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## Original Research Article

# A comparative study to assess the effectiveness of structured teaching program on knowledge regarding prevention of pressure ulcers among BSc nursing 2<sup>nd</sup> year and BSc nursing 3<sup>rd</sup> year students in selected nursing colleges of Patiala, Punjab

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## ABSTRACT

**Statement of Problem:** “A comparative study to assess the effectiveness of structured teaching program on knowledge regarding prevention of pressure ulcers among BSc nursing 2<sup>nd</sup> year and BSc nursing 3<sup>rd</sup> year students in selected nursing colleges of Patiala, Punjab.

**Background of the Study:** Pressure ulcer is a preventable medical complication of immobility. It has psychological, economic and social impact on individual and family. Its cost of treatment is more than twice of cost of prevention.

**Aim of the Study:** To assess the effectiveness of structured teaching program on Knowledge regarding prevention of pressure ulcers among B.Sc. nursing 2<sup>nd</sup> year and B.Sc. Nursing 3<sup>rd</sup> year students in selected nursing colleges of Patiala, Punjab”

**Materials and Methods:** The research approach adopted for the study was non-experimental, with descriptive comparative design. 60 B.Sc. nursing 2<sup>nd</sup> year and B.Sc. nursing 3<sup>rd</sup> year students in selected nursing colleges of Patiala, Punjab by simple random sampling. Self-structured knowledge was developed and administered to assess the knowledge of among B.Sc. nursing 2<sup>nd</sup> year and B.Sc. nursing 3<sup>rd</sup> year students in selected nursing colleges of Patiala, Punjab”

**Results:** The mean knowledge revealed that in the BSc nursing 2<sup>nd</sup> year students, majority of students 28(93.3%) had Adequate knowledge and 2(6.7%) had Moderate knowledge but none of them had Inadequate knowledge. Whereas in the BSc nursing 3<sup>rd</sup> year students, majority of students 26(86.7%) had Inadequate knowledge and 4(13.3%) had Moderate knowledge but none of them had Inadequate knowledge.

**C onclusion:** The students had significant gain in knowledge after the administration of structured teaching program regarding prevention of pressure ulcers.

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## 1. Introduction

Bedridden patient is a patient that has to stay in bed for a long period of time. Such patient might quickly develop serious complications that are not directly linked with the reason why he has to stay in bed. Most of those complications can be very easily prevented

using simple exercises and teaching the patient or the caretaker. The reason why a patient has to stay in bed can be multiple trauma, fracture of the spine, paralysis, severe disease, coma, surgery, head injury etc. The most common complications of bedridden patients are muscle weakness/atrophy, pressure sores (bed ulcerations), respiratory problems (lung infection), Blood circulation problems, bone demineralization.<sup>1</sup>The skin has multiple layers of ectodermic tissue and guards the underlying

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muscles, bones, ligaments and internal organs. Because it interfaces with the environment, skin plays a key immunity role in protecting the body against pathogens and excessive water loss.<sup>2</sup> The important functions of the skin are to protecting the underlying tissue and serve as a surface barrier to the external environment, barrier against invasion of bacteria and viruses and excessive water loss, fat insulates the body and provides protection from trauma, sensory perception for external stimuli, heat regulation, homeostasis by fluid and electrolyte balance, synthesis of vitamin D.<sup>3</sup> Impaired skin integrity is not normally a problem in healthy people but it is a threat to the elderly clients who have restricted mobility or chronic illness.<sup>4</sup> The longer the pressure lasts, the greater is the risk of skin breakdown and development of pressure ulcer.<sup>5</sup>

The purpose of the study was to assess and compare knowledge regarding prevention of pressure ulcers among B.Sc. 2<sup>nd</sup> year and B.Sc. 3<sup>rd</sup> year nursing students in selected colleges of Patiala Punjab. Bedridden patient is a patient that has to stay in bed for a long period of time. Such patient might quickly develop serious complications that are not directly linked with the reason why he has to stay in bed. A pressure ulcer is a localized injury to the skin or underlying tissue usually occurs over a bony prominence, as a result of unrelieved pressure or pressure in combination with shear.<sup>6</sup>

Pressure ulcers are caused by unrelieved pressure applied with great force (shear) over a short period or less force (friction) over a long period that disrupts blood supply to the capillary network, impeding blood flow and depriving tissue of oxygen and nutrients Pressure ulcers are a serious health issue for patients in all kinds of health care settings and even at home thus reduction of pressure ulcer prevalence in long-term care (LTC) is a Healthy people 2010

initiative. In fact, Florence Nightingale in 1859 wrote, —If he has a bedsore, it's generally not the fault of the disease, but of the nursing. The incidence varies from 0.4% to 38% in hospitals and 2.2%–23% in long-term care settings. Bedsores are one of the most costly and physically debilitating complications. Pressure ulcers (PrUs) affect approximately 2.5 million patients and account for 60,000 deaths annually. They are associated with an additional annual cost of \$43,000 per related hospital stay and a total cost to the US health care system as high as \$25 billion.<sup>7</sup> Butcher (2012), stated that immobility is widely documented in the literature as a cause of increased mortality and complications. Immobilized patients are at greater risk for skin breakdown and delayed wound healing. The musculoskeletal system is severely affected by immobility and prolonged bed rest. Prolonged bed rest and immobilization inevitably lead to complications. Such complications are much easier to prevent than to treat.<sup>8</sup> In the intensive care unit (ICU), patients have multiple factors that increase the risk of pressure ulcers

developing. Typically the patient has respiratory equipment, urinary catheters, sequential compression devices, multiple intravenous catheters, and the infusion of vasoactive agents for hypotension that may contribute to inability to turn patients and increase the risk of pressure ulcer development.<sup>9</sup>

### 1.1. Need for the Study

“An ounce of prevention is worth a pound of cure”

Preventing pressure ulcers can save the health service, millions of pounds and improve patient care. Pressure ulcers are common problem in nursing practice and entail great expenses for the patients as well as for the health care services. Despite technologic and preventive advances in recent years, the incidence of pressure ulcers in acute care remains unacceptably high.

The prevalence of pressure ulcer development is highest among the older adult population and it has been estimated that 70 percent of pressure ulcers occur in patients older than 70 years of age. 95 percent of pressure ulcers develop on the lower part of the body; 65 percent develop in the pelvic area and 30 percent develop on the lower limbs. The average estimated annual cost of treating a pressure ulcer ranges from \$5000 to \$60,000. This results in a cost to the U.S. health care system of about \$8.5 billion annually. In the older adult population, the risk of death from a pressure ulcer increases fourfold. Nurses are often blamed for pressure ulcers as they are seen as a failure of nursing care, most pressure ulcers can be prevented if there is an active plan for their prevention.<sup>10</sup> A study conducted on prevalence of pressure ulcers in hospitalized patients in India. A total of 445 patients hospitalized in medical and surgical wards were examined in a single day for the number, site and grade of pressure ulcers. Hemoglobin, serum albumin and blood sugar levels of patients with pressure ulcers were recorded. The result was the prevalence of pressure ulcers was high (4.94%). Anemia, malnutrition and diabetes were important risk factors, while morbidity due to pressure ulcers in long-stay wards, such as neurology, was exceptionally high (40.9%).

## 2. Objectives

1. To assess the pre-test knowledge score regarding prevention of pressure ulcers among BSc nursing 2nd year and BSc nursing 3rd year students in selected nursing colleges of Patiala, Punjab.
2. To plan and implement structured teaching program regarding prevention of pressure ulcers among BSc nursing 2nd year and BSc nursing 3rd year students in selected nursing colleges of Patiala, Punjab.
3. To evaluate the post-test knowledge score regarding prevention of pressure ulcers among BSc nursing 2nd year and BSc nursing 3rd year students in selected

**Table 1:** Frequency and percentage distribution of socio-demographic variables among B.Sc. nursing 2nd year and B.Sc. nursing 3rd year students in selected nursing colleges of Patiala, Punjab N=60

Socio-demographic variables		B.Sc. nursing 2nd year Frequency (n=30)	B.Sc. nursing 2nd year Percentage (%)	B.Sc. nursing 3rd year Frequency (n=30)	B.Sc. nursing 3rd year Percentage (%)
Age(in years)	18 Years	6	20.0%	0	0.0%
	19 Years	20	66.7%	6	20.0%
	20 Years	3	10.0%	21	70.0%
	21 Years	1	3.3%	3	10.0%
Gender	Male	8	26.7%	13	43.3%
	Female	22	73.3%	17	56.7%
Educational Qualification	B.Sc. (nursing) 2nd year	30	100.0%	0	0.0%
	B.Sc. (nursing) 3rd year	0	0.0%	30	100.0%
Clinical Posting	Medical ward	9	30.0%	8	26.7%
	Surgical ward	11	36.7%	5	16.7%
	Orthopedic ward	6	20.0%	9	30.0%
	Intensive care unit	4	13.3%	8	26.7%
Source of information regarding prevention of pressure ulcers	Clinical instructors	26	86.7%	26	86.7%
	College mates	1	3.3%	1	3.3%
	Mass media	2	6.7%	1	3.3%
	Other	1	3.3%	2	6.7%

**Table 2:** Comparison of distribution of Frequency and Percentage between Pre-test and Post-test Knowledge Score regarding the effectiveness of structured teaching program on knowledge regarding prevention of pressure ulcers among B.Sc.nursing 2nd year and B.Sc. nursing 3rd year students

Criteria Measure of Pre-Test Versus Post-Test Knowledge Score								
Score Level	Pre-test		Pre-test		Post-test		Post-test	
	BSc nursing 2nd year		BSc nursing 3rd year		BSc nursing 2nd year		BSc nursing 3rd year	
	Freq	%	Freq	%	Freq	%	Freq	%
Adequate 67-100%(21-30)	0	0%	0	0%	28	93.3%	26	86.7%
Moderate 34-66%(11-20)	6	20%	3	10%	2	6.7%	4	13.3%
Inadequate ≤33%(0-10)	24	80%	27	90%	0	0%	0	0%
Maximum=30 Minimum =0								

nursing colleges of Patiala, Punjab.

- To compare the pre-test and post-test knowledge score regarding prevention of pressure ulcers among BSc nursing 2nd year and BSc nursing 3rd year students in selected nursing colleges of Patiala, Punjab.
- To find out the association between pre-test knowledge score regarding prevention of pressure ulcers with their socio demographic variables.

## 2.1. Inclusion and exclusion criteria

### 2.1.1. Inclusion criteria

The study included B.Sc. nursing 2nd year and B.Sc. nursing 3rd year students: -

- B.Sc. nursing 2nd year and B.Sc. nursing 3rd year students of selected nursing colleges of Patiala Punjab.
- Are willing to participate in the research study.

- Are available at the time of study Data Collection.

### 2.1.2. Exclusion criteria

- The study excluded nursing students who were not: -
- Willing to participate in the study.
- Available at the time of study Data Collection

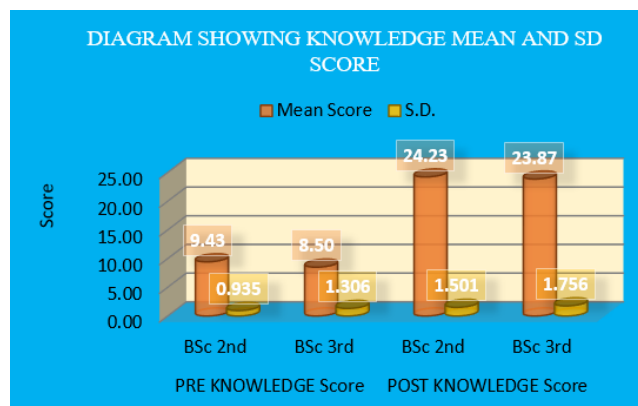
## 3. Selection and Development of Tool

Research tool consists of two (2) sections

- Section A- Socio-demographic variables.
- Section B- Multiple choice self-structured knowledge questions regarding prevention of Pressure Ulcers.

**Table 3:** Association of Post-test Score regarding prevention of pressure ulcers among B.Sc. nursing 3rd year students in selected nursing colleges of Patiala, Punjab with their selected socio-demographic variables

Demographic Variables		Level of Scores			Association of KNOWLEDGE Score with Demographic variables (Post KNOWLEDGE) BSc 3rd Students				
Variables	Options	Inadequate	Moderate	Adequate	Chi Test	P Value	df	Table Value	Result
Age ( in years)	18 Years	0	0	0	1.360	0.507	2	5.991	Not Significant
	19 Years	0	1	5					
	20 Years	0	2	19					
	21 Years	0	1	2					
Gender	Male	0	3	10	1.885	0.170	1	3.841	Not Significant
	Female	0	1	16					
Educational Qualification	B.Sc. (nursing)	0	0	0	NA				
	2nd year								
	B.Sc. (nursing) 3rd year	0	4	26					
Clinical Posting	Medical ward	0	1	7	4.471	0.215	3	7.815	Not Significant
	Surgical ward	0	2	3					
	surgical ward								
	Orthopedic ward	0	0	9					
Source of information regarding prevention of pressure ulcers	Intensive care unit	0	1	7	0.710	0.871	3	7.815	Not Significant
	Clinical instructors	0	4	22					
	College mates	0	0	1					
	Mass media	0	0	1					
	Other	0	0	2					

**Figure 1:** Bar Diagram showing Comparison of Pre-test and Post-test Knowledge Score regarding the effectiveness of structured teaching program on knowledge regarding prevention of pressure ulcers between B.Sc. nursing 2nd year versus B.Sc. nursing 3rd year students

#### 4. Development of Structured Knowledge Questionnaire

A self-structured knowledge questionnaire was prepared for assessing the knowledge regarding prevention regarding

prevention of pressure ulcers among B.Sc. nursing 2nd year and B.Sc. nursing 3rd year students. The tool was developed after the extensive review of research and non-research literature, seeking the opinion of experts and guides, formal and non-formal discussions with the peer group and investigators professional experience.

A blue print was prepared by specifying the domains of areas. Details of the blue print are shown in table 1. Item writing was done after preparing the blue print specifying the domains of objectives (knowledge, comprehension, and application).

#### 5. Conclusion

The study depicts the Pre-test Knowledge Score comparison revealed that in the B.Sc. nursing 2nd year students, majority of students 24(80%) had Inadequate knowledge and 6(20%) had Moderate knowledge but none of them had Adequate knowledge. Whereas in the B.Sc. nursing 3rd year students, majority of students 27(90%) had Inadequate knowledge and 3(10%) had Moderate knowledge but none of them had Adequate knowledge.

Post-test Knowledge Score comparison revealed that in the B.Sc. nursing 2nd year students, majority of students 28(93.3%) had Adequate knowledge and 2(6.7%) had Moderate knowledge but none of them had Inadequate knowledge. Whereas in the B.Sc. nursing 3rd year students, majority of students 26(86.7%) had Inadequate knowledge and 4(13.3%) had Moderate knowledge but none of them had Inadequate knowledge.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

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