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Exercise Plan in Preventing of Pressure Ulcers among Post-Operative Patients

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Abstract: ***Background: Pressure ulcers are the common conditions among patients hospitalized in acute and chronic care facilities and impose significant burden on patients, their relatives and caregivers. Pressure ulcers have been described as one of the most costly and physically debilitating complications since the 20th century. The pain and discomfort due to pressure ulcer prolongs illness, rehabilitation, time of discharge and even contribute to disability and death. Lengthy periods of immobilization are emotionally stressful for patients. Immobility related problems include pressure ulcers, pneumonia, constipation, loss of appetite, urinary stasis, urinary track infections and venous stasis or deep vein thrombosis. When the complications due to immobilization are prevented it helps an individual to be physically, emotionally and psychologically sound. These complications can be prevented through simple basic patient care like skincare, active-passive exercises, changing position and deep breathing exercises. Nurses have a key role in prevention of these complications by educating the patients. Hence the study was conducted "To evaluate the effectiveness of structured teaching programme regarding prevention of complications of immobilized patients . methods: The study involved 50 immobilized orthopaedic patients using the structured interview schedule. STP was implemented and post-test was conducted after 8 days using the same structured interview schedule to find out the effectiveness. Results: 86% of respondents were taking mixed diet and 60% had compound fracture. The main cause for the fracture was road traffic accident (46 %). Regarding effectiveness of Structure exercise plan , the overall mean percentage knowledge score in the pre-test was 34.71% and 80.91% in the post-test. The statistical paired 't' test indicates that enhancement in the mean percentage knowledge score was found to be significant at P≤0.05 percent level for all the aspects . Conclusion: This study revealed that nursing staffs' knowledge and practice about pressure ulcer preventive measures could be improved. Participants in the study reported that they could use the educational program effectively and easily in the prevention of pressure ulcers among their immobilized patients, which decreases the occurrence of pressure ulcers and as well as improved patient outcome.***

Keywords: pressure ulcer, post operative patients, structure exercise plan

I. INTRODUCTION

The physiological and psychological alterations which result from recumbency can have a drastic effect on the patients. Some authors consider that immobilization may be responsible for many undesirable complications that affect many organs. It increases heart rate, reduces stroke volume and cardiac output and ultimately reduces maximal oxygen uptake by the body. In addition to cardiovascular and pulmonary complications, bed rest and immobility cause loss of bone mass, hypercalcemia and atrophy of skeletal muscle. The prevalence and incidence of pressure ulcers, describe their complications, and identify the proportions of patients followed by the multidisciplinary clinical services at King Abdulaziz Medical City (KAMC) – Jeddah-Saudi Arabia Pressure ulcers prevalence and incidence was 5.7% and 1.6 ulcer/1000 patient-days respectively. Majority of pressure ulcer patients were anemic, bedridden, incontinent, and needed home care on hospital discharge. Further research is needed to clarify the best team approach to manage patients with pressure ulcers. The pressure ulcer is a significant risk for many patients in home health care (HHC). HHC staff should illustrate competences in pressure ulcer management. HHC in the western region of Saudi Arabia provides care for around seven million citizens over an extended area of 153,128Km2 in 16 administrative centres. This study aimed to explore pressure ulcer knowledge among a sample of HHC staff in Saudi Arabia.

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The research questions were “what is the pressure ulcer knowledge among the home healthcare staff?” and “what are the priorities for the coming programmes for HHC?” A cross-sectional descriptive study of 23 participants was carried out in April 2018. The study used the pressure ulcer knowledge and assessment test (PUKAT) to evaluate the level of pressure ulcer care administered. The average age of all participants was around 31 years old. A high percentage of nurses with diplomas and a low number of bachelor holders were the main features of the HHC staff. Also, the majority of participants were females (60.9%) with a higher education degree from Saudi Arabia and almost half of them did not a participant or attend any educational activities in pressure ulcer care (47.8%). The study highlighted the lack of knowledge related to issues of aetiology, assessment, classification and prevention of pressure ulcers, as well as a satisfactory result in the knowledge related to the role of personal hygiene and the importance of turning patients. Therefore, the study recommends that specific educational programmes for the management of pressure ulcers for HHC be established to cover this lack of knowledge. A Dutch study (2018) found that cost associated with care of pressure ulcers were the 3rd highest after those of cancer and cardiovascular diseases

Lapsley. M. Helen and Vogel St. Rosina (2019), in their study the average length of stay for all patients was calculated and compared with the average length of stay for all patients who suffered a pressure ulcer. Results indicate that incidence rate reduced when the pressure level was detected earlier. Incidence of complications not only has an adverse outcome result in the patient experiencing pain and discomfort, but also incurs considerable cost both to the patient and the hospital. The investigator happened to see of 60% patients in the orthopeadic wards were long term immobilized and they developed complications like pressure sores, food drop, constipation and pneumonia. Based on these facts the investigator felt that she was in need to administer a structured teaching programme in order to prevent 16 complications. The selected complications for the study purpose were pressure sore, pneumonia and constipation

A. Significance of the Study

Pressure ulcers have been described as one of the most costly and physically debilitating complications since the 20th century. The pain and discomfort of pressure ulcer delays rehabilitation, prolongs illness and timing of discharge, and also contribute to disability and death. These dramatically raise health care costs as a result of the need for supplies and nursing hours

B. Aim of the Study

Evaluate the effect of structured exercise plan in preventing of pressure ulcers among post operative patients

C. Research Hypothesis

There will be significant between pre test and post test knowledge scores on prevention of complications among immobilized orthopaedic patients.

II. MATERIALS AND METHODS

A. Research Design

A quasi experimental design was utilized to achieve the aim of the current study.

B. Setting

The study was conducted in the general hospital al namas

C. Sample

The sample size was 50

1) *Tools of Data Collection:* two tools used to collect data in order to achieve the aim of the study. The researchers developed two tools after reviewing the related literature.
2) *Tool Interviewing Questionnaire Sheet*

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It included two parts:

a) *Part 1:* Patient's demographic data such as age, educational level, occupation, diet , type of fracture and cause of the fracture.
b) *Part –II:* Structured schedule consists of 34 items on knowledge about fracture and prevention of its complications. Each item of the schedule has one correct answer, every correct answer would fetch one mark, and the score of the knowledge schedule is 34.

D. Description of Structured Teaching Programme

The STP was titled "concept of fracture, complications due to immobilization and its prevention." The STP was structured for one session, which was prepared to enhance knowledge of orthopaedic regarding prevention of complications. It consists of the following content area: • Concept of fracture • Complications due to immobilization • Prevention of pressure sores • Prevention of Hypostatic pneumonia • Prevention of constipation the study study Evaluate the effectiveness of STP • Find out the feasibility of conducting the final study and • Determine the method of statistical analysis Fifty immobilized orthopaedic patients were selected conveniently for 60 days that is two patients on day 1 and three patients on day 2, on day 1, the two patients were interviewed with a structured schedule and pre test was conducted. On the same day, STP was administered for 45 min. On day 2, three patients were interviewed, pretest was conducted and on the same days STP was administered by using the same structured questionnaire to evaluate the effectiveness of STP on the knowledge regarding prevention of complications among immobilized orthopaedic patients.

III. RESULTS

Table 1 shows pre-test mean percentage knowledge score on selected complications among immobilized orthopaedic patients. Aspect wise mean percentage knowledge score on selected complications of immobilized orthopaedic patients from the respondents. The highest mean, 34% knowledge score was obtained regarding the component on prevention of Hypostatic Pneumonia, followed by 37.2 mean percentage knowledge score on constipation and its prevention. The mean percentage knowledge score on prevention of pressure scores was found to be 36.3% and 31.3% mean percentage on the general information. However, the overall pre-test mean percentage knowledge score was found to be 34.71% 26.2 percentages among the respondents. The highest 85.8 mean percentage knowledge score was found in prevention of constipation followed by 81.7 percentage mean knowledge score in general in formations related to prevention of complications due to immobilization 83.5 mean percentage knowledge score was found in prevention of pressure scores and 80.6 mean percentage on prevention of hypostatic pneumonia. However, the overall post-mean percentage knowledge score was found to be 82.9 percentage 9.1 percentage among the respondents.

Table 2 indicates the overall mean percentage knowledge scores of pre-test and post-test on ill effect of smoking. The findings reveals that the post-test mean percentage knowledge score was found higher (mean percentage = 80.91 and SD percentage = 11.3) when compared with pre-test mean percentage knowledge score value which was 34.71 percentage with SD of 26.2 percentage (mean knowledge enhancement score was 46.2%). The statistical paired 't' test implies that the difference in pre-test and post-test value was found statistically significant at 5% level ($p < 0.05$) with a paired 't' test value of 13.64 there exists a statistical significant in the enhancement of knowledge score indicating the positive impact of intervention programme.

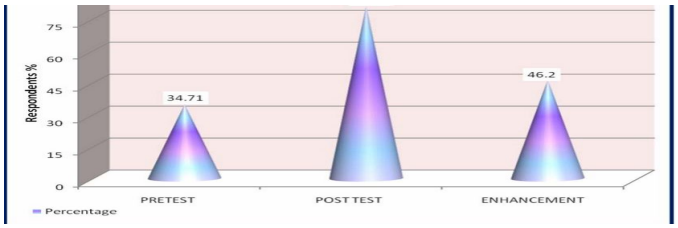

Fig: 1 Overall Pretest and Posttest mean knowledge on selected complications among immobilized orthopaedic patients, shows that are in pretest 34.71% and posttest 18.91 and there is an enhancement of 46.2%

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Table 3 reveal that pre-test result shows 70 percentage of the respondents possess inadequate knowledge and remaining 30 percentage of the respondents possess moderate knowledge. Whereas, in the post – test results 74 percentage of them had adequate knowledge and 26 percentage and moderate knowledge. However, the Chi square test indicates the significant difference in the knowledge level of respondents on selected complications among immobilized orthopedic patients ($X2 = 74.16, P<0.05$)

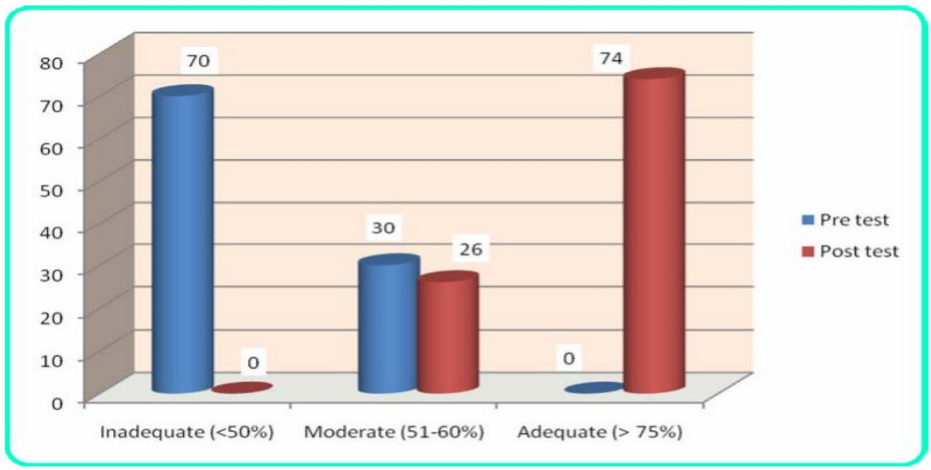

Fig 2 : Classification of knowledge level of respondents on prevention of selected complications

IV. DISCUSSION

Orthopaedic truauma is a major public-health problem with high morbidity and mortality. Immobilization may consist of applying caste or traction, or using equipment, such as orhtopaedic frames or Ciro-O-Lectric beds. It can lead to complications like pressure sores, hypostatic pneumonia and constipation. During the immobilization phase, simple basic patient care like skin care, active-passive exercises, position changes in bed (as permitted), good nutrition, adequate fluid intake, regularly in elimination, and common basic hygiene not only contribute to the patient's physical but also psychological well-being.

The present study confirmed that there was a considerable improvement of knowledge after the structured teaching progarmme and its statistically established as significant. The overall mean percentage knowledge score in the pre-test was 34.71% and 80.91 in the post-test with 46.2% mean percentage knowledge enhancement. The mean knowledge score during pre-test is 12.05 and 28.32 in the post-test . The present study confirms that the overall mean percentage knowledge sore in the post-test is 80.91% when compared pre-test mean knowledge score value 34.71%. This shows the enhancement of knowledge by 46.2% after structured teaching programme. This educational programme leads to gain in knowledge which may have an impact in preventing the complications among immobilized orthopaedic patients.

V. CONCLUSION

Respondents were lacking knowledge in the aspect of general information of immobility. Overall the immobilized orthopaedic patients had inadequacy in their knowledge in all areas of prevention of complications. Conducting a structured teaching programme would be effective in increasing the knowledge of the respondents

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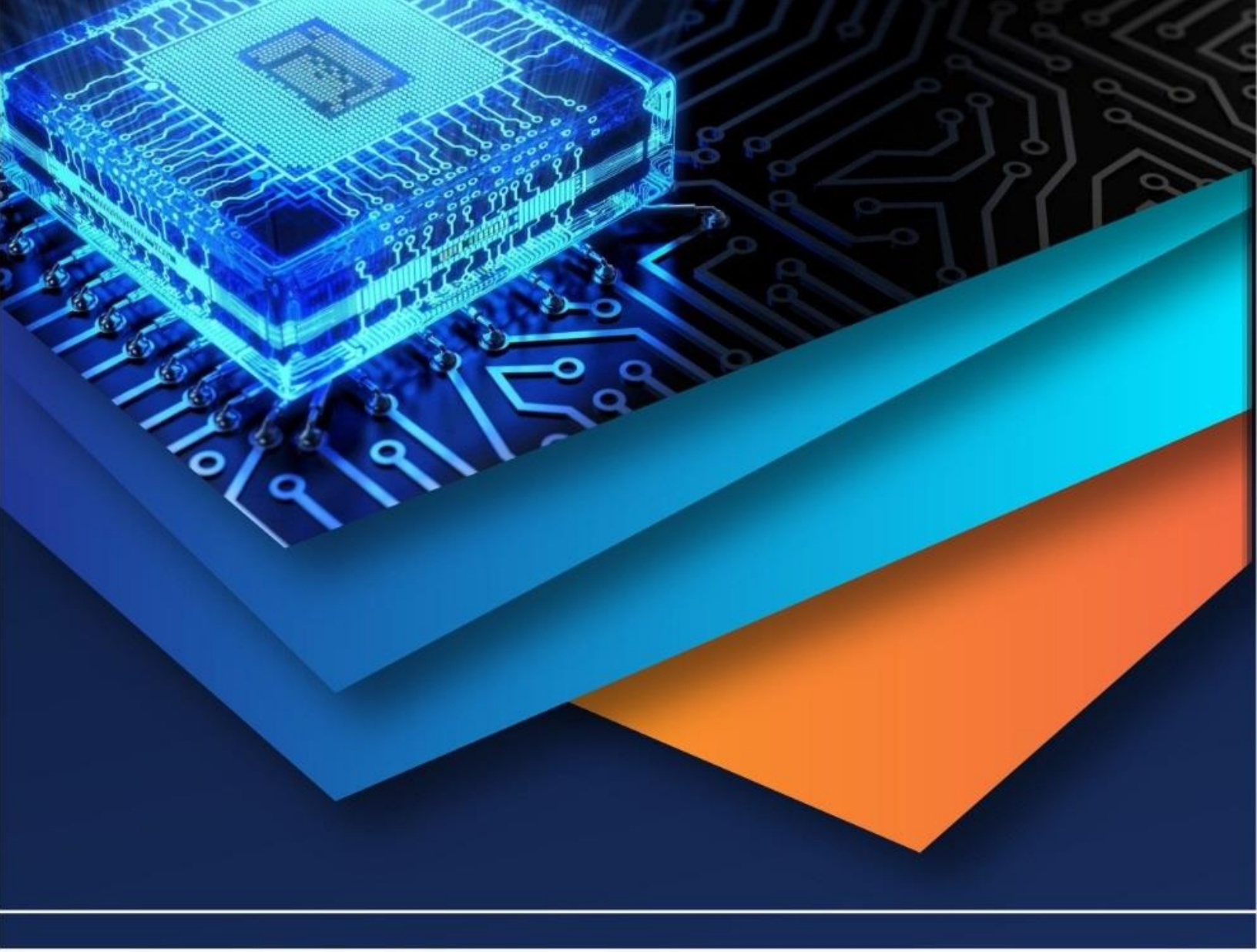

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