

Knowledge Regarding Burn Wound Care among Nurses

Swati Kambli

Principal, Dr. D. Y. Patil College of Nursing, Mumbai, Maharashtra, India

Abstract: Fifty consecutive staff nurses of .D. Y. Patil hospital, surgical ward and National Burn Centre, Airoli were interviewed using questionnaire to determine how well informed they were about burn wound care. **Methodology:** A cross-sectional survey was conducted in Dr. D. Y. Patil hospital, Nerul and National Burn Centre, Airoli using questionnaire regarding burn wound care, its definition, factors affecting, aseptic technique, steps and principles followed and its management. **Findings:** The knowledge of the staff nurses of National Burn Centre were more as compared to the staff nurses working at D.Y. Patil Hospital and Research Centre. **Conclusion:** Sincere and sustained efforts are required to increase the knowledge of staff nurses of all non-specialized hospitals in burn wound care to provide proper care to burn patient and decrease mortality rate due to ineffective burn management.

Keywords: Knowledge, burn, wound care, staff nurses.

1. Introduction

Learning is the addition of new knowledge and experience Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [1] Burns injuries, which have reached epidemic proportions in recent years are considered a health care problem .It has only been in the past several years that the medical profession has begun to recognize and understand the problem associated with burns [2].

In caring for the patients with a burn injury it is important to remember that many factors can influence in the area of the patient. This is of particular relevance in the area of wound care. In some instances sophisticated products are available but lack of clinical experience makes them difficult to use. Wound care needs to be undertaken in the context of the local environment. In recent years burns treatment research brought relief to burns patients in many different forms. Perhaps the most beneficial is artificial skin grafting. Different types of grafting are available. These products are proving to be life saving for many burns victims [2].

The National Center for Injury prevention and control of the Centers for Disease Control and Prevention(CDC) identifies that burn injury as the 5th most common cause of death from unintentional injury in U.S. great strides in research have helped to increase the survival rate of patients with burns injuries. Research in areas such as fluid resuscitation, emergency burn treatment, nutritional needs and changes in wound care practice, skin grafting, and use of skin substitutes have contributed greatly to decrease in burn death. Continued research and advances in the areas of critical care, rehabilitation, psychosocial, and scar management are essential for continued progress in burn care[3].

2. Need for the Study

India was the only country in the world where the burns was classified among the 15th leading causes of death. More than 7 lakhs burns patients being hospitalized and 1.2 lakhs death occurring annually due to burn injury every year in India. Burns are one of the most common household injuries it is estimated that about 1.25 million burns injuries occur each year in the U.S. [4]

Burns are now a major health problem with its implication for both patient who suffer and for nurses who care for them. Nurses represent the care of the patient with a complex situation ,where valuation is not easy and the need of comprehensive care which requires a immediate response to prevent damage, aesthetic, functional, psychological and sometimes even death. It is intended to emphasize the importance of making a comprehensive assessment rapid and comprehensive of those who suffer this type of injury and to act immediately to meet the needs and its complications [4].

A prospective study was conducted regarding nosocomial infections in a burn care unit. These infections are the most common cause of mortality after burn injury. An analysis of burns are patients admitted and treated between January 2004 and December 2005 in turkey. About 182 cases were admitted to Burn care unit during the study period ,169 met the inclusion criteria. Of the 169 burns patients, 127 acquired, 166 nosocomial infection (15.7% pneumonia, 56.0% burn wound, 8.4% UTI, 19.9% blood stream infection)with an overall nosocomial infection rate of 18.2 per 1000 patient-days[5].

A comparative study was conducted to determine the association with mortality and morbidity in severely injured burns patients in which 38 articles were reviewed. The age of burn(<45yrs) and trauma ranged between (34-49yrs)groups was lower than the general critical care ranged between(57-64yrs)population of survival differed with trauma patients experiencing a lower rate of mortality associated with sepsis (7-36.9%)compared with burns (28-65%)and critical care (21-53%)groups.[6]

A cross sectional descriptive study was conducted to evaluate persons who survived with severe burns and to describe long-term residual problems relating to skin. The study included evaluation of 98 burn survivors who survived. Participants were male (63%)female(69%).The average time from injury was 17 years (3-53 yrs)and average of TBSA burn was 57%(range 30-97%).Findings showed that hypertrophic scars in grafted areas were (92%),non grafted areas were (38%),decreased sensation to pin grafted areas were (71%),hyper pigmentation in grafted areas were (53%),fingernail deformities were(35%) and skin breakdown were (32%). There was critical need for long term follow up both in the clinic and in research.[7]

The above studies revealed the magnitude of the burn problem, its complication and its management. The findings show that there is a dire need to conduct further research in care of patients with burn injury.

The investigator experience with patients of burn injury, discussion with colleague and experts helped her to realize that the need to teach the students with regard to care of burn patients, as she found that they have very little knowledge for an effective and efficient management. If the students were educated adequately we can control the incidence of death of the burns patients. Therefore, the investigator decided to undertake the study to assess the effectiveness of Planned Teaching Programme regarding care of burns patients among third year G.N.M students in a selected school of nursing at Mangalore.

3. Review of Literature

Review of literature is a key step in research process. The review of literature in a research report is summery of current knowledge about particular practice, problem and includes what is known and what is unknown about a problem [8].

Shinde, M., & Mohite, V. R. (2014). Found that The knowledge on hand hygiene was moderate (144 out of 200, 74%) among the total study population. The majority of students had poor attitudes with regard to hand hygiene. Nursing students had significantly ($P < 0.05$) better attitudes (52%) compared to nursing staff (12%). Student nurses had better five moments of hand hygiene practices than the staff nurses [9].

Deshmukh, M.(2014), concluded that the maximum of 43.33 % of nurses scored between 0-13 (Poor) knowledge score regarding Venous Access Device Care [10].

Kale, M., Gholap, M., & Shinde, M. (2014) Concluded that the majority (66%) of the student nurses had an average, majority (66%) of the student nurses had an average knowledge whereas 20% students showed a satisfactory performance of universal precautions. there was no significant association between the level of performance of universal precautions and students.The nursing management of people with blood borne diseases involves the risk of occupational hazards to health care workers. As student health care workers become more involved in patient contact during their training, they are at risk of exposure to blood

borne pathogens. The safety of student health care workers themselves, and subsequently that of their patients, depends directly upon the degree to which student nurses have knowledge of occupational hazards specific to their jobs and management mechanism for mitigating those hazards[11]

The study was undertaken to determine the current survival statistics and length of stay in population of burned patients treated. The 2057 burns patients were reviewed for survival and length of stay and they enrolled in the study.About 1357 (61.9%)survived their injuries. The mean age was 19 yrs and mean burn size was 30% TBSA. Septic complications accounted for 76% of the deaths, irreversible burn shock for 20%, and only 0.57% were directly related to severe smoke inhalation. The mean and median lengths of hospital stay were 16.8 and 10 days respectively. [12]

A Retrospective study was conducted to review the withdrawal of life sustaining treatment and end of life care in burn patient death. The study was undertaken for all burns patients deaths from 1st April 2001-31st December 2007. About 63 patients were included in the study, with a median age of 56 yrs(21-94).End of life decisions in younger patients (under 65 yrs)were more often due to burn severity.. In 34% of patients end of life care was not comprehensively documented. [13]

A study was conducted regarding quality of life impact as outcome in burns patients. This study used the Sickness Impact Profile(SIP) to investigate quality of life in 30 burned patients after discharge and again 3 months later. At the first assessment both the physical and psychological dimensions were significantly impaired, although there was an improvement at the 3 month follow up particularly in the physical dimension. At the first administration gender related differences were particularly marked in amputation ($p=.005$), body care and movement ($p=.004$) home management $p=(.013)$, mobility ($p=.011$), physical dimension ($p=.004$), and quality of life general score($p=.031$).Although all of these areas had improved by the time of re test, the gender related differences remained. [14]

A population based of epidemiology of acute adult burn injuries and factors associated with mortality and hospital length of stay from 1995-2004. Reaserchers collected data on all adult (≥ 18 yrs)who suffered a burn injury requiring hospital admission between Januuary 1995 and December 2004.A total of 928 burn patients were identified. The highest incidence of burn injury admissions occurred in 1996(12.2 burn injury admissions per 100,000 population)and 2004(12.3 admissions per 100,000 population).The largest number of burn injury admissions occurred during the month of July and August(23.3%)while the fewest occurred during the winter months of February and December(11.9%).Mean patient age was 45.2 yrs(ranged 18-97)and 658(70.9%)were male. [15]

4. Research Methodology

According to Shinde M (2007), Research approach refers to the overall plan for obtaining answers to the research questions and for testing the hypothesis. The research designs spells out the strategies that the researcher adopts to

develop information that is accurate, objective and interpretable and it helps the researcher in selection of subjects, manipulation of independent variable, observation of a type of statistical analysis to be used to interpret the data[8].

a) Research Approach

A comparative survey approach was adapted to determine knowledge regarding burn wound care in staff nurses of National Burn Centre and D.Y. Patil Hospital and Research centre.

b) Research Design

In the present study, non –experimental design is selected which is of exploratory nature. This study intended to ascertain the knowledge of staff nurses regarding burn wound care.

c) Variables

In this study, variable used are dependent and independent variable.

In this study the subjects are the nurses who are working in National Burn Center ,Airoli and D.R D.Y Patil hospital and research center.

1)Independent variable:

In this study the independent variable is staff nurses.

2)Dependent variable : In this study the dependent variable is knowledge of wound care in burn patient.

d) Setting of the study :

This study will be conducted in National Burn Center, Airoli which is a 50 bedded hospital for burn patient only and Dr D.Y. Patil hospital and research center is a 1050 bedded which include 60 OPD's, Surgical wards ,SICU, PICU, ICU, Causality.

e) Population of the study

Population of the study is the number of staff nurses working in National Burn Center, Airoli and the staff nurses of surgical unit in Dr DY Patil hospital and research center.

f) Sample

In this study the staff nurses of National Burn Center, Airoli and the staff nurses of surgical unit in Dr DY Patil hospital and research center is selected to represent the population of interest. *Sample size* was 50 i.e. 25 from each hospital.

g) Sample technique:

Purposive sampling which is one of the types of non probability sampling technique is used.

i. Inclusion criteria:-

- Sample is selected from national burn center, airoli.
- Staff nurses who have completed their ANM, RGNM and Bsc Nursing and Post basic B.sc Nursing.
- Staff nurses included in this study are those who are willing to undergo assessment.

ii. Exclusion criteria:-

- Staff nurses who are having less than 6 month of experience.
- Staff nurses who are not willing.
- Student nurses who have not completed their course.

h) Tools:

- **Section 01:** Demographic data.
- **Section 02:** Assessment done in wound care and Reverse barrier Technique.
- **Section 03:** Dietary management and principle of bathing.

i) Plan for data analysis:

The data obtained in this study was entered into a master data sheet prepared by the investigator to analyze the data. The data would be analyzed based on the objectives and hypothesis using comparative and inferential statistic.

5. Major Finding of the Study

a) Section 1:

More than 70% of staff nurses of both the hospitals are of the age group of 21-30 yrs. Majority i.e. 53% of sample were male in both the hospitals. The qualification of majority of staff nurses i.e. around 60% of National Burn Centre, Airoli is Basic B.Sc nursing and the majority of staff nurses i.e. around 56% of Dr, D. Y. Patil Hospital and Research Centre is RGNM.

b) Section 2:

Maximum numbers of staff nurses of National Burn Center ,Airoli are having more knowledge related to Burn Wound Care (that is 57 %)than DR D.Y Patil Hospital and Research Center(that is 43%).

6. Conclusion

In spite of tremendous advancement in knowledge and technology in Burn patient care, the staff nurses are lacking in relation to burn wound care. The results of study support our assumptions. The Specific areas of burn wound care where there is lack of depth knowledge have been identified and insisted throughout the study. More emphasis should be given on Burn wound care and implementation of Burn wound care for planning comprehensive nursing care. Sincere and sustained efforts are required to increase the knowledge of staff nurses of all non-specialized hospitals in burn wound care to provide proper care to burn patient and decrease mortality rate due to ineffective burn management. Creating awareness and developing knowledge among the staff nurses in relation to Burn wound care is the key factor to plan for comprehensive nursing care for better prognosis of the patient and to reduce disability and improve the quality of life of burn patients.

7. Implication of Study

As there is increase in mortality rate due to ineffective burn wound care, more studies are required to bring out an effective, preventive intervention. The finding of the study may be helpful for such future studies. In this context, the findings has valuable implication towards nursing education, service, practice and research.

a) Nursing Education:

World Health Day (7th April) could be celebrated by nursing personnel by providing education to the staff nurses by experts on how to take care of burn patient.

- Students should be well prepared on the theoretical aspects and demonstration of Burn wound assessment and care during their postings.
- b) **Nursing Administration:** Periodic refresher courses like an in-service education program should be conducted by the hospitals for the staff nurses.
- c) **Intensive Care Unit, Surgical Ward, and Causality:** The staff nurses should be specially trained in these wards based on Burn wound care. Periodic workshops and lectures should be conducted by the tutors and physicians for staff nurses.
- d) **General Education**
A Topic on "Burn wound care" should be included as a health teaching for burn patient and their relatives.
- e) **Nursing Research**
The ultimate goal of any profession is to provide its clients with maximum, effective and efficient services. A profession seeking to improve the practice of its members and to enhance its professional stature, strives for the continual development of a relevant body of knowledge. Nurses need to engage in multidisciplinary research so that it will help to improve the knowledge and by applying it, health problems can be solved. The need of the patients with burns has to be explored to prepare effective teaching methods thereby contributing to effective and quality nursing care.
- f) **Nursing Practice**
Learning is an active goal directed process transforming knowledge skills and values into new behavior. Nurses should carefully assess the learners, set the teaching environment, develop good rapport and communication and maintain appropriate documentation. Nurses can work as a school health nurse to increase the communication. Nurses have a major role in the preventive aspect than the curative aspect
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Author Profile



Swati Kambli is working as Principal, Dr. D.Y. Patil College of Nursing, Mumbai, Maharashtra, India

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