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Research Article

Assess The Effectiveness Of Information booklet On the knowledge regarding high risk Medication Among nurses working in Intensive care unit in selected hospital in Gurugram Haryana

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A B S T R A C T

Introduction: High alert medicines (HAMs) account for the bulk of hazardous errors and are thought to be among the drugs most closely linked to a high risk of serious injury if given incorrectly.

Objectives: The study aimed to assess the pre test knowledge score regarding high risk Medication Among nursesworking in Intensive care unit in selected hospital, To determine the effectiveness of Information Booklet regarding high risk Medication Among nurses working in Intensive care unit, To assess the post -test knowledge Score regarding high risk Medication Among nurses and to determine the association between post- test knowledge Score with selected demographic variables among Nurses working in Intensive care unit .

Methodology: A quantitative research approach was adopted for the study with quasi experimental research design and non probability purposive sampling technique. The sample of the present study comprised of 60 nursing staff Working in Intensive care unit in selected hospital Gurugram ,Haryana The data was collected through Structured Knowledge Questionnaire.Descriptive and Inferential statistics were used to analyse data.

Results: The study revealed that the nurses working in Intensive care unit has pre-test knowledge score, 2(3.3%) had insufficient knowledge and 47(78.3%) had a moderate level of knowledge.For the post test knowledge score, 58(96.7%) has significant increase in their adequate knowledge and, there was a substantial correlation between the nurses pre- and post-test knowledge scores and for the association it was revealed that the post-test knowledge score showed statistically no significant association with the chosen demographic variables.

Keywords: High alert medications(HAM), information booklet

Introduction

Globally , there is much concern about medication safety during administration since it affects patient care quality and safety. Prescription, dispensing, storing, preparing, and administering pharmaceuticals can all result in medication errors (MEs), which are inadvertent failures in the drug treatment process. MEs were among the top concerns for nursing practitioners worldwide. High alert medicines (HAMs) account for the bulk of hazardous errors and are thought to be among the drugs most closely linked to a high risk of serious injury if given incorrectly[1].

Achieving specific treatment outcomes that enhance a patient's quality of life while lowering risk is the aim of medication therapy. The therapeutic use of medications (prescription and over- the-counter) and drug administration equipment carries inherent dangers, recognized and undiscovered. Several traits are common to High-Alert Medications (HAMs), including a limited therapeutic index and the potential for serious consequences in the event of a system malfunction or incorrect medication administration. Drugs having a narrow therapeutic index are risky because even little variations in dosage or blood drug concentration might result in Adverse Drug Events (ADEs), which are dose- or blood concentration-dependent significant therapeutic failures.HAMs are drugs that, even when used as prescribed, have a high potential for serious side effects in the patient. Focusing on a few classes of high alert drugs (insulin, opioids, sedatives, and anticoagulants) would have the biggest effect, according to the Institute for Healthcare Improvement's (IHI) America report. Because of their high frequency of usage and inherent hazards, these four kinds of HAMs are mostly to blame for injury[2].

One of the biggest causes contributing to medicine administration errors is thought to be nurses' lack of understanding. The majority of pharmaceutical errors do not damage patients; nonetheless, improper administration of high-alert drugs frequently results in fatalities and serious injuries (such as comas or cardiac resuscitation)[3]. The authors of the current study conducted a prior study in which they validated 20 questions to assess nurses' knowledge. The study revealed a low correct answer rate of 56.5%, indicating that nurses lacked sufficient knowledge regarding high-alert medications. The authors recommended the creation of educational materials and interventions to enhance nurses' understanding of this topic.[4] According to a study, improper administration practices accounted for 6.2% of pharmaceutical mistakes. 97% of the 265 IV medication mistakes were caused by giving medications more quickly than is advised.The one study they cited indicated that giving patients concentrated electrolytes or a large dose of adrenaline might be harmful. They stated that it is necessary to evaluate nurses' levels of expertise in this area[5].

According to a study, there are numerous preventable mistakes that can be made when high- alert pharmaceuticals are stored in easily accessible locations, look-alike and sound-alike prescriptions are kept together, warning labels are absent from medications, handwriting that is difficult to read, and improper abbreviations are used.[6]

To enhance medication administration and management, identify possible medication errors before they happen, monitor, assess, and make improvements to the process's quality and safety, and uphold a high standard of nursing competence, nurses need to possess the necessary knowledge and abilities. Previous studies have highlighted varying levels of knowledge among nurses regarding high-alert medications, with common errors linked to dosage miscalculations and improper administration techniques. However, there is limited research on specific knowledge gaps among ICU nurses. This study aims to fill the identified gaps by assessing the knowledge of ICU nurses regarding high-alert medications. By understanding these knowledge levels, targeted interventions can be developed to enhance nurse education and patient safety protocols.

Objectives

- To assess the pre-test knowledge score regarding high risk Medication Among nurses working in Intensive care unit in selected hospital in Gurugram Haryana.
- To determine the effectiveness of Information Booklet regarding high risk Medication Among nurses working in Intensive care unit in selected hospital in Gurugram Haryana.
- To assess the post -test knowledge Score regarding high risk Medication Among nurses working in Intensive care unit in selected hospital in Gurugram Haryana.
- To find a correlation between the Pre-test knowledge score and post-test knowledge score regarding high risk Medication Among nurses working in Intensive care unit in selected hospital in Gurugram Haryana.
- To determine the association between post- test knowledge Score with selected demographic variables among Nurses working in Intensive care unit in selected hospital in Gurugram Haryana.

Methodology

The researcher adopted the quantitative research approach for the study. Quasi-Experimental research design with non probability purposive sampling technique. The setting of the study was RJ Super speciality Hospital Bahadurgarh, Haryana. The present study's sample included 60 nursing officers. The tool used in this study was organized into 2 sections. Section A included the Demographic profile

of nursing officers. Section-B includes the Structured Knowledge Questionnaire,It consists of 25 items that assess the knowledge on high alert medications."1" was added for each successful response, and a "0" was deducted for each wrong response. For this study, The reliability of the scale calculated using the Cronbach's Alpha formula. Reliability was found to be .r=0.84. The tool was found to be reliable for the study.

Ethical considerations :In this study, A research study approval letter was obtained from the RJ Super speciality Hospital Bahadurgarh, Haryana with reference number (SGTU/FON/21/2024/372) Following that, each participant signed an informed consent form. A commitment to confidentiality was made to study participants. Data was collected between 1/05/2024 and 15/5/2024.

Results

The data shows in Figure-1 represents the frequency and percentage distribution of the nurses' demographic profile by age, gender, educational background,religion, years of work experience, place of employment, place of residence, monthly income, awareness of HAM, and information source.In terms of age, 22 nurses (36.7%) were in the 26–35 age group, and half of the 30 nurses (74.6%) were in the 36–40 age group. Of the nurses, only 8 (13.3%) were between the ages of 20 and 25.According to gender, there were 29 (48.3%) female nurses and 31 (51.1%) male nurses.More than half of the nurses were 38(63.3%) GNM, 17(28.3%) were B.Sc Nursing and only 5(8.3%/) nurses were Post Basic B.Sc Nursing.In terms of religion, 53 nurses (88.3%) identified as Hindu, and 4 nurses (6.7%) identified as Muslim. Of the nurses, just three (5%) fell under the other religious category. 15 nurses (or 25%) had up to one year's experience, 37 nurses (or 61.7%) had two to four years' experience, 7 nurses (or 11.7%) had five to seven years' experience, and 1 nurse (or 1.7% of the total) had more than seven years' experience.According to working area 46(76.7%) nurses worked in ICU, 7(11.7%) worked in PICU and NICU respectively .Regarding where they lived, 43 nurses (71.7%) lived in an urban region, while 17 nurses (283.3%) lived in a rural one.With regard to Income per month, 23(38.3%) nurses were having below 20,000, 29(48.3%) nurses were having 20001-30000years of experience, 7(11.7%) were having 30001-40000 and 1(1.7%) were having above 40000. As per the awareness about HAM, most of the nurses56(93.3%) were aware about HAM, and 4(6.7%) were not aware about HAM.With regard to source of information about HAM 23(38.3%) nurses were having information from health personnel, 31(51.7%) nurses were having from self learning , and 6 (10%) were having information from other source.

presents the collected scores, with a mean of 23, a median of 23.5, and a standard deviation of 1.953. The possible range of scores, i.e., 0-25, is shown by the data. The proximity of the mean and median indicates that the scores are in the normal distribution, and the mean score of 23.02 was about in the middle of the score range of 0 to 25. Variability in the scores is shown by the standard deviation (1.953). The frequency and percentage distribution of nurses according to their post-test knowledge score for high alert drugs are displayed in Figure 3. According to the results, 58 nurses, or 96.7 percent, have significantly increased their knowledge, indicating that they have acquired knowledge successfully. and none of the nurses received a low or inadequate knowledge score, indicating that the intervention had a good effect. Therefore, H1 was approved since it shows a 0.05 level of significance increase in the post-test knowledge score of ICU nurses regarding high-risk drugs.

displays the paired t test between the nurses working in the intensive care unit of selected hospital in Gurugram, Haryana, and their pre- and post-test knowledge scores about high-risk medication. At a significance level of 0.05, the computed paired t test value is (17.79), and the table value is 2.00. Given that the computed "t" value is greater than the table value, this suggests that there is a substantial correlation between the nurses' pre- and post-test knowledge scores on high-risk medications. It offers compelling proof that the nurses' knowledge increased as a result of the information booklet.

Because there was a significant correlation between the Intensive Care Unit Nurses' pre- and post-test knowledge scores on high-risk drugs at the 0.05 level of significance, hence, H2 was accepted.

The Chi square test was performed to determine the relationship between the post-test knowledge score and a few demographic characteristics, as shown in Table 4 (age, educational background, year of experience, working area, awareness of HAM, and information source). Regarding age, educational background, year of experience, working region, awareness of HAM, and information source, the results show that the acquired p- value, as indicated in table -4, was significant at the more than 0.05 level. Therefore, this suggests that the post-test knowledge score and a subset of demographic characteristics do not statistically significantly correlate. Therefore, at the 0.05 level of significance, H3 was discarded since it shows no meaningful relationship between the post-test knowledge score and the chosen demographic variables.

Discussion

The bulk of hazardous errors are caused by high alert medications (HAMs), which are thought to be among

the drugs most frequently associated with a high risk of serious injury if administered incorrectly. One of the biggest contributing factors to medicine administration errors is thought to be nurses' inadequate expertise. The majority of pharmaceutical errors do not damage patients; nonetheless, improper administration of high-alert drugs frequently results in fatalities and serious injuries (such as comas or cardiac resuscitation). The current study's goals were to evaluate nurses' pre- and post-test knowledge scores regarding high-risk medication, as well as the usefulness of an information booklet on the subject. It also sought to establish a relationship between nurses' pre- and post-test knowledge scores regarding high-risk medication and certain demographic variables related to nurses working in intensive care units in particular hospital in Gurugram, Haryana.

The current study found that the average knowledge score was 13.07 and after the post test was 23.The pre-test and post-test knowledge scores of nurses had standard deviations of

4.023 and 1.953, respectively. This suggests that the intervention had a favorable impact on the post-test knowledge score and that the mean variability of the pre-test knowledge score was higher.The results of this investigation are in line with According to Zehra F. et al., student nurses' mean knowledge score on high-alert drugs was 30.23 on the pretest and 44.03 on the posttest. Student nurses' pretest scores had a standard deviation of 9.71 and their posttest scores of 7.42, indicating that the pretest had higher variability7.

At a significance level of 0.05, the current study found that the paired t test value is (17.79) and the table value is 2.00. Given that the computed "t" value is greater than the table value, this suggests that there is a substantial correlation between the nurses' pre- and post-test knowledge scores on high-risk medications. It offers compelling proof that the nurses' knowledge increased as a result of the information booklet.

The results of this study support those of Yousef et al. They indicate that there was a statistically significant difference in the study respondents' overall knowledge scores regarding high alert drugs in both the pre- and post-tests (t=19.7.17.9, p=0.000), respectively.It demonstrates the strong correlation between the nurses' pre- and post-test knowledge scores8.

The current study's findings indicate that, at the 0.05 level of significance, there was no statistically significant correlation between the post-test knowledge score and the selected demographic among nurses regarding high alert medications, age (p=0.200), educational background (p=0.549), years of work experience (p=0.361), area of work (p=0.219), awareness of HAM (p=0.701), and source of information (p=0.380).

The results of this investigation are in line with According to Zehra F et al., there was no significant correlation found at the 0.05 level of significance between the knowledge of student nurses about high-alert medications and certain demographic variables, such as age (p=0.678), education (p=0.302), percentage of class attendance (p=0.615), percentage of previous exam (p=0.930), and area of residence (p=0.891). Thus, the H2 was turned down. At the 0.05 level of significance, there is no discernible correlation between the awareness of high-alert drugs and certain demographic variables7.

Nursing implications: Nurses should participate in educational programs in hospital addressing the proper management of high alert drugs.It is recommended that nurses adopt the practice of preparing, storing, transferring, and administering drugs with high alertness alomg with Incorporating guidelines for administering high alert drugs in the nursing curriculum

Conclusion

Medication on high alert is one of the key ideas for enhancing patient safety. One of the main causes of morbidity and mortality in the medical field and critical care is adverse effects of high alert medications.It is important to design and review appropriate workplace policies and procedures for the safe handling of high alert drugs.In order to minimize the exertion and pressure on nurses to reduce HAM errors, nurse administrators should rework work plans and do early assessment and intervention.

Limitations

The small sample size used in the study restricts how far the results may be applied.

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