

ASSESSING NURSES' KNOWLEDGE ON PRESSURE INJURY AFTER A STRUCTURED EDUCATION PROGRAMME IN AN ACUTE MEDICAL CENTRE

Yang LP¹, Loo YJ¹, Wong PK¹, Tan SY¹, Goh YX¹, Chia SY²

¹Department of Nursing, National Heart Centre, Singapore

²Department of Singapore Cardiac Data Bank, National Heart Centre Singapore



National Heart
Centre Singapore
SingHealth

BACKGROUND

Pressure injury (PI) remains a significant complication for patients at risk and is associated with increased morbidity, mortality, length of hospital stays and healthcare expenditure (Bauer et al., 2016). Studies showed that nurses have inadequate knowledge in PI prevention, staging and wound management (Beeckman, Defloor, Schoonhoven & Vanderwee, 2011; Demarré et al., 2012; Low et al., 2017). Therefore, an educational programme on PI prevention was conducted for nurses within the inpatient clinical areas.

AIM OF RESEARCH

The aim of this study is to determine the PI knowledge of nurses before and after providing an educational intervention.

METHODOLOGY

A descriptive survey was conducted in an acute cardiac centre in Singapore. Ethical approval was obtained from Centralised Institutional Review Board. All in-patient nurses were invited to participate in the study. Nurses working in the ambulatory centre, catheterisation laboratory and operating theatres were excluded. Work flow on the data collection as shown in Figure 1.

Data analysis was performed using the General Linear Model (by SPSS, version 23) to determine the relationship of PI knowledge with the different factors.

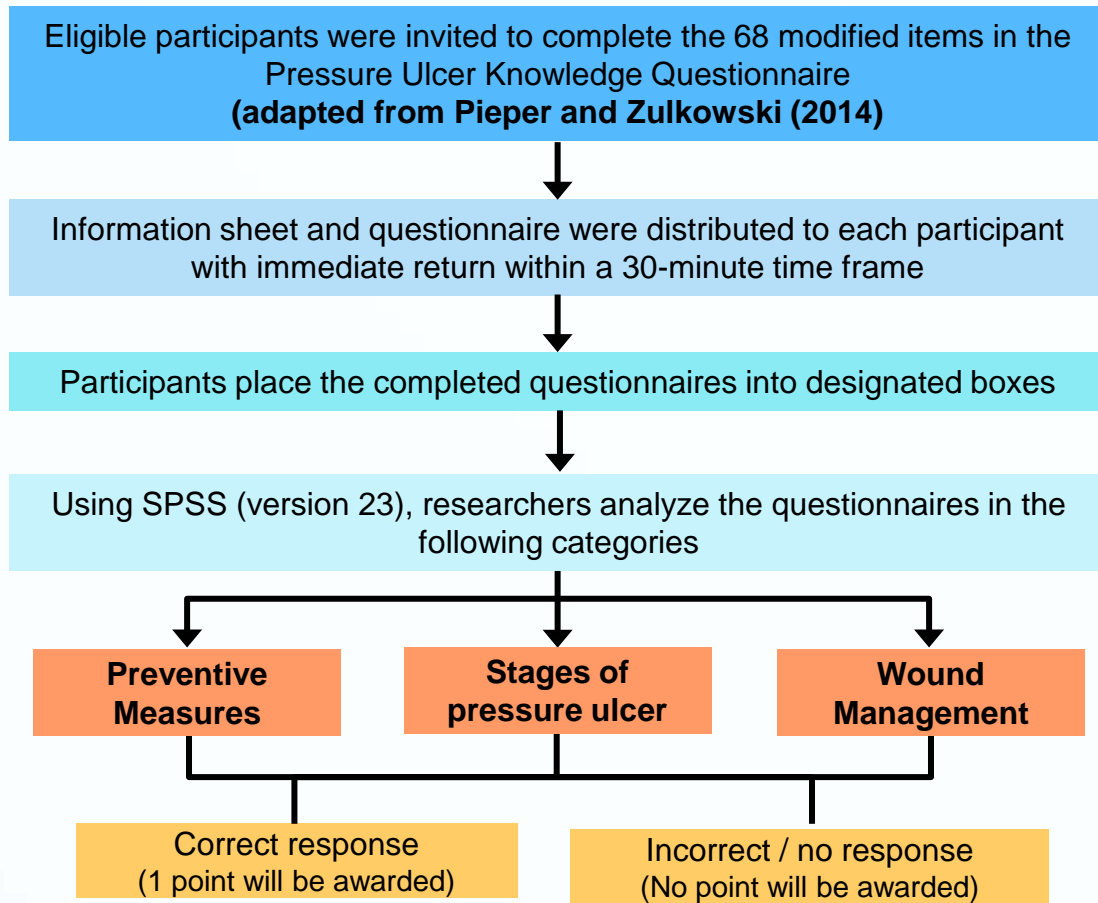


Figure 1: Data Collection Workflow

REFERENCES

- Bauer, K., Rock, K., Nazzari, M., Jones, O., & Qu, W. (2016). Pressure ulcers in the United States' inpatient population from 2008 to 2012: Results of a retrospective nationwide study. *Ostomy Wound Management*, 62(11), 30-38. Retrieved from <http://www.o-wm.com/article/pressure-ulcers-united-states-inpatient-population-2008-2012-results-retrospective>
- Beeckman, D., Defloor, T., Schoonhoven, L., & Vanderwee, K. (2011). Knowledge and attitudes of nurses on pressure ulcer prevention: A cross-sectional multicenter study in Belgian hospitals. *Worldviews on Evidence-Based Nursing*, 8, 166-176. doi: 10.1111/j.1741-6787.2011.00217.x
- Demarré, L., Vanderwee, K., Defloor, T., Verhaeghe, S., Schoonhoven, L., & Beeckman, D. (2012). Pressure ulcers: Knowledge and attitude of nurses and nursing assistants in Belgian nursing homes. *Journal of Clinical Nursing*, 21(9-10), 1425-1434. doi: 10.1111/j.1365-2702.2011.03878.x
- Low, J. H. E., Tan, S. Y., Lim, L. S., Leong, L. C., Maliga, C. R., Agnes, D. F., ... Chia, S. Y. (2017). A survey on nurses' pressure ulcers knowledge in an acute care setting. Unpublished manuscript.
- Pieper, B., & Zulkowski, K. (2014). The Pieper-Zulkowski pressure ulcer knowledge test. *Advances in Skin & Wound Care*, 27(9), 413-419. doi: 10.1097/01.ASW.0000453210.21330.00

ACKNOWLEDGEMENT

Our thanks and appreciation to Chief Nurse Tay Ai Liu, DDN Fong Meng Kum, ADN Foo Lee Lian, Ag ADN Teo Lee Wah, Ag ADN Chua Lee Kheng and SNM Foong Jia Yi

RESULTS

A total of 235 inpatient nurses participated in the survey. Most of the respondents were female (88.1%) registered nurses (84.7%). The highest proportion of respondents were aged 20-29 (51.5%) and had less than 5 years work experience (43.4%). Majority (69.8%) had attended the PI educational program prior to the survey (Figure 2).

The demographic characteristics of the respondents according to age, gender, job designations, years of experience, areas of practice, highest qualification and history of training were presented in Table 1 and Figure 2. The mean evaluation score for nurse's knowledge on pressure ulcer prevention, staging and wound management are displayed in Table 2.

Table 1. Demographic characteristics (N=235)

Characteristics	n (%)
Age (years)	
20-29	121 (51.5%)
30-39	65 (27.7%)
40-49	21 (8.9%)
≥ 50	28 (11.9%)
Gender	
Female	207 (88.1%)
Male	28 (11.9%)
Job Designation	
Enrolled Nurse	36 (15.3%)
Registered Nurse	199 (84.7%)
Years of Nursing Experience	
Less than 5 years	102 (43.4%)
5 - 10 years	64 (27.2%)
More than 10 years	69 (29.4%)

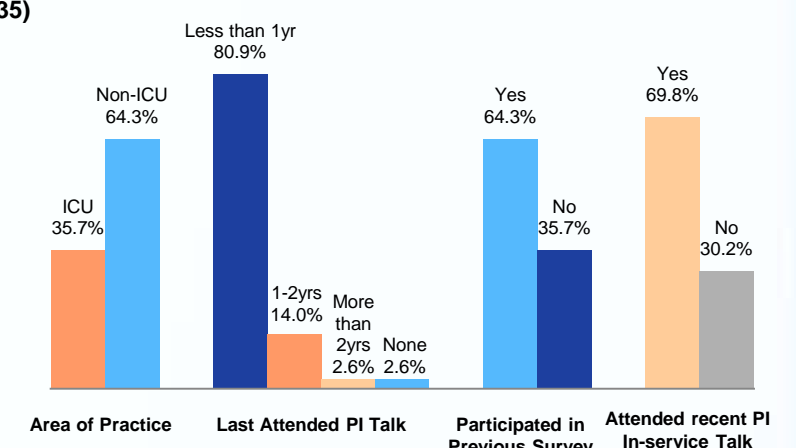


Figure 2: Area of Practice and Attendances for PI Talk

Overall, results showed statistically significant relationship between nurses' PI knowledge with nursing position ($p=0.020$), years of working experience ($p<0.001$), area of practice ($p=0.044$) and those who attended the educational program showed better knowledge as compared to those who did not ($p<0.001$).

Additionally, those who had attended the PI educational program demonstrated statistically significance in nurses' knowledge in prevention ($p=0.009$), staging ($p<0.001$) and wound prevention (0.003) (Table 2). The top three barriers that influenced nurses' initiative to go through proper assessment and carrying out PI prevention were lack of time, lack of knowledge and uncertainty about which dressing material to use.

Table 2. Mean evaluation score for nurses' knowledge on pressure ulcer prevention staging and wound management

	Pressure Ulcer Knowledge											
	Overall			Prevention			Staging			Wounds		
	Mean ± SD	P ^a	P ^b	Mean ± SD	P ^a	P ^b	Mean ± SD	P ^a	P ^b	Mean ± SD	P ^a	P ^b
Position												
- EN	67.4 ± 13.1	0.001	0.020	72.4 ± 13.7	0.031	0.225	67.6 ± 14.8	0.003	0.040	61.4 ± 15.4	0.002	0.020
- RN	73.6 ± 9.5			76.7 ± 10.2			74.3 ± 11.8			69.2 ± 13.5		
Working Experience (as a nurse)												
- < 5 years	69.7 ± 10.9	<0.001	<0.001	73.0 ± 11.6	<0.001	<0.001	70.3 ± 12.9	0.001	<0.001	65.3 ± 15.0	0.009	0.007
- 5 - 10 years	73.2 ± 9.0			77.4 ± 10.4			73.4 ± 11.2			68.1 ± 11.9		
- > 10 years	76.5 ± 9.6			79.3 ± 9.2			77.7 ± 12.0			72.0 ± 13.8		
Area of Practice												
- ICU	71.3 ± 10.0	0.139	0.044	74.4 ± 10.6	0.087	0.039	71.7 ± 12.6	0.147	0.059	67.3 ± 13.5	0.536	0.313
- Non-ICU	73.4 ± 10.5			76.9 ± 11.0			74.2 ± 12.4			68.5 ± 14.5		
Qualification/Educational Level												
- Institute of Education	66.7 ± 12.3	0.001	0.272	71.2 ± 12.7	0.002	0.052	66.9 ± 14.6	0.011	0.572	61.4 ± 15.6	0.034	0.917
- Diploma in Nursing	71.4 ± 11.1			74.7 ± 11.8			72.1 ± 12.6			66.9 ± 15.2		
- Post Basic Certificate/Advanced Diploma in Nursing	71.7 ± 9.7			73.1 ± 9.5			73.1 ± 12.2			68.9 ± 12.8		
- Bachelor of Nursing & above	75.0 ± 8.8			78.7 ± 9.6			75.6 ± 11.6			70.0 ± 13.0		
Attended recent Pressure Injury in-service talk												
- Yes	74.0 ± 10.8	0.002	<0.001	77.1 ± 11.6	0.025	0.009	75.0 ± 12.3	0.001	<0.001	69.5 ± 14.2	0.014	0.003
- No	69.4 ± 8.6			73.6 ± 8.9			69.4 ± 12.2			64.6 ± 13.4		

CONCLUSIONS

Regular PI education program conducted for nurses twice per year will refresh and update their knowledge. A handy manual quick reference guide on pressure injury will be useful for nurses in the clinical area.

Measuring knowledge before and after an educational intervention should be considered to evaluate whether knowledge inadequacy is corrected. This methodology helps to document that knowledge adequacy was met.