

The Effectiveness of Structured Teaching Programme (Stp) on Knowlegde Regarding Medication Error and Its Prevention Among Staff Nurses Working In A Selected Hospital Bangalore: Pre Experimental (One Group Pre-Test Post-Test Design) And Evaluative Research Approach

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Research Article

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Abstract

Background: A medication error is a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient. However, it is important to detect them, since system failures that result in minor errors can later lead to serious errors. Reporting of errors should be encouraged by creating a blame-free, non-punitive environment. Improving nurse's knowledge can favorably affect the incidence and outcome of medication error. This study was design to give knowledge regarding medication error and its prevention among staff nurses.

Methods: Experimental one group pre-test and post-test study was conducted at Sapthagiri hospital, Bangalore. 60 staff nurses were selected by using Non-Probability Convenience sampling technique. Data was collected over a period of one month by administering structured knowledge questionnaire.

Results: In the context of pre-test, a majority 47 (78.3%) had inadequate knowledge, and 13 (21.7%) had Moderately Adequate knowledge and none of them had adequate knowledge. In post test, majority i.e. 48 (80%) had Adequate knowledge and 12 (20%) of them had moderately adequate knowledge and none of them had inadequate knowledge. It evidenced that there is an increase in the knowledge.

Regarding over all knowledge the paired mean difference was 15.917 and SE mean difference was 0.603. It was found to be significant ($t=26.38$, $df=59$) at 5% level (i.e. $p<0.05$). The present study also found there is no significant association between knowledge regarding medication error and its prevention with selected demographic variable.

Interpretation and conclusion: The overall findings of the study clearly showed that the structures teaching program was effective in improving the knowledge level of staff nurses regarding medication error and its prevention.

Introduction

Healthcare organizations need to establish a culture of safety that focuses on system improvement by viewing medical errors as challenges that must be overcome. All individuals on the healthcare team must play a role in making the provision of healthcare safer for patients and healthcare workers (Helo & Moulton, 2017). All providers know medical errors create a serious public health problem that poses a substantial threat to patient safety. Yet, one of the most challenging unanswered questions is "What constitutes a medical error?" The answer to this basic question has not been clearly established. Errors of the commission occur as a result of the wrong action taken. Examples include administering a medication to which a patient has a known allergy or not labeling a laboratory specimen that is subsequently prescribed to the wrong patient.¹

Medical errors are a serious public health problem and a leading cause of death in the United States. It is a difficult problem as it is challenging to uncover a consistent cause of errors and, even if found, to provide a consistent viable solution that minimizes the chances of a recurrent event. By recognizing

untoward events occur, learning from them, and working toward preventing them, patient safety can be improved (Oebay, 2013). Part of the solution is to maintain a culture that works toward recognizing safety challenges and implementing viable solutions rather than harboring a culture of blame, shame, and punishment.¹

Patient safety is very important in the provision of quality care. The patient who is to be cured or cared for is to be at the centre of the care process without which the objective of care will not be achieved. As care givers attempt caring the sick, they inadvertently make mistakes that either worsen the situation of the patient or result in death. These errors are inevitable but with acknowledgement of the possibility of the incidence of errors in the care process, it could be reduced to the minimum.^{2,12}

Medication error is any preventable error in the medication administration process starting from prescribing including preparing, dispensing, administrating and transcribing. Medication errors are not only significant clinically but may also have serious economic and legal consequence like extended hospital stay, additional treatment and diagnostic evaluation.^{3,5}

Healthcare workers face more challenges today than ever before. Doctors are seeing more patients every hour of every day, and all healthcare staff, including doctors, nurses, and administrators, must adapt to the demands of new technology in healthcare, such as electronic health records (EHR) systems and Computerized Provider (Physician) Order Entry (CPOE) systems. Overwork and systemic issues can and do lead to medical errors-thousands, in fact, every year, according to a 1999 report by the Institute of Medicine. At the time of the report, between 44,000 and 98,000 deaths occurred each year as a result of medical mistakes. As many as 400,000 Americans succumb to medical errors annually. Another 10,000 people suffer complications every day. The total cost of these errors, including lost income and productivity, disability, and the expense of additional care, is estimated at between \$17 billion and \$29 billion per year.⁴

Medical errors are not only monetarily costly, but costly in terms of loss of trust in the healthcare system by patients, reduced patient satisfaction, and degraded morale among healthcare professionals, who often feel helpless to change the situation. It's important to note that one of the main conclusions of the Institute's report is that the majority of medical errors occur not as a result of incompetence or recklessness on the part of nurses and other healthcare workers, but rather as a result of faulty systems, fragmented processes, and working conditions (e.g., nurses exhausted from working double shifts). Deaths resulting from medical errors are tragic not only for patients and their families, but for the healthcare professionals who are responsible, as an article painfully highlighted about one nurse's tragic mistake a few years ago. There are many types of medical errors, and they can occur anywhere in the healthcare system-from hospitals, to nursing homes, to pharmacies. The focus of this article is on medication errors in nursing. We'll examine different types of medication errors, how they occur, and prevention measures for reducing this errors.⁴

A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professionals, patient or consumers. Such events may be related to professionals, health care products, procedure and systems, including prescribing, order communication, product labeling, dispensing, distribution, administration, education, monitoring and use.^{5,48}

Nurses are frequently recognized as the “last line of defense” in the prevention of medication errors. The nurse provides the final check prior to the patient receiving medication. Therefore, to have knowledge about common medication errors and its prevention is very important for the nurses in their professional practice.⁶

Methods

Study design: Experimental one group pre-test and post-test study was conducted at Sapthagiri hospital, Bangalore.

Sample and Sample size: The sample for the study consists of 60 staff nurses working in Sapthagiri Hospital at Bangalore.

Participants: The target population in this study was the staff nurses. The accessible population in this study was the nurses working in Sapthagiri Hospital Bangalore and who were present at the time of data collection.

Sampling technique Non-Probability Convenience sampling technique.

Instrumentation: Data was collected over a period of one month by administering structured knowledge questionnaire.

Eligibility Criteria: Staff nurses who are registered in state nursing council and Staff nurses who are willing to participate in the study were included in the study whereas those who were not available at the time of data collection and Staff nurses who are not registered in state nursing council were excluded from study. The study is aimed at assessing the effectiveness of structured teaching programme (STP) on knowledge regarding medication error and its prevention among staff nurses working in a selected hospital, Bangalore

Results

This chapter deals with analysis and interpretation of data collected from a sample of 60 staff nurses working in hospital to assess the effectiveness of structured teaching programme on knowledge regarding medication error and its prevention. The data collected were analyzed by suitable descriptive and inferential analysis and interpreted. The substantive summary of findings was presented in accordance with the objectives over the following sections

Classification of samples based on frequency and percentage of Demographic variables shown in Table 1.

Table 1
DISTRIBUTION OF SAMPLES BASED ON FREQUENCY AND PERCENTAGE OF DEMOGRAPHIC CHARACTERISTICS

| S. No | Demographic variable | | Frequency | Percentage |
|-------|---|-----------------------------|-----------|------------|
| 1 | Age in years | 21–25 years | 13 | 21.7 |
| | | 26–30 years | 12 | 20.0 |
| | | 31–35 years | 15 | 25.0 |
| | | 36 years and above | 20 | 33.3 |
| 2 | Gender | Male | 17 | 28.3 |
| | | Female | 43 | 71.7 |
| 3 | Educational status | General nurse and midwifery | 23 | 38.4 |
| | | B.Sc Nursing | 12 | 20.0 |
| | | Post basic BSc Nursing | 23 | 38.3 |
| | | M.Sc Nursing | 2 | 3.3 |
| 4 | Area of working | Ward | 17 | 28.3 |
| | | ICUs | 16 | 26.7 |
| | | Emergency | 16 | 26.7 |
| | | Others | 11 | 18.3 |
| 5 | Duty hours | 6 hours | 48 | 80.0 |
| | | 8 hours | 12 | 20.0 |
| | | 12 hour | - | - |
| 6 | Job experience in years | Fresher's | 13 | 21.7 |
| | | 1–3 years | 12 | 20.0 |
| | | 3–7 years | 15 | 25.0 |
| | | 7 years and above | 20 | 33.3 |
| 7 | Did you ever been in medication error | Yes | 12 | 20.0 |
| | | No | 48 | 80.0 |
| 8 | Source of information regarding medication error and its prevention | Seminar | 17 | 28.3 |

| S. No | Demographic variable | Frequency | Percentage |
|----------|------------------------------|-----------|------------|
| | In service education program | 8 | 13.3 |
| | Workshop | 18 | 30.0 |
| | Peer group | 8 | 13.3 |
| | No information | 9 | 15.0 |

The Table 1 depicts the frequency and distribution of staff nurses according to demographic variables.

According to age in years, 21.2 % of them were 21–25 years old, 20.0% of them were 26–30 years old, 25.0 % of them were 31–35 years old, and 33.3 % were 36 years and above years old.

According to gender, 28.3 % were males and 71.7 % were females.

Regarding educational status, 38.4 % were GNM, 20.0 % were B.Sc Nursing, 38.3 % were P.B B.Sc Nursing and the remaining 3.3% were M.Sc Nursing.

According to area of working, 28.3 % were working in ward, 26.7 % were working in ICU, 26.7 % were working in emergency and the remaining 18.3% were working in other areas.

Regarding duty hours, 80 % were having six hours of duty, 20% were having eight hours of duty and none of them having twelve hours of duty.

Regarding job experience in years, 21.7 % were had less than 1 year of experience, 20.0 % were had experience between 1–3 years, 25.0 % were had experience between 3–7 years, and remaining 33.3 % were having more than 7 years and above experience.

Regarding did you ever been in medication error, 20.0 % had been in medication error and remaining 80.0 % had not been in any medication error.

Regarding previous source of information, 13.3 % had in-service education programme as previous source of information, 30.0% had workshop as previous source of information, 13.3 % had peer group as previous source of information, and remaining 15.0 % had no information at all.

Table 2. Range, mean, standard deviation and mean percentage of pre and posttest knowledge regarding medication error and its prevention among staff nurses.

Table 2

Range, mean, standard deviation and mean percentage of pre and post test knowledge regarding medication error and its prevention among staff nurses.

| No. | Knowledge Aspects | Statements | Range | Mean | SD | Mean (%) |
|-----|--------------------|------------|-------|-------|------|----------|
| 1 | Pretest knowledge | 40 | 7–28 | 16.53 | 4.79 | 41.3 |
| 2 | Posttest knowledge | 40 | 26–37 | 32.45 | 2.44 | 81.1 |

Table 2 shows the pretest range was 7–28, mean 16.53, standard deviation was 4.79, mean percentage was 41.3% and the post test range was 26–37, Mean was 32.45, standard deviation was 2.44, and mean percentage was 81.1%.

Table 3. Frequency distribution of samples according to pre and posttest level of knowledge regarding medication error and its prevention among staff nurses

Table 3

Frequency distribution of samples according to pre and post test level of knowledge regarding medication error and its prevention among staff nurses

| Knowledge Level | Classification of Respondents | | | |
|-----------------------------|-------------------------------|------------|-----------|------------|
| | Pre test | | Post test | |
| | Number | Percentage | Number | Percentage |
| Inadequate (1–20) | 47 | 78.3 | 00 | 00 |
| Moderately Adequate (21–30) | 13 | 21.7 | 12 | 20 |
| Adequate (31–40) | 00 | 00 | 48 | 80 |
| Total | 60 | 100 | 60 | 100 |

Table 3. Shows in the pre-test 47 (78.3%) had inadequate knowledge, and 13 (21.7%) had Moderately Adequate knowledge But, in posttest, 48 (80%) had Adequate knowledge, 12 (20%) had moderately adequate knowledge and none of them had inadequate knowledge. It evidenced that there is an increase in the knowledge.

Table 4. Mean, standard deviation and mean percentage of pre and post test aspect wise knowledge

Table 4

Mean, standard deviation and mean percentage of pre and post test aspect wise knowledge

| S No. | Aspects of knowledge | Max score | Pretest | | | Posttest | | |
|-------|--|-----------|---------|-------|--------|----------|-------|--------|
| | | | Mean | SD | Mean % | Mean | SD | Mean % |
| 1 | Definition | 2 | 1.58 | 0.561 | 79.0 | 1.95 | 0.220 | 97.5 |
| 2 | Types | 10 | 4.53 | 1.641 | 45.3 | 7.85 | 0.954 | 78.5 |
| 3 | Risk factors of medication error | 2 | 0.83 | 0.785 | 41.5 | 1.70 | 0.497 | 85.0 |
| 4 | Causes | 4 | 1.57 | 0.981 | 39.3 | 3.10 | 0.796 | 77.5 |
| 5 | Factor influence medication error | 4 | 1.57 | 0.810 | 39.3 | 3.08 | 0.766 | 77.0 |
| 6 | Detecting and reporting error | 1 | 0.37 | 0.486 | 37.0 | 0.70 | 0.462 | 70.0 |
| 7 | Prescribing faults and prescription errors | 4 | 1.58 | 0.979 | 39.5 | 3.37 | 0.736 | 84.3 |
| 8 | Strategies to reduce medication errors | 2 | 1.03 | 0.712 | 51.5 | 1.68 | 0.469 | 84.0 |
| 9 | Prevention | 11 | 3.67 | 1.884 | 33.4 | 9.17 | 1.520 | 83.4 |
| | Overall | 20 | 16.73 | 9.839 | 40.7 | 32.6 | 6.42 | 81.9 |

Table 4. shows mean score percentage of knowledge in the aspect of knowledge regarding definition of medication error was 79.0%, knowledge on types of medication error was 45.3%, knowledge on risk factors of medication error was 41.5%, knowledge on causes of medication error was 39.3%, knowledge on factor influence medication error was 39.3%, knowledge on detecting and reporting error of medication error was 37.0 %, knowledge on prescribing faults and prescription errors was 39.5 % knowledge on strategies to reduce medication errors was 51.5% and knowledge on prevention of medication error was 33.4 % before structured teaching program and after the intervention it was found to be increased mean score percentage of knowledge in the aspect of knowledge regarding definition of medication error was 97.5%, knowledge on types of medication error was 78.5%, knowledge on risk factors of medication error was 85.0%, knowledge on causes of medication error was 77.5 %, knowledge on factor influence medication error was 77.0 %, knowledge on detecting and reporting error of medication error was 70.0 %, knowledge on prescribing faults and prescription errors was 84.3 % knowledge on strategies to reduce medication errors was 84 % and knowledge on prevention of medication error was 83.4 %.

Table 5. Outcomes of Paired T-Test Analysis On Comparison Of Pre And Post Test knowledge

Table 5
Outcomes of Paired T-Test Analysis on Comparison of Pre and Post Test knowledge

| Aspects | Max. Score | Respondents Knowledge Scores | | | Mean diff | SD of Mean Diff | Paired 't' | Df | P value | Inference |
|----------------------|---------------|---------------------------------|---------------|-----------|--------------|-----------------------|---------------|----|------------|-----------|
| | | Mean | SD of Mean | Mean % | | | | | | |
| Pre test | 40 | 16.53 | 0.619 | 41.3 | 15.917 | 0.603 | 26.38 | 59 | < 0.05 | HS |
| Post test | 40 | 32.45 | 0.316 | 81.1 | | | | | | |

The Table 5 represents the mean pre test and post test knowledge. The paired t-test was carried out and it was found invariably significant at $p < 0.05$ level, hence null hypothesis (H_0) is rejected and the research hypothesis (H_1) was accepted. It provides the evidence that the STP was significantly effective in improving knowledge among staff nurses.

Table 6. Association between levels of knowledge score regarding medication error and its prevention with their selected demographic variable of nurses.

Table 6

Association between levels of knowledge score regarding medication error and its prevention with their selected demographic variable of nurses.

| SI No | DEMOGRAPHIC | | Below median | Above median | total | Chi square | df | P value | Sign |
|-------|-------------------------|-----------------------------|--------------|--------------|-------|------------|----|---------|------|
| 1 | Age in years | 21–25 years | 8 | 5 | 13 | 1.365 | 3 | > 0.05 | NS |
| | | 26–30 years | 5 | 7 | 12 | | | | |
| | | 31–35 years | 9 | 6 | 15 | | | | |
| | | 36 years and above | 10 | 10 | 20 | | | | |
| 2 | Gender | Male | 9 | 8 | 17 | 0.001 | 1 | > 0.05 | NS |
| | | Female | 23 | 20 | 43 | | | | |
| 3 | Educational status | General nurse and midwifery | 13 | 10 | 23 | 0.853 | 3 | > 0.05 | NS |
| | | B.Sc Nursing | 5 | 7 | 12 | | | | |
| | | Post basic BSc (N) | 13 | 10 | 23 | | | | |
| | | M Sc Nursing | 1 | 1 | 2 | | | | |
| 4 | Area of working | Ward | 9 | 8 | 17 | 4.905 | 3 | > 0.05 | NS |
| | | ICUs | 12 | 4 | 16 | | | | |
| | | Emergency | 6 | 10 | 16 | | | | |
| | | Others | 5 | 6 | 11 | | | | |
| 5 | Duty hours | 6 hours | 28 | 20 | 48 | 2.411 | 1 | > 0.05 | NS |
| | | 8 hours | 4 | 8 | 12 | | | | |
| | | 12 hour | | | | | | | |
| 6 | Job experience in years | Fresher's | 8 | 5 | 13 | 8.34 | 3 | < 0.05 | S* |
| | | 1–3 years | 5 | 7 | 12 | | | | |
| | | 3–7 years | 13 | 2 | 15 | | | | |
| | | 7 years and above | 5 | 15 | 20 | | | | |

| SI No | DEMOGRAPHIC | | Below median | Above median | total | Chi square | df | P value | Sign |
|-------|---|------------------------------|--------------|--------------|-------|------------|----|---------|------|
| 7 | Did you ever been in medication error | Yes | 5 | 7 | 12 | 0.820 | 1 | > 0.05 | NS |
| | | No | 27 | 21 | 48 | | | | |
| 8 | Source of information about deep vein thrombosis and its prevention | Seminar | 11 | 6 | 17 | 3.60 | 4 | > 0.05 | NS |
| | | In service education program | 4 | 4 | 8 | | | | |
| | | Workshop | 11 | 7 | 18 | | | | |
| | | Peer group | 3 | 5 | 8 | | | | |
| | | No information | 3 | 6 | 9 | | | | |

The Table 6 shows the outcomes of association between posttest knowledge and demographic variables. Out of demographic variables Years of experience was significantly associated with knowledge at 95% level of confidence ($p > 0.05$).

Discussion

This chapter includes the discussion of the findings of the study interpreted from statistical analysis. The present study was conducted to evaluate the effectiveness of structured teaching programme regarding medication error and its prevention among staff nurses in selected hospital, Bangalore.

In order to achieve the objectives of the study, pre-experimental one group pre-test post-test design with evaluative approach was used. Non probability convenience sampling technique was adopted to select the samples. The study was conducted in Sapthagiri Hospital, Bangalore and data was collected from 60 staff nurses before and after the structured questionnaire to assess their knowledge.

The findings are discussed in relation to the objectives, need for the study, related literature and conceptual framework. It is presented in the line with objectives of the study.

The first objective was to assess the level of existing knowledge regarding medication error and its prevention among staff nurses.

In the present study, majority 78.3% had inadequate knowledge and 21.7% had moderately adequate knowledge considering the pre- test level.

The pre test overall knowledge score was ranging within 7–28, mean 16.53 and Standard deviation 4.79 and mean percentage was 41.3%.

The mean score percentage of knowledge in the aspect of knowledge regarding definition of medication error is 79.0%, regarding types of medication error is 45.3%, regarding risk factors of medication error is 41.5%, regarding causes is of medication error is 39.3%, regarding factor influence medication error is 39.3%, regarding detecting and reporting error is 37.0%, regarding prescribing faults and prescription errors is 39.5%, regarding strategies to reduce medication error is 51.5% and regarding prevention of medication error is 34.4% before STP. It is evidence that there is less knowledge regarding medication error and its prevention.

Various studies have review articles suggest that nurses have major part to play in the prevention of medication error which requires thorough knowledge about medication error and its prevention.

A descriptive study was conducted to assess the knowledge regarding medication error among staff nurses. Data was collected from staff nurses at SGRD hospital, Amritsar, Punjab in May 2017. Convenience sampling technique was employed to obtain sample of 100 staff nurses who were working in different clinical areas. A self structured questionnaire was used for the collection of data. The data was gathered and analyzed by calculating the frequency, percentage, mean, mean percentage, standard deviation and chi square. The present study findings revealed that 61% of nurses were having average knowledge score followed by 32% in poor score and 7% in good score. There was highly significant association of knowledge with selected clinical variables i-e average number of patients per day and any in-service education attended on medication error.⁵⁴

The second objective was to evaluate the effectiveness of structured teaching programme regarding medication error and its prevention among staff nurses by comparing pre-test and post-test knowledge score.

In the post test study, majority 80% had adequate knowledge and 20% had moderately adequate knowledge and none of them inadequate knowledge regarding medication error and its prevention.

The post test overall score was ranging within 26–37 with mean 32.45 and SD 2.44. The mean percentage was 81.1%.

After the intervention it was found to be increased to the mean score percent of knowledge in the aspect of knowledge regarding definition of medication error is 97.5%, regarding types of medication error is 78.5%, regarding risk factors of medication error is 85.0%, regarding causes is of medication error is 77.5%, regarding factor influence medication error is 77.0%, regarding detecting and reporting error is 70.0%, regarding prescribing faults and prescription errors is 84.3%, regarding strategies to reduce medication error is 84.0% and regarding prevention of medication error is 83.4% before STP. It is evidence that there is increase in knowledge regarding medication error and its prevention.

Regarding over all knowledge the paired SD of mean difference was 1.209 and SD of difference was 15.867. It was found to be significant ($t = 30.875$, $df = 59$) at 5% level (i.e. $p < 0.05$). The paired t-test was also worked out for the different aspects of knowledge regarding medication error and its prevention

among staff nurses and it was found to be invariably significant at 5% (i.e. $p < 0.05$). It evidenced that STP was statistically significant in improving knowledge among nurses.

A Study was conducted on effectiveness of structured teaching programme on medication reconciliation among new nurses in selected Hospital at Chennai. The study aim is to assess the effectiveness of structured teaching programme on medication reconciliation among new nurses. 30 nurses who fulfilled the inclusion criteria were selected randomly. The pre-test was assessed using a semi structured questionnaire and the structured teaching programme was given to nurses. After that post-test was conducted. The result showed that the mean level of knowledge was 7.63 with standard deviation of 15.6 in pre-test and 16.9 with standard deviation of 14.6 in post-test, there was a statistically high significant difference with paired 't' value of 22.49 at $p < .001$ level. The study concluded that there was an increase in the level of knowledge regarding medication reconciliation among new nurses after the the structured teaching programme. Hence the structured teaching programme on medication reconciliation among new nurses was found to be effective.⁵⁵

The third objective was to associate post-test knowledge score regarding medication error and its prevention with the selected demographic variables of nurses.

The Chi square analysis was carried out to determine the association of knowledge score regarding medication error and its prevention with their selected demographic variables of nurses and it is found to be associated with the selected demographic variables.

The Chi square value of demographic variable age in years is 1.365, gender is 0.001, educational status is 0.853, area of working is 4.905, duty hours 2.411, did you ever been in medication error is 0.820, source of information regarding medication error and its prevention is 3.60 are not significant, whereas Chi square value of demographic variable job experience is 8.34 is significant.

Various studies have review articles suggest that nurses have major part to play in the prevention of medication error which requires thorough knowledge about medication error and its prevention.

A descriptive study was conducted to assess the knowledge regarding medication error among staff nurses. Data was collected from staff nurses at SGRD hospital, Amritsar, Punjab in May 2017. Convenience sampling technique was employed to obtain sample of 100 staff nurses who were working in different clinical areas. A self structured questionnaire was used for the collection of data. The data was gathered and analyzed by calculating the frequency, percentage, mean, mean percentage, standard deviation and chi. The results shows majority of nurses 90% were found in age group 21–40 years. Most of the nurses (98%) were female with 49% qualified with GNM exhibiting less than 5 years of clinical experience among 62%. Most of the nurses were found working in ICU i-e 28%. Among total sample of 100 nurses, majority of nurses 56% had not attended any in-service programme on medication error. The study concluded that most of the nurses were having average knowledge score which is 61%. The study revealed that there was significant association of knowledge with selected socio-demographic variable i.e. average number of patient per day and in-service programme on medication error.⁵⁴

Limitations

- Data collection period is limited to 4 weeks.
- The study is limited to the staff nurses.
- The sample size is limited to 60 staff nurses. The small number of samples limits generalization of the study.
- The study did not use control group. The investigator had no control over the events that took place between pre-test and post-test.
- Only the knowledge aspect is considered in the present study.

Conclusion

The conclusions which have been drawn from the study are as follows:

- The knowledge score of staff nurses regarding, medication error and its prevention was found to be inadequate in two third of the sample before structured teaching programme.
- The knowledge score of staff nurses regarding medication error and its prevention was found to be moderately adequate in one third of the sample and none of them had adequate knowledge before structured teaching programme.
- Structured teaching programme was an effective teaching method.
- Overall knowledge score of staff nurses was found to be moderately adequate in one third of the sample and adequate in two third of the sample none of them had inadequate knowledge structured teaching programme.
- There was a significant difference between the pretest and posttest knowledge and score of the staff nurses after giving structured teaching programme on knowledge regarding medication error and its prevention.
- There was a statically association between posttest knowledge score regarding medication error and its prevention with selected demographic variables of staff nurses.

Abbreviations

B.Sc. N: Bachelor of Science in Nursing, Df: Degree of freedom, GNM: General Nurse Midwifery, H: Hypothesis, HS: Highly significant, Er: Emergency, ICU: Intensive Care Unit, LD: Latissimus Doris, M.Sc.: Master of Science in Nursing, N: sample size, NS: Not significant, P: Probability, P.B.B.Sc.N: Post Basic Bachelor of Science in Nursing, R: Reliability, SD: Standard Deviation, STP: Structured Teaching Programme, < : Less than, >: More than, %: Percentage, EHR: Electronic Health Records, i.e: That is, COPE: Computerize Provider (physician) Order Entry, LASA: Look Alike Sound Alike

Declarations

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Affiliations

Author's contribution:

KP participated in conception of the study, study design, acquisition of data, analysis and interpretation of data and implementation of the study, prepared the manuscript, RK participated in draft the proposal, help in prepared the manuscript and guide throughout the study also helped in data analysis and interpretation, DL revising the content, English correction. Final approval of the version to be submitted (KP, RK, and DL)

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Ethical Declaration

Ethics approval and consent to participate

Participants received oral and written information about the nature and purpose of the study and provided voluntary informed consent. Sapthagiri Institute of Medical Sciences and Research Center, Institutional Review Board of RR Institutions, and Rajiv Gandhi University of Health Sciences approved this study and the investigation conformed to the principles outlined in the Declaration of Helsinki.

Consent for publication

Prior to the intervention, all the participants were given information regarding the study. The participants, those who participated read the written information approved by the ethics committee; it described the nature and purpose of the study. The information sheet clearly stated that those who participated in the study also gave their consent to the use of the de-identified information for paper publication.

Availability of data and materials: The data sets used and analyzed in this study are available from the corresponding author on reasonable request.

Competing interest: The authors declare that they have no competing interests.

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Figures

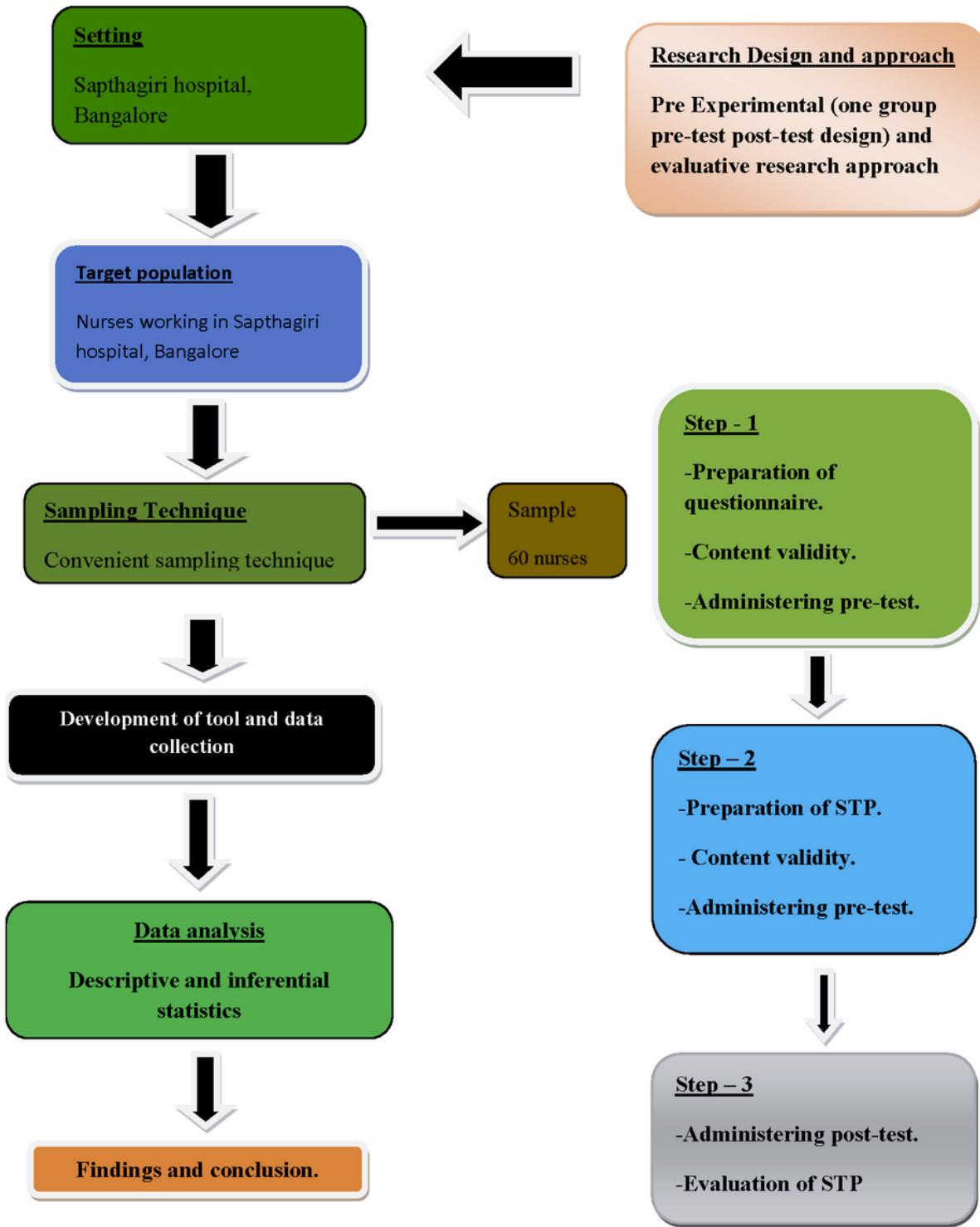


Figure 1

SCHEMATIC DIA GRAM OF RESEARCH DESIGN