

A Crosssectional Study on Knowledge, Attitude and Practice on Pressure Ulcer among Nurses in Jigme Dorji Wangchuk National Referral Hospital (JDWNRH)

Kencho Wangmo¹, Tshering Dema², Tandin Pemo³, Thinley Dema⁴, Pema Dorji⁵, Yangzom⁶

¹Chief Nurse, Emergency Department, JDWNRH, ²Deputy Nursing Superintendent,

³Nursing Superintendent, ³AICU & Pressure Ulcer Focal Nurse, Pema Dorji,

⁵Chief Nurse, AICU, ⁶Pressure Ulcer Focal Nurse

Abstract

The increased incidence of pressure ulcers among inpatient patients has been reported in JDWNRH. As a result, there was an increase in the length of hospitalization, over utilization of resources and affects patient's satisfaction. There was also a lack of adequate evidence on knowledge, attitude and practice for effective prevention of pressure ulcers. The study was conducted to study the knowledge, attitude, and practice of pressure ulcers among nurses of JDWNRH. Cross-sectional was used among 389 nurses working in all inpatients department. The results found that the knowledge on pressure sore was good (64%) but the attitude (75.1%) and Practice (93.1%) to prevent pressure ulcer was low. Scientific analysis also showed that knowledge had a significant correlation with working experience ($p=0.034$), which reveals that the longer the duration in the service, the more the knowledge was gained. Subsequently, the more the knowledge was gained, the practice on prevention on pressure ulcer increases ($p=0.036$). The study found out that retention of the experienced nurses is extremely important because CME updates the knowledge, which eventually improves the patient's care whereas behaviour change remains challenging because of individual attitude and perception.

Keywords: *Incidence, pressure ulcer, hospitalization, knowledge, attitude, practice, working experience, prevention.*

Introduction

Pressure ulcers has been the frequent condition among chronic patients and impose a significant burden on patients, their family, and caregivers. It has continued to be a major public health problem associating with high morbidity and mortality both in developed and developing countries.^[9] Nurses have a significant impact on the prevention of pressure ulcers with good knowledge, attitude, and practice. The increased incidence of pressure ulcers among inpatient patients has been reported in JDWNRH by pressure ulcer team. As a result, there was increase in length of hospitalization, over utilization of resources and affects patient's satisfaction. There was also lack of adequate evidence on knowledge, attitude and practice for effective prevention of pressure ulcers. The formation of pressure ulcer team was necessary as the number of patients were increasing and there were also findings that hospitalized

patients have pressure sores or are at risk to develop.^[1] Therefore, this study was intended firstly to assess knowledge, attitude and practice among nurses, generate baseline data on incidences and prevalence of pressure ulcer, and finally, the findings will be implemented to improve the efficiency of pressure ulcer management in JDWNRH. Pressure ulcer team members keep the record of the pressure ulcer in order to come up with the nursing prevention methods.^[5] Implementation strategies should introduce ways in which key staff can be empowered to overcome barriers to change.^[8] Documentation of pressure ulcer prevention and treatment improved after the educational session.^[11] An initial surveillance carried out in 2012 by Nursing Department in JDWNRH, with an objective to monitor the number of patients with pressure ulcers and high risk in different wards and units, found a prevalence of 29% of patients with a pressure ulcer. Screening of pressure ulcers as routine nursing assessment was instituted in 2015 to assess

patients for the risk of developing a pressure ulcers. However, in 2016, surveillance carried out by Nursing Department on the implementation of a tool to screen risk of pressure ulcers found that only 40% of patients were screened. It was also found that only 33% of the position changing charts were implemented by the nurses. Simultaneously, during the surveillance it was reported, 69% of the patients developed pressure ulcer during their stay in JDWNRH, 23% developed ulcers at home, and 8% of the patients came with pressure ulcers from other hospitals.

Literature Review

There are many factors that influence the development of pressure sores. Key factors include lack of manpower, facilities, equipment, and staff dissatisfaction.^[9] In addition to these factors, several studies have indicated that the attitude of the nursing staff plays an important role. A survey in a Swedish healthcare setting found that although the guidelines for the risk assessment is available but it has not adopted and used in practice.^[7] Therefore training on its own cannot guarantee the provision of quality health care, as there is a wide discrepancy between what nurses know and what they put into practice.^[2] Implementation of behavioral change strategies is require for overcoming the barriers and perpetuate the attitude on the prevention of the pressure ulcer by the staff ^[4] because the study done in Belgian hospitals, shows the attitudes of nurses toward pressure ulcers prevention are significantly correlated but the knowledge is not adequate.^[3] Continue medical education plays a major role and it is essential to update the knowledge because the practice on the prevention of pressure ulcers eventually improves.^[3] Subsequently the more the knowledge you gained, the practice on pressure ulcer increases(p-0.036).We need to come up with different strategies to improve the knowledge as it had improved the attitude by overcoming the barriers for the behaviour change towards the prevention of pressure ulcer.^[12] It was found that hospitalized patients have pressure sores or are at risk to develop.^[11] There are studies done in preventing from developing pressure ulcer by using different nursing methods so the pressure ulcer team members keep the record of the pressure in order to come up with the nursing method in preventing the patients from developing a pressure ulcers.^[5] It was found that prerequisite adequate dissemination pressure

ulcer prevention guidelines will improve the quality of pressure ulcer prevention.^[6] Not only the nurses have the sole responsibility for pressure ulcer prevention, nurses do have a unique opportunity for the significant impact on this problem with the positive attitude and knowledge, but these barriers were prevented by lack of time and staff. Implementation strategies should introduce ways in which key staff can be empowered to overcome barriers to change.^[8] Studies carried out in several countries have demonstrated gaps in knowledge about recommendations for pressure ulcer care and deficiencies in their implementation.^[9]

Objectives of the Study

1. To assess the level of knowledge, attitude and practice among nurses?
2. To know the incidence and the prevalence of pressure ulcer in JDWNRH?
3. To find it out the association of demographic variables with Knowledge, Attitude and Practice among nurses of JDWNRH?

Methodology

Cross-sectional quantitative study to determine the knowledge, attitudes and practices of nurses who work on the inpatient units of JDWNRH, Thimphu Bhutan. The sample size of the study was calculated as follows. Study population-to find the knowledge among nurses who are providing nursing care to inpatients in the different wards and units. Margin of Error (Confidence Interval)—the error to allow in the study. Common error to allow (+/- 5%). Confidence level-keeping the confidence interval to 95% confident. Standard deviation (SD)-SD variance of 0.5 is used for the study to ensure large sample collection. Confidence level corresponds to a Z-score, the constant value needed for sample calculation and the z-scores for the confidence levels:

$$95\% - Z \text{ Score} = 1.96$$

Plugging in Z-score, Standard of Deviation, and confidence interval into this equation:

$$\text{Necessary Sample Size} = (\mathbf{Z\text{-score}})^2 * \mathbf{StdDev} * (\mathbf{1 - StdDev}) / (\mathbf{margin\ of\ error})^2$$

Choosing 95% confidence level, 0.5 standard deviation, and a margin of error (confidence interval) of +/- 5%.

$$\begin{aligned} & ((1.96)^2 \times .5(.5)) / (.05)^2 \\ & (3.8416 \times .25) / .0025 \\ & .9604 / .0025 \\ & 384.16 \end{aligned}$$

385 respondents are needed

Sampling procedure (9th October 2017-30th April 2018)

A pretested (Randomly conducted among 20 nurses) using structured self-administered questionnaire on Knowledge, Attitude, and Practice (KAP) [9] while modified version of the existing data entry form for pressure ulcer was used to collect data for incidence and prevalence. Target population for KAP was all the nurses working with inpatients in JDWNRH. The enumerators for Knowledge, Attitude and Practice data collection in the high-risk areas were the pressure ulcer prevention and management nurse member. These enumerators are briefed about the questionnaires and the importance of data quality. The nurses were not pressurized however requested to answer honestly, so that we can come up with the activities which will eventually benefit the nurses and improve the quality services to the patients.

Study population: All the nurses (398) presented during the data collection were included. Incidence and prevalence of pressure ulcer data collection was done from high risk wards and units (Medical ward, Medical Extension, Cabin, Ortho, Surgical, Oncology, Adult Intensive Care Unit and Emergency Department with the addition of Paediatric Intensive Care Unit).

Inclusion criteria: The Regular and contract nurses working with inpatients in JDWNRH who are directly involved in patient care.

Exclusion criteria: Directly employed Scheme nurses as they are temporary posted and nurses working in outpatient department.

Data analysis: The data were recorded in the excel sheet and exported to SPSS 17 for analysis and report generation. Regression analysis were used to evaluate the correlation between the demographic variables and Knowledge, Attitude and Practice. The proportion was used to determine the incidence and prevalence of pressure ulcers.

Results

Table 1: Social-demographic characteristics of the study population

S. No	Variables	Options	Frequency	Percentage
1	Gender	Male	145	37.30%
		Female	244	62.70%
2	Age	20-29	265	68.3%
		30-39	92	23.7%
		40-49	29	7.5%
		≥50	2	0.5%
3	Education	Masters	5	1.3%
		Bachelor's in nursing	98	25.2%
		Diploma in nursing	228	58.6%
		Certificate	58	14.9%
4	Work Experiences	< 1- 4 years	241	62%
		5- 9 years	84	21.6%
		≥ 10 years	64	16.5%

Social-demographic characteristics of the study population

389 participated in the study, yielding a response rate of 97.25%. The mean age of the respondents was 29.18 years (SD 5.766). More than half of the respondents (62.7%) were female, 58.6% of the nurses had a diploma certificate. Majority of them (62%) had working experience of less than 5 years.

Table 2: Knowledge regarding Pressure Ulcer

		Correct		Incorrect	
		n	%	n	%
1	High loading pressure is the contributing factor for pressure ulcer formation.	339	87.1%	47	12.1%
2	Immobility is the most important factor for pressure ulcer Formation.	383	98.5%	6	1.5%
3	Bowel and bladder incontinence are the favorable environment for bacterial growth in the form of maceration.	339	87.1%	50	12.9%
4	Low albumin is the critical determinant for pressure ulcer formation.	269	69.2%	115	29.6%
5	Head to toe skin assessment is a procedure for a patient who is at high risk for pressure ulcer development.	331	85.1%	57	14.7%
6	Norton scale is the risk assessment scale for pressure ulcer.	354	91 %	32	8.2%
7	Norton scale >14 is high risk for pressure ulcer.	140	36%	247	63.5%
8	Partial skin loss with blister and abrasion is correct answer for the sign of stage two pressure ulcers.	312	80.2%	76	19.5%
9	Pale, red, or bluish- grey discoloration on the skin is the sign for pressure ulcer development.	368	94.6%	21	5.4%
10	Topical cream is appropriate method for skin care.	246	63.2%	142	36,5%
11	Turn position every four hours is significant activity for protecting skin damage.	263	67.6%	125	32.1%
12	Lift the patient without dragging is a correct practice for maintaining skin integrity	354	91%	36	9%
13	Use pillow under the patient's leg to prevent heel ulcer.	359	92.3%	28	7.2%
14	Vitamin C and E is important to maintain healthy skin.	367	94.3%	22	5.7%
15	Elevate the head of bed < 30° is the activity for reducing shearing force.	269	69.2%	118	30.3%
	Overall Number (n) and Rate (%)	313	80%	75	18%

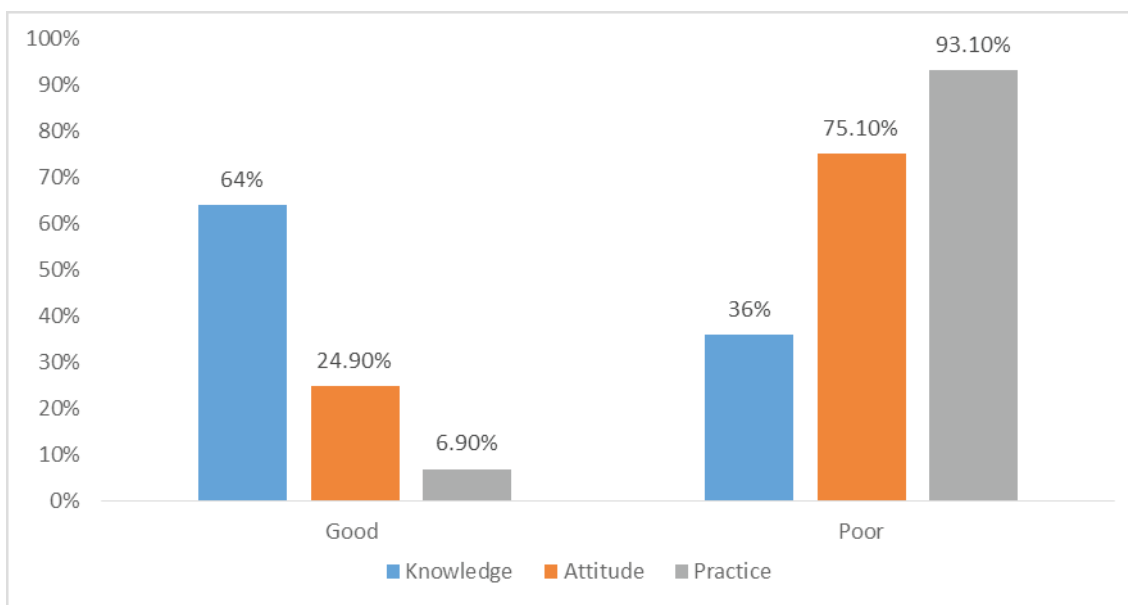


Fig 1: Knowledge, Attitude, Practice on Pressure Ulcer Prevention

Knowledge, Attitude, Practice on Pressure Ulcer Prevention

Based on the literature⁽¹³⁾, Participants were asked questions to assess their knowledge on pressure ulcer prevention, and they were categorized into two groups based on their score. Knowledge: good (64%) poor (36%), in attitude: good 97 (24.9%) poor 292 (75.1%), and in practice: good 27(6.9%) poor 362 (93.1%)

Knowledge and Working experience

Analysis scientifically shows that knowledge has significant correlation with working experience (P-0.034). The longer the duration in the service, more the knowledge is gained. However, from the demographic profile, majority of the staff are below 5 years of working experience (62%)

Knowledge and Practice

There is significant correlation between the knowledge and practice (P-0.036), which indicates the more knowledge you gained, subsequently practice on prevention of pressure ulcer increases.

Attitude and Practice

There is no significant correlation between the attitude with practice (p-0.56) and attitude with education

(P-0.654). Attitude on knowledge and practice depends on individually as there is no correlation statistically.

Discussion

The incident of the pressure ulcer among the patients remain challenging for every nurse. Despite every effort by the pressure ulcer team members monitoring, still increased incidence of pressure ulcer among inpatient patients has been reported in JDWNRH. The result even showed the significant correlation between the working experience with knowledge. There are precipitating factors as shown in some studies^[2,7,9,] affecting the practice for the pressure ulcer because the result shows poor practice (>90%) for preventing the pressure ulcer. Even 75% of nurse's attitude toward pressure management is low which could be the lack of implementation strategies. Documentation of pressure ulcer prevention and treatment improved after the educational session.^[11] Analysis scientifically shows that knowledge has a significant correlation with working experience (P- 0.034). The longer the duration in the service, more the knowledge is gained. However, from the demographic profile, majority of the staff are below 5 years of working experience (62%). There is significant correlation between the knowledge and practice (P-0.036), which indicates the more knowledge you gained, subsequently practice on prevention of pressure ulcer

increases. There is no significant correlation between the attitude with practice (p=0.56) and attitude with education (P=0.654). Attitude on knowledge and practice depends on individually as there is no correlation statistically.

Conclusion

It is recommended that the retention of experienced nurses is extremely important because more knowledge was gained with the duration in the service. Frequent CME needs to conduct since it helps in renewing the knowledge to date and improves the patient's care. Behavior change is challenging but strategies are required to overcome the barriers and perpetuate the attitude on the prevention of the pressure ulcer.

Acknowledgment: We would like to extend our gratitude to all the nurses who agreed to participate for the study amid hectic schedule and all the pressure ulcer team members.

Limitations: The study was done in JDWNRH, so the result may not represent the problem with the whole nurses of Bhutan because the factors affecting the workload is different in districts than in JDWNRH.

Conflict of Interest: None

Source of Funding: Nursing administration, JDWNRH.

Ethical Consideration: Prior to data collection, approval for the study (Ref. No. REBH/Approval/2017/067) was obtained from Research Ethics Board of Health (REBH).

References

- Allman RM, Laprade CA, Noel LB, Walker JM, Moorer CA, Dear MR, et al. Pressure sores among hospitalized patients. *Annals of internal medicine.* 1986;105(3):337-42.
- Claudia G, Diane M, Daphney SG, Danièle D. Prevention and treatment of pressure ulcers in a university hospital centre: a correlational study examining nurses' knowledge and best practice. *International journal of nursing practice.* 2010;16(2):183-7.
- Dimitri Beeckman R, PhD. Knowledge and Attitudes of Nurses on Pressure Ulcer Prevention: A Cross-Sectional Multicenter Study in Belgian Hospitals.
- Gunningberg L, Lindholm C, Carlsson M, Sjöden PO. Risk, prevention and treatment of pressure ulcers-nursing staff knowledge and documentation. *Scandinavian journal of caring sciences.* 2001;15(3):257-63.
- Halfens R, Eggink M. Knowledge, beliefs and use of nursing methods in preventing pressure sores in Dutch hospitals. *International Journal of Nursing Studies.* 1995;32(1):16-26.
- Hulsenboom MA, Bours GJ, Halfens RJ. Knowledge of pressure ulcer prevention: a cross-sectional and comparative study among nurses. *BMC nursing.* 2007;6(1):2.
- Källman U, Suserud BO. Knowledge, attitudes and practice among nursing staff concerning pressure ulcer prevention and treatment-a survey in a Swedish healthcare setting. *Scandinavian journal of caring sciences.* 2009;23(2):334-41.
- Moore Z, Price P. Nurses' attitudes, behaviours and perceived barriers towards pressure ulcer prevention. *Journal of clinical nursing.* 2004;13(8):942-51.
- Nuru N, Zewdu F, Amsalu S, Mehretie Y. Knowledge and practice of nurses towards prevention of pressure ulcer and associated factors in Gondar University Hospital, Northwest Ethiopia. *BMC nursing.* 2015;14(1):34.
- Pancorbo-Hidalgo PL, García-Fernández FP, López-Medina IM, López-Ortega J. Pressure ulcer care in Spain: nurses' knowledge and clinical practice. *Journal of Advanced Nursing.* 2007;58(4):327-38.
- Provo B, Piacentine L, Dean-Baar S. Practice versus knowledge when it comes to pressure ulcer prevention. *Journal of WOCN.* 1997;24(5):265-9.
- Strand T, Lindgren M. Knowledge, attitudes and barriers towards prevention of pressure ulcers in intensive care units: a descriptive cross-sectional study. *Intensive and critical care nursing.* 2010;26(6):335-42.
- Jamal Qaddumi, Abdullah Khawaldeh Pressure ulcer prevention knowledge among Jordanian nurses: a cross-sectional study. *BMC Nursing.* 2014.