

Effectiveness of simulation technique, on Practice Regarding selected nursing procedure among B.Sc. Nursing students at Sumandeeep Nursing College, Piparia, Vadodara

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Abstract: Simulation is a form of experimental learning. It is a type of reflective learning exercise in which students review their own performance and consider how nursing theory is actually applied in nursing practice, then receive feedback from an instructor. IM & IV administration are the one of basic skill for a portion of clinical time in undergraduate nursing programs, so all nursing students must learn the technique, they should practice simulator allows demonstration practice on injection manikin which shows positive outcomes in increasing self confidence and satisfaction with simulation before clinical practice. The aim of the study was to assess effectiveness of simulation technique, on practice regarding selected nursing procedure among B.Sc. nursing students. A total of 80 subjects were selected through purposive sampling technique. Pre-test practice was assessed with the help of observational check list and on the same day simulation technique done regarding selected basic nursing procedures is given to subjects and doubts were clarified, on 8th day conducted post-test with the help of observation check list regarding selected basic nursing procedures. Results: As t value with respect to practice of IM & IV (23.648 & 26.895 respectively) is greater than the table value t value (1.664) at 0.05 level of significant. Hence the obtained t value is significant and research hypothesis is accepted. Therefore there exists significant difference between pretest and post test practice score of students regarding simulation technique on IM & IV administration. Hence research hypothesis H₁ is accepted. Conclusion: The 't' test was computed between pre-test and post-test score indicate that there was improvement the level of practice among nursing students. Hence it indicates that simulation technique was effective to improve the practice on basic nursing procedure like IM & IV among nursing students before posted them in clinical area.

Keywords: Simulation technique, IM & IV nursing procedure, observational checklist.

1. BACKGROUND OF THE STUDY

The alarming rise in morbidity and mortality among hospitalized patients throughout the World heightens concerns about professional competency. Nurses and other health care professionals are under increased scrutiny to provide safe, effective care. Likewise, nursing education programs are facing increased pressure to produce graduates who are capable of providing safe patient care.¹ Toward that end, nursing education programs revised curricula, hire qualified faculty, and select learning experiences including field visit, simulation techniques etc; these learning activities reflect the reality of a clinical environment for students in an effort to increased ability in decision making, critical thinking and psychomotor skills without fear of harm to the patient and train and competent effective nurses.²

Medication safety is a major concern and a global issue related to quality and safety of patient care. In 2001 The Audit Commission of the National Health Service (NHS) in the United Kingdom (UK) estimated that medication errors

accounted for about 20% of deaths from all adverse events. Complications from drug treatment, therapeutic misadventures and diagnostic errors were the most common non-operative medical errors. Hatcher indicated that 61% of life threatening errors were associated with intravenous (IV) medications.³

The administration of intramuscular and intravenous injection is a common nursing intervention. Clinical setting deeming it essential for nurses to have the education and skill set to manage the challenges associated with IM and IV medication delivery. To raise awareness in relation to the injection sites used for intramuscular injection and IV management skills with safe medication practice. Malpractice of IM and it essential for nurses to have the education and skill set to manage the challenges associated with IV medication delivery injection can cause potential complications like abscess, cellulitis, thrombophlebitis, emboli, tissue necrosis, granuloma, muscle fibrosis, contractures, hematoma, septicemia and injury to the blood vessel, bone and peripheral nerve.^{4,5} Today, most undergraduate professional students have not had much experience with direct IV push injection and IM injection outside of a classroom or simulation setting, largely due to practice limitations in host facilities. With simulation supportive practice environment enhances student nurses' error interception practices. These interception practices play a role in reducing medication errors.

Statement of the problem:

“Effectiveness of simulation technique, on Practice Regarding selected nursing procedure among B.Sc. Nursing students at Sumandeep Nursing College, Piparia, Vadodara”.

Objectives:

1. To assess the pre-test practice score regarding selected nursing procedure Among B.Sc. Nursing students.
2. To evaluate the effectiveness of simulation technique, on Practice Regarding selected nursing procedure Among B.Sc. Nursing students.
3. To find Association of the pre-test practice score with their selected demographic variables.

Operational definition:

SIMULATION TECHNIQUE: It is the act of presenting and improving the practice of the student nurses regarding practice on selected nursing procedure among B.Sc (N) 2nd year.

PRACTICE: it refers to the repeated or systematic exercise for the acquiring skill to practice of selected nursing procedure (IV & IM).

SELECTED NURSING PROCEDURE: it refers to basic nursing procedure such as IV & IM Practice, which is practiced by nurses in day to day life in respective ward.

NURSING STUDENTS: All the student nurses who are studying in B.Sc (N) 2nd year at Sumandeep Nursing College.

Assumptions:

1. B.Sc. (N) 2nd year students will have less practice on simulation technique on IV & IM.
2. Demonstration on simulation technique of IV & IM will improve the practice among B.Sc. (N) 2nd year students.

Hypothesis:

H₁: There will be significant difference in the pre-test and post-test practice score regarding simulation Technique on selected nursing procedure among B.Sc (N) 2nd year at Sumandeep Nursing College, Vadodara.

H₂: There will be significant association between the selected demographic variables with the pre-test practice score regarding simulation Technique on selected nursing procedure among B.Sc (N) 2nd year students at Sumandeep Nursing College, Vadodara.

Conceptual Framework:

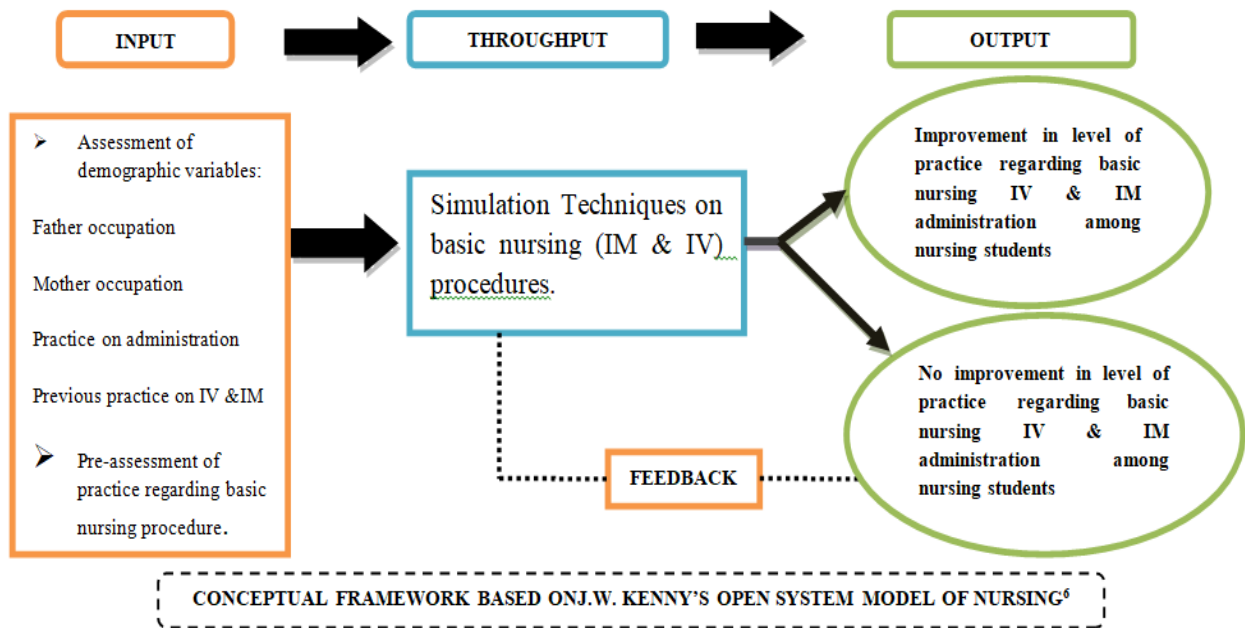


Fig.1

Review of literature: In present study researcher review the literature on following

Section A: Studies related to practice of IV & IM

Section B: Studies related to simulation technique

Section C: studies on medication error

2. RESEARCH METHODOLOGY

Research Approach

In order to achieve the objective of the study an evaluative approach was considered appropriate.

Research Design:

The design adopt the for the study is pre -experimental – one group pre test and post test design.

Settings of the study

The study was conducted at Sumandeep Nursing college, Piparia, Vadodara.

Research variable

Simulation technique regarding selected Nursing Procedure

Demographic Variable:

The demographic variables in this study include Occupation of father, Occupation of mother, Practice on administration of IV&IM, and previous source of practice on IV&IM administration.

Population:

In present study the target population is selected for the study comprised of nursing students of Sumandeep Nursing College, Piparia, Vadodara.

Sample:

In present study the sample consist of 80 nursing students of Sumandeep nursing college, Pipariya, Vadodara.

Sampling technique:

The sample of the study was selected by using the non-probability purposive sampling techniques.

Tool for data collection.

Section A: Comprises of the socio demographic profile of the nursing students.

Section B: Observational checklist. It consisted of 27 items for IV practice and 17 items for IM practice.

Scoring Interpretation:

I.M.	I.V.
Need Practice: 27-45	Need Practice: 27-45
Satisfactory: 46-64	Satisfactory: 46-64
Excellent : 68-81	Excellent : 68-81

Data Collection Process:

Pilot Study: The observational checklist was administered to 8 students. The reliability was established by using formula Cronbach’s alpha. Co- efficient of co-relation of practice test was found to be $r = 0.773$ was found to be reliable for data.

Final Data Collection: Pre test was conducted for 80 nursing students nursing students. Guidelines on data collection tool were administered. They were instructed to go through the instruction while doing simulation technique. Implementation of lecture cum demonstration regarding simulation technique on IV & IM, it was conducted for 1 hour. During post test same observational checklist was administered on 8th day of lecture cum demonstration regarding simulation technique on IV& IM for nursing students to assess their practice.

3. RESULTS

Major finding of the study

Section 1: Frequency and distribution of socio demographic variables:

- With regards to Father Occupation shows that 27(33.75%) Businessmen, 25(31.25%) farmer, 12 (15%) defense, 10 (12.5) Teacher, and only 6(7.5%) are health professional.
- Regarding Mother Occupation 72(90%) homemaker, 5(6.25%) Teacher, 1(1.25%) Businesswomen, 1(1.25%) farmer, and 1(1.25%) health profession.
- Regarding Practice of administration of IV and IM 44(55%) no practice of IV & IM administration, 16(20%) students have practice of IV administration and 14(17.5) have both IV and IM practice, where as only 6(7.5%) students have IM practice.
- Previous source of Information: 44 (55%) have got clinical practice of IV and IM, 21(26.25%) gained through Lab demonstration, 13(16.25%) gained through lab demonstration and clinical practice, whereas only 2 (2.5%) accessed information through all of sources.

Section 2: Analysis of the Pre-Test & Post-Test practice scores regarding selected nursing procedure Among B.Sc. Nursing students

Table:1 Pre-test shows Majority of the students (88.8 & 97.5%) are having poor practice regarding IM & IV administration. And few students (11.3 & 2.5%) have satisfactory practice regarding IM & IV administration. None of the students have good practice on IM & IV administration. Post -Test shows after simulation technique found that Majority of the students (77.5%) are having satisfactory practice regarding IM and (22.5%) have good practice on IM administration, and (53.6%) have good practice regarding IV, (46.4%) have satisfactory practice on IV administration. None of the students have poor practice on IM & IV administration.

Table:1

N=80

Practice		Pre-test				Post-test			
		IM		IV		IM		IV	
		Frequency	%age	Frequency	%age	Frequency	%age	Frequency	%age
Level	Excellent	0		0	-	18	22.5	43	53.6
	Satisfactory	9	11.3	2	2.5	62	77.5	37	46.4
	Need Practice	71	88.8	78	97.5	0	-	0	-
	Total	80	100	80	100	80	100	80	100

Section 3: Effectiveness of simulation technique, on Practice regarding selected nursing procedure Among B.Sc. Nursing students:

Table: 2 Comparison of overall practice scores of B.sc (N) 2nd year students

Variables		Mean	Mean difference	Standard deviation	t-value	Inference
Practice IM	Pre-test	1.11	1.113	0.318	23.648	S
	Post-test	2.23		0.420		
Practice IV	Pre-test	1.03	1.513	0.157	26.895	S
	Post-test	2.54		0.502		

$t_{(79)} = 1.664$ at 0.05 level of significant

Table 2: depict that the obtained t value with respect to practice of IM & IV (23.648 & 26.895 respectively) is greater than the table value (1.664) at 0.05 level of significant. Hence the obtained t value is significant and research hypothesis is accepted. Therefore there exist significant differences between pretest and post test practice score of students regarding simulation technique on IM & IV administration.

Section 4(A): Association between pre-test IM practice scores of 2nd year B.SC (N) students with socio-demographic variables: χ^2 value computed between the pre-test practice score of B.sc (N) 2nd year students regarding IM administration and selected socio-demographic variables. Variables of occupation of father ($\chi^2= 7.620$), occupation of mother ($\chi^2= 0.765$), practice on administration ($\chi^2= 2.227$), source of practice regarding injection administration ($\chi^2= 1.612$) were found to be not significant at 0.05 level. Thus it can be interpreted that there is no significant association between pre-test level of IM practice of B.sc (N) 2nd year students with selected socio-demographic variables.

Section 4(B): Association between pre-test IV practice scores of 2nd year B.SC (N) students with socio-demographic variables: χ^2 value computed between the pre-test practice levels of B.sc (N) 2nd year students regarding basic nursing procedure that is IV administration and selected socio-demographic variables. Variables of occupation of father ($\chi^2= 2.887$), practice on administration ($\chi^2= 1.678$), source of practice regarding injection administration ($\chi^2= 0.835$) were found not significant at 0.05 level, only occupation of mother ($\chi^2= 30.769$) was found significant at 0.05 level. Thus it can be interpreted that there is a significant association between pre-test levels of IV practice of B.sc (N) 2nd year students with selected socio-demographic variables such as occupation of mother.

4. NURSING IMPLICATION

The findings of the study have implication to nursing practice, nursing education, nursing administration.

Nursing education:

- The nursing curriculum should consist of increased depth, content and activities which help to develop knowledge and skills among nursing students regarding IM & IV administration.
- The nurse educator should emphasize manikin demonstration regarding IM & IV administration and its prevention as part of learning experience for the students.
- The nurse educator should arrange hand on practice, video Assisted Teaching and seminar for student nurse regarding IM & IV administration.
- The nurse educator can provide an opportunity for students to actively participate in implementation of Simulation technique.

Nursing Practice

- Nurse need to take up the responsibility to create awareness among the nursing student regarding IM & IV administration.
- Nurses should use wide variety of intervention to enhance knowledge and practice regarding IM & IV administration and its importance of practicing nurse to evaluate these interventions.
- Nursing Teachers and health care providers play a vital role in motivating the students to do safe practice of administration of IM & IV.
- Nurse should organize educational program campaign to students regarding administration of IM & IV administration.

Nursing Administration

- Nurse as an administration plays an important role in educating the professionals and in policy making such as mass health education measures in hospitals.
- Nurse administration should guide and monitor the nurse regarding IM & IV administration and has to plan for on-services education periodically.
- The findings shows that there is need for contained simulation technique and avoiding medication error which can be organized by nurse administrator regarding IM & IV administration at all health care delivery levels.

5. NURSING RESEARCH

- The main findings of the study serve as the basis for the professional and the students to conduct further studies.
- The generalization of the study results can be made by replication of the study.

6. RECOMMENDATIONS

On the basis of present study, following recommendation was made

- A similar study can be conducted with different teaching strategies like VAT, SIM and PTP.
- Comparative study can be done on knowledge and practice regarding IM & IV administration among B.sc N 2nd year and internship students.

7. CONCLUSION

Finding of the present study concluded that outcome of demonstration cum simulation technique on basic nursing procedure IM & IV administration is effective to improve practice among nursing students before posted them in clinical area.

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