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Research Article

A Pre-experimental Study to Assess the Effectiveness of a Structured Teaching Programme on Knowledge and Practice Regarding the use of the Braden Scale among Staff Nurses in selected Hospitals of Kashmir

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A B S T R A C T

Introduction: The Braden Scale for Predicting Pressure Ulcer Risk helps nurses assess a patient's likelihood of developing pressure ulcers. It is quick to administer and proven more accurate than other tools or clinical judgment across age groups and care settings.

Objectives: The study aimed to evaluate the effectiveness of a structured teaching programme on knowledge and practice regarding the Braden Scale and to examine the association between pre-test knowledge and selected demographic variables such as age, gender, clinical experience, area of practice, and professional qualification.

Methodology: The study was guided by J.G. Kenny's General System Model (1936) and used a quantitative, pre-experimental (one group pre-test, post-test) design with purposive sampling. Sixty staff nurses from selected GMC and Associated Hospital, Handwara, Jammu and Kashmir, participated. Data were collected via structured questionnaires assessing knowledge and expressed practice. The tool's validity and reliability were established. Data were analyzed using descriptive and inferential statistics.

Results: Among the participants, 53.3% were female, 37% aged 25–36, and 38.3% had 0–5 years of experience. Most (33.3%) worked in intensive care, and 41.7% were B.Sc. Nursing graduates. Post-test knowledge (86.7%) and practice scores (96%) significantly improved compared to pre-test scores (73.3% and 91.7%, respectively). A significant association was found between pre-test knowledge and area of practice ($p < 0.05$).

Conclusion: The structured teaching programme effectively enhanced staff nurses' knowledge and practice regarding the Braden Scale, with a notable link between knowledge scores and area of practice.

Keywords: Structured Teaching Programme, Braden Scale, Staff Nurses, Knowledge, Practice, Effectiveness

Introduction

Decubitus ulcers are another name for pressure ulcers. Decubitus, which means to lie down, is a Latin word. When soft tissues (muscle, skin, and subcutaneous tissue) are crushed for an extended length of time between a firm surface and a bony prominence, a pressure ulcer forms.[1]

In healthy people, capillaries collapse when the pressure is between 25 and 32 millimeters of mercury. Cell digestion will be hampered if the pressure applied to the skin exceeds the tension within the skin tissue. Tissue iron insufficiency is the ultimate effect of decreased flow of blood to the tissue. Skin lightens as a result of this reduction in blood flow. The danger of skin deterioration and remission of pressure injury increases with the duration of the pressure.[2]

Given the high prevalence of ulcers from pressure and the vital role nurses play in preventing them, it is imperative to evaluate the efficacy of a systematic educational program designed to enhance the Braden Scale's use.[3]

One of the most used instruments for estimating the likelihood of pressure ulcer development is the Braden Scale. The Braden Scale, which gauges six aspects of a patient's health and skin condition, has been shown to predict the development of ulcers.[4]

The Braden Scale for Forecasting Pressure Ulcer Risk was created to assist nurses in determining their patients' incidence of pressure ulcers. With people of any age and in all circumstances, the Scale—which takes only a few seconds to complete—has been shown to be more precise than other measurements or clinical judgment.[5]

In order to account for injuries to both intact and ulcerated skin, the National Pressure Ulcer Advisory Panel (NPUAP) changed the word "pressure ulcer" in the NPUAP Injury Staging System to "pressure injury" in April 2016. According to NPUAP, pressure ulcers have a detrimental impact on an individual's quality living and are linked to a higher risk of infection, death, and medical issues.[6]

A structured teaching program can standardize and enhance the understanding and application of the Braden Scale among staff nurses. By improving both knowledge and practical skills, this program can ensure that staff nurses consistently and accurately assess patient risk, leading to timely and effective interventions. Consequently, it can contribute to reducing the incidence of pressure ulcers, improving patient care quality, and optimizing resource allocation within healthcare institutions.[7]

Prior research has demonstrated that a planned educational program can greatly increase nurses' efficacy. Therefore, the researcher felt compelled to do the experiment to assess how well an organized education program has improved the expertise of staff nurses and practice about the use of the Braden scale in a particular hospital.

Methodology

A quantitative research approach with a pre-experimental (one group pre-test post-test) design was used for the study. The research was carried out on 60 staff nurses from selected GMC and Associated hospital Handwara ssJammu and - Kashmir. The participants were selected using purposive sampling technique. As per RAO (Response Amplitude Operator) soft sample size calculator sample size should be 60 with a 95% level of confidence and a margin of error of 5%. So the researcher included all 60 staff nurses. The pretest was administered on day 1 and on day 2 the intervention of structured teaching programme was administered and on 9th day administration of posttest on knowledge and practice was assessed.

Tool

One tool has been used for the study and tool-1 is divided into 3 sections

Section-A

This section consists of items related to demographic variables such as age, gender, clinical experience, area of posting, and professional qualification of selected staff nurses.

Section-B

It consists of structured knowledge questionnaire to assess the effectiveness of structured teaching program on knowledge regarding use of Braden scale among staff nurses & it contains 20 items.

Section-C

It consists of structured practice questionnaire to assess the effectiveness of structured teaching program on expressed practice regarding use of Braden scale among staff nurses & it contains 15 items.

Ethical Consideration

Ethical permission was taken from Jamia Hamdard Institute of Ethical Committee New Delhi to conduct the study. Administrative clearance was taken from the selected GMC and Associated hospital Handwara Jammu and Kashmir to conduct the study. A written informed consent was taken from each study subject and were given assurance of confidentiality of information and withdrawal from study at any point of time.

Result

Table 1 highlight the demographic profile of the sample based on age, gender, clinical experience, area of practice, and professional qualification.

- **Age:** Majority (37%) were aged 25–36 years, followed by 30% under 25, 28% aged 37–50, and only 5% above 50.

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- **Gender:** Females made up 53.3% (n=32), while males accounted for 46.7% (n=28). No transgender participants were reported.
- **Clinical Experience:** 38.3% had 0–5 years of experience, 33.3% had 6–10 years, 23.3% had 11–20 years, and 5% had over 20 years.
- **Area of Practice:** ICU (33.3%) was the most common area, followed by CCU (26.7%), surgical ward (20%), and orthopedic ward (20%).
- **Professional Qualification:** 41.7% were BSc nurses, 35% were GNM, 16.7% were P.BSc, and only 6.7% held MSc/PhD qualifications.

The above table-2, shows the comparison of pre-test and post-test knowledge. In the pre-test knowledge score of staff nurses regarding use of Braden scale majority 44 (73.3%) were having moderate knowledge, 16 (26.7%) were having inadequate knowledge and no staff nurse had adequate knowledge while as in the post-test knowledge level majority 52 (86.7%) were having adequate knowledge, 8 (13.3%) were having moderate knowledge and no staff nurse had inadequate knowledge regarding use of Braden Scale.

Table 1.Frequency and Percentage distribution of staff nurses according to their demographic Variables

n=60

Sample Characteristics	Category	Frequency (f)	Percentage (%)
Age (in years)	<25	18	30
	25-36	22	37
	37-50	17	28
	>50	3	5
Gender	Male	28	46.7
	Female	32	53.3
	Transgender	0	0
Clinical experience (in years)	0-5	23	38.3
	6-10	20	33.3
	11-20	14	23.3
	>20	3	5
Area of practice	Intensive care unit (ICU)	20	33.3
	Cardiac care unit (CCU)	16	26.7
	Surgical ward	12	20
	Orthopaedic ward	12	20
Professional Qualification	GNM	21	35
	B.Sc. Nursing	25	41.7
	P. BSc. Nursing	10	16.7
	M.Sc. Nursing/PhD Nursing	4	6.7

Table 2.Frequency and percentage distribution of pre-test and post –test level of knowledge regarding use of Braden scale among staff nurses

n=60

Extent of Knowledge	Pre-test Knowledge Score		Post-test Knowledge Score	
	Frequency	Percentage	Frequency	Percentage
Inadequate Knowledge (0-6)	16	26.7%	0	0%
Moderately adequate Knowledge (7-13)	44	73.3%	8	13.3%
Adequate Knowledge (14-20)	0	0%	52	86.7%

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- **H1:** There is a significant difference in the pre-test and post-test levels of knowledge outcome among staff nurses at a 0.05 level of significance as measured by Structured Student Evaluation Questionnaire'.
- **H01:** There is no significant difference in the pre-test and post-test levels of knowledge outcome among staff nurses at 0.05 level of significance as measured by Structured Student Evaluation Questionnaire'.

Data findings in the table-3 revealed that the calculated t value is above table value hence there is a significant difference in the mean pre-test and post-test knowledge score of staff nurses regarding use of Braden scale. Which shows the effectiveness of structured teaching programme on knowledge regarding use of Braden Scale. Hence we accepted the research hypothesis H1.

Data findings in the above table-4, reveals the pre-test and post-test practice level among staff nurses regarding the use of Braden scale. In the pre-test practice score Majority 55 (92.7%) were having moderate practice level, 5 (8.3%) were having inadequate practice level and no staff nurse had adequate practice level while as in the post-test practice level all the staff nurses 58 (96%) had adequate practice level and 2(4%) had moderate practice regarding use of Braden scale.

- **H2:** There is a significant difference in the pre-test and post-test levels of practice outcome among staff nurses at a 0.05 level of significance as measured by the Structured practice questionnaire'.
- **H02:** There is no significant difference in the pre-test and post-test levels of practice outcome among staff nurses at 0.05 level of significance as measured by Structured practice questionnaire'.

Data findings present in table-5 revealed that the calculated t value is above table value hence there is a difference in the mean pre-test and post-test practice scores of staff nurses regarding use of Braden Scale.. Which shows the effectiveness of structured teaching programme on practice level regarding use of Braden Scale. Hence we accepted the research hypothesis H2.

The table no 6 shows that there was significant association between the knowledge of staff nurses and demographic variables in area of practice as fishers exact value was more than 0.05 level of significance.

The table no 7 shows that there was no significant association of staff nurses between - pretest practice score and with their selected demographic variables as the fisher's exact 'p' value is less than 0.05 level of significance.

Table 3.Range score obtained, Mean, Median, standard deviation and t- value of Pre-test and Post-test Knowledge Scores regarding use of Braden scale among staff nurses

n=60

Knowledge score	Range score obtained	Mean ± SD	Median	D.f	t value	p value
Pre-test	7-12	8.2± 2.11	8	59	22.9*	0.000
Post-test	11-20	15.7 ± 2.17	15			

t(59)=1.296, at 0.05 level of significance.

Table 4.Frequency and percentage distribution of pre-test and post-test expressed practice score of staff nurses in using the Braden scale

n=60

Practice Level	Pre-test Practice Score		Post-test Practice Score	
	Frequency	Percentage	Frequency	Percentage
Inadequate Practice (0-4)	5	8.3%	0	0%
Moderate Practice (5-10)	55	91.7%	2	4%
Adequate Practice (11-15)	0	0%	58	96%

Table 5.Range score obtained, Mean, Median, standard deviation and t- value of Pre-test and Post-test practice Score regarding use of Braden scale among staff nurses

n=60

Knowledge score	Range score obtained	Mean ± SD	Median	D.f	t value	p value
Pre-test	3-15	7.2± 1.74	7	59	26.74*	0.000
Post-test	11-15	13.6± 1.24	14			

t(59) =1.296, at 0.05 level of significance.

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Table 6.Fisher's exact test showing the association between the pre-test knowledge of staff nurses regarding the use of Braden scale with their selected demographic variables

n=60

Demographic Variables	Content	Pre-test Knowledge Score	Practice Score	Fisher Exact Test	df	p value
Age (in years)	<25	1	17	0	6	0.92
	25–36	2	19	1		
	37–50	2	14	1		
	>50	0	3	0		
Gender	Male	2	24	1	2	0.964
	Female	3	29	1		
Clinical experience (years)	0–5	1	21	1		
	6–10	3	17	0		
	11–20	1	13	0		
	>20	0	2	1		
Area of practice	ICU	4	16	0	6	0.029*
	CCU	0	16	0		
	Surgical Ward	0	10	2		
	Orthopaedic Ward	1	11	0		
Professional Qualification	GNM	2	19	0	6	0.686
	B.Sc. Nursing	3	21	1		
	P.BSc. Nursing	0	9	1		
	M.Sc./PhD Nursing	0	4	0		

p ≤ 0.05*significant

Table 7.Fishers exact test showing Association between the pre-test practice of staff nurses regarding use of Braden scale with their selected demographic variables

n=60

Demographic Variables	Content	Pre-test	Practice Score	Fisher Exact Test	df	p value
Age (in years)	<25	0	18	0	6	0.609
	25-36	1	20	1		
	37-50	2	15	0		
	>50	0	3	0		
Gender	Male	2	24	1	2	0.75
	Female	2	31	0		
Clinical experience (in years)	0-5	1	22	0	6	0.885
	6-10	1	18	1		
	11-20	1	13	0		
	>20	0	3	0		
Area of practice	ICU	0	19	0	6	0.273
	CCU	0	16	0		
	Surgical Ward	2	10	0		
	Orthopaedic Ward	1	11	0		

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Professional Qualification	GNM	1	20	0	6	0.901
	B.Sc. Nursing	1	23	1		
	P.BSc. Nursing	1	9	0		
	M.Sc./PhD Nursing	0	4	0		

P > 0.05, not significant

Discussion

The present study aimed to assess the effectiveness of a structured teaching programme on knowledge and practice regarding use of Braden Scale among staff nurses in selected hospital of Kashmir.

Satish B.N et.al. (Satish B Nadagaddi, 2018) conducted a pre-experimental study to assess staff nurses' understanding of the Braden Scale's application in pressure sore prevention through a structured instructional scheme. The study found that the level of expertise among staff nurses was significantly improved by the teaching program. According to the results, 16 nurses (26.7%) received fair knowledge scores in the pre-test, whereas 44 (73.3%) achieved good knowledge scores. Among those who took the post-test, 58 nurses (96.7%) had very good knowledge scores, while 2 (3.3%) had good scores. These findings are consistent with post-test knowledge levels of nursing staff, showing that none had inadequate knowledge of the Braden Scale; 8 (13.33%) had moderate knowledge, and 52 (86.67%) had adequate understanding [8].

Sumathi S.G. (G, 2023) conducted a quasi-experimental study using a standardized questionnaire to evaluate how a structured training program affects nursing students' knowledge of the Braden Scale. A post-test was administered on the eighth day after the instructional program to assess improvement. Results showed that 99% of students had acceptable knowledge and 1% had moderate knowledge, highlighting the effectiveness of the structured teaching. In this study, a structured questionnaire was given on day one, a teaching program on day two, and a knowledge quiz on day nine. The outcome showed that 52 staff nurses (86.67%) had adequate knowledge, 8 (13.33%) had moderate knowledge, and none had insufficient knowledge regarding use of the Braden Scale [9].

Limitations

The sample of the present study was limited to a single setting. Hence it was insufficient and difficult to make a broad generalization.

Conclusion

This study concluded that:

- The structured teaching programme improved the knowledge and expressed practice of staff nurses regarding use of Braden scale.
- There was significant association between knowledge of staff nurses and area of practice in selected demographic variables.

Conflict of Interest: None

Source of Finding: None

Author's Contribution: DAS, NJ, and FK equally contributed to the conception and design of the study, data collection, and analysis, interpretation of results, and drafting and revising the manuscript. All authors have read and approved the final version and agree to be accountable for all aspects of the work.

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