A Study To Assess The Effectiveness Of Planned Teaching Programme Regarding Knowledge Of Vacuum Assisted Closure (VAC) Of Wound Among Staff Nurses In Selected Hospital At Mangaluru.

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ABSTRACT

Background of the study: Wound care and wound healing is a challenging task for nursing professionals throughout the world. Faster wound healing has a positive outcome on patients' quality of life physically, socially and economically. With the evolution of technology new methods of wound care are on the rise and Vacuum Assisted Closure (VAC) is one among them. Hence nurses must have and get training about appropriate dressing selection to enhance the life quality for patients with wounds that are difficult to heal.

Aim of the study: To assess the effectiveness of planned teaching programme regarding knowledge of Vacuum Assisted Closure (VAC) of wound among staff nurses

Objectives of the study: To assess the pretest and post-test level of knowledge of staff nurses regarding vacuum assisted wound closure, to determine the effectiveness of planned teaching programme on Vacuum Assisted wound Closure among staff nurses and to find out the association between the pre-test level of knowledge with the selected base line characteristics.

Methods: Design: Pre-experimental (pretest-post-test). **Setting:** Srinivas Hospital, Mukka, Mangalore. **Subjects:** Staff nurses (N=50) working in the hospital by convenience sampling. **Tools:** 1) Self structured questionnaire regarding VAC of wound Section1.Baseline characteristics. Section 2) Knowledge assessment on Vacuum Assisted wound Closure (VAC). Analysis: The data collected was analysed and interpreted using descriptive and inferential statistics.

Results: The pretest knowledge revealed that 6% had inadequate knowledge and 80% had moderate knowledge. The post test revealed that 99% had adequate knowledge. In terms of effectiveness of planned teaching programme (PTP) on knowledge among staff nurses, it was proved that the mean score is 18.34 with SD 3.936 and mean percentage is 36.68.In post-test, the mean score is 33.04 with SD 0.755 and mean% is 66.08.The computed t value showed that there is a statistically significant difference between nurse's knowledge in pre-test and post-test knowledge scores $t_{49}=25.2$(p value<0.001).Result also revealed that there is no significant association between the pre-test knowledge score and selected baseline characteristics.

Interpretation and Conclusion: The study results revealed that there is low to moderate knowledge regarding wound VAC among staff nurses and the planned teaching programme has a positive effect on increasing nurse's knowledge regarding vacuum assisted closure (VAC) of wound.

Recommendation: Continuous and up to date educational programme for staff nurses is needed to upgrade the nurse's knowledge.

Key words: Vacuum Assisted Closure (VAC) of wound, Planned teaching programme (PTP).

Introduction

A wound is a disruption of the normal structure and function of the skin and soft tissue architecture. An acute wound demonstrates normal physiology and healing is anticipated to progress through the expected stages of wound healing.[1] Chronic or hard to heal wounds are commonly defined as wounds that have not reduced in size by more than 40 to 50%. The global prevalence of chronic wounds is estimated at 1.51 to 2.21per 1000 population and the incidence is expected to rise with ageing populations worldwide. Chronic wounds may have different etiologies and are commonly classified in the categories ofdiabetic foot ulcerss, wounds related to peripheral arterial disease, venous leg ulcers, pressure injuries and atypical hard to heal wounds. Chronic wounds are associated with significant physical, emotional and economic burdens both at an individual and societal level. Healing of chronic wounds depends on several complex biological factors and wound care regimens.[2]

Wound healing remains a challenging clinical problem and efficient wound management is essential. Many wounds are difficult to heal, despite medical and nursing care. They may result from complications of an underlying disease like diabetes, surgery, constant pressure, trauma, or burns. Chronic wounds may lead to impaired quality of life. More than 2.5 million people in the USA develop pressure ulcers each year within acute care.[3] The incidence of bedsores is 0.4 to 38% within long term

care, 2.2% to 23.9%, and in home care ,0% to 17%. There is same wide variation in prevalence 10% to 18% in acute care, 2.3% to 28% in long term care, and 0% to 29% in home care.[3] To ensure proper healing through the expected stages, the wound base should be well vascularised, free of devitalized tissue, clear of infection and moist. Wound dressings might help facilitate this process if they eliminate dead space, control exudate, prevent bacterial growth, ensure proper fluid balance, demonstrates cost-efficiency and are manageable for the patient and or nursing staff.[4] The biophysics behind the success of this treatment largely have focussed on increased wound blood flow,increased granulation tissue formation,reduced bacterial counts and stimulation of wound healing pathways through shear stress mechanism.The overall success of negative pressure wound therapy has led to a multitude of clinical applications.[5]

Methodology

Design: Pre-experimental (pretest-post-test).

Setting: Srinivas Hospital, Mukka, Mangalore.

Subjects: Staff nurses (N=50) working in the hospital by convenience sampling.

Tools: 1) Self structured questionnaire regarding VAC of wound Section1.Baseline characteristics. Section

2) Knowledge assessment on Vacuum Assisted wound Closure (VAC). Analysis: The data collected was analysed and interpreted using descriptive and inferential statistics.

Result:

Section: 1 Assessment of level of knowledge scores among staff nurses

• Range, mean and SD of pre-test and post-test knowledge regarding the wound VAC among staff nurses.

Section: 2 Effectiveness of educational programme on knowledge regarding wound VAC

• Mean difference of pre-test and post-test level of knowledge was tabulated.

Section: 3 Association between the pre-test knowledge with baseline characteristics of staff nurses

• Chi-square analysis was done to find out the association between pre test knowledge and the baseline characteristics.

Table 1: Range, mean and SD of pre-test and post-test knowledge regarding the effectiveness of PTP on wound VAC among staff nurses

N=50

Area	Range	Mean	SD	Mean%	Mean diff	SE
Pre-test	10-26	18.34	3.936	53.9%	14.7	0.560
Post-test	32-34	33.04	0.755	97.17%		0.106

Max score =34

Table 1 Figures out that inthe pre-test the score ranged from 10-26 and the mean score was 18.34 with SD 3.936. In the post-test the score ranged from 32-34 and the mean score was 33.04 with SD 0.755. The mean gain in score was 14.7.

Section: 2 Effectiveness of educational programme on knowledge regarding wound VAC among staff nurses

To test the effectiveness of PTP in increasing the knowledge, paired 't' was computed. To test the statistical significance the following null hypothesis was formulated:

H0: There will be no significant difference in the meanpre-test and post-test knowledge score of staff nurses regarding wound VAC

H1: The mean post-test knowledge score of staff nurses will be significantly higher than the mean pre-test score regarding wound VAC.

Table 2.1: Mean difference of pre-test and post-test level of knowledge regarding wound VAC among staff nurses

N=50

Pre/Post	Mean	Std. Deviation	Effectiveness						
			Mean difference	S.D of difference	Change(%)	t value	df	p value	
Pre	18.34	3.936	14.7	4.1	80.2	25.2	49	0.000	HS
Post	33.04	0.755							

P value <0.05 *Significant

Table 2.1 shows that the computed 't' value 25.2 is highly significant at 5% level of significance. The obtained value (p<0.0) is lower than the p<0.05. Therefore the null hypothesisis rejected and research hypothesis is accepted.It can be inferred that PTP was effective in improving the knowledge of staff nurses regarding wound VAC.

Section: 3 Association between the pre-test knowledge with baseline characteristics of staff nurses

Association between pre-test knowledge with selected baseline characteristics of staff nurses

        In order to test the association between pre-test knowledge with selected baseline characteristics, Chisquare value was computed. To test the statistical significance the following null hypothesis was formulated:

H0:   There will be no sgnificant association between the selected baselune characteristics and pre-test knowledge score regarding the effectiveness of PTP regarding wound VAC among staff nurses at a selected hospital in Mangaluru.

H2:   There will be significant association between the selected baseline characteristics and pre-test knowledge score regarding the effectiveness of PTP regarding wound VAC among staff nurses at a selected hospital in Mangaluru.

Knowledge score					
Sl.no	variables	≤median 19	> median 19	Chi square value	P value
1	Age in years 21-30 31-50	 11 17	 11 11	0.574	0.449
2.	Educational/professional qualification BSC/MSC GNM	 5 17	 9 19	0.542	0.462
3.	Years of experience as staff nurse 0-10 years 11+ years	 14 8	 18 10	0.002	0.962
4.	Present designation at work SN SSN	 20 2	 23 5	0.786	0.375
5.	PRESENT WORKING AREA Medical Surgical OT and others	 8 11 3	 8 9 11	4.111	0.128
6.	Received any training on wound care Yes No	 9 13	 10 18	0.141	0.707
7.	Have you heard about wound VAC Yes No	 4 18	 9 19	1.248	0.264

Table 4 revealed that there is no significant association between pre-test level of knowledge score with their baseline characteristics. The obtained values in these areas

(0.449,0.462,0.962,0.375,0.128,0.707,and 0.264,) were lower than p value (p<0.05). Therefore the null hypothesis was retained and research hypothesis was rejected.

Discussion:

The pretest knowledge revealed that 6% had inadequate knowledge and 80% had moderate knowledge. The post test revealed that 99% had adequate knowledge. In terms of effectiveness of planned teaching programme (PTP) on knowledge among staff nurses, it was proved that the mean score is 18.34 with SD 3.936 and mean percentage is 36.68.In post-test, the mean score is 33.04 with SD 0.755 and mean% is 66.08.The computed t value showed that there is a statistically significant difference between nurse's knowledge in pre-test and post-test knowledge scores $t_{49}=25.2$(p value<0.001).Result also revealed that there is no significant association between the pre-test knowledge score and selected baseline characteristics.

Conclusion:

The study results revealed that there is low to moderate knowledge regarding wound VAC among staff nurses and the planned teaching programme has a positive effect on increasing nurse's knowledge regarding vacuum assisted closure (VAC) of wound.

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