



Volume: 2, Issue: 9, 91-96
Sep 2015
www.allsubjectjournal.com
e-ISSN: 2349-4182
p-ISSN: 2349-5979
Impact Factor: 4.342

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Assessment of change in knowledge and attitude towards Evidence-Based Practice about hospital practices of Nursing Personnel through a training workshop

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Abstract

Background: Incorporating evidence in daily working pattern is a challenge within the profession of nursing. Reasons include a general lack of awareness, absence of periodic assessments of professional skills and poor access to academic resources. This research survey was taken to assess the knowledge of nursing personnel regarding various hospital practices, its applicability in tertiary care settings, attitude towards incorporating evidence in service delivery and to assess the effectiveness of a multidisciplinary training program in improving the same.

Methodology: A semi-structured questionnaire was administered to participants, before and after attending a two day workshop titled "Ensuring Quality of Nursing Services" was conducted in the month March 2015 at SGPGIMS, a tertiary care super speciality hospital in Lucknow, Uttar Pradesh. The responses were tabulated and entered into a spreadsheet and statistically analysed using online software.

Results: 107 nurses attended the workshop and the response rate was 100% for the purpose of this study. 78.3% nurses were from SGPGI. Among the attendees, 74% possessed a highest qualification attained of GNM nursing. Most of the nurses had a working experience of 1 to 5 years (56.6%). Wilcoxon signed rank test between pre and post survey answers was statistically significant with a Z-score of 4.287 (p-value <0.001) and a r value indicating strong negative relationship between wrong answers pre and post workshop.

Conclusion: Nurses need more skills in evaluating research before they can incorporate the best evidence into their nursing practice. Any programme which incorporates didactic lecture series is an effective approach that can be employed by nursing leaders to educate as well as motivate nurses working in different departments and in varying shifts towards enhancing patient care and safety by incorporating best available practices.

Keywords: Baseline Assessment, Nursing, Evidence Based Practice (EBP), Knowledge, Attitude, Accomplishment level.

Introduction

According to Hicks "Evidence based health care takes place when decisions that affect the care of patients are taken with due weight accorded to all valid, relevant information ^[1]." Disparities exist between nurses' perceptions of their knowledge and skill level toward maintaining quality in their routine day to day employment. A commonly recommended strategy, the BARRIERS scale which is used to identify barriers to change and then tailor interventions for increasing research use in clinical practice has since been recommended for disuse due to its doubtful validity ^[2]. Researchers cite lack of available time and increased workload as the most important barriers in implementing evidence based practices (EBP) ^[1, 3-6]. Inadequate organisational and leadership support and lack of resources have also been identified as barriers for the implementation of quality services at the workplace ^[6-8].

Ellis et al. (2005) examined the barriers to adopt Evidence Based Practice (EBP) and concluded that good facilitation was more influential than context in overcoming them ^[9]. Hundley et al. (2000) evaluated the effectiveness of two approaches to increase research, awareness among midwives and nurses ^[4]. The command group was provided with an education and training program only and the intervention group was provided with the education and training program as well as policy and exercise interventions. Findings indicated that the intervention group was more likely to engage in research utilization and take part in reading research journals. Kajermo et al. (2001) concluded that research utilization and the alteration in research-based nursing practice are complex matters which call for both organizational and educational efforts ^[10]. Tsai (2003) studied the effects of an 8-week research utilization course. Nurses in the experimental group had a more positive attitude toward research, perceived greater support from their institutions, and higher levels of participation in research than did the nurses in the control group

and concluded that continuous consultation and assistance should be provided to the nurses after the course, so as to implement the results of research utilization [11]. However, studies suggest that, in general, nurses have a positive attitude towards EBP [4-6, 12]. Further studies state that nurses with positive attitudes were more likely to use evidence-based research in practice and that nurses who believe that EBP improves patient outcomes provided higher levels of evidence-based care [7]. Higher education levels and job title of nurses can be regarded as a significant predictor of knowledge and ability to perform research activities but is not related to willingness to engage in research activities [12-14].

Objective

This research survey was undertaken to investigate the effectiveness of a quality based teaching program on nurses' perceptions of knowledge, attitude, and skill level related to Evidence Based Practice (EBP) and research use. In view of the above, a study was conducted to achieve the following objectives:

1. To conduct the baseline assessment of nurses' perceptions of knowledge, attitude, and accomplishment level in nursing personnel.
2. Assess overall change in nurses' perception of knowledge, attitude, and accomplishment level upon on completion of lecture series.
3. Based on above two points, to analyse the effectiveness of a nursing education program on nurses' perceptions of knowledge, attitude and skill level and justify conducting such training programs in the future.

Sample Frame and Study Setting

An invitation was sent to all the major hospitals in the city of Lucknow, the capital of Uttar Pradesh state of India, through their various departmental heads no nominate at least 4 senior nurses for a two day workshop on "Ensuring Quality of Nursing services". The actual number of qualified nursing personnel who had attended the conference was 107.

Materials & Method

A cross sectional study was conducted in the month of March 2015 during a workshop titled "Ensuring Quality of Nursing Services" conducted at Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGIMS), Raebareli Road, Lucknow, a tertiary care Postgraduate Institute of Medical Sciences. The institute is a premier medical training centre and was

established with the aim of providing advance specialized medical care which is available only at a few centres in the country and nowhere else in the state. The main hospital is having 868 beds, 14 well equipped Specialty operating rooms, a 16 bed intensive care unit and a 28 bed dialysis unit. A redesigned multiple choice based objective, semi-structured questionnaire survey sheet containing 4 unstructured and 25 structured questions was administered to the participants: first at the start; and later at the conclusion of the workshop. The questions encompassed the topics of Hospital Administration, Microbiology, Transfusion Medicine and Nursing specialties and were framed by the respective faculty from the department. The questionnaire was composed of two parts. The first was a demographic data collection form having the participants name, place of work, highest qualification attained and number of years of experience. The second part of the questionnaire was an Evidence-Based Nursing Questionnaire (EBNQ) composed of 25 questions having four responses each, one response among the four was the right answer. Nurses were asked to complete the questionnaires before the Workshop lectures began and the same questionnaire was administered at the conclusion of the workshop. The questionnaire was designed by faculty members of various disciplines such as Hospital Administration, Microbiology, Transfusion Medicine, and Nursing Administration and CSSD. The questionnaire is given here as Annexure 1.

Results & Discussion

A total of 107 nurses participated in the workshop. The response rate to both pre and post survey questions was 100%. Amongst the attendee nurses (78.3%) belonged to SGPGI Hospital followed by KGMU (05.66%) and Sahara Hospital (05.66%). (Table 1, Figure 1) The highest level of training received was GNM (74.52%) followed by B.Sc Nursing (22%) and M.Sc Nursing (3%). (Table 2, Figure 2) The study also revealed that a majority (57%) of nursing personnel who attended the workshop had a working experience of 01-05 years, followed by 11.32% of respondents with an experience of 21-25 years and only 3.76% nurses with an experience of 36 to 40years.(Table 3, Figure 3) Wilcoxon signed rank test between pre and post survey answers was statistically significant with a Z-score of 4.287(p-value <0.001) and a r value indicating strong negative relationship between wrong answers pre and post workshop. (Decrease in the number of nurses answering incorrectly)

Sample name	Number of samples	Mean	Standard error of the mean	Standard deviation	Median
Pre workshop Answers	25	48.200	5.039	25.193	50.000
Post workshop Answers	25	79.440	3.192	15.958	78.000
N = Number of differences (omitting Nil differences) = 25-1 = 24 (as Question No. 14 has Nil Differences)					
Wilcoxon signed-rank	<ul style="list-style-type: none"> • $W+ = 0$ • $W- = 300$ • $0 < 300$ hence $W=0$ • Using the table of critical Wilcoxon values. With an N of 11, the critical value for a two-tailed test at the $\alpha=0.05$ significance level is 81 • Since observed value $0 < \text{expected value } 81$. The null Hypothesis stands rejected and there is a statistically significant difference between 'Pre workshop Answers' and 'Post workshop Answers'. • $z\text{-score} = 4.287$ (asymptotic significance (2-tailed) $p < 0.001$) • Effect size $r = -0.606$ signifying strong negative linear relationship between pre Workshop wrong answers and post workshop wrong answers. 				

Table 1: Institution wise respondents

S. No.	Name of Institutions	No. Of Respondents	Percentage (%)
1	SGPGI	83	78.30
2	Fatima Hospital	03	02.83
3	ERA Hospital	03	02.83
4.	KGMU	06	05.66
5	RMLIMS	03	02.83
6	SAHARA	03	02.83
7	Vivekanand Hospital	03	02.83
8	OP Chaudhary Hospital	03	02.83
		107	100.00

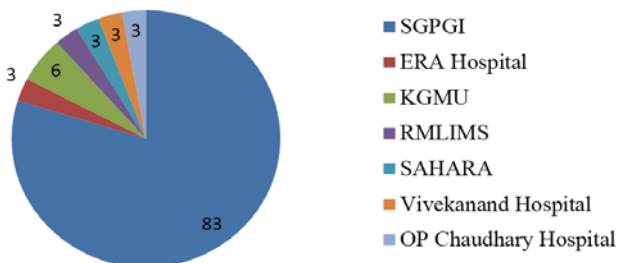


Fig 01

Table 2: Educational Qualification of the Respondents

S.No.	Qualification	No. Of Respondents	Percentage
1	GNM	79	74.52
2	B.Sc	22	20.75
3	M.Sc	06	05.66

Distribution of Participants by Qualification

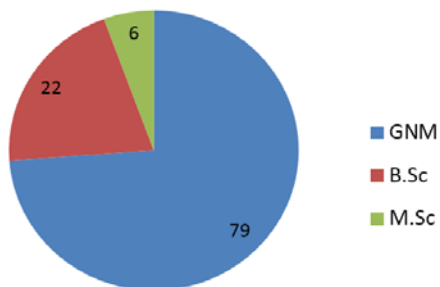


Fig 2: Distribution of participants based on highest qualification attained

Table 3: Distribution of Respondent by Experience (Years)

Sl. No.	Experience	No.of Respondents	Percentage (%)
1	01-05	60	56.60
2	06-10	16	15.09
3	11-15	05	04.71
4	16-20	05	04.71
5	21-25	12	11.32
6	26-30	05	04.71
7	31-35	00	00.00
8	36-40	04	03.76

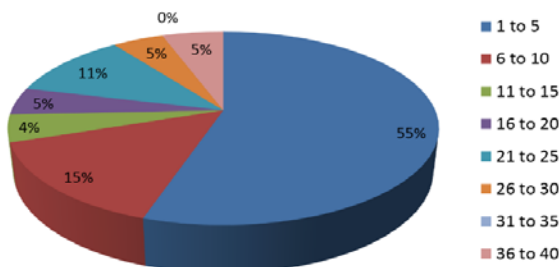


Fig 3: Distribution of Respondents based on Number of years of experience

Table 4: Question Wise Response of Respondents

Question No.	Participants who marked the correct response	Percentage of total (%)
1	19	17.92
2	20	18.86
3	31	29.25
4	68	64.15
5	53	50.00
6	59	55.66
7	9	08.49
8	42	39.62
9	61	57.54
10	67	63.21
11	100	94.34
12	67	63.21
13	8	07.55
14	87	82.08
15	42	39.62
16	62	58.49
17	63	59.43
18	55	51.89
19	34	32.08
20	50	47.17
21	23	21.70
22	92	86.79
23	17	16.04
24	44	41.51
25	32	30.19

Table 5: Question wise response on Post Data Survey

Question No.	Correct Respond	Percentage
1	39	36.79
2	56	52.83
3	61	57.55
4	78	73.58
5	59	55.66
6	98	92.45
7	75	70.75
8	87	82.08
9	87	82.08
10	97	91.51
11	103	97.17
12	98	92.45
13	76	71.70
14	87	82.08
15	87	82.08
16	89	83.96
17	97	91.51
18	76	71.70
19	65	61.32
20	76	71.70
21	67	63.21
22	98	92.45
23	67	63.21
24	76	71.70
25	87	82.08

Table 6: Comparison of responses collected during Pre and Post Survey

Question No.	Correct Respond Pre Survey (Xa)	Correct Response Post Survey (Xb)	Signed Ranks of Differences (Xa- Xb)
1.	19	39	-5
2.	20	56	-16
3.	31	61	-10.5
4.	68	78	-4
5.	53	59	-2.5
6.	59	98	-17
7.	9	75	-23
8.	42	87	-19.5
9.	61	87	-7.5
10.	67	97	-10.5
11.	100	103	-1
12.	67	98	-12.5
13.	8	76	-24
14.	87	87	NIL
15.	42	87	-19.5
16.	62	89	-9
17.	63	97	-15
18.	55	76	-6
19.	34	65	-12.5
20.	50	76	-7.5
21.	23	67	-18
22.	92	98	-2.5
23.	17	67	-21
24.	44	76	-14
25.	32	87	-22

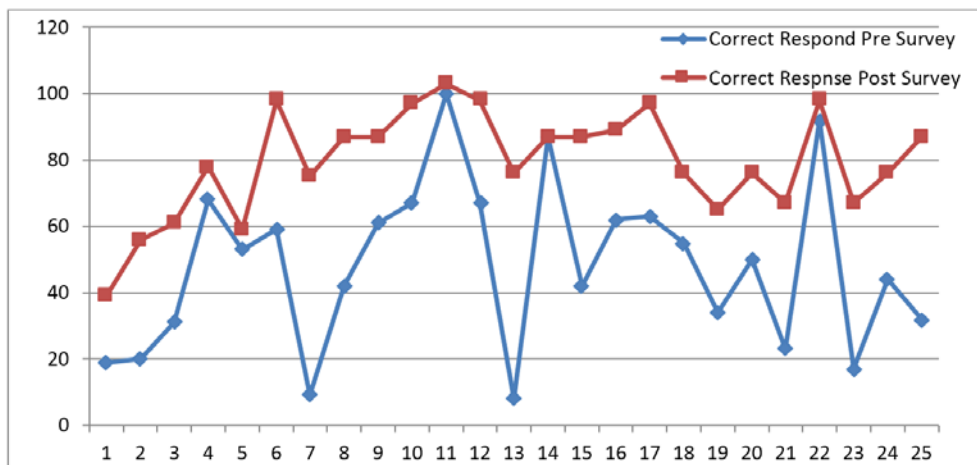


Fig 4: Pre and Post workshop correct responses question wise.

Annexure1: Survey Questionnaire

Demographic Data:

Name:

Institution:

Highest Qualification:

Experience in Years:

Please tick (✓) the most appropriate answer:

1. Patient safety is :

- a. Keeping patients safe from intentional harm.
- b. Keeping patients safe from unintended harm
- c. Making hospitals a safe place
- d. Ensuring patients do not injure healthcare workers

2. Medication error:

- a. is another term for medical error
- b. Only means when there is adverse reaction

- c. Is a type of medical error
- d. Error in reading the medication.

3. The commonest medication error is:

- a. Prescribing errors
- b. Transcribing errors
- c. Dispensing errors
- d. Administrative errors

4. How to sterilize plastic material

- a. Steam
- b. Heat
- c. Ethylene Oxide (EO)
- d. None of the above
- e.

5. Linen can be sterilized by

- a. Ethylene Oxide (EO)

- b. Plasma
 - c. Dry Heat
 - d. Steam
- 6. A material is pronounced sterile if it**
- a. Achieve 90% kill of bacteria
 - b. Achieves 99.99 of bacteria & spores.
 - c. Achieves 99.99 of bacterial
 - d. Achieve 97% of bacteria and spores.
- 7. Duties and responsibilities of ward In charge**
- a. Administrative
 - b. Nursing Care
 - c. Teaching
 - d. All above
- 8. Indian Nursing Council was established in:**
- a. 1916
 - b. 1947
 - c. 1950
 - d. 1956
- 9. Non Nursing duties are**
- a. Arranging dispatch of sample
 - b. Making diet list
 - c. Supervision of house keeping
 - d. All above
- 10. Standard precautions does not include.**
- a. Washing hands before and after patient contact
 - b. Appropriate handling of contaminated clinical waste
 - c. Use of aseptic technique
 - d. Use of gloves and gowns at all times.
- 11. A Nurse finds an uncapped needle lying on the floor in a resident's room, what should she do first.**
- a. Wash her hands
 - b. Go to the nursing station and notify the charge nurse
 - c. Leave the needle on the floor and call housekeeping
 - d. Put on gloves and carefully place needle in sharps container.
- 12. You can protect yourself from transmission of Hepatitis B, Hepatitis C and HIV by:**
- a. Using standard precautions.
 - b. Appropriate use of PPE and Engineered safety devices
 - c. Having accurate information about blood borne pathogens
 - d. All above
- 13. What will you do if blood spill in the ward?**
- a. Just inform the head nurse or call the housekeeping
 - b. Cover it with a blotting paper and pour 10% Sodium hypochlorite over the spill
 - c. Cover it with the blotting paper and pour 1% Sodium hypochlorite over the spill.
 - d. All of the above are true.
- 14. True about Personal protective equipment (PPE) is:**
- a. They include gloves, gowns, eye shields, apron, masks
 - b. Not required if there is a risk of aerosols.
 - c. One can leave the work area while wearing it.
 - d. None of the above is correct.
- 15. Which one of the following cannot be dependent on you as a female staff Nurse.**
- a. Wife
 - b. Uncle
 - c. Father
 - d. Mother in law
- 16. Your appointment has been done in one of the following Pay Band.**
- a. Pay Band I
 - b. Pay Band II
 - c. Pay Band III
 - d. Pay Band IV
- 17. How much Pensionary Benefit you are paying per month:**
- a. 10% of Total Salary
 - b. 20% of total salary
 - c. 30% of total salary
 - d. None of the above.
- 18. Which one of the following statement is not correct for Audit:**
- a. Retrospective evaluation
 - b. Concurrent evaluation
 - c. Can be done without standards
 - d. Criteria to be defined
- 19. Which one of the following is not for Nursing Audit:**
- a. Quality Improvement
 - b. Done to find out the errors and make improvement.
 - c. It is done for just to record the deficiency as a part of Nurse and use as and when required
 - d. It is a control process
- 20. Which one of the following may be debit part of the Nursing Staff.**
- a. Patient cured
 - b. Patient relieved
 - c. Patient satisfied
 - d. Patient LAMA
- 21. Infection means**
- a. Availability of microbes on surface of body
 - b. Ingestion of contaminated food.
 - c. Appearance of sign and symptom of the disease.
 - d. All of the above.
- 22. Needle stick injury usually cannot cause by one of the following:**
- a. Respiratory pneumonia
 - b. HIV
 - c. Hepatitis B
 - d. Hepatitis C
- 23. How much percentage of the biomedical waste is usually in total hospital waste**
- a. 15% to 20%
 - b. 35% to 40 %
 - c. 45% to 50 %
 - d. 60% to 65%
- 24. Universal precaution is a safeguard to prevent transmission of infection to**
- a. Patient
 - b. Health care provider
 - c. Environment
 - d. None of the Above
- 25. For fresh frozen plasma transfusion: which one of the following blood group is considered as universal recipient.**
- a. O
 - b. AB
 - c. B
 - d. A

Conclusion

Building a culture in which research is valued combined with periodic training series by experts is rapidly becoming a norm in the practice of nursing and is essential to its evolution to meet contemporary as well as futuristic demands. Exploration of diverse and effective methods are the need of the hour in order to create and sustain a highly skilled and updated nursing workforce. Findings indicate that nurses currently need more skills in evaluating research before they can implement the best evidence into their nursing practice. The present study indicates

that a convenient and flexible programme incorporating didactic lecture series is an effective approach that can be employed by nursing leaders to motivate and engage large numbers of nurses working in different departments and in varying shifts towards enhancing patient care and safety by incorporating best available practices.

Limitations

1. The questionnaire was confined to fewer medical specialities like CSSD, Microbiology, Infection Control, Hospital Administration, Nursing Administration and Blood Bank due to paucity of time and to encourage completeness by limiting the number of questions.
2. Nurses may have had interactions with other nurses while completing pre and post program surveys, which could act as a confounding factor.

Implications: These findings have implications for nursing practice in the areas of education, nursing accountability, and organisational infrastructure. Though nurses have positive attitudes about using research to support best nursing practice, there remains a substantial gap in knowledge and skill level in retrieving research publications, evaluating the evidence, and incorporating evidence into practice. Such issues are going to play a crucial role in ensuring positive patient outcomes in the future.

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