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Effectiveness of Demonstration on Knowledge and Practice Regarding Donning and Removing of Selected Personal Protective Equipment Among First year Nursing Students at Selected Nursing Institutes

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Abstract

Background: For health care workers, the main strategy for reducing physical exposure to highly infectious diseases is through personal protective equipment (PPE). PPE will only be effective if the equipment can form a barrier between the Health Care Worker(HCW) and the exposure to contaminated body fluids. Therefore, standards have been developed that, once complied with, guarantee that PPE is of sufficient quality to protect against biohazards. Probably the biggest risk of infection, in spite of using proper PPE, is associated with taking the PPE off, also called doffing in an improper way wherein the HCWs can contaminate themselves (Fischer 2014). Some types of PPE make donning and doffing more difficult and increase the risk of contamination (Zamora 2006). Therefore, specific guidance has been developed for donning and doffing PPE (WHO 2014).¹

Objectives: 1. To assess the pre test knowledge and practice regarding donning and removing of selected Personal Protective Equipment among First year nursing students in Experimental and control group. 2. To assess the post test knowledge and practice regarding donning and removing of selected Personal Protective Equipment among First year nursing students in Experimental and control group. 3. To evaluate the effectiveness of demonstration on knowledge and practice regarding donning and removing of selected Personal Protective Equipment among nursing students in Experimental and control group. 4. To find out association of knowledge and practice score with selected demographic variables in experimental and control group.

Methodology: A True experimental Pre test post test design was adopted for the study. It was conducted over 60 First year nursing students (30 in experimental group and 30 in control group) by using random sampling technique (Lottery method). For experimental and control group two different Nursing Institutes were randomly selected. Pretest on knowledge was done by using structured questionnaire and practice was assessed by checklist in both experimental and control group. Same day demonstration on donning and removing of selected personal protective equipment was given to experimental group. Post test was done after seven days and analysis showed that there was significant increase in knowledge and practice score after Demonstration.

Result: The analysis reveals that, in experimental group mean difference of knowledge score

was 9.06 & SD 3.93 and in control group mean difference of knowledge score was 0.16 & SD 1.17 and calculated t value was 12.30 which was much higher than table value. In experimental group mean difference of practice score was 13.60 & SD 3.02 and in control group mean difference of practice score was 0.40 & SD 2.06 and the calculated t value was 19.75 which was much higher than table value. Thus the H_1 is accepted and H_0 is rejected. In experimental group there is significant association of knowledge score with course of instruction and age in years, whereas there is significant association of practice score with course of instruction. In control group there is a significant association of knowledge score with age in year, course of instruction and residential area, whereas there is significant association of practice score with family member working as health care provider.

Conclusion: Finding of the study shows that demonstration on donning and removing of selected personal protective equipment among first year nursing students in the experimental group was effective and there is significant increase in knowledge and practice in experimental group than in control group.

Keywords: Demonstration; Knowledge; Practice; Donning and removing of selected personal protective equipment(PPE); First year nursing students.

Introduction

An Infection is an invasion of the body tissue by microorganisms and their growth there. Such a microorganism is called an infectious agent. If the microorganism produces no clinical evidence of disease, the infection is called asymptomatic or subclinical infection.²

Worldwide, health-care workers are at risk for occupational exposure to blood-borne pathogens through contact with human body fluids. Although about 60 blood-borne infectious pathogens have been identified, including Epstein-Barr virus, most occupation-related, blood-borne infections are due to hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).³

Nurses are directly involved in providing a biologically safe environment. Effective control of infection requires a nurse to remain aware of the mode of the transmission and way to control them.⁴

Personal protective equipment (PPE) continues to play an integral role in prevention of transmission of infection in the healthcare setting, researcher discover by looking back at the history of protection of healthcare workers (HCWs) and prevention of spread of infection, that the concept is several centuries old.⁵

Background of the study

Hinal Baria¹(2016) conducted a study on Knowledge and practice of universal precautions among nursing staff, She said Health care providers are at an increased

risk of exposure to various infections like HIV, Hepatitis B, Hepatitis C etc. Correct knowledge regarding universal precautions among nursing staff is still not of satisfactory level and training at repeated interval needs to be given to ensure correct knowledge as well as implementation of universal precautions.⁶

Kathleen B. Stoessel, (2009) said that Donning and Removing PPE for Infection Prevention importance of attention to personal protection cannot be underestimated. By way of example, a cluster of 17 SARS (severe acute respiratory syndrome) cases among Canadian HCP in 2003 was studied. Among their findings – 13 of those who fell ill (87 percent) were unsure of the proper order in which personal protective equipment (PPE) should be donned and removed.⁶

Need of the Study

Office of scholarship and research development New york- April 25, 2017-conducted a study on Student Nurses Want More Infection Prevention Education, Study Finds a national survey from Columbia University School of Nursing finds that almost 40 percent of nursing students say they feel they need more instruction on preventing and controlling infection, especially in busy healthcare environments, despite believing that their nursing program emphasizes the importance of infection prevention. More than half of respondents also report observing breaches in prevention practices during

clinical placements, yet have trouble addressing them because they feel unqualified or fear retaliation from others. The survey also found that 51% of respondents witnessed poor infection prevention and control practices during clinical rotations but often had difficulty addressing them. "A culture of safety depends on healthcare workers' ability to express their concerns, adding that "we need to empower nurses to speak up in order to improve patient care. That empowerment should start early in training, before nurses get their RN degree." The study's findings are particularly important, given the critical role that nurses play in preventing nosocomial infections, which contribute substantially to patient morbidity and mortality, as well as healthcare costs, Carter said. "It will take collaboration across disciplines and institutions to have discussions about how to best support student nurses, which will ultimately improve the care they provide as students and professional nurses.

Student nurses overwhelmingly reported that they knew when and how to use various infection prevention precautions, but acknowledged that it was often difficult to perform these practices when busy, which speaks to the complexity of the healthcare environment," said Columbia Nursing Assistant Professor Eileen J. Carter, PhD, lead author of the study. "Education is important but education alone is not sufficient."⁸ Within healthcare settings, many microorganisms have the perfect living and breeding conditions, due to the numbers of susceptible patients gathered in an ideal environment. The student nurses are more prone to get the infection in the hospital settings due to lack of knowledge regarding safety precautions. One of the common and essential safety precaution to control infection is wearing personal protective equipment. First year nursing students are beginner in this profession to start to learn and acquire skills. So, the Researcher is interested to assess their knowledge and practice regarding use of personal protective equipment, to demonstrate the procedure on donning and removing of selected personal protective equipment and to again assess the effectiveness of demonstration by reassessing their knowledge and practice.

Statement of the problem

"An experimental study to assess the Effectiveness of Demonstration on knowledge and practice regarding donning and removing of selected Personal Protective Equipment among Firstyear nursing students at selected nursing institutes of the city."

Objectives

1. To assess the pre test knowledge and practice regarding donning and removing of selected Personal Protective Equipment among First year nursing students in Experimental and control group.
2. To assess the post test knowledge and practice regarding donning and removing of selected Personal Protective Equipment among First year nursing students in Experimental and control group.
3. To evaluate the effectiveness of demonstration on knowledge and practice regarding donning and removing of selected Personal Protective Equipment among nursing students in Experimental and control group.
4. To find out association of knowledge and practice score with selected demographic variables in experimental and control group.

Operational definition

Assess

In this study assess means, the organized systematic continuous process of collecting data from the nursing students regarding donning and removing of selected Personal Protective Equipment (PPE).

Effectiveness

In this study effectiveness means, the desired changes brought about by the Demonstration among nursing students regarding donning and removing of selected Personal Protective Equipment (PPE).

Demonstration

In this study Demonstration means, showing the proper technique of donning and removing selected Personal Protective Equipment.

Knowledge

In this study knowledge means, the information, understanding regarding donning and removing selected Personal Protective Equipment (PPE).

Practice

In this study practice means the students will be able to perform the steps of donning and removing of selected personal protective equipment (PPE) correctly and develop skills in clinical practice.

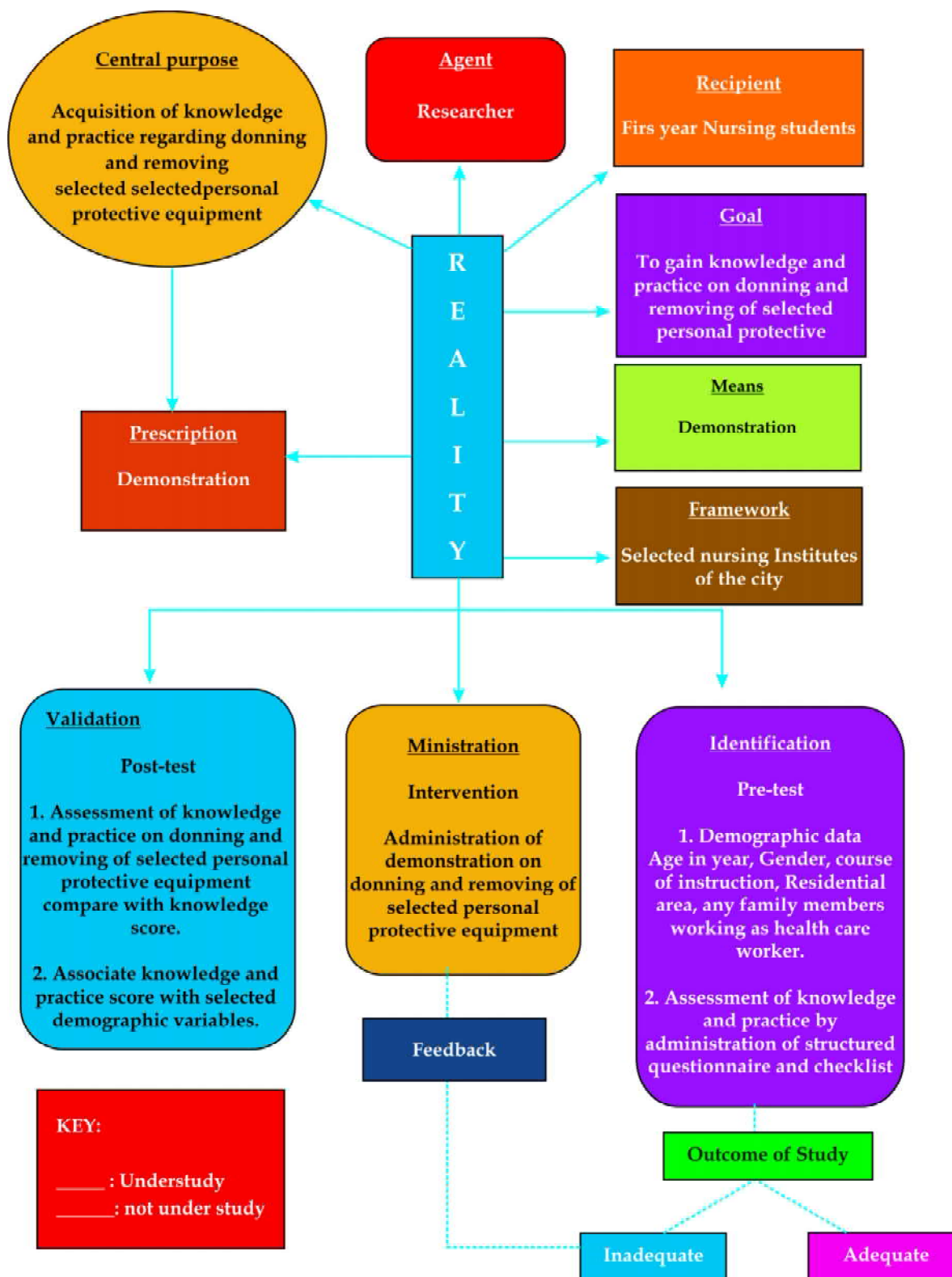


Fig 1.1: Conceptual Framework

Selected Personal protective equipment

In this study selected Personal Protective Equipment

(PPE) is specialized equipment or clothing used to protect yourself and patients from germs. Selected

Personal Protective equipment are Gown, mask, goggle, gloves.

Donning

In this study donning means to put on or Steps to wear selected Personal Protective Equipment.

Removing

In this study removing means to take off or to remove the selected Personal Protective Equipment.

First Year Nursing students

In this study, First Year nursing students are Basic B.Sc Nursing Students and General Nursing and Midwifery students those who are studying in selected institute of the city.

Delimitation

This study is delimited to the first year Basic B.Sc. Nursing students and General Nursing and Midwifery student nurses studying in selected Nursing Institutes.

Hypothesis

Was tested at 0.05 level of significance

H₀: There is no significant difference in knowledge and practice regarding donning and removing of selected Personal Protective Equipment among First year nursing students in experimental and control group.

H₁: There is significant difference in knowledge and practice regarding donning and removing of selected Personal Protective Equipment among First year nursing students in experimental and control group.

Conceptual Framework

The conceptual framework selected for the study is based on Ersestine Wiedenbanch's "Perspective Theory.

Review of Literature

The Literature review is classified under following sections.

- I. Literature related to Hospital acquired infection.
- II. Literature related to knowledge and practice regarding use of Personal Protective Equipment among health care workers.
- III. Literature related to effectiveness of demonstration.

Methodology

Research approach: In this study quantitative

approach is used.

Research design: In this study the design used is True experimental Pre testpost test design.

Setting of the study: Total two nursing Institutes(1 for experimental and 1 for control group) were selected for the study.

Independent variable: Demonstration on donning and removing of selected personal protective equipment (PPE).

Dependent variable: knowledge and practice regarding donning and removing of selected personal protective equipment (PPE).

Demographic variable: It includes age, gender, Course of instruction, residential area, any family member working as health care provider.

Population

The population in this study are all nursing students. Target population: In this study the target population includes the all first year nursing students.

Accessible population

In the present study the accessible population selected for the study comprises of First year basic B.sc Nursing and General nursing and Midwifery students studying in selected nursing institute of the city and are available at the time of data collection and who were fulfilling the inclusion criteria.

Sampling

Sample: In this study, sample consisted of 60 first year nursing students (30 in experimental group and 30 in control group) studying in selected nursing institutes of the city who were available during the time of data collection.

Sample size: 60

Sampling technique: In this study simple random sampling technique(Lottery method) is used.

Sampling criteria

Inclusion criteria: In this study, inclusion criteria is,

- First year basic B.Sc Nursing and General nursing and midwifery students.
- Willing to participate in the study.
- Available at the time of data collection.

Exclusion Criteria

In this study exclusion criteria is,

- Post Basic B.Sc nursing students, M.Sc. nursing students.
- Students who are not willing to participate in the

study.

Description of tools

Section A – Demographic variables

Section B – Self structured knowledge questionnaire

Section C-checklist to identify the influence of participants clinical practice regarding donning and removing of selected personal protective equipment.

Validity

Content and construct validity of tool was determined by 27 experts including medical surgical nursing subjects experts, physician, English literature and statistician etc.

Reliability

Karl Pearson correlation coefficient formula was used. The correlation coefficient 'r' of the questionnaire was 0.99, which is more than 0.8. hence the questionnaire was found to be reliable. Reliability of checklist was done by using Inter-rater method, the reliability of the tool was 0.997, which is more than 0.8 and hence the tool was reliable.

Pilot study

Pilot study was conducted from 4th October 2019 to 11th October 2019 for a period of 7 days. The pilot study was feasible in terms of time, money, material and resources.

Table 1: Table showing Percentage wise distribution of first year nursing students according to their demographic characteristics

Demographic Variables	Experimental Group Frequency (f)	Experimental Group Percentage (%)	Control Group Frequency (f)	Control Group Percentage (%)
Age in years				
17-19yrs	23	76.7	27	90
20-22yrs	7	23.3	1	3.3
=23 yrs	0	0	2	6.7
Gender				
Male	7	23.3	5	16.7
Female	23	76.7	25	83.3
Course of instruction				
B.Sc. Nursing	15	50	15	50
GNM	15	50	15	50
Residential Area				
Urban	19	63.3	23	76.7
Semi Urban	4	13.3	4	13.3
Rural	7	23.3	3	10
Family member working as health care provider				
Yes	9	30	15	50
No	21	70	15	50
If yes, specify				
	n=9		n=15	

Doctor	0	0	1	6.7
Nurse	7	77.8	11	73.3
Paramedical	2	22.2	1	6.7
Housekeeper	0	0	1	6.7
Any other	0	0	1	6.7

Data collection

The main study data was gathered from 4th November 2019 to 23rd November 2019. Permission was obtained from concerned authority. The samples were approached in small groups on a daily basis. Before giving the questionnaire self introduction was given by the investigator and the purpose of the study mentioned. Consent of the samples were taken. Pretest on knowledge was assessed by administering the structured questionnaire and practice was assessed by checklist in both experimental and control group. Same day demonstration on donning and removing of selected personal protective equipment was given to experimental group. Post test was conducted on 7th day in both experimental and control group knowledge was assessed by questionnaire and practice by checklist in experimental and control group.

Result

Section-I: Description on demographic variable of first year nursing students in experimental and control group.

Section-II: Description on pretest knowledge and practice score regarding donning and removing of selected personal protective equipment among first year nursing students in experimental and control group

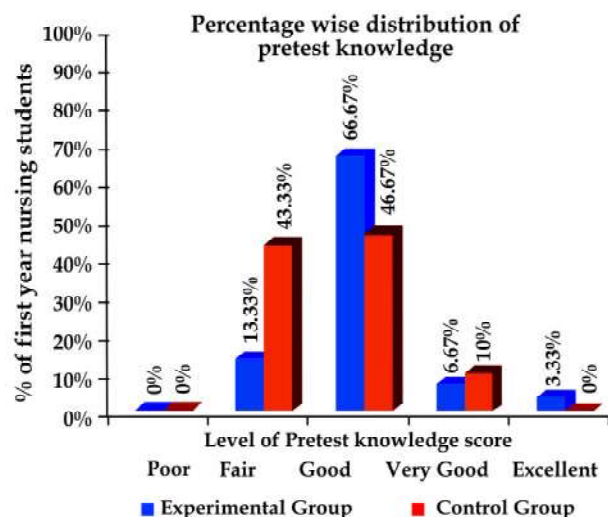


Fig. II (A): Bar diagram representing distribution of pretest knowledge score in terms of percentage in experimental and control group.

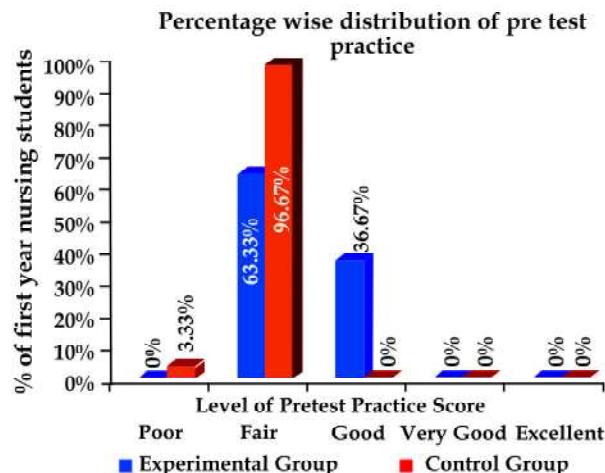


Fig. II (B): Bar diagram representing distribution of pretest practice score in terms of percentage in the experimental and control group.

Section-III: Description of post test knowledge and practice score regarding donning and removing of selected personal protective equipment among first year nursing students in experimental and control group.

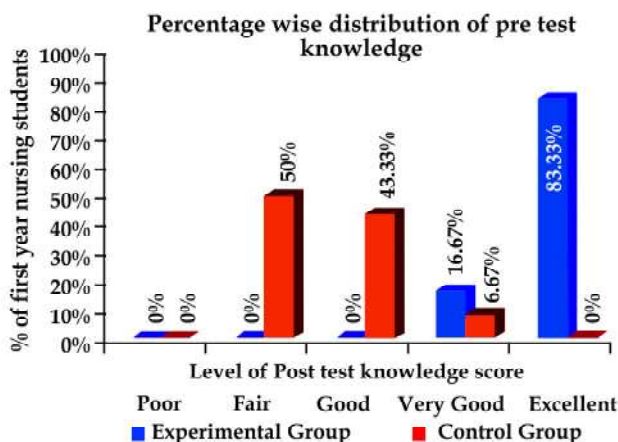


Fig. III (A): Bar diagram representing distribution of post test knowledge score in terms of percentage in the experimental group and control group.

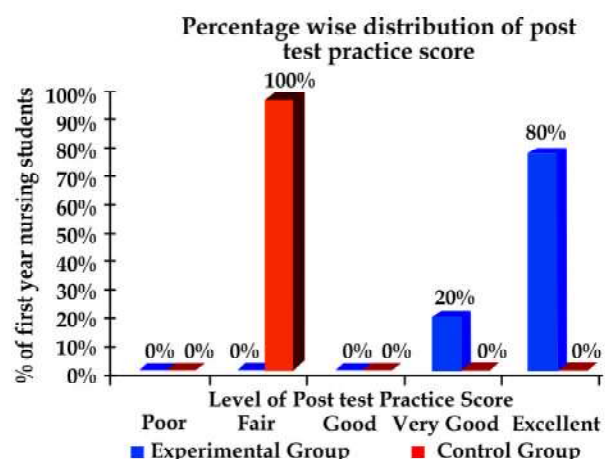


Fig. III (B): Bar diagram representing distribution of post test practice score in terms of percentage in the experimental and

control group.

Section-IV: Description on the comparison of pretest and post test knowledge and practice score regarding donning and removing of selected personal protective equipment among first year nursing students in experimental and control group.

Table IV(A): Table showing the comparison of mean and standard deviation (SD) of knowledge score of first year nursing students in experimental group and control group.

Groups	Mean difference	SD	Calculated t-value	Df	Table Value	P Value
Experimental Group	9.06	3.93				
Control group	0.16	1.17	12.30	58	2.00	0.0001,S

*S- Significant

The table IV(A) shows the comparison of difference in the knowledge score of experimental and control group in the pretest and post test of the first year nursing students in selected Nursing institutes of the city. Mean and standard deviation values are compared and student's unpaired 't' is applied at 5% level of significance. The degree of freedom $n=(30-1)+(30-1)$ i.e 58, the table value of $df(58)$ is 2, the calculated 't' value is 12.30 which is much higher than the tabulated value at 5% level of significance which is statistically acceptable level of significance. Hence it is statistically interpreted that the research hypothesis H_1 is accepted and H_0 is rejected. Thus, it is statistically interpreted that the demonstration regarding donning and removing of selected personal protective equipment was effective in the first year nursing students in the experimental group, and the level of knowledge is significantly increased in the experimental group as compared to the control group.

Table IV(B): Table showing the comparison of mean and standard deviation (SD) of practice score of first year nursing students in experimental group and control group

Groups	Mean difference	SD	Calculated t-value	Df	Table Value	P Value
Experimental Group	13.60	3.02				
Control Group	0.40	2.06	19.75	58	2.00	0.0001,S

*S- Significant

The table IV(B) shows the comparison of difference in the practice score of experimental and control group in the pretest and post test of the first year nursing students in selected Nursing institutes of the

city. Mean and standard deviation values are compared and student's unpaired 't' is applied at 5% level of significance. The degree of freedom $n=(30-1)+(30-1)$ i.e 58, the table value of $df(58)$ is 2, the calculated 't' value is 19.75 which is much higher than the tabulated value at 5% level of significance which is statistically acceptable level of significance. Hence it is statistically interpreted that the research hypothesis H_1 is accepted and H_0 is rejected. Thus, it is statistically interpreted that the demonstration regarding donning and removing of selected personal protective equipment was effective in the first year nursing students in the experimental group, and the level of practice is significantly increased in the experimental group as compared to the control group.

Section-V: Description on association of knowledge and practice score with selected demographic variable in experimental and control group.

Analysis reveals that, in the experimental group, there is significant association of knowledge with age in years and course of instruction, whereas no association is found with gender, residential area, family member working as a health care provider and type of health care provider and in the control group, there is a significant association of knowledge with age in years, course of instruction, residential area, whereas no significant association found with the gender, family member working as a health care provider and type of health care provider.

Analysis reveals that, in the experimental group, there is significant association of practice with course of instruction, whereas no significant association found with the age in years, gender, residential area, family member working as a health care provider and type of health care provider and in the control group, there is a significant association of practice with family member working as a health care provider whereas no significant association found with the age in years, gender, course of instruction, residential area, and type of health care provider.

Discussion

Vidya Rajesh Gupta, Regina Dias (2012) conducted a study on Effectiveness of Simulated Demonstration regarding Defibrillation Technique on Knowledge and Practices among Nurses. The Study was aimed to assess Effectiveness of demonstration regarding defibrillation technique on knowledge and practices among nurses. The objectives were, To assess the knowledge and practice score of staff nurses regarding defibrillation technique before and after Demonstration. To determine the association between knowledge & practice score of staff nurses with

selected demographic variable. Methodology used in the study was Quantitative research approach and one group pre-test and post-test design was used. Non-probability convenient sampling method was applied to select the 50 samples. Findings-majority 30 (60%) of the subjects were between the age group of 26 to 30 years and Majority i.e. 47(94 %) were females. While 33 (66%) of the subjects were professionally qualified up to General nursing and midwifery Maximum i.e. 16 (32%) of the subjects have less than one years of ICU work experience, Maximum i.e. 34 (68%) of subjects had previous information acquired regarding defibrillation from other sources like books internet ET. Findings evident that the mean knowledge score of the nurses in pre test was 14.88 and SD 1.57, whereas mean knowledge score in post test was 45.7 and SD 14.6. The mean practice score of the staff nurses in pre test was 11.88 and SD 4.11, whereas mean practice score in post test was 21.1 and SD 2.88. The paired t test showed significant increase in the knowledge and practice score of the staff nurses after demonstration of defibrillation technique. Conclusion The results indicated positive response to the demonstration which was found to be really useful to them. This motivated staff nurses to take prompt decisions, perform defibrillation with confidence and save many lives of in-hospitals cardiac arrest victims.¹²

In the present study, the knowledge and practice regarding use of selected personal protective equipment was assessed by taking pre-test among first year nursing students in experimental and control group, followed by Demonstration of procedure in the experimental group and further reassessed the Knowledge and practice score in experimental and control group. Analysis reveals that in Experimental group, the pre-test mean knowledge score was 13.03 & SD 3.03 and post test score was 22.10 & SD 2.23. Whereas, the mean practice score in pre-test was 11.83 & SD 2.30 and post test score was 25.43 & SD 2.36. In Control group, pre-test mean knowledge score was 11.50 & SD 2.86 and in post test 11.33 & SD 2.85. Whereas, the mean practice score in pre-test was 9.33 & SD 1.29 and post test score was 9.73 & SD 1.46. Mean difference for knowledge in experimental group was 9.06 whereas in control group it was 0.16 and for practice mean difference in experimental group was 13.60 whereas in control group it was 0.40. Thus, it is interpreted that the demonstration was effective among first year nursing students.

Implication of the study

The findings of this study have implications for

nursing practice, nursing education, nursing administration, and nursing research.

Nursing Practice

- Nurses have a crucial role to play in prevention and control of hospital acquired infection and to prevent exposure to occupational hazard. This study can be used as information illustration for nurses working in various clinical area.
- It will also help the nurses to keep update knowledge regarding various aspects of donning and removing of selected personal protective equipment.
- When professional liability is recognized, it defines the parameters of the profession and the standards of professional conduct. Nurses should therefore enhance their professional knowledge.
- The demonstration can be used for imparting knowledge and practice regarding donning and removing of selected personal protective equipment to health team members and would serve as a ready reference material for the health team members. The information is particularly useful for the nurses for educating health team members the benefits of proper donning and removing of selected personal protective equipment .

Nursing Education

- Nurse who are up to date with the knowledge and practice regarding donning and removing of selected personal protective equipment are the better person to impart their knowledge and practice to the nursing student which will ultimately decrease the mortality related to respiratory diseases.
- Now days, much emphasis is given on comprehensive care in the nursing curriculum. So this study can be used by nursing teachers as an informative illustration for nursing students.
- Demonstration could help educators to use it as a tool for teaching.

Nursing Administration

- Findings of the study can be used by the Nursing Administrator in creating policies and plans for providing education to the first year nursing students and health care professionals.

- It would help the nursing administrators to be planned and organized in giving continuing education to the nurses and to others for applying and updating the knowledge regarding donning and removing of selected personal protective equipment.

Nursing Research

- The findings of the study have added to the existing body of the knowledge and practice in relation with donning and removing of selected personal protective equipment which will enhance the knowledge and practice and would help to keep it updated.
- Other researchers may utilize the suggestions and recommendations for conducting further study.
- The tool and technique used has added to the body of knowledge and practice and can be used for further references.

Limitations

- The study was conducted only on first year nursing Basic B.Sc. nursing and General Nursing and Midwifery students of selected Nursing Institutes.
- The sample size was small to generalize the findings of the study.
- The tool for data collection was prepared by investigator herself. Standardized tool was not used.

Recommendation

- A similar study can be replicated on a larger population for a generalization of findings.
- A descriptive study can be carried out to assess the attitude of first year nursing students on donning and removing of selected personal protective equipment.
- A similar study can be carried out to evaluate the effectiveness of video assisted self instructional module on donning and removing of selected personal protective equipment.
- A comparative study can be done on demonstration versus video assisted teaching on practice regarding donning and removing of personal protective equipment.
- A comparative study can be done to assess the knowledge and practice regarding donning and removing of selected personal protective equipment among the first year and final year nursing students.

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Regarding Prevention of Selected Complication of Immobility Among Immobilized Orthopedic Patients

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Abstract

Background: Musculoskeletal disorders highly affecting mobility include strains, sprains, fractures, joint dislocations, amputations, and joint replacement so orthopedic patients are more prone for immobility and its complications. They need to understand what are the complications which can be, cause by immobility and how it can be prevented. Nurses have the responsibility to educate and aware the patient about their illness, complications of illness and how the complications can be prevented.²

Objectives: To assess the pre test knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients, To assess the post test knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients, To evaluate the effectiveness of planned teaching programme on knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients, To associate the knowledge score with selected demographic variables.

Methodology: A pre experimental one group pre test post test design was adopted for the study. It was conducted over 60 immobilized orthopedic patients and was selected by using Non probability purposive sampling technique. Pre test was done using self structured questionnaire for knowledge. After pre test the researcher administered planned teaching programme on knowledge regarding prevention of selected complications of immobility among immobilized orthopaedic patients. Post test was conducted after seven days.

Result: Post test was done after seven days. Post test mean knowledge score was higher 20.65 with SD of 1.82 when compared with the pre test mean knowledge score value which was 9.03 with SD of 1.79. The calculated 't' value 28.77 is greater than table value 2.00 at 0.05 level of significance. Thus the H₁ is accepted and H₀ is rejected.

Conclusion: Planned teaching programme on knowledge regarding preventions of selected complications of immobility among immobilized orthopedic patients was effective. Significant association was found between knowledge score and age, gender, education.

Keywords: Selected complications; Immobility; Orthopaedic patients; Planned teaching programme; Knowledge.

Introduction

Movement is a complex process that requires coordination between the musculoskeletal and nervous systems. Body mechanics is a term used to describe the coordinated efforts of the musculoskeletal and nervous system. Although nurses need to understand the physics. Mobility refers to person's ability to move about freely, and immobility refers to the inability to do so. Some clients can be mobile or immobile, whereas others experience varying degrees of partial immobility. Think of mobility as a continuum with mobility on one end, immobility on the other and varying degrees of partial immobility in between the end points. Some clients move back and forth between mobility and immobility, but for others immobility is absolute and continues indefinitely. NANDA International (NANDA-I) defines impaired physical mobility as a limitation in independent, purposeful physical movement of the body or one or more extremities (Ackley and Ladwing, 2006).

Background and need of the study

A.Malarvizhi, V. Hemavathy (Mar.-Apr. 2015), Conducted a study to assess the knowledge on complications of immobility among the immobilized patients in selected wards at selected hospital. Assessment of level of knowledge on complications of immobility among the immobilized patients was done by providing questionnaire. Results showed that 50% of the participants were having inadequate knowledge whereas 40% of them were having moderately adequate knowledge followed by 10% of them were having adequate knowledge on complications of immobility. None of the demographic variables had significant association with knowledge on complications of immobility among orthopedic patients. Present study found that the knowledge on complications of immobility among orthopedic patients were poor in all the study setting. The patient can be educated and continuous feedback monitoring; supervision of practice should be needed on prevention of complications.⁵

S Poudyal, M Neupane, M Lopchan (2015), conducted a study on knowledge on prevention of complications related to immobility among caregivers of orthopaedic patients at selected hospitals of chitwan district; the study concluded that education plays a significant role in providing care to prevent complications related to immobility. So, awareness programmes regarding preventive measures should be planned and implemented for caregivers of immobilized patients.⁶

Statement of the problem

An experimental study to assess the Effectiveness of Planned Teaching Programme on knowledge regarding Prevention Of selected Complications of Immobility among immobilized orthopaedic patients admitted in selected hospitals of the city.

Objectives

1. To assess the pre test knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients
2. To assess the post test knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients
3. To evaluate the effectiveness of planned teaching programme on knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients
4. To associate the knowledge score with selected demographic variables.

Operational definition

Assess

In this study assess means, the organized systematic continuous process of collecting data from immobilized orthopedic patients regarding prevention of selected complications of immobility.

Effectiveness

In this study effectiveness means, the desired changes brought about by the planned teaching programme on knowledge on prevention of selected complication of immobility.

Planned teaching programme

In this study planned teaching programme means , systematically providing information regarding selected complications of immobility among immobilize orthopaedic patients which include introduction, definition of immobility, selected complications (bed sore, deep vein thrombosis, constipation, urinary tract infection) and its prevention

Knowledge

In this study knowledge means, responses obtained from immobilized orthopedic patients regarding prevention of selected complications of immobility

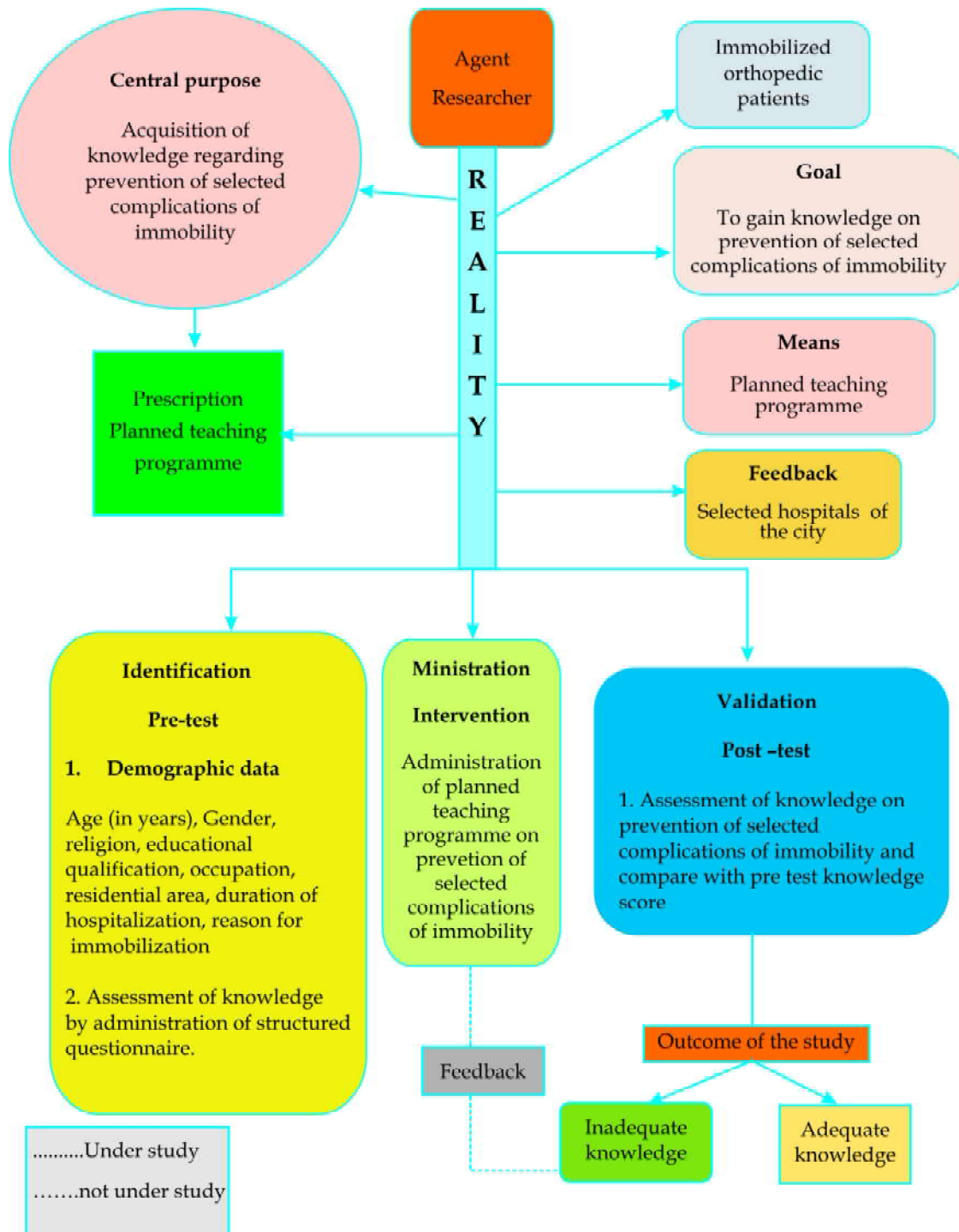


Fig. No.I-1: Conceptual framework based on -modified Widenbench perception theory

Complication

In this study selected complications includes, Bed sore, deep vein thrombosis (DVT), hypostatic pneumonia, constipation, urinary tract infection

Immobility

In this study immobility means condition in which a

patient is unable to move independently or is restricted for orthopaedic interventions.

Orthopaedic patients

In this study orthopedic patients means (male and female) patients with fracture of lower limbs, who are immobilize after orthopaedic surgery or on traction or plaster cast and who are unable to move about freely.

Delimitation

This study is delimited to the immobilized orthopedic patients admitted in selected hospitals.

Hypothesis

Hypothesis will be tested at 0.05 level of significance

- H_0 – There is no significant difference between pre and post test level of knowledge score regarding prevention of selected complications of immobility among immobilized orthopedic patients
- H_1 – There is significant difference between pre and post test knowledge score regarding prevention of selected complications of immobility among immobilized orthopedic patients

Conceptual Framework

The conceptual framework selected for the study is based on ErsentineWiedenbanch's "Perspective Theory" (Helping art of clinical nursing).

Review of Literature

- I. Literature related to complications of immobility
- II. Literature related to prevention of complications of immobility
- III. Literature related to effectiveness of planned teaching programme

Methodology

Research approach: In this study quantitative approach is used.

Research design: In this study pre experimental one group pre test and post test design is used.

Setting of the study: orthopedic wards of selected hospitals

Independent variable: Planned teaching programme

Dependent variable: Knowledge regarding prevention of selected complications of immobility.

Demographic variable: The demographic variables in this study include Age, Gender, Religion, Educational qualification, Occupation, Residential area, Duration of hospitalization, Reason for immobilization

Population:

Target population

In this study the target population includes the all immobilized orthopedic patients who are admitted in hospitals.

Accessible population

In the present study the accessible population of all immobilized orthopedic patients who are admitted in selected hospitals and are available at the time of data collection.

Sampling

Sample: In this study, sample consist of 60 immobilized orthopedic patients admitted in selected hospitals of the city.

Sample size: 60

Sampling technique: In this study Non probability purposive sampling technique used.

Sampling criteria:

Inclusion criteria:

In this study, inclusion criteria was, Immobilized patients who are;

1. More than 18 years of age
2. Suffering from orthopaedic condition with lower limb fracture, surgery, on traction or plaster cast
3. Able to read and write English, Hindi, Marathi
4. Willing to participate in study
5. Available at the time of data collection

Exclusion criteria

In this study, the exclusion criteria was, Immobilized patients who are;

1. critically ill with altered level of consciousness
2. Other than orthopaedic conditions
3. Not willing to participate in study

Description of tools

Section A – Demographic variables

Section B – Self structured knowledge questionnaire

Section C-Planned teaching programme on knowledge regarding Prevention of selected Complications of Immobility

Validity

Content and construct validity of tool was determined by 27 experts including medical surgical nursing subjects experts, orthopedic surgeon, English literature and statistician etc.

Reliability

Karl Pearson correlation coefficient formula was used. The correlation coefficient 'r' of the questionnaire was 0.87%, which is more than 0.8. Hence the questionnaire was found to be reliable.

Pilot study

Pilot study was conducted from 4th October 2019 to 10th October 2019 for a period of 7 days. The pilot study was feasible in terms of time, money, material and resources.

Data collection

The main study data was gathered from 4th November 2019 to 25 November 2019. The samples were approached in small groups on a daily basis. Before giving the questionnaire the purpose of the study mentioned. Consents of the samples were taken. The pre test questionnaire were distributed to the samples and collected back after 40 minutes. After the pre test the investigator administered the treatment (Planned Teaching Programme on knowledge regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients). After 7 days post test was taken.

Result

Section I: description of immobilized orthopedic patients admitted in selected hospitals with regards to demographic variables

Table No.1: Table showing frequency and percentage wise distribution of immobilized orthopedic patients according to their demographic variables.

Demographic		Frequency	Percentage
Variables		(F)	(%)
Age (in year)	18-30 yrs	12	20.0
	31-40 yrs	16	26.7
	41-50 yrs	19	31.7
	51-60 yrs	12	20.0
	=61 yrs	1	1.7
Gender	Male	40	66.7
	Female	20	33.3
Religion	Hindu	31	51.7
	Muslim	4	6.7
	Buddhist	18	30.0
	Christian	4	6.7
	Others	3	5.0
Education	Primary	29	48.3
	Secondary	21	35.0
	Higher Secondary	7	11.7
	Graduate	3	5.0
	PG	0	0
	Others	0	0
Occupation	Labour	8	13.3
	Homemaker	10	16.7
	Farmer	15	25.0
	Service	6	10.0
	Business	9	15.0

Residential Area	Unemployed	5	8.3
	Others	7	11.7
	Urban	27	45.0
	Rural	28	46.7
Duration of hospitalization	Semi Urban	5	8.3
	Less than 1 week	4	6.7
	1-2 weeks	15	25.0
Reason for immobilization	>2 weeks	41	68.3
	Fracture	22	36.7
	of lower limb		
	Surgery of lower limb	14	23.3
	Plaster/traction of lower limb	21	35.0
	Any other	3	5.0

Section II: Description on pretest knowledge regarding prevention of selected complications of immobility among immobilized orthopedic patients admitted in selected hospitals.

Table No. 2: Table showing frequency and percentage wise distribution of pre test knowledge scores regarding Prevention of Selected Complications of Immobility among immobilized orthopedic patients n=60

Level of knowledge	Score Range	Frequency (f)	Percentage (%)
score in pre test			
Excellent	81-100%(25-30)	0	0
Very Good	61-80%(19-24)	0	0
Good	41-60%(13-18)	3	5.00
Average	21-40%(7-12)	55	91.67
Poor	0-20%(0-6)	2	3.33
Minimum score			6
Maximum score			14
Mean knowledge score			9.03±1.79
Mean % Knowledge Score			30.11±5.98

Section III: Description on post test knowledge regarding prevention of selected complications of immobility among immobilized orthopedic patients admitted in selected hospitals

Table No. 3: Table showing frequency and percentage wise distribution of post test knowledge score regarding preventions of selected complications of immobility among immobilized orthopedic patients n=60

Level of knowledge	Score Range	Frequency (f)	Percentage (%)
score in post test			
Excellent	81-100%(25-30)	1	1.67
Very Good	61-80%(19-24)	54	90
Good	41-60%(13-18)	5	8.33
Average	21-40%(7-12)	0	0
Poor	0-20%(0-6)	0	0
Minimum score			16
Maximum score			25
Mean knowledge score			20.65 ± 1.82
Mean % Knowledge Score			68.83 ± 6.07

Table no. 4: Table showing comparison of pretest and posttest grading score

n=60

Level of knowledge score	Score Range	Pre test	Posttest
Frequency Percentage Frequency Percentage			
Excellent	81-100% (25-30)	0	0
Very Good	61-80% (19-24)	0	0
Good	41-60% (13-18)	3	5.00
Average	21-40% (7-12)	55	91.67
Poor	0-20% (0-6)	2	3.33
Minimum score	6	16	
Maximum score	14	25	
Mean knowledge score	9.03±1.79	20.65±1.82	
Mean % Knowledge Score	30.11±5.98	68.83±6.07	

Table No.5: Table showing effectiveness of planned teaching programme on knowledge score of pre test and post test regarding preventions of selected complications of immobility among immobilized orthopedic patients admitted in selected hospitals n=60

Test	Mean	SD	Mean Difference	Calculated t-value	df	Table value	p-value	Significance
Pre Test	9.03	1.79	11.61 ±2.5	28.77	59	2.00	0.0001	S
Post Test	20.65	1.82	4				S,p<0.05	

Level of significance p<0.05

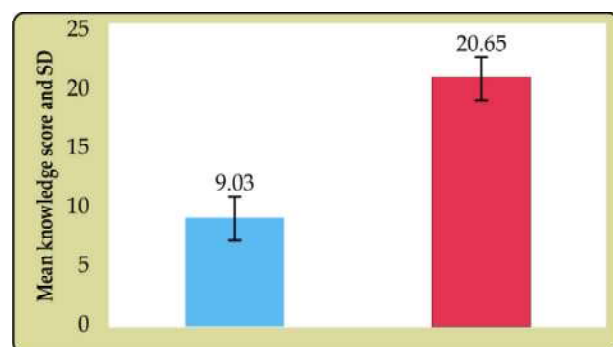


Table no.3 shows the overall mean knowledge score of pretest and posttest. The post test mean knowledge score was 20.65 with SD of 1.82 which was higher when compared with the pre test mean knowledge score value which was 9.03 with SD of 1.79, mean difference was 11.61 with SD 2.54. The DF was 59 (60- 1) the calculated 't' value 28.77 is greater than table value 2.00 at 0.05 level of significance. Hence it is statistically interpreted that the research hypothesis is (H_1) is accepted and null hypothesis (H_0) is rejected. Thus the planned teaching programme on

knowledge regarding preventions of selected complications of immobility among immobilized orthopedic patients is effective and the level of knowledge is significantly increased as compare to the pre test.

Section-V: description on association on knowledge score with selected demographic variables marital status, area of working and none of the other demographic variables were associated with knowledge score.

Table no 5: Table showing association of knowledge score with selected demographic variables. n=60

Demographic Variables	T-value	Calculated F-value	df	P-value	Table Value	Level of significance <0.05	Significance
Age (in yrs.)	-	8.23	0.01	4,55	2.52	<0.05	S
Gender	2.34	-	0.023	58	2.00	<0.05	S
Religion	-	1.58	0.19	4,55	2.52	>0.05	NS
Education	-	5.82	0.002	3,56	2.76	<0.05	S
Occupation	-	1.17	0.33	6,53	2.25	>0.05	NS
Area of residence	-	0.59	0.55	2,57	3.15	>0.05	NS
Duration of hospitalization	-	0.02	0.97	2,57	3.15	>0.05	NS
Reason for immobilization	-	1.15	0.33	3,55	2.76	>0.05	NS

Key: S – Significant NS: Not significant

Above study show the Structured Teaching Programme regarding prevention of Selected Complications among immobilized orthopaedic patients was effective. Also there was significant association between knowledge score age, gender, education status, monthly income, religion and type of diet.

In the present study, the knowledge regarding preventions of selected complications of immobility was assessed by taking pre test among immobilized orthopedic patients, followed by planned teaching programme on knowledge regarding prevention of selected complications of immobility among immobilized orthopedic patients and further more assessed the knowledge regarding preventions of selected complications of immobility in same patients. Analysis reveals that mean pre test knowledge score was 9.03 and the mean post test knowledge score was 20.65. The calculated t value 28.77 which is greater than tabulated value 2.00 at 0.05 level of significance. Analysis also reveals that there is association of knowledge score with age (in years), gender and education while none of the other demographic variable was associated with knowledge score.

Hence it is statistically interpreted that planned teaching programme on knowledge regarding preventions of selected complications of immobility among immobilized orthopedic patients was effective

as a teaching strategy.

In present study also association was found between knowledge score and selected demographic variable that is age gender and education

Implication of The Study

The findings of this study have implications for nursing practice, nursing education, nursing administration, and nursing research

Nursing practice

- Health care services are essential component of community health nursing the role of nurse is to conduct education programme to educate patient and family about prevention of complications of immobility for health promotion and prevention of complication
- It will help nurses to keep update knowledge regarding various aspects of immobility that is common problem by orthopedic patients and taking measures to prevent such complications
- Nurse can educate and motivate patient and care giver regarding various complications of immobilization and its prevention

Nursing education

- Nurse who are up to date with the knowledge regarding various complications of immobilization and its prevention are the better person to impart their knowledge to the nursing student which will ultimately update the knowledge regarding various complications of immobilization and its prevention
- Now a day, much emphasis is given on comprehensive care in the nursing curriculum. So this study can be used by nursing teachers as an informative illustration for nursing students.
- Planned teaching programme could help educators to use it as a tool for teaching.
- Students must be given clinical field assignment, in which they must be given opportunity to interact with people and create awareness regarding various complications of immobilization and its prevention
- Teacher training programs must also include the topic of complications of immobilization and its prevention

Nursing administration

- Findings of the study can be used by the Nursing Administrator in creating policies and

plans for providing education to the staff nurses and health professionals.

- It would help the nursing administrators to be plan and organize in giving continuing education to the nurses and to others for applying and updating the knowledge regarding various complications of immobilization and its prevention
- In-service education must be conducted for the nurses to create awareness regarding various complications of immobilization and its prevention
- The result of the study contributes to the body of knowledge of nursing.

Nursing research

- The findings of the study have added to the existing body of the knowledge on complications of immobilization and its prevention which will enhance the knowledge and would help to keep it updated.
- Other researchers may utilize the suggestions and recommendations for conducting further study.
- The tool and technique used has added to the body of knowledge and can be used for further references.

Limitation

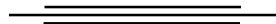
- The sample size was small to generalize the findings of the study.
- The study was limited to measure the knowledge of immobilized orthopedic patients admitted in selected hospitals of the city.
- The tool for data collection was prepared by investigator herself. Standardized tool was not used

Recommendations

- A similar study can be replicated on a larger population for a generalization of findings.
- A Study may be conducted to evaluate the effectiveness of self-instructional module on knowledge regarding prevention of selected complications of immobility.
- A study can be carried out to evaluate the efficiency of various teaching strategies like pamphlets, leaflets and computer – assisted instruction on prevention of complications.
- An experimental study can be undertaken with a control group for effective comparison of the result.

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Burnout and Coping Strategies among Nurses: A Literature Review

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Abstract

The concept of stress plays an important role in an occupational area, especially health care setting. Health care professionals are repeatedly exposed to this stress, especially nursing personnel. The response to this chronic stress is termed burnout. In other words, burnout means giving more time, energy, and effort to work for a long period of time leading to exhaustion both mentally and physically. In order to reduce these burnout symptoms, an individual tries to adopt certain strategies to minimize his/her negative feelings. This is known as a coping strategy. Due to the increase in workload, advancement in science and technology, quality patient care, these symptoms have escalated which have drawn attention to health care organizations. Many strategies have been developed to reduced these symptoms and develop a positive environment for nurses to work within it.

Keywords: Burnout, coping strategies, nurses

Introduction

Stress is considered stimulus, consequence, interaction or response to any reaction. In mid 1950s, this stress was considered as occupational hazard because it imposed significant health problems.¹ This stress was identified in working nurses in 1960² and was mainly caused by physical labor, human sufferings, working hours, staffing pattern, lack of autonomy and authority to take decisions and interpersonal relationship with colleagues, superiors and others health care team members. The work stress increased with time due to development in science and technology, high health care costs and complex

health care infrastructure.³

The concept of burnout was first put forth by Freudenberg (1977) and Maslach (1976). In simple terms, burnout is a consequence of stress and is a prolonged reaction to the stress that hits an individual working for an organization. This prolonged stressed life affects the individual's physical health and in turn has an impact on the work environment. Burnout is a work-related effect, the symptom of which includes low self-esteem and exhaustion with regard to the individual in his work sphere. Burnout is a syndrome that compromises of emotional exhaustion, depersonalization and reduced personal

accomplishment.⁴

Dimension of Burnout

The most commonly accepted definition of burnout is the three components that have been defined by Maslach and Leiter (1998). Burnout is a syndrome of emotional exhaustion, depersonalization and diminished personal accomplishment

- The emotional exhaustion is generalized fatigue that occurs when an individual gives extra time and effort to a particular work which is not important.
- Depersonalization means when an individual shows different behavior to his/her colleagues or work which is not acceptable.
- Reduced personal accomplishment means an individual is unable to evaluate his work and has poor self esteem.

Burnout can be associated with physical symptoms including insomnia, muscle tension, headaches, and gastrointestinal problems.⁵

The syndrome is more prevalent in professional areas like teaching, police and health care. This work stress and burnout affect nurses both on individual and organizational level. As an individual, it can cause fatigue, depression, memory problems, sleep disorders, anxiety and irritability while in organizations; work stress can lead to absenteeism and turnover among nurses which can affect the quality of care.⁶ There is high prevalence of burnout among nurses working in critical care units, operation theatre and oncology ward.⁷ The nurses working in these areas are continuously exposed to various traumas like death of patients, grieving families, severe physical pain and psychological states like anger and depression in patients and their families. The repeated exposure of these circumstances can cause a state of physical and emotional exhaustion among nurses.⁸

When an individual tries to minimize his/her negative feelings, this process is called as coping. These coping strategies can be of two types: problem focused and emotional focused coping strategy. The problem focused coping strategies is external because it mainly focuses on the problem that is causing stress while emotional focused coping strategy is internal because it focuses on emotional stress arising from stress. Therefore detailed knowledge regarding burnout syndrome and its components should be understood along with development of various strategies can help in preventing and treating burnout syndrome. This will improve the health of working nurses and also improves the quality of care to patients.⁹

The aim of the study was to assess the burnout syndrome and coping strategies among nurses.

Burnout Syndrome among Nurses

- Shahin MA (2020) conducted a cross sectional study to determine the prevalence and associated factors of burnout among nurses working in the primary health care centers. The results of the study showed that 39% nurses had high emotional exhaustion, 38% had high depersonalization and 85.5% had low personal accomplishment. The most important sources of stress were long working hours, work overload, fear of violence and lack of resources. Burnout was associated with age, educational level and sources of stress in the workplace.¹⁰
- Raju AV (2019) conducted a descriptive study to determine the burnout syndrome among the staff nurses in a tertiary care hospital. The study results revealed that majority of the nurses (83%) had high level of burnout, 3% had very high level of burnout and 14% had moderate level of burnout.¹¹
- Kumar A (2019) conducted a descriptive study to assess the prevalence of burnout and its correlates among critical care nurses in a tertiary care teaching hospital. The results showed that 37.6% nurses were experiencing high burnout. The variables associated with high burnout were lack of specialized ICU training, performing extra duty in last month and mid-level experience (1–5 years).¹²
- Jose S (2019) conducted a cross-sectional descriptive study to assess the burnout and resilience among frontline nurses working in the emergency department during COVID-19 pandemic. The result showed that the total mean percentage score for emotional exhaustion, depersonalization, and personal accomplishment was 54%, 43%, and 78.5% respectively. The emotional exhaustion and reduced personal accomplishments negatively correlated with total resilience but there was no significant relation between depersonalization and resilience. So it was concluded that increasing resilience among nurses can reduce the severity of burnout symptoms.¹³
- Kowalczyk K (2018) conducted a cross sectional study to examine relationship of burnout with mental well-being of nurses and sick leave. The results of the study concluded that average levels of occupational burnout measured from 32.7 to 38.6% of the maximum value. The excessive workload led to more burnout symptoms which

caused nurses to take more sick leaves.¹⁴

- Chanu NJ (2018) conducted a descriptive research study to assess burnout and identify factors leading to burnout among staff nurses. The study results showed that majority of staff nurses experienced burnout. The personal factors like family responsibilities, lack of interest in present profession and negative attitude towards patient led to more burnout among nurses while professional and organizational factors like frequent night shifts, long working hours and attitude of the physicians caused more burnout. The socio-cultural and psychological factors that caused burnout among nurses were feeling of disrespect, gender issues and religious beliefs.¹⁵
- Sharma RC (2018) conducted a descriptive cross sectional study to measure the extent of burnout syndrome among the nurses working in a tertiary care hospital. The results of the study showed that 45.7% of the nursing professionals presented high levels of emotional exhaustion, 24.7% presented with depersonalization and 6.2% demonstrated low levels of personal fulfillment at work. The duration of profession (more than 5 years), professionals who frequently performed their tasks too quickly and those who considered their salary inadequate based on their efforts employed presented high levels of burnout.¹⁶
- Dyrbye LN (2016) conducted a cross sectional exploratory study to evaluate the relationship between burnout among nurses with absenteeism and work performance. The results showed that 30.5% nurses had high emotional exhaustion, 20% had high depersonalization and 19% had low personal accomplishment. 30.7% nurses had symptoms of depression. Absenteeism was reported by 16.6% with half of this group having missed 1 day in the past month due to a personal health problem and the other half missing more than 1 day.¹⁷
- Negi Y (2015) conducted a descriptive study to determine the level of burnout among the nursing professionals in tertiary care hospitals. The results showed low mean score for emotional exhaustion (14.39 ± 6.87) and depersonalization (4.84 ± 3.34), and an average score (34.72 ± 6.33) for personal accomplishment. The variables associated with burnout were nurse-patient ratio, number of night duties, demands of patient attendants, duty roster, death/critical condition of a patient, conflicts at work place, study leave and category of employment (regu-

lar/contractual).¹⁸

- Tay WS (2012) conducted a cross sectional study to determine the prevalence of burnout among nurses in a community hospital. The results showed that prevalence rate of burnout among nurses were 33.3%. The nurses working in rehabilitation centers had highest rate of burnout symptoms. The year of work was also associated with a higher burnout level among nurses. The other factors associated with burnout was work interfering with family commitments.¹⁹

Coping Strategies for Burnout Syndrome:

- Hasan AA (2017) conducted a descriptive study to determine the relationships between perceived work stress, coping strategies and levels of depression among psychiatric nurses. The most used coping strategy was self-assurance that his/her job will be appreciated by others followed by having confidence in own abilities to do job well and developing an individual.²⁰
- Cruz SP (2016) conducted a cross-sectional study to estimate the burnout, perceived stress, and job satisfaction, coping and general health levels among emergency department nurses. The result showed that most common strategy used by nurses was problem focused strategy.²¹
- Jordan TR (2016) conducted a cross sectional observational study to examine the relationship between stress, coping, and the combined influences of perceived stress and coping abilities on health and work performance among. The results of the study showed that five most common ways that nurses cope with work-related stress were: talking with friends and loved ones (79%); listening to music (46%); watching TV (43%); praying/meditating (43%); and eating more of their favorite foods (42%).²²
- Muriithi JW (2016) conducted a cross-sectional study to evaluate the relationship between three coping strategies (problem oriented, social support and avoidance coping strategies) and burnout among nurses. The result showed that there was a moderate correlation between burnout and coping strategies, out of which majority of nurses used problem solving strategy.²³
- Mutisya F conducted a descriptive study to determine the relationship among job stress, coping strategies, and burnout among nurses. The results showed that most common coping strategies used was problem focused coping strategies.²⁴

- Jose TT conducted a research study to determined level of stress and coping among nurses. The results revealed that most common coping strategy used was positive reappraisal followed by seeking social support. A significant association was found between coping strategies and marital status of nurses.²⁵

Summary

Workplace plays an important vital role in everyone's life. Sometimes this may cause stress to and individual. Chronic job stress can lead to physical and emotional exhaustion. Health care works, especially nurses working high intensive care settings are more prone to this chronic stress. Burnout is more prevalent among staff nurses who are working in high dependency wards. Due to prolonged and repeated stress, nurses are unable to cope up with their personal and professional life. In this regards burnout is associated with feelings of hopelessness, difficulty in dealing with work and not able to provide quality of care to patients. In order to deal with this chronic stress, nurses use many coping strategies. Therefore, these problems should be identified early and should be rectified at initial stages only. Prompt identification and treatment of such problems can improve mental and physical health of a nurse thereby improving their quality of patient care.

Discussion

The literature was reviewed to understand about the concept of burnout symptoms and various coping strategies used by nurses to deal with burnout. Sources of information were including books, journals, dissertation, thesis, internet and online databases.

Best and Kahn (1992), states that review of literature helps the researcher in many ways. It helps to assess what is already known, what is still unknown and untested, justifies the need for replication, throw some light on the feasibility of the study and problems that are encountered.

Conclusion

The literature review concluded that nurses had a variable degree of burnout syndrome. Several socio-demographic variable that positively correlated with burnout were years of service, area of work, long working hours, number of night shifts and salary of the personnel. The most common coping strategies used by nurses were problem focused coping strategies.

Conflict of Interest

There is no actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations.

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State the background of the study and purpose of the study and summarize the rationale for the study or observation.

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The methods section should include only information that was available at the time the plan or protocol for the study was written such as study approach, design, type of sample, sample size, sampling technique, setting of the study, description of data collection tools and methods; all information obtained during the conduct of the study belongs in the Results section.

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Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical details can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

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Include summary of key findings (primary outcome measures, secondary outcome measures, results as they relate to a prior hypothesis); Strengths and limitations of the study (study question, study design, data collection, analysis and interpretation); Interpretation and implications in the context of the totality of evidence (is there a systematic review to refer to, if not, could one be reasonably done here and now?, What this study adds to the available evidence, effects on patient care and health policy, possible mechanisms)? Controversies raised by this study; and Future research directions (for this particular research collaboration, underlying

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Standard journal article

[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. *J Oral Pathol Med* 2006; 35: 540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. *Acta Odontol Scand* 2003; 61: 347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone iodine antiseptics. State of the art. *Dermatology* 1997; 195 Suppl 2: 3-9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. *J Periodontol* 2000; 71: 1792-801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. *Dent Mater* 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovou J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O,

Guidelines for Authors

Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

Reference from electronic media

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/HSQ_20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

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