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Shivani
Assistant Professor (MSN),
Lingaya's Institute of Health
Sciences, Faridabad, Haryana,
India

Effectiveness of pressure ulcer prevention strategies on pressure ulcer formation among bed ridden patients at NIMS hospital, Jaipur

Shivani

Abstract

Background: Nursing care with emphasis on pressure ulcer prevention strategies may be great help for the bedridden patients in prevention of pressure ulcer formation.

Objective: The aim of the study was to assess the effectiveness of pressure ulcer prevention strategies on pressure ulcer formation among bed ridden patients.

Materials and methods: True experimental, posttest only research design was used in the study. 40 patients were selected for the study by using simple random sampling. The study was carried out from November, 2017 to February, 2018 at NIMS hospital, Jaipur.

Result: found significant difference in formation of pressure ulcer among bed ridden patients of experimental and control group.

Conclusion: Study reveals that pressure ulcer prevention strategies are effective in pressure ulcer formation.

Keywords: Pressure ulcer, pressure ulcer prevention strategies, bed ridden patients

Introduction

Pressure ulcer is a continuing major health problem worldwide. Pressure ulcer remains a national health concern. Pressure ulcers represent a major burden of sickness and reduced quality of life for patients and their caregivers. According to National Pressure Ulcer Advisory Panel (NPUAP), a pressure injury is localized damage to the skin and soft tissue, usually over bony prominence or related to a medical or other device. It can present as intact skin or an open ulcer and may be painful^[1]. Patients who are prone to pressure ulcer include those confined to bed for long periods, those with motor or sensory dysfunction and those who experience muscular atrophy and reduction of padding between the overlying skin and the underlying tissue^[2]. The incidence of pressure ulcer is highest during the first few weeks after admission to a long term care facility. The patients in long term care facilities may be more at risk. About 20% of patients with pressure ulcers develop them at home and these figures represent pressure ulcer patients being cared for by health care professionals. The total numbers of homebound patients who have pressure ulcers remain unknown^[3]. Pressure ulcers are a particular problem for bedbound individuals who are hospitalized, in nursing homes, or have spinal cord injuries. In hospitalized patients, pressure ulcers are more likely to occur among older adults (65 years and older), and patients with pressure ulcers are three times more likely to be discharged to a long-term care facility than those with other diagnoses. As the population of those over 65 years is expected to double within the next 25 years, the number of people with pressure ulcers will likely increase exponentially (WOCN, 2016a)^[4]. Pressure ulcer results in form of unwanted burden such as increase in human suffering, hospital stay, treatment etc. and these effects have made pressure ulcers prevention and management a great concern for the nursing staff and other health care profession. Preventing a pressure ulcer is much less expensive than treating one, therefore preventing nursing interventions is imperative^[6].

Nurses and other health care professionals must not allow such intangible costs to be underestimated because pressure ulcer are indeed more than physical wounds^[3].

Although the prevention of pressure ulcers is a multidisciplinary responsibility but nurses play a major role. Pressure ulcer is a pervasive and expensive problem but is highly preventable, as long as the patients receive proper care, early diagnosis and appropriate treatment.

Corresponding Author:
Shivani
Assistant Professor (MSN),
Lingaya's Institute of Health
Sciences, Faridabad, Haryana,
India

It has been observed by researcher in clinical that there is no uniform standard of care, even lack of current practice parameters for pressure ulcer prevention. Even though there are standard guidelines to enhance the quality of care given by the Joint Commission for Accreditation of Health care Organization, National Pressure Ulcer Advisory Panel but In Indian scenario, these guidelines are not followed properly. However, there is standard guidelines of NABH for the prevention of pressure ulcer but, researcher planned to develop pressure ulcer prevention strategies based on current practice parameters, synthesis of research findings and expert opinion practitioners to assist or teach the nursing personnel in providing quality of care and then to examine its effectiveness in prevention of pressure ulcer among bedridden patients.

Material and Method

Research approach: A quantitative research approach

Research design: True-experimental, post-test only research design

Population: Bedridden patients

Setting: NIMS Hospital, Jaipur

Sample and sampling size: 40 bed ridden patients.

Sampling technique: Simple random sampling technique

Description of the Tool

Tool was divided into 2 sections-

Section I: Demographic Variables

Section II: Pressure ulcer assessment scale

Data collection procedure: Nursing care based on the pressure ulcer prevention strategies was given to the bed ridden patients for 10 days. Post test was conducted on 10th day.

Statistical analysis: The data was analyzed on the basis of objectives by using descriptive and inferential statistics.

Result

Section I: Frequency and Percentage distribution of sample according to demographic variables

Table 1: Frequency and Percentage distribution of sample according to demographic variables

Demographic variables	Control group		Experimental group	
	No.	%	No.	%
Age				
21-30	3	15	3	15
31-40	4	20	5	25
41-50	9	45	4	20
50<	4	20	8	40
Sex				
Male	13	65	10	50
Female	7	35	10	50
Body Build				
Thin	5	25	6	30
Moderate	11	55	9	45
Obese	4	20	5	25
Level of dependency				
Partially dependent	8	40	9	45
Fully dependent	12	60	11	55
Associated diseases				
Diabetes	2	10	1	5
Hypertension	4	20	2	10
Anemia	4	20	4	20
Any 2 or 3 from above	9	45	11	55
None	1	5	2	10

The table 1: Shows that in age group of 21-30 years, very few 3(15%) respondents were belonging to control group as well as 3 (15%) to experimental group. In the age group of 31-40 years, 4(20%) respondents were in control group whereas 5(25%) were in experimental group. In the age group of 41-50 years, majority of 9 (45%) respondents were in control group whereas only few 4(20%) were in experimental group. In the age group of 50 years and above only few 4(20%) respondents were in control group whereas majority 8 (40%) were in experimental group. Majority of respondents 13(65%) were male and only few 7 (35%) were females in control group whereas in experimental group, equal no. 10(50%) of respondents were male as well as 10 (50%) female. Total 5 (25%) of respondents of control group and 6 (30%) of experimental group were belonging to thin category. Majority of respondents 11 (55%) of control group, 9 (45%) of experimental group were belonging to

moderate body build category. The 4(20%) of respondents of the control group and 5 (25%) from experimental group were in obese category. Total 8(40%) of respondents were partially dependent and 12 (60%) were fully dependent in control group whereas in experimental group 9(45%) of respondents were partially dependent & 11 (55%) were fully dependent. In control group few of respondents 4(20%) had hypertension and 4(20%) of respondents had anemia, very few 2(10%) had diabetes and 9 (45%) of respondents had more than two associated diseases. Only 1(5%) of respondents did not have any associated diseases. Whereas in experimental group, majority of respondents 11(55%) had 2 or more associated diseases and 4(20%) of respondents had anemia, very few of respondents 2(10%) had hypertension and only 1(5%) had diabetes. Very few of respondents 2 (10%) in experimental group did not have any associated diseases.

Section II: Comparative Occurrence of Pressure Ulcer in Control Group and Experimental Group

Table 2: Comparative Occurrence of Pressure Ulcer in Control Group and Experimental Group

Occurrence of pressure ulcer	Control group		Experimental group	
	No.	%	NO.	%
0 No pressure ulcer formation	5	25	14	70
1-5 Stage one pressure ulcer	8	40	6	30
6-10 Stage two pressure ulcers	7	35	0	0
11-15 Stage three pressure ulcers	0	0	0	0
Total	20	100	20	100

N=40

The table 2: Depicts that out of 20 samples of control group 8(40%) samples had stage one pressure ulcer, 7(35%) had stage two pressure ulcer 5(25%) whereas in experimental group. there was no sample in stage two ulcer, 6(30%) had stage one pressure ulcer and 14(70%) had no pressure ulcer. There was no sample in experimental group and control

group who were suffering from stage three pressure ulcers.

Section-III: Statistical difference in occurrence of pressure ulcer among control group and experimental group based on mean, standard deviation and P-value

Table 3: Statistical difference in occurrence of pressure ulcer among control group and experimental group based on mean, standard deviation and P-value

	Mean	SD	t-value	Df	p value
Control group	3.9	3.3			
Experimental group	0.85	1.4	3.7	38	0.000275

The table 3: Shows that calculated mean score and S.D. of pressure ulcer occurrence for control group were 3.9 and 3.3 whereas calculated mean score and S.D. of pressure ulcer occurrence in experimental group were .85 and 1.5. This showed the effectiveness of pressure ulcer prevention strategies on pressure ulcer formation. Calculated t value is 3.7 at the degree of freedom 38. Calculated “P” value 0.000275 was less than established “P” value .05, so

researcher rejected null hypothesis and accepted alternative hypothesis H₁ that there was significant difference in formation of pressure ulcer among bed ridden patients of control and experimental group.

Section-IV: Association between pressure ulcer formation and selected demographic variables.

Table 4: Association between pressure ulcer formation and selected demographic variables.

Demographic data		Level of ulcer formation				Chi square	D.F.	P value	Result
		No pressure ulcer	Stage one	Stage two	Stage third				
Age	21-30	5	1	0	0	9.528	6	.14	Not-significant
	31-40	4	4	1	0				
	41-50	3	5	5	0				
	>50	7	4	1	0				
Sex	Male	13	6	4	0	2.1	2	.341	Not-significant
	Female	6	8	3	0				
Body build	Thin	7	4	0	0	4.0	4	.396	Not-significant
	Moderate	9	6	5	0				
	Obese	3	4	2	0				
Level of dependency	Partially dependent	10	6	1	0	3.07	2	.21	Not-significant
	Fully Dependent	9	8	6	0				
Associated diseases	Diabetes	0	2	1	0	10.39	8	.23	Not-significant
	Hypertension	3	2	1	0				
	Anemia	6	2	0	0				
	Any 2 or 3 From Above	7	8	5	0				
	None	3	0	0	0				

Table 4: shows that there was no significant association between the pressure ulcer formation and selected demographic variables as the calculated p value for the age (0.14), sex (0.34), body build (0.39), level of dependency (0.21), associated diseases (0.23) was more than established “p” value .05. Hence the H₂ was rejected and alternative hypothesis was accepted.

Discussion

Nursing care is having important role in prevention of

pressure ulcer among bedridden patients. Prevention of formation of pressure ulcer is a great help for the patient, it protect the patient, family and health team from many unwanted problems. Regarding prevention of formation of pressure ulcer among bedridden patients, study findings revealed that there was significant difference in formation of pressure ulcer among bed ridden patients of control and experimental group. It was less in experimental group than control group.

Study finding supported by another study conducted by

Banashree Hawaibam *et al.* which shown that there were reduction in the signs and symptoms of decubitus ulcer in experimental group as compared to control group after oil massage ^[7].

Similar study by Norton D, McLaren R, and Exton-Smith reported the effect of changing position in managing the bedsore among older adult and found that older adults turned every 2 to 3 hours had fewer ulcers ^[8].

Conclusion

The finding of study concluded that nursing care based on pressure ulcer prevention strategies is effective on prevention of pressure ulcer formation of bedridden patients. Therefore it can be advised to nursing faculty to give more emphasis on implementation of pressure ulcer prevention strategies in providing care to the bedridden patients.

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