Research Article

A Study to Evaluate the Effectiveness of Structured Teaching Programme (STP) on Knowledge Regarding Use of Braden Scale for Predicting Pressure Sore Risk Among Student Nurses in KLEs Institute of Nursing Sciences, Hubballi

Suma K*, Sanjay M Peerapur**, Sharon K Rose**

Qualifications of Authors:
*Mrs. Suma K, Principal, SVPMVP Institute of Nursing, Hubballi.
** Dr. Sanjay M Peerapur, Principal, KLEs Institute of Nursing Sciences, Hubballi.
**Mrs. Sharon K Rose, Lecturer, KLEs Institute of Nursing Sciences, Hubballi.

Abstract: Background: Skin is the largest organ covering the entire outside of the body. Skin care is a fundamental component of basic patient care and reflects on the overall quality of care a patient receives in the hospital. Pressure ulcers have been described as one of the physically debilitating complications in the 20th century and it will increase the costs of health care. **Objectives:** (1) To assess the knowledge regarding use of Braden Scale for predicting pressure sore risk among student nurses. (2) To evaluate the effectiveness of Structured Teaching Programme on knowledge regarding use of Braden Scale for predicting pressure sore risk among student nurses in terms of gain in knowledge scores. (3) To find out an association between pre-test knowledge scores regarding use of Braden Scale for predicting pressure sore risk among student nurses and their selected socio-demographic variables. **Methods:** A pre experimental one group pre-test post-test design was used. The sample size of 50 were selected by using Probability; simple random sampling technique. Data was collected from samples in KLEs Institute of Nursing Sciences, Hubballi by means of structured knowledge questionnaire. The reliability of the tool was r =0.73 and analysis was done using descriptive and inferential statistics. **Results**: The overall pre-test knowledge scores of student nurses, majority of the subjects 38(78%) had average knowledge, 4(8%) had good knowledge, and 8(16%) had poor knowledge. Whereas, in post-test, maximum subjects 47 (94%) had good knowledge, 3(6%) had average knowledge scores and none of them had poor knowledge regarding use of Braden scale in predicting pressure sore risk. There was significant gain in knowledge score who were exposed to structured teaching programme i.e 34.12%. The paired 't' test value (t $_{cal}$=26.08*) was greater than the tabulated value (t$_{tab}$= 2.009) for knowledge, hence proved that stated hypothesis i.e. mean post-test knowledge scores of Nursing students who have been exposed to structured teaching Programme will be significantly higher than the mean pre-test knowledge scores at 0.05 level of significance. **Conclusion:** The study concluded that structured teaching programme was more effective for student nurses to increase the knowledge regarding use of Braden scale in predicting pressure ulcer risk.
Keywords: Ulcer risk, structured teaching programme, knowledge, pressure.

Introduction
Skin is the largest organ covering the entire outside of the body. It receives one third of the body's blood circulation. Skin is tough and pliable, forming the body's protective shield against heat, light,

chemical and physical action. The skin protects us from microbes and the elements, helps regulate body temperature, and permits the sensations of touch, heat, and cold. It plays an active role with the immune system, protecting us from infection. Destruction or skin breakdown can range from minor scrapes, cuts, tears, blisters or burns with destruction of tissue down up to the bone. Anemia, malnutrition, and diabetes are some of the important risk factors, that occur individually or in combination, and can lead to form pressure ulcer.[1]

A sound skin makes you feel good and look healthy; skin is often an indicator of our holistic wellness. Maintenance of a glowing, healthy skin needs good personal hygiene, unpolluted environment, avoiding contact with chemicals, good eating habits and proper rest and peace.[2]

Skin care is a fundamental component of basic patient care and reflects on the overall quality of care a patient receives in the hospital. Maintaining skin integrity is an important function of nursing. Nurses must use consistent observations and skin care measures to prevent abrasions and subsequent tissue breakdown. Impaired skin integrity leads to skin irregularities. Skin irregularities that are frequently encountered in nursing practice is pressure ulcer and is usually a threat to the elderly and to patients who have restricted mobility or chronic illness.[3] The bedridden patients face various problems which include depression, nervousness, poor hygiene, and pressure ulcer.[4]

The word pressure means stress or strain. It is the force exerted by one object upon another. In the pressure areas of the body where the tissues may be compressed between the bed and underlying bone, especially the sacrum, greater trochanters, and heels, constant pressure against the pressure areas will reduces the blood supplies to the area and the affected tissue will become ischemia and leads to necrosis.[5]

Pressure ulcer also known as pressure sores, decubitus ulcers and bedsores and are now referred to as pressure injuries, pressure ulcers are localized damage to the skin and underlying tissue that usually occur over a bony prominence as a result of pressure or pressure in combination with shear and friction. The most common sites are the skin overlying the sacrum, coccyx, heels, or the hip, but other sites such as the elbows, knees, ankles, back of shoulders, or the back of the cranium can be affected.[6]

Pressure ulcer can be prevented by assessing the risk factors like Poor blood circulation, Immobility, Poor nutrition, rubbing or friction. If pressure ulcers cannot be assessed cautiously, it will lead to pain and decreased quality of Patient's life. Assessing all these risk factors is important to prevent pressure ulcers among patients.[7]

Pressure ulcers remain one of the most neglected aspects of health-care provision in India and identifying their associated risk factors at an early stage may go a long way in preventing their occurrence.[8]

Statement of the Problem
A Study to evaluate the effectiveness of Structured Teaching Programme (STP) on knowledge regarding use of Braden Scale for predicting pressure sore risk among student nurses in KLEs Institute of nursing sciences, Hubballi.

Objectives of the study
1) To assess the knowledge regarding use of Braden Scale for predicting pressure sore risk among student nurses.
2) To evaluate the effectiveness of Structured Teaching Programme on knowledge regarding use of Braden Scale for predicting pressure sore risk among student nurses in terms of gain in knowledge scores.

3) To find out an association between pre-test knowledge scores regarding use of Braden Scale for predicting pressure sore risk among student nurses and their selected socio-demographic variables.

Research Hypothesis

H₁: The mean post-test knowledge scores of nursing students who have been exposed to structured teaching programme will be significantly higher than the mean pre-test knowledge scores at 0.05 level of significance.

H₂: There will be statistical association between pre-test knowledge scores of nursing Students with their selected socio-demographic variables at 0.05 level of significance.

Methodology

Research Approach: Research approach used was evaluative approach.

Research Design: The research design for the study was Pre-experimental; one group pre-test, post-test design.

Research Setting: The setting of the study included KLEs Institute of Nursing Sciences, Hubballi.

Population: Student nurses studying inKLEs Institute of nursing sciences, Hubballi.

Sample: The sample for the study was the student nurses of age 20-22 years studying in KLEs Institute of nursing sciences, Hubballi.

Sample Size: The sample size selected for the present study was 50 nursing students of KLEs Institute of nursing sciences, Hubballi.

Sampling Technique: Simple random sampling technique.

Criteria for Selection

Inclusion Criteria: Student nurses who are:
✓ In the age group of 20-22 years.
✓ Available at the time of data collection.
✓ Willing to participate in the study.

Exclusion Criteria: Student nurses who are sick during the time of data collection.

Instrument Used

Section A: Demographic Performa was used to collect the baseline variables.

Section B: A structured knowledge questionnaire regarding use of Braden scale in predicting pressure sore risk was prepared by the researcher for the present study.

Description of the instruments

Section I: Socio-demographic data which consists of 7 variables that includes-Age, gender, religion, course of study, type of family, habitat, and source of information.

Section II: Structured knowledge questionnaire that consists of 49 items.

The structured knowledge questionnaire was divided into following parts.

Part A: 05 Items on knowledge regarding anatomy and physiology of skin.
Part B: 08 Items on knowledge regarding pressure ulcer.
Part C: 06 Items on knowledge regarding pressure ulcer prevention.
Part D: 30 Items on knowledge regarding use of Braden scale.

A score value of one (1) was allotted for each correct response and zero (0) for each incorrect response. Total maximum score limit was 49.

Method of Data Collection
Ethical clearance to conduct this study was obtained from the institutional ethical committee, KLEs Institute of nursing sciences, Hubballi. A formal permission was obtained from administrative authorities of KLEs Institute of nursing sciences, Hubballi. The study was conducted in 4th year B.Sc. (N) and 3rd year GNM students. 50 subjects were selected using Simple random sampling technique based on inclusion and exclusion criteria. The data collection period was from 16-01-2020 to 22-01-2020. Subject information sheet was read to the subjects to understand the nature of study and written informed consent was obtained. Structured knowledge questionnaire method was used to collect the data. Demographic Performa was used to collect the baseline variables. The subjects took a total time of 30 minutes to answer all the items in the tool.

Results
Section I: Description of demographic variables of student nurses
✓ The 38% of subjects are in age group 21 years.
✓ The 82% are females.
✓ The 66% belongs to Hindu religion.
✓ The 66% are studying IVth year B.Sc.(N)
✓ The 86% belong to nuclear family.
✓ The 27 (54%) belongs to rural area.
✓ The 21 (42%) had source of information by electronic media urban area.

Section II: Mean, Median, Mode, Standard Deviation and Range of knowledge scores of subjects regarding use of Braden scale in predicting pressure ulcer risk.

Table 1. Frequency and percentage distribution of knowledge scores of subjects regarding use of Braden scale in predicting pressure ulcer risk (n=50)

Area of analysis	Mean	Median	Mode	Standard Deviation	Range
Pre-test	22.14	23	25	3.53	14
Post-test	38.86	40	41	4.42	20
Difference	16.72	17	16	0.89	06

Table 1 shows that distribution of level of knowledge on student nurses regarding use of Braden scale in predicting pressure ulcer risk during pre-test and post-test. Most of the subjects in the pre-test 38 (78%) had average knowledge, 4(8%) had good knowledge, and 8(16%) had poor knowledge. In post-test, 47 (94%) had good knowledge, 3(6%) had average knowledge scores.

Table 2. Pre-test, post-test percentage of knowledge scores of subjects regarding use of Braden scale in predicting pressure ulcer risk.

Items	Total Score	Mean % of knowledge scores of subjects		
		Pre-test	Post-test	Gain in knowledge
Structured knowledge questionnaire	2450	45.18%	79.36%	34.12%

Table 2 reveals that there was 34.12% gain in knowledge after administration of structured Teaching Program.

Section III: Testing hypotheses
H₁: The mean post-test knowledge scores of student nurses who have been exposed to Structured Teaching Programme will be significantly higher than the mean pre-test knowledge scores at 0.05 level of significance.

Table 3. Mean difference ($\bar{d}$) Standard Error of difference (SEd) and paired 't' values of knowledge scores of subjects.

Mean Difference ($\bar{d}$)	Standard error of difference (SEd)	Paired 't' values	
		Calculated	Tabulated
16.72%	0.640	26.08*	2.009

Table 3 reveals that the calculated paired 't' ($t_{cal}=26.08^*$) was greater than the tabulated value ($t_{tab}=2.009$). Hence, H_1 was accepted. This indicates that the gain in knowledge score was statistically significant at 0.05 level of significance. Therefore, the structured teaching program was effective to improve the knowledge of subjects.

H₂: There will be a significant association between pre-test knowledge scores of nursing students with their selected socio-demographic variables at 0.05 level of significance.

Table 4. Frequency and percentage distribution of subjects according to socio demographic variables.

S. No.	Socio-Demographic variables	Frequency	Percentage (%)
1	**Age in years**		
	20	14	28%
	21	19	38%
	22	17	34%
2	**Gender**		
	Male	9	18%
	Female	41	82%
3	**Religion**		
	Hindu	33	66%
	Muslim	06	12%
	Christian	09	18%
	Others	02	4%
4	**Course of study**		
	B.Sc. (N) 4ᵗʰ year	33	66%
	GNM 3ʳᵈ year	17	34%
5	**Type of family**		
	Nuclear	43	86%
	Joint	06	12%
	Extended	01	02%
6	**Habitat**		
	Rural	27	54%
	Urban	23	46%
7	**Source of information**		
	Print media	13	26%
	Electronic media	21	42%
	Peer group and social group	02	04%
	Health professionals	14	28%

The results revealed that there was no statistical association between the knowledge scores and socio-demographic variables.

Nursing Implications
The findings of the present study have implications in the area of nursing education, nursing practice, nursing administration and nursing research.

Nursing Practice
Nursing personnel need to prepare instructional material which should be simple, clear and understandable that can be studied by their own with other health team members and there is need for in-service training and refresher courses about use of pressure ulcer risk assessment scale to update their knowledge and which can be translated into practice. Regular screening of people can be arranged by health care professionals to detect pressure ulcer and prevent the complications.

Nursing Education
As a nurse educator, there are abundant opportunities for nursing professionals to educate the nursing students regarding use of Braden scale. The study emphasizes significance of continuing education programs for nurses on use of Braden scale in predicting pressure ulcer risk. Motivate the student nurses and health care workers to update the knowledge on various approaches in treatment modalities and preventive measures for pressure ulcer.

Nursing Administration
Nurse administrator plays a major role in constantly updating the knowledge on use of Braden scale and effective practice among nurses and other healthcare team members. Nurse administrators need to conduct awareness programs on use of Braden scale as it helps to identify people at risk for pressure ulcer. Organize in-service education, seminars and re-evaluation of staff nurses regarding use of Braden scale in predicting pressure ulcer risk and prevention of pressure ulcer.

Nursing Research
The present study concluded by the investigator can be a source of review of literature for others, who are intending to conduct studies on use of Braden scale and this can motivate nursing researcher to conduct more studies to assess the effectiveness of structured teaching programme related to prevention of pressure ulcer.

Limitations
The study was limited to:
✓ 50 student nurses.
✓ Student nurses of KLEs Institute of Nursing Sciences Hubballi. The tool was used for the data collection was not standardized. It was designed by the investigator herself for the purpose of present study based on the objectives of the study which was validated by the experts.
✓ The study did not use a control group. The investigator had no control over the events that took place between pre-test and post-test.

Recommendations
Keeping in view the findings of the present study, the following recommendations were made:
a) A similar study can be replicated on a larger sample size thereby findings can be generalized for larger population.
b) A comparative study can be conducted among staffs of different wards with same setting.
c) A descriptive study can be conducted to assess the knowledge, attitude, and practice regarding use of Braden scale in predicting pressure ulcer risk among student nurses.
d) A similar study can be conducted and evaluated using alternative teaching strategies like self-instruction module, video assisted teaching.
e) An observational study can be conducted regarding use of Braden scale among staff nurses.

Conclusion
a) The overall pre-test knowledge scores of student nurses were average.
b) The post-test knowledge scores of the subjects after administration of the structured teaching programme was significantly higher than the pre-test knowledge scores.
c) The results revealed that there was no statistical association between the knowledge scores and socio-demographic variables.

d) The study concluded that structured teaching programme was more effective for student nurses to increase the knowledge regarding use of Braden scale in predicting pressure ulcer risk.

e) The age, education, occupation and family history of the alcoholic peoples have no associations with the self-esteem whereas the age of beginning of alcohol, quantity of consumption and income have association with self-esteem.

Conflicts of interest: The authors declare no conflicts of interest.

References
1. Dean J. Skin health: Prevention and treatment of skin breakdown. Transverse Myelitis Assoc J. 2011;5:26-32.

2. Nadagaddi BS, Sikandar BJ, Chopade S, Appangouda P. The effectiveness of individual structured teaching Programme (istp) on use of Braden scale for predicting pressure sore risk for Bed fast patients among staff nurses at selected hospital of Bijapur. Int J Curr Adv Res. 2018;7(9):15420-423.

3. Kaur I. Preventing pressure ulcer. Nightingale Nurs Times. 2015;10(12): 50-52.

4. Jagtap M, Tata S, Philip ES, Jadhav K. Effectiveness of structured teaching programme on use of Braden scale among nurses at tertiary care hospital, Karad. Int J Sci Res. 2018;6(7):868-72.

5. Patidar DD, Patidar K, Patel J. Effectiveness of structured teaching programme on knowledge of staff nurses regarding use of Braden scale on pressure sore in selected hospital. Int J Adv Nurs Manag. 2019;7(3):275-78.

6. Pressure ulcer Wikipedia [online] 2019 [cited 2019 Feb 12]. Available from: https://en.wikipedia.org/wiki/Pressure_ulcer

7. Courtney H. Pressure ulcer [online] 2019 [cited 2019 Feb 14]. Available from: https://www.hopkinsmedicine.org/geriatric_medicine_gerontology

8. Daniel B, Ashkan J. Pressure ulcer prevention: Evaluation and Management. J Am Fam Phys. 15;78(10):1186-1189.