimension of skin care (M = 82.05%, SD = 13.54%) was at high level.

Relationships among Nurses’ Knowledge, Attitude, and Practice

Pearson product-moment correlation coefficient statistics revealed that there was a positive moderate relationship between nurses attitude and practice ($r = .34$, $p < .01$), while there were no relationship between knowledge and attitude ($r = .14$, $p > .05$), and between knowledge and practice ($r = .14$, $p > .05$) regarding pressure ulcer prevention among the nurses.

Discussion

The findings showed that the staff nurses obtained a very low score on overall knowledge regarding pressure ulcer prevention and of four sub-dimensions including factors
for pressure ulcer formation, risk assessment, nutrition to maintain healthy skin, and management of mechanical loads were found to be at very low levels. The reason to explain this issue is educational and training background. Previous studies found that being training in pressure ulcer prevention resulted in high level of knowledge (Pancorbo-Hidalgo et al., 2007; Panagiotopoulou & Kerr, 2002). The result of this study is differed from those previous researches due to different health environment, social value, educational, and basic training background on pressure ulcer prevention between Western countries and Bangladesh. In this current study, almost all the staff nurses did not receive formal training (98.9%) in pressure ulcer prevention care. In addition, the majority of the nurses had only diploma in nursing (78%) in which the contents of pressure ulcer prevention was limited in this curriculum.

Since almost all the staff nurses had no basic education in pressure ulcer prevention care and majority of them had diploma degree in nursing, it is concluded that these results are the significant reasons for obtaining a very low level of knowledge regarding this issue. Similarly, a previous study was conducted in Ireland showed that majority of staff nurses had lack in education and training regarding pressure ulcer preventive care and this made a barrier to improve the nurse’s knowledge (Moore & Price, 2004).

Although it has been proposed that more working experience could increase knowledge in that area, the findings in this current study did not congruent with that propose. The staff nurses had some working experience in providing care (M = 12.90), but their overall knowledge was at very low level. This finding may be due to the fact that staff nurses do not know all aspects of nursing care for prevention of pressure ulcer even though they had some working experiences. Similar to previous study, it was found that a lower level of knowledge among nurses with many years of service experience was due to a lack of current educational status (Pancorbo-Hidalgo et al., 2007).

Results revealed that the majority of staff nurses perceived a moderate level of overall attitude regarding pressure ulcer prevention, also three out of six sub-dimensions including factors for pressure ulcer formation, risk assessment, and nutrition to maintain healthy skin were at moderate levels. This moderate level of attitude may be due to clinical experience that the nurses concern and awareness to the severe adverse effects of pressure ulcer development in hospitalized patients. In addition, the staff nurses’ long time working experiences and personal interest towards pressure ulcer prevention care and social values would affect the moderate level of attitude.

Since they had limited knowledge in prevention of pressure ulcer, this limited knowledge could affect the level of attitude because one factor that affects attitude is
knowledge-based in a specific area (Bloom, 1956). This finding was similar to previous study conducted in Ireland (Moore & Price, 2004). They found that the majority of staff nurses perceived a moderate level of attitude towards pressure ulcer prevention and that was not enough to implement into practice (Moore & Price). Therefore, staff nurses’ level of attitude regarding pressure ulcer preventive care needs to be improved.

The staff nurses' practice regarding pressure ulcer prevention was at a moderate level. Of five sub-dimensions of the majority of nurses’ practices: identifying factors for pressure ulcer prevention, risk assessment, serving nutrition to maintain healthy skin, educational program for patient, family, and staff, and management of mechanical loads were at moderate levels. The possible reasons for explaining this moderate level of practice might be due to the limited working time in direct patient care, shortage of nursing staff, inadequate equipment, and absence of practice guideline for pressure ulcer prevention, which were not investigated in this study. Previous study showed that nurses in government hospitals spent only 5.3% of their working time in direct contact with their patients (Hadley & Roques, 2007). A previous study reflected that majority of nurses reported a low level of practice regarding pressure ulcer prevention care due to lack of staff and lack of time (Moore & Price, 2004). The above limitations cause nurses to provide moderate level of practice for the prevention of pressure ulcer. Importantly, the lack of nurses’ knowledge of pressure ulcer prevention found in this current study would cause nurses to perform care at a moderate level.

There was no significant relationship existed between knowledge and attitude, and between knowledge and practice regarding pressure ulcer prevention among the staff nurses. These findings contrast with taxonomy of educational objective developed by Bloom (1956) in which practice is influenced by knowledge and attitude. However, this current study found no relationship between knowledge and practice. This finding was similar to a previous study that found that nurses’ high level of knowledge regarding pressure ulcer prevention intervention was not reflected into practice (Pancorbo-Hidalgo et al., 2007). Similar to one previous study, they found that nurses’ knowledge and attitude regarding massage to prevent pressure ulcer did not influence practice (Duimel-Peeters et al., 2006). Similarly, there was no relationship between Hongkong nurses’ knowledge and practice although the majority of nurses had sound knowledge on pressure ulcer prevention but their practice was reported at low (Wilkes, Bostock, Lovitt, & Dennis, 1996). The non-significant relationship between knowledge and practice in this current study may be due to other factors that influence towards nurses’ practice as already discussed. Also, there was no relationship between knowledge and attitude. There would be other factors related to attitude. Those factors were
belief, value, awareness, interest, intention, lack of staff, insufficient time, cultural, and social norm (Moore & Price, 2004). However, these factors were not explored in this current study. However, there was a significant moderate relationship found between attitude and practice in this current study. This relationship was congruent with Bloom’s taxonomy. Bloom stated if attitude developed, it would reflect on practice. It is concluded that not only knowledge and attitude determines practice but also other factors involve in this respect.

There are some limitations in this study. The main limitation was using self-report questionnaire to examine nurses’ practice that might not reflect into actual nursing practices. Another limitation was generalizeability of the findings because this study recruited subjects only from 6 units where adult patients were admitted in one hospital. This may limit the use of the findings in this current study into other settings.

Conclusion

The level of staff nurses’ knowledge regarding pressure ulcer prevention was at very low level in which attitude and practice were at the moderate levels. There was no relationship between knowledge and practice, and between knowledge and attitude. However, there was a positive moderate relationship between attitude and practice. A possible reason for these findings is due to lack of update knowledge and no formal training on pressure ulcer prevention. In this regard, staff nurses need further continuing education, refresher courses, and training program on pressure ulcer prevention in order to integrate their knowledge, attitude, and practice regarding pressure ulcer prevention care.

Recommendation

Based on the findings in this study, some recommendations are suggested:

1. Further interventional study may be initiated on this topic in order to improve nurses’ knowledge and improve nursing practice.

2. Conduct in-service activities to promote nurses’ attitude in terms of pressure ulcer prevention care.

3. Conduct in-service training and refresher courses along with providing facilities needed for pressure ulcer prevention for staff nurses to enhance their knowledge and practice.

4. Replication of study using observation of nurse’s actual practice is recommended.
References


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