Knowledge Impact of Negative Pressure Wound Therapy on Diabetes Wound

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ABSTRACT
Wound assessment is obligatory to plan and complete administration regimens and to assess care. As indicated by diabetes imperative distributed by the international diabetes federation (IDF), there were an expected 40 million people with diabetes in India in 2007 and number is anticipated to ascend to just about 70 million individuals by 2025. Negative pressure wound treatment (NPWT) is an innovation that is as of now utilized broadly in wound consideration and is advanced for use on complex injuries (open injuries) NPWT includes the utilization of an injury dressing through which a contrary weight is applied, regularly with any twisted and tissue liquid drawn away from the territory being gathered into a canister. The present study aims to assess the knowledge impact of negative pressure wound therapy on diabetes wound among staff nurses. The one group pre and post-test design were conducted among 50 staff nurses. Purposive sampling techniques were used to select samples. A self-administered questionnaire was used to collect demographic data and knowledge on negative pressure wound therapy was assessed. The video was shown to the staff nurses after pre-test. The present study also shows that the demographic variables sex, professional qualification and wound care experience shows significant association with the post-test level of knowledge among staff nurse at p<0.0001 level and the demographic variables has shown statistically significant association with the knowledge among staff nurse. This study concludes that video-assisted teaching program was significantly effectiveness in increasing the knowledge regarding negative pressure wound therapy.

INTRODUCTION
Negative pressure wound treatment (NPWT) is an innovation that is at present utilized generally in wound consideration and is advanced for use on complex injuries (open injuries) NPWT includes the utilization of an injury dressing through which a negative weight is applied, frequently with any twisted and tissue liquid drawn away from the region being gathered into a canister (Bhuvaneswari, 2020). The measure of weight applied to utilize the treatment can change and there is no single convention for use, in any case, pressure being conveyed goes from 75 mmHg to 150 mmHg, with 125 mmHg being ordinarily used (Bobkiewicz et al,
Although the specific instrument has not been clarified, and it is estimated that negative weight adds to twisted recuperating by expelling overabundance interstitial liquids, expanding the vascularity of the injury, decreasing oedema and making useful system powers nipple leads to cell development and expansion (Frykberg and Banks, 2015).

Vacuum helped conclusion (VAC) treatment is intended to advance the development of granulation tissue for the quicker mending in the injury beds of a patient with intense and interminable injuries. Basically, the method is exceptionally straightforward (Jeffcoate et al., 2004). A bit of froth with an open cell structure is brought into the injury and an injury channel with parallel puncturing is laid on it. At the point when the uncovered end of the channel tube is associated with a vacuum source, liquids are drawn from the injury through the froth into a repository for resulting removal. The plastic film store prevents the passage of air and allows a partial vacuum to outline inside the injury, reducing its volume and empowering the clearing of fluids. The foam ensures that the entire surface area of the injury is reliably introduced to the negative weight sway, prevents obstacle of the penetrating in the channel by contact with the base or edge of the injury and take out the theoretical risk of a restricted locale of high weight and resultant tissue rot (Garwood and Steinberg, 2016). In India, the frequency of postoperative irreversible in different medical clinic changes from 10-25% (Huang and Li, 2016). Wound disease influences about 20% of postoperative cases and they contribute up to 57% of additional clinic days at 42% of additional expenses. Diabetes is a genuine constant infection (Coco and Leanza, 2018).

In 2003 the worldwide pervasiveness of diabetes was evaluated at 194 million. This figure is anticipated to arrive at 333 million by 2025 (Frear et al., 2019). Extensive epidemiological overviews have shown that somewhere in the range of 40% and 70% of all lower furthest point removal are identified with diabetes (Nordmeyer et al., 2016). As indicated by diabetes crucial distributed by the worldwide diabetes league (IDF), there were an expected 40 million people with diabetes in India in 2007 and this number is anticipated to ascend to right around 70 million individuals by 2025. The nations with the biggest number of diabetes individuals will be India, China, and the USA by 2030 (Montori et al., 2017).

Wound Consideration is a fast developing claim to fame. Precise injury appraisal is compulsory to plan and complete administration regimens and to assess care. To give top-notch care, the parental figure needs appropriate workplace by a multidisciplinary foot care group at an autonomous injury care focus. In spite of the fact that the wellbeing group ought to in a perfect world involve master doctor, wound consideration nurture and partnered wellbeing proficient medical caretaker drove wound consideration has appeared to improve tolerant results (Wirth et al., 2018). As medical caretaker’s job in wound administration is indispensable, they have to have targets training on wound administration and ought to be engaged in their job among the other colleagues. The present study aims to assess the knowledge impact of negative pressure wound therapy on diabetes wound among staff nurses.

MATERIALS AND METHODS

A quantitative approach to pre-experimental research design was used to conduct the study in SMCH. 50 samples were selected using a purposive sampling technique. The criteria for sample selection are those who are working in SMCH. Before commencing the data collection, authorized setting permission was obtained from the nursing superintendent of SMCH. The investigator introduced and explained the purpose of the study to the samples and obtained the written informed consent. The demographic data were collected using a self-administered questionnaire for the staff nurses knowledge regarding negative pressure wound therapy was assessed. The knowledge was assessed before playing the video among the staff nurses. Then the video-assisted teaching program was conducted and after that level of knowledge was re-assessed among the staff nurses. The data were analysed using descriptive and inferential statistics. The sample characteristics were described using frequency and percentage Pearson’s co-efficient correlation was used to assess the effectiveness of video-assisted teaching program regarding negative pressure wound therapy among staff nurses. Chi-square was used to associate the pre and post-test level of knowledge with selected demographic variables.

RESULTS AND DISCUSSION

Among 50 samples the demographic variables result of most of them were <30 years (94%) and most of them were female (92%), and most of them were professionally qualified degree holder (78%) and nursing experience of 1–5 years (66%) and >5 years (34%) and wound care trained nurses were (64%) hospital experience on OPD were (24%) and surgical unit were (44%) and other units were (32%).
Table 1: Comparison between pre-test and post-test of knowledge on negative pressure wound therapy on diabetes wound

| Knowledge on NPWT among staff nurses | Mean | Standard Deviation | Mean difference | Paired ‘t’ value |
|--------------------------------------|------|--------------------|-----------------|-----------------|
| Pre-test                              | 11.8 | 2.562              | 14.14           | 28.0079         |
| Post-test                             | 25.94| 2.486              |                 |                 |

Figure 1: Level of knowledge on negative pressure wound therapy in pre and post-test

In pre-test has inadequate knowledge 46 (92%), has moderate 4 (8%) and in the post-test majority of nurses have adequate knowledge 44 (88%) and moderate knowledge 6 (12%). In pre-test is 11.8 and 2.562, in post-test the mean and standard deviation is 25.94 and 2.486. The mean pre-test score of level of knowledge of negative pressure wound therapy on diabetes wound is 11.8 (S.D=2.562) and the post-test mean score is 25.94 (S.D=2.486) and the mean difference is 14.14. The post-test mean score was 25.94 higher than the pre-test mean score 11.8 and the paired ‘t’ value is 28.00789.

The current investigation was upheld by Dashrath Kumar Menaria et al., were directed an examination to survey the viability of self-instructional module (SIM) with respect to negative weight twisted treatment among staff attendants of chose medical clinics, Udaipur Rajasthan among 120 staff attendants. The outcome uncovers the pre-test was 10.08, which are expanded to 22.08 in the post-test. The examination infers that self-instructional module (SIM) was essentially successful in expanding information with respect to negative weight twisted treatment among staff nurses (Menaria et al., 2018).

Figure 1 shows that in the pre-test, 92% has inadequate knowledge, 8% has moderate knowledge and in post-test, 12% has moderate knowledge and 88% has adequate knowledge. While comparing the level of knowledge on negative pressure wound therapy in post-test, 88% has adequate knowledge of more than pre-test 0%.

This examination was upheld by Sriyani A. Kumarasinghe et al., on attendant’s information on diabetes ulcer infection and their mentality towards patients experiencing its and to recognize factors which impacts them. Absence of formal injury care preparing was accounted for by 91/2%. The Mean information score was 77.9, with 57.8% of attendant acquiring = 80%. The attendant’s shown a general inspirational mentality towards thinking about diabetic ulcer tolerant. In any case, the distinguished examination shortage in centre information and some negative mentality, for example, lack of care toward torment. A Statistically critical affiliation was seen between nurture information and term of nursing wound consideration encounters and the sort of unit are they are connected to no relationship was seen between attendant’s information and attitude (Kumarasinghe et al., 2018).

The present study shows the mean pre-test score of level of knowledge on negative pressure wound therapy on diabetes wound is 11.8 (S.D=2.562) and the post-test mean score is 25.94 (S.D=2.486) and the mean difference is 14.14. The post-test mean score was 25.94 higher than the pre-test mean score 11.8 and the paired ‘t’ value is 28.00789 (Table 1).

The current examination was upheld by Alshimasabur et al., were directed an investigation on the evaluation of medical caretaker’s information and works on with respect to wound vacuum helped conclusion treatment was created to encourage wound mending. There was a powerless positive relationship between’s attendant’s injury VAC all-out mean information score and general practice reaction. The Pearson connection coefficient was 0.206. The medical caretaker’s in the examination had lacking information and work on with respect to wound VAC therapy (Sabur, 2017).

The study showed there was a significant association between age, professional qualification, nursing experience and wound care training in level of knowledge on negative pressure wound therapy among staff nurses in post-test. It was also proved that there was statistically (p> 0.001) between before and after the intervention.
CONCLUSION

As medical caretaker’s job in wound administration is indispensable, they have to targets training on wound administration and ought to be engaged in their job among the other colleagues. The study concludes that staff nurses gained knowledge regarding negative pressure wound therapy in diabetes wound among staff nurses.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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