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A study to evaluate the effectiveness of structured teaching programme on skin ulcer among staff nurses working in selected hospitals Bhandara city

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Abstract
Background of the study: A study, titled "A study to evaluate the effectiveness of structured Teaching programme on knowledge regarding skin ulcer among staff nurses in selected hospitals at Bhandara city", Immobility has an effect on individual functions confined to bed. It can lead to constant pressure. Pressure sores, an injury to the skin and underlying tissues occur as a result of direct unrelieved pressure of soft tissue against bones; Pressure sores are a serious problem which leads to pain, longer hospital stay and slow recovery from health problems. Hence, nurses play an important role in preventing pressure sores.
Approach: The research approach adopted for this study is an evaluative approach.
Design: The research design selected for this present study was pre-experimental
Setting: The study was conducted at selected hospitals of Bhandara city District.
Participants: 50 staff nurses were assessed by convenient sampling technique, as a non-probability sampling method.
Pre-assessment: The tool was developed by preparation of structured knowledge questionnaires content validity of the tool was established by giving to professional experts.
Intervention: Personal data was assessed by using a demographic questionnaire Structured knowledge questionnaire was administered on day one to 50 staff nurses. Structured teaching programme was administered on the same day to them.
Post assessment: Structured knowledge questionnaire was administered after 7 days of administration of structured teaching programme to assess its effectiveness.
Results: The results of major findings indicated that staff nurses had inadequate knowledge in various aspects of skin ulcer and its prevention STP was found to be a very effective method of providing information regarding skin ulcer and its prevention. The mean post-test level of knowledge is significantly higher than the mean pretest knowledge scores "t"= $P< 0.01$. There was no significant association between the findings and the selected demographic variables as estimated.
In post-test knowledge score ranged from 42–47, whereas the pre-test knowledge scores ranged from 12-24. The mean post-test knowledge scores ($\chi^2 = 46.00$) was apparently higher than the mean pre-test knowledge score ($\chi^2= 17.08$). The median of post-test knowledge score ($M_2 = 46.00$) was higher than the median of pre-test knowledge score ($M_1 = 17$). Calculated 't' value ('t'= 68.11, $p< 0.001$) is greater than table value ('t' = 2.00), which represents the significant gain in knowledge, through the Structured Teaching Programme. Hence the hypothesis H_1 was accepted. Thus it suggests that the STP has been effective in increasing the knowledge of staff nurses about pressure sore and its prevention. The association of the knowledge scores of staff nurses with their selected socio-demographic variables shows that, there is a no statistical significant relationship between gain in knowledge and personal characteristics like age, marital status, Professional Education, experience, area of work. Hence the hypothesis (H_2) rejected.
Interpretation & Conclusion: The study concluded that the STP on skin ulcer and its prevention was an effective method for providing moderate to adequate knowledge and help staff nurse to enhance their knowledge to provide effective nursing care to clients and implications for clinical practices.

Keywords: Knowledge, evaluate, effectiveness, Skin ulcer, pressure sore; friction, immobility, incontinence, contractures, hygiene, structured teaching programme

Introduction
A sound skin makes you feel good and look good" 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 sleep and peace and happiness. An estimated 1.7 million patients develop skin ulcers annually. Both prevention and treatment of pressure ulcers are costly in term of health care dollars and quality of life for patients at

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risk because the cost in term of pain and suffering for a person with pressure ulcer can't be quantified, the old saying "an ounce of prevention is worth a pound of cure" is particularly applicable to pressure ulcers.(Brunner and suddarth 2004) [1].

Skin ulcers and Pressure sores are health problems which has impact on health of Nation. In UK the treatment of pressure sore imposes a large financial and manpower burden [1].

Also it was suggested that an annual reduction of 5-10% in their incidence would be a reasonable target, justified by the belief that "are largely preventable". Numerous reports have been published on the prevalence and incidence of skin ulcer due to the large groups of the patients, it is impossible to determine how many of the reported one could have been prevented [2].

Skin ulcer is physiologically defined as a lesion on the skin surface that results in blistered, broken or necrotic skin. It has been reported that 1 out of 10 hospitalized patients and 25% of all nursing home patients have skin ulcer in varying stages [3].

Skin ulcer is a friction burn, Decubitus ulcers as well as bed sores. How serious they are depends on the amount of damage to skin and tissue. A pressure sore (or Bed-sore) is an injury to the skin and tissue under it, and caused usually by unrelieved pressure, constant pressure against the skin which reduces the blood supplies to that area and the affected tissue will be necrosed. A pressure ulcer starts as reddened skin but gets progressively worse, forming a blister, then an open sore and finally a crater [3].

Skin ulcer is a common health problem in hospitals and nursing homes and in home care setting. The incidence of skin ulcers is estimated at 11% in skilled care and nursing homes, 10% in acute care and 4. 4% in home care. The prevalence of skin ulcers ranges from 10-17% in acute care, 0-29% in home care and 2.3-28% in institutional long-term care. Incidence ranges from 0.4-38% in acute care, 0-17% in home care and 2.2-23.9% in institutional long-term care [1].

Daideri G, Berthier F, Brocker P, had a survey to determine the prevalence of skin ulcer or pressure sore in university hospital and to assess the risk of developing pressure sore. The Braden scale was used to measure the patients risk for the development of pressure ulcers. The total prevalence was 16.6%, 95% critically ill, the Braden scale score less than or equal to 15 was found in 29.1% of hospitalized patients. Nurses use nursing process in order to plan and carry out nursing intervention. During the phase of planning, nurses prioritize needs giving importance to immediate and life threatening needs; patient safety needs patient's priority needs and lastly to nurse's priorities. Therefore as part of patient safety we are liable to protect the patient from complications resulting from neglected skin. Skin care is hence a primary activity of the nurse.

Jean G (2013) [5]. mentioned in their studies that skin ulcers are present in 6-14% of all the patients in acute care setting and up to 25% in residential nursing care. A prevalence of 40% has been reported in adult intensive care unit. Two-third of pressure ulcers occurs in patients over the age of 70. Pressure ulcer may complicate the individual at any age [8].

The prolonged low pressure is a greater risk than short term high pressure. Bereck (1978) cited five conditions that contribute to pressure sore. They are poor nutrition, aging process, motor paralysis, superficial sensory loss with absence of subjective awareness of pain and pressure. He suggested that decrease of pressure level under the resisting body is important in prevention of skin breakdown [2].

According to the Braden Scale for predicting pressure sore risk, the individuals scored according to the sensory perception, degree of moisture activity, immobility, rotation and friction (Potter and Perry 1997) [2].

Skin ulcer not only cost money but also because other problems like add the length of stay at hospital and leads to loss in many ways. Initially, recovery and rehabilitation of patients who develop pressure ulcer is delayed secondly, feeling of failure, disappointment and guilt is engendered in the nursing staff. When a pressure sore develops it often carries the connate of neglect and mismanagement in the nursing care of patients. Thirdly untreated pressure sore will lead to systemic complications and nosocomial infection. Finally the country is affected in that, this phenomena prevents another citizen from using the hospital bed and delays potential tax payers return to his job.

So the present study is an attempt to use the concept of preventive care, by giving structured teaching programme on skin ulcer in hospitalized patients among staff nurses.

Objectives
1. To assess the knowledge regarding skin ulcer among staff nurses working in selected hospital Bhandara city.
2. To evaluate the effectiveness of Structured Teaching Programme regarding skin ulcer among staff nurses working in selected hospital Bhandara city.
3. To find the association between the knowledge regarding skin ulcer among staff Nurses working in selected hospital Bhandara city with selected socio demographic variables.

Hypothesis
H_1: There will be significant difference between pretest and posttest knowledge scores of subjects exposed to structured teaching programme on skin ulcer

H_2: There will be significant association between posttest knowledge scores regarding skin ulcer and selected demographic variables.

Methodology
Research Approach: Evaluative approach
Research Design: Pre experimental design
Sampling technique: Non-Probability; Convenient Sampling Technique
Sample size: 50
Setting of study: Selected areas of Bhandara city
Tool used for data collection: Following tools used for the data collection

Part-I
Personal data consisting of 8 items which includes age, gender, marital status, professional education, years of experience in nursing, areas of experience, attended any in-service education programme, seminars, etc.,

Part-II
It consists of 40 items to assess the knowledge of rural and urban mothers regarding child abuse. It has four sections as mentioned below.

Section A: Consist of 6 items on general information regarding skin ulcer.

Section B: Consist of 12 items on knowledge of staff nurses regarding incidence of skin ulcer.

Section C: Consist of 10 items on knowledge of staff nurses regarding causes, diagnosis of skin ulcer.

Section D: Consist of 12 items on knowledge of staff nurses

regarding skin ulcer its prevention and management.

Procedure of data collection

Data was collected after obtaining administrative permission from selected hospitals of Bhandara city. The investigator personally explained the participants the need and assured them of the confidentiality of their responses. Data was collected through structured knowledge questionnaries. The test was conducted based on their availability and convenience. Soon after the test, the learning intervention was administered.

Results

The findings related to socio-demographic variables of participants

Part I: Frequency and percentage distribution of socio-demographic variables of participants N=50

The Percentage wise distribution of sample according their age depicts that, Most of the subjects i.e. 49 (98%) were in the age group of 21-30 years; only one (2%) was above 30 years old. The percentage wise distribution of sample according to their religion shows that, majority of subjects (64%) were belonging to Hindu religion, (30%) of them were belonging to Muslim community and (6%) were belonging to Christianity.

The percentage wise distribution of sample according to their marital status illustrates that, majority of subjects (90%) were married, (10%) were unmarried Percentage wise distribution of Sample according to their educational qualification that, majority subjects (82%) had completed GNM & (18%) had BSc Nursing.

The Percentage wise distribution of sample according to their work experience reveals that, majority of subjects (46%) had ortho ward experience, (32%) of them were had 2 -6 year of neuro ward experience & (22%) had surgical and other ward experience.

The Percentage wise distribution of sample according to their area of experience reveals that, majority of subjects (94%) had less than 2 year of experience, (4%) of them were had 2 -6 year of experience & (2%) had more than 7 years.

The Percentage wise distribution of sample according to their type of family reveals that, in rural area most of (88%) the subjects were Joint family and 12% of them were Nuclear.

The Percentagewise distribution of sample according to their source of information depicts that, in rural area most of (4%) the subjects getting from friends, 44%of them were getting information from mass media, 4% from others and 48% staff nurses getting information from medical professionals.

Part-II: Assessment of levels of knowledge regarding skin ulcer among staff nurses residing in selected hospitals

Table 1: Range, mean, median & standard deviation of pre & posttest knowledge scores of staff nurses on skin ulcer and its prevention. N = 50

Test	Range	Mean	Median	Standard deviation
Pre-test	12 - 24	17.08	17	2.72
Post-test	42 – 47	46.00	46	1.12

Table-1 reveals that the Data in table – 3 represents that the post-test knowledge score ranged from 42 –47, whereas the pre-test knowledge scores ranged from 12-24. The mean post-test knowledge scores ($\chi^2 = 46.00$) was apparently higher than the mean pre-test knowledge score ($\chi^2 = 17.08$). The median of post-test knowledge score ($M_2 = 46.00$) was higher than the median of pre-test knowledge score ($M_1 = 17$).

Table 2: Mean, difference of mean, Standard Deviation and 't' value of pre and post-test knowledge scores of staff nurses. N = 50

Group	Mean		Difference of mean	Standard deviation		't' value paired	P value
	Pre-test	Post-test		Pre-test	Post-test		
Staff Nurses	17.08	46.00	8.58	2.72	1.12	68.11	*P*<0.001

Table-2 reveals shows that computed 't' value ('t'= 68.11, *p*< 0.001) is greater than table value ('t' = 2.00), which represents the significant gain in knowledge, through the Structured Teaching Programme. Hence the hypothesis H$_1$ was accepted. Thus it suggests that the STP has been effective in increasing the knowledge of staff nurses about pressure sore and its prevention

Table 3: Comparison of mean percentage and SD between pre-test and post-test in various aspects of prevention of skin ulcer N=50

Sl No.	Area	Pre Test		Post Test		"t" value	P value
		Mean	SD	Mean	SD		
1	Knowledge	9.36	2.05	24.76	0.59	48.60	*P*<0.001
2	Understanding	5.74	1.28	1.98	0.64	55.61	*P*<0.001
3	Application	1.98	1.24	5.66	0.52	18.90	*P*<0.001

Z = 5.81 (Table value = 1.96)

The data presented in the Table 3 depicts the shows that the mean knowledge scores of the pre-test were maximum in the area of knowledge (9.36) & minimum in the area of application (1.98). The mean knowledge scores of post-test were maximum in the area of knowledge (24.76) and minimum in the area of application (5.66).

Mean difference between possible gain and actual gain is calculated and found to be least in the area of understanding. Knowledge (24.76) indicates that the gain in knowledge in this area was maximum comparing to other areas.

Table 4: Relationship between post-test knowledge level and demographic variable on skin ulcer and it's prevention.

Sl. No	Personal characteristics	Below median score	Above median score	χ^2	Level of Significance
	Age: 21-30 > - 50	20 1	29 0	0.03 d.f. =1 p = 0.87	NS
	Marital status Married Unmarried	1 20	0 29	0.03 d.f.=1 p=0.87	NS
	Prof. education G.N.M. B.Sc (N)	10 11	15 14	0.08 d.f.=1 p=0.77	NS

	Experience < 2 years > 2 years	19 2	28 1	0.08 d.f.=1 p=0.77	NS
	Area of work Medical Ortho Neuro Surgical	1 9 6 5	1 14 10 4	0.94 d.f.=3 p=0.82	NS

df: Degrees of Freedom NS: Not Significant

Table-4 reveals that the association of the knowledge scores of staff nurses with their selected socio-demographic variables shows that, there is a no statistical significant relationship between gain in knowledge and personal characteristics like age, marital status, Professional Education, experience, area of work. Hence the hypothesis (H$_2$) rejected.

Conclusion
On the basis of the findings of the study, the following conclusions are drawn:
- The findings showed that none of the subjects had Inadequate knowledge in the pre-test whereas all the subjects had adequate knowledge in post-test. The mean Post-test percentage scores and the modified gain scores in all areas were found to be high, the maximum gain was in the area of knowledge and minimum in the area of application.
- The 't' test, which was computed between pre-test and post-test knowledge scores, indicated a true gain in the knowledge. Hence it was concluded that STP was effective as a method to improve knowledge among staff nurses.
- The association of the knowledge scores of staff nurses with their selected socio-demographic variables shows that, there is a no statistical significant relationship between gain in knowledge and personal characteristics like age, marital status, Professional Education, experience, area of work. Hence the hypothesis (H$_2$) rejected.

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