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Effectiveness of Capacity Building program for Implementation on Evidence based practices in RMNCH+A Using ECHO Model

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Aim: To assess the effectiveness of capacity building program for Nurses using ECHO model on Evidence based practices in RMNCH+A.
OBJECTIVES:
• To compare the pre and post test scores of the capacity building program for Implementation on Evidence based practices in RMNCH+A
• To assess the compliance of the participants for the capacity building program for Implementation on Evidence based practices in RMNCH+A
• To associate the demographic variable with the knowledge of capacity building program for Implementation on Evidence based practices in RMNCH+A
Materials & Methods: The research design utilized is quasi experimental one group pretest post test design study. selected by non-probability convenient sampling,were 48 faculty working as community health nursing educators and concerned with reproductive health, interns who will enter as staff nurses, Registered nurses working in the community who registered and attended the sessions of the capacity building program.Pretest was conducted using google forms to assess the knowledge of the nurses. Capacity building program including expert sessions on evidenced based practices in RMNCH+A through ECHO India virtual platform for a duration of 12 weeks. Post test was done using google forms. Feedback was collected using google forms to assess the opinion and attendance sheet was used to find out the compliance of the nurses. Data analysis was done using descriptive and inferential statistics.
Result: In all sessions, post test mean score was higher than pretest mean score. There Mean attendance score for first half is 35.16 and second half is 20.66

respectively,About 39% participants felt the session were excellent and 55% felt it was good and informative.
Conclusion: The results of the study proved that capacity building program using ECHO model had a significant effect on improving Evidence based practices in RMNCH+A.

1. Introduction

Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH+) is a comprehensive approach that focuses on the health and well-being of women, children, and adolescents throughout their life stages. This chapter will explore the significance, scope, and key components of RMNCH+, emphasizing its importance in achieving global health goals.

SIGNIFICANCE OF RMNCH+

RMNCH+ is vital for sustainable development and improving health outcomes worldwide. It addresses the continuum of care from preconception to adolescence, recognizing the interconnections of health across generations. By prioritizing these stages, RMNCH+ aims to reduce maternal and child mortality, improve nutrition, enhance access to healthcare services, and promote healthy lifestyles.

SCOPE OF RMNCH+

1. Reproductive Health: Focuses on ensuring individuals have access to family planning services, sexual health education, safe pregnancies, and care during childbirth.

2. Maternal Health: Aims to reduce maternal mortality by improving antenatal care, skilled birth attendance, emergency obstetric care, and postpartum support.

3. Newborn Health: Targets the first 28 days of life, emphasizing essential interventions like immediate newborn care, breastfeeding, immunizations, and early identification of health issues.

4. Child Health: Encompasses the health needs of infants and children, including growth monitoring, nutrition, immunizations, and treatment of common childhood illnesses.

5. Adolescent Health: Addresses the unique health challenges faced by adolescents, such as sexual and reproductive health, mental health, substance use, and injury prevention.

KEY COMPONENTS OF RMNCH+

1. Health Promotion and Education: Providing accurate information and resources to empower individuals and communities to make informed decisions about their health.

2. Preventive Interventions: Implementing strategies to prevent diseases and complications through vaccinations, micro nutrient supplementation, and behavior change programs.

3. Quality Care: Ensuring access to skilled healthcare professionals, functional health facilities, and essential medicines and equipment.

4. Integration: Coordinating services across different levels of care to provide a seamless continuum of care from preconception to adolescence.

GLOBAL INITIATIVES AND COMMITMENTS

RMNCH+ is a cornerstone of international efforts to improve health outcomes. Global initiatives like the Sustainable Development Goals (SDGs), Every Woman Every Child, and the Global Strategy for Women's, Children's and Adolescents' Health outline targets and strategies to achieve universal health coverage and reduce health disparities.

In conclusion, RMNCH+ is a multifaceted approach that recognizes the importance of addressing health needs across the lifespan. By investing in reproductive, maternal, newborn, child, and adolescent health, countries can foster healthier populations and advance towards achieving global health objectives. This chapter serves as an introduction to the principles, goals, and significance of RMNCH+ in promoting the health and well-being of individuals and communities worldwide.

THE NEED OF STUDYING RMNCH+

Research and study in the field of Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH+) is critical for understanding health challenges, identifying effective interventions, and improving health outcomes across diverse populations. This chapter explores the necessity and importance of studying RMNCH+.

Research Self-Efficacy:

Investigate how the program impacts nurses' confidence in conducting evidence-based practice (EBP) research. Assess whether their self-efficacy improves and if they feel more capable of implementing EBP.

Research Anxiety:

Explore any changes in nurses' anxiety levels related to research. Does the program reduce anxiety and enhance their willingness to engage in research activities?

Research Attitude:

Evaluate nurses' attitudes toward research. Are they more positive and motivated to participate in EBP initiatives after completing the capacity-building program?

Knowledge and Skills:

Assess the acquisition of specific knowledge and skills related to EBP. Determine if the program effectively enhances nurses' understanding of research methods, critical appraisal, and data analysis.

Organizational Culture and Support:

Consider the impact of the program on the overall research culture within RMNCI++A. Does it foster an environment that encourages EBP adoption and provides necessary resources and support for nurses?

STATEMENT:

Effectiveness of Capacity Building program for Implementation on Evidence based practices in RMNCH+A

AIM:

To assess the effectiveness of capacity building program for Nurses using ECHO model on Evidence based practices in RMNCH+A

OBJECTIVES:

• To compare the pre and post test scores of the capacity building program for Implementation on Evidence based practices in RMNCH+A

• To assess the compliance of the participants for the capacity building program for Implementation on Evidence based practices in RMNCH+A

• To associate the demographic variable with the knowledge of capacity building program for Implementation on Evidence based practices in RMNCH+A

OPERATIONAL DEFINITION

EFFECTIVENESS: In this study, effectiveness refers to the difference in the pre and post test scores assessed using google forms. It also refers to the compliance of the participants in attending the sessions of the capacity building program.

CAPACITY BUILDING PROGRAM: It refers to the empowerment in knowledge and skill of nurses for implementationofbestevidencebasedmaternalandchildhealth practices organized by K. J. Somaiya school and college of nursing in collaboration withECHO India.Ten weeks program was conducted once a week for 2hrs. This virtual program includedpre-test,casepresentation,expertsession,discussions, post-testandfeedback.Thedetailsofthesessionsareasfollows (Table 1):

HYPOTHESIS:

H0: There is no significant difference between the mean pre and post test scores of the capacity building program for Implementation on Evidence based practices in RMNCH+A.

H1: There is significant difference between the mean pre and post test scores of the capacity building program for Implementation on Evidence based practices in RMNCH+A.

ASSUMPTIONS

1. Nurses have basic knowledge about RMNCH+A.
2. The capacity building program may be able to update the nurses on recent evidence-based practices.
3. Continuingeducationisameansforempoweringnurses.

2. Research Methodology

Research approach

This study used a quantitative approach. This study was intended to assess the effectiveness of capacity building program on nurses to work skillfully in community and enable them to identify, treat and prevent complications pertaining to reproductive, maternal, child, neonatal &adolescent health.

Research design

The research design utilized is quasi experimental one group pretest posttest design (table 2)

Table: Research design

O1	X	O2
Pretest using google forms to assess the knowledge of the nurses	Expert sessions during the capacity building program reproductive, maternal, child, neonatal & adolescent health, on evidenced based on ECHO India virtual platform	Post test using google forms, feedback using google forms to assess the opinion and attendance sheet to find out the compliance of the nurses.

Variables

Independent variables- Capacity building program

Dependent variable- Effectiveness

Setting

The study was conducted by K. J. Somaiya ECHO hub team, through ECHO India virtual platform as a part of project ECHO.

Population

Faculty working as community health nursing educators and concerned with reproductive health, interns who will enter as staff nurses, Registered nurses working in the community.

Target Population

This consisted of faculty working as community health nursing educators and concerned with reproductive health, interns who will enter as staff nurses, Registered nurses working in the community who all were available online.

Sample and sample size

Sample of the study were 48 faculty working as community health nursing educators and concerned with reproductive health, interns who will enter as staff nurses, Registered nurses working in the community who registered and attended the sessions of the capacity building program.

Sampling technique

Sampling technique chosen was non probability convenient sampling. A brochure was circulated through the social media with the registration link and the details of the session enclosed. Those who were accessible and registered through the link became the participants of the study.

Criteria of selecting sample

❖ Inclusion Criteria:

·Faculty working as community health nursing educators and concerned with reproductive health, interns who will enter as staff nurses, Registered nurses working in the community.

·Nurses who were able to access internet.

·Those who were willing to participate in the study.

❖ Exclusion Criteria:

·Nurses who were working in areas other than the stated area.

Technique for data collection

The technique for data collection was self-reporting through google forms and attendance sheet through iECHO platform.

Tool

It consisted of four sections

Section A: Personal profile of participants

Section B: Assessment google sheet of each session.

Section C: feedback of the participants regarding the sessions.

Section D: attendance sheet of the participants

Validity and Reliability

The pre and post test questions were prepared by the expert speakers for each session and was validated by the ECHO hub team. The participants could register and attend the session without any difficulty.

Data Collection method

The capacity building program was conducted once a week for 12 weeks. The participants of the study registered on iECHO platform, prior to the commencement of the program in which they gave consent to share the data. Data collection was done by self-reporting method using google form during the pre and post-test of each session. Attendance of the participants were tracked using iECHO platform. Each session was followed by feedback from the participants collected through google forms. Data analysis was done using descriptive and inferential statistics.

3. Review of Literature

The goal of the study was to determine, in light of years of nursing experience, the research capacity development needs of clinical nurses at a Jeddah tertiary care hospital. The study used a quantitative cross-sectional methodology and was carried out in a tertiary hospital by de Beer, Jennifer in the year 2024. 311 nurses who answered a questionnaire about their capacity for research were included in the study, which used a straightforward random sampling approach. One method used to collect data was a piloted survey ($\alpha = 0.98$). The top three demands (I comprehend the Coveris system, n = 134 (43.2%); I know how to access CITI, n = 132 (42.5%); and I know about the I query card, n = 131 (42.4%)) were all related to the infrastructure architecture. The study's conclusions showed a discrepancy between nurses' needs for research and the amount of research produced. The majority of nurses identified infrastructure-related research requirements, but few of them actually conducted research. There was a correlation between the number of years spent working as a clinical nurse and the requirement for research capacity-building[1].

A study conducted in 2022 by Politeknik Sandi Karsa, in order to satisfy patient satisfaction standards, nurses must enhance their competence, expertise, and abilities in performing healthcare jobs. The analysis of hospital nurses' capability development is the aim of this study. Primary and secondary data sources are employed in the researcher's qualitative study. Document studies, interviews, and observations are used to gather the data. The qualitative descriptive data analysis method makes use of deep meaning and interpretation through the simplification, presentation, and validation of data through triangulation of data. The findings demonstrated that developing nurse capacity has been accomplished through internal training programs and modified integrated nurse capacity building patterns. The following factors have been identified as influencing nurse capacity development: technology, leadership, commitment, culture, spirituality, and leadership. Subsequently, the researcher draws the conclusion that training and education centered on spiritual and technological components of hospital nurse capacity development can actualize the strategy of enhancing nurses' ability in health services[2].

A study conducted in 2022 by O'brien Catherine et al to learn about the facilitators of a nursing team's involvement in an international nurse-led clinical trial and to examine their experiences implementing it in practice. Clinical nurses' duties and roles are expanding to include research activities in order to support evidence-based practice. Nonetheless, a number of individual and institutional obstacles may limit nurses' ability to conduct and use research in clinical settings.

Three focus groups including eighteen members of a nursing team were held. The research team defined and approved the themes before using thematic analysis. The following five themes were found: "Challenges of research in nursing practice," "Decision-making regarding participation in the clinical trial," "Previous experience of and attitudes toward participation in clinical research," and "Future orientation towards research." After conducting a nurse-led clinical trial in their practice, nurses identified several obstacles and enablers for their involvement. Important motivators included the nurses' perception of the clinical trial's applicability to their work, the possibility of better patient care, and their appreciation of the nurse leader's context-awareness and knowledge. Encouraging, inspiring, supporting, and approachable nurse leader who cultivated reciprocal trust led to the nursing team's dedication and involvement[3].

This study was conducted in 2022 by Ruhmel S Et al to assess the results of a five-year initiative aimed at bolstering the professional associations of East African nurses and midwives. The design of this investigation was mixed approaches. Surveys (n = 1,266) were used to collect quantitative, cross-sectional descriptive data from association members. To supplement the survey results and gather qualitative data, in-depth interviews (n = 65) were conducted. Data was collected both quantitatively and qualitatively at the same time. To evaluate the program's effectiveness throughout Tanzania, Kenya, and Uganda, the findings were compared. Four of the five organizational capacity areas—resource mobilization, financial management, strategy, and monitoring and evaluation—saw successful capacity building as a result of the program. The fifth area that was addressed, marketing and communications, did not demonstrate any progress. Even though there was no training provided in these areas by the program, capacity in research and service delivery was also increased. Furthermore, there was an improvement in cooperation between associations and their members[4].

Launched in 2013, India's Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) Strategy marked a significant advancement in the nation's health strategy, building on the achievements of the National Health Mission. A study conducted in the year 2019, by Taneja G et al in order to implement critical RMNCH+A Interventions, 184 High Priority Districts were identified nationwide based on a predetermined set of indicators. To support the state and district health departments, a specialized institutional framework was established, consisting of National and State RMNCH+A Units and District Level Monitors, with funding from development partners. An RMNCH+A Supportive Supervision mechanism tracked progress and produced evidence to support actions for improving ongoing interventions. The Government of India has now created the "Aspirational Districts Program" to comprehensively address health issues in underperforming districts within the broader sociocultural domain in order to promote inclusive and long-lasting changes. This program is supposed to be guided by the lessons learned and limits[5].

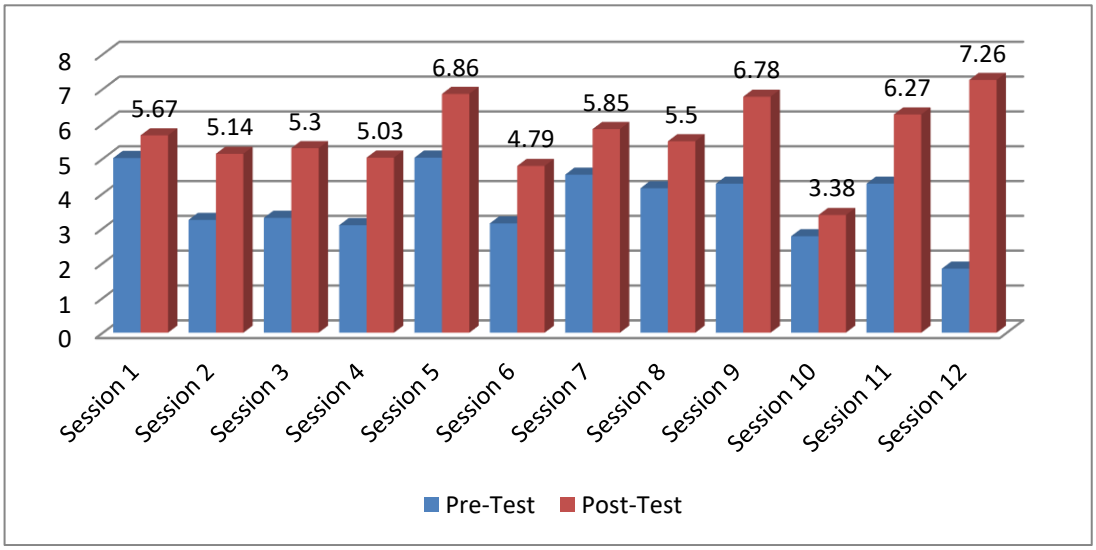
Finding and assessing evidence of clinical nurses' increased research capacity in practice was the goal of this study conducted in 2015 by Lode, Kristen et al. A comprehensive analysis of research on the practical development of nurses' research capacity was conducted. The Quality Assessment and Validity Tool for Correlation Studies was used to assess and consider the articles' quality. 4748 abstracts and titles were found in total from the literature searches. The examination comprised eight quantitative research. The analysis revealed three themes:

cooperation and coordination of research usage; failure to ensure research quality and standards; and developing a research culture. There is only one sub-theme within the main issue, which is ignorance of methods to boost research use. Three sub-themes form the foundation of the second theme: the capacity to recognize clinical issues, modifying nurses' perspectives toward research, and research supervision. The final sub-theme of the third theme is "Funding as a Success Factor." To sum up, developing research competency is necessary for increasing research capacity and producing knowledge that improves patient safety and quality. Nurse leaders have a critical role in fostering a research culture and evidence-based practice, which in turn improves nurses' capacity and attitudes toward science[6].

4. ANALYSIS AND INTERPRETATION OF DATA.

Capacity Building program for nurses was conducted through 12 session. Data analysis and interpretation done is as follows.

Section B: Analysis and Interpretation of pretest and post test score.



Graph 1: Difference between pretest and posttest mean score.

Graph 1 represents pre test and post test mean score of 12 sessions capacity building program for nurses. From the above graph , it is evident that in all the sessions the post test mean score is higher then pre test mean score.

Table 3: Paired t test results : The paired t test result of pretest and posttest is 5.423006

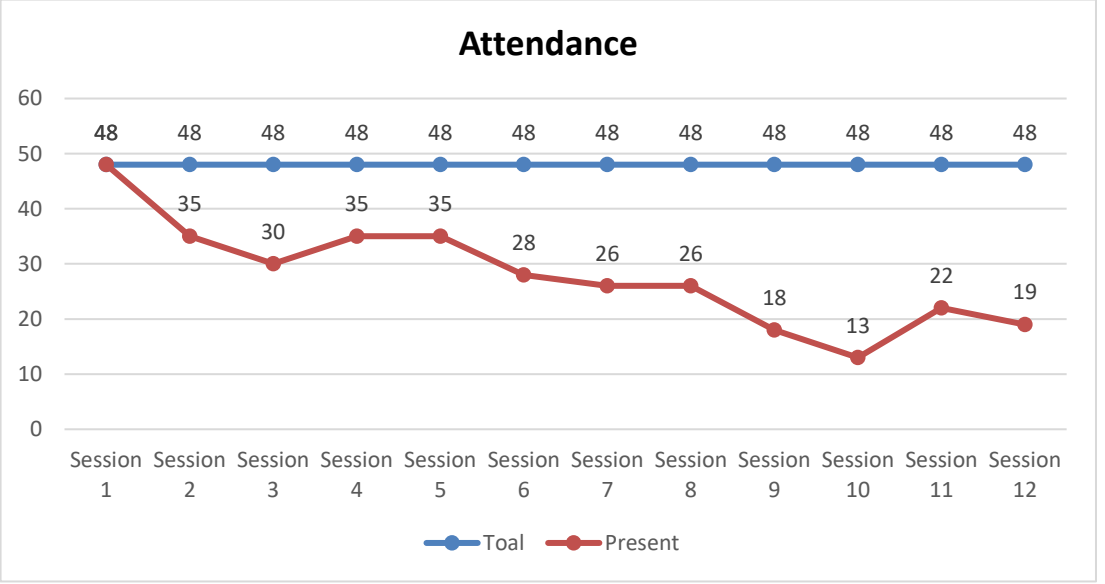
Sessions	Pre-Test	Post-Test
Session 1	5.02	5.67
Session 2	3.24	5.14
Session 3	3.30	5.30
Session 4	3.09	5.03

Session 5	5.03	6.86
Session 6	3.14	4.79
Session 7	4.54	5.85
Session 8	4.15	5.50
Session 9	4.28	6.78
Session 10	2.77	3.38
Session 11	4.28	6.27
Session 12	1.84	7.26

P value and statistical significance:

The two-tailed value of P is 0.0001. The result is significant at p < 0.05.

Section 2



Graph 2: Analysis and interpretation of attendance.

Total 12 sessions were conducted for Capacity Building Program for nurses on Implementation on Evidence based practices in RMNCH+A Using ECHO Model. A total of 48 participant from all over Maharashtra had registered for the program out of which around 75% participants attended initially which declined to around 50% in the later sessions as shown in (Graph 2).

Attendance line graph is declining from session 1 to session 12. Mean attendance score for first half is 35.16 and second half is 20.66 respectively. It indicates that as length of program extended , attendance declines. So for better outcome short program with lesser sessions can be planned.

Section 3: Analysis and interpretation of Feedback

Table 4: Analysis and interpretation of Feedback

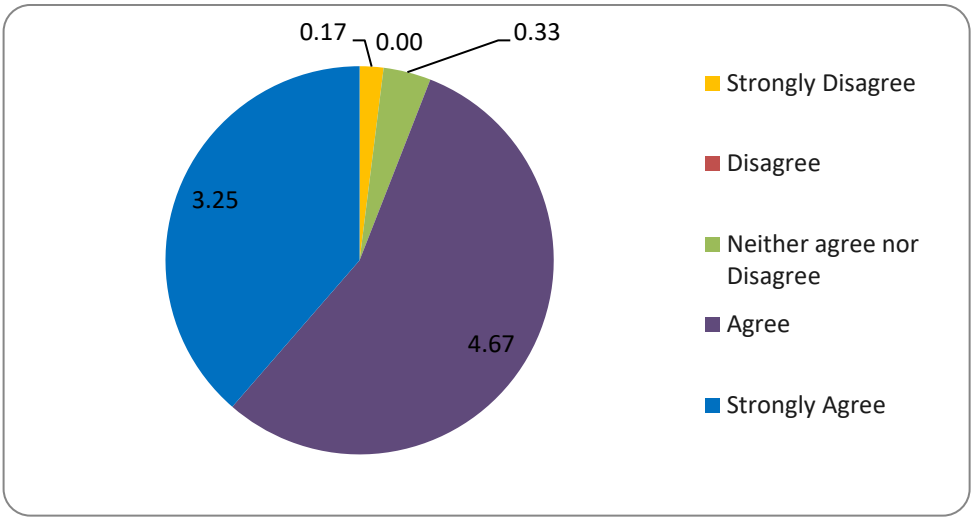
Questions	Options	Ses. 1	Ses. 2	Ses. 3	Ses. 4	Ses. 5	Ses. 6	Ses. 7	Ses. 8	Ses. 9	Ses. 10	Ses. 11	Ses. 12	Mean
1.The objectives of the Ses. were met	Strongly Disagree	0	2	0	0	0	0	1	0	0	0	0	0	0.25
	Disagree	0	0	0	1	0	0	0	0	0	0	0	0	0.08
	Neither agree nor Disagree	0	1	1	0	1	1	0	0	0	0	0	0	0.33
	Agree	22	13	16	11	14	12	7	4	8	3	2	1	9.42
	Strongly Agree	11	6	11	6	4	7	6	4	8	3	5	6	6.42
2.The Ses. content was helpful in improving my knowledge and skill	Strongly Disagree	0	1	1	0	0	0	1	0	0	0	0	0	0.25
	Disagree	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	Neither agree nor Disagree	1	1	1	0	0	1	0	0	0	0	0	0	0.33
	Agree	19	14	15	14	13	12	8	6	12	3	4	2	10.17
	Strongly Agree	13	6	11	4	6	7	5	2	4	3	3	5	5.75
3.ECHO has diminished my professional isolation	Strongly Disagree	1	1	0	0	1	1	2	0	0	0	0	0	0.50
	Disagree	2	2	2	4	2	2	1	2	2	0	1	0	1.67
	Neither agree nor Disagree	6	3	3	1	0	1	0	0	0	0	0	0	1.17
	Agree	21	11	17	10	15	12	7	5	12	3	0	2	9.58
	Strongly Agree	3	5	6	3	1	4	4	1	2	3	3	5	3.33
4.Did the case discussion change your care plan for this patient?	Strongly Disagree	0	1	0	0	0	0	1	0	0	0	3	0	0.42
	Disagree	1	0	0	0	0	0	0	0	0	0	0	0	0.08
	Neither agree nor Disagree	6	2	2	0	0	1	0	0	1	0	0	1	1.08
	Agree	23	16	21	16	16	15	10	6	11	4	0	4	11.83
	Strongly Agree	3	3	5	2	3	4	3	2	4	2	6	2	3.25
5.Did you learn something new from the discussions of cases presented by others today?	Strongly Disagree	0	1	0	0	0	0	1	0	0	0	1	0	0.25
	Disagree	0	0	0	0	1	0	0	0	0	0	0	0	0.08
	Neither agree nor Disagree	3	2	3	0	0	1	0	0	1	0	0	0	0.83
	Agree	24	14	17	15	15	15	9	5	11	4	5	5	11.58
	Strongly Agree	6	5	8	3	3	4	4	3	4	2	2	2	3.83
6.Did you find a balance of lecture and interactivity in this Ses. ?	Strongly Disagree	0	1	0	0	0	0	1	0	0	0	0	0	0.17
	Disagree	0	0	0	0	0	1	0	0	0	0	0	0	0.08
	Neither agree nor Disagree	2	1	4	0	1	1	0	0	0	0	0	0	0.75

	Agree	28	17	18	13	16	14	7	5	13	5	5	3	12.00
	Strongly Agree	3	3	6	5	2	4	6	3	3	1	2	4	3.50

Questions	Options	Ses. 1	Ses. 2	Ses. 3	Ses. 4	Ses. 5	Ses. 6	Ses. 7	Ses. 8	Ses. 9	Ses. 10	Ses. 11	Ses. 12	Mean
7.Will you use what you learned in this Ses. in your work?	Strongly Disagree	0	1	0	0	0	0	1	0	0	0	0	0	0.17
	Disagree	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	Neither agree nor Disagree	2	1	1	1	0	1	0	0	0	0	0	0	0.50
	Agree	23	17	19	11	15	13	8	6	11	5	5	1	11.17
	Strongly Agree	8	3	8	6	4	6	5	2	5	1	2	6	4.67
8..On a scale of 1 to 10, how likely are you to recommend this program to a friend or colleague?	1	1	1	1	1	2	1	1	1	0	0	1	0	0.83
	2	4	1	2	2	1	1	1	2	2	0	1	0	1.42
	3	8	6	6	7	6	8	4	1	6	1	1	1	4.58
	4	10	7	8	2	6	6	5	2	3	3	1	3	4.67
	5	10	8	11	6	4	4	3	2	5	2	3	3	5.08

Feedback was taken for all the 12 sessions conducted. Majority of the participants gave a positive feedback (table 4).

Strongly Disagree	Disagree	Neither agree nor Disagree	Agree	Strongly Agree
0.25	0.08	0.33	9.42	6.42
0.25	0.00	0.33	10.17	5.75
0.50	1.67	1.17	9.58	3.33
0.42	0.08	1.08	11.83	3.25
0.25	0.08	0.83	11.58	3.83
0.17	0.08	0.75	12.00	3.50
0.17	0.00	0.50	11.17	4.67
0.83	1.42	4.58	4.67	5.08
0.17	0.00	0.33	4.67	3.25



Graph 3: Participants rating for feedback of the sessions on Likert's scale 1-5.

Feedback was recorded for all 12 sessions. About 39% participants felt the session were excellent and 55% felt it was good and informative.

5. IMPLICATIONS.

The findings of the study have implication in various areas of Nursing namely ; Nursing Practice , Nursing education and Nursing Research.

Nursing Practice

As nurses we can conduct various sessions for patients, nurses andnursingstudentsoncapacitybuildingtoacquireknowledge and skills in the fields of nursing.

This study provides light on the effectiveness of capacity building program on nurses.

More capacity building programs can be conducted for various groups like student nurses, community health workers etc. to acquire advance skill and knowledge and to bridge the gap between education and service.

Nursing Education

In nursing education teachers can organize various capacity building program to bridge the gap between education and service.

Nursing Administration

As a nursing administrator one can make sure about various areasin which theparticipants require toupdate their skillsand knowledge.

Capacity buildingprogram can be arranged on small scalewith few sessions to enhance their knowledge and skills.

NursingResearch

Nursing research should be conducted to assess the need for capacitybuildingprogramandinwhichfielditismostrequired.

LIMITATIONS

As the study was on online platform there was no face to face interaction or clarification of queries.

SUGGESTIONS

Alltheheadnurseshouldarrangeforcapacitybuildingprogram in their speciality area to upgrade the knowledge and skills of her team members.

Awareness program should be conducted on how capacity building program helps the participants etc.

RECOMMENDATIONS

Based on the findings of the study the following recommendations are made.

- Similarstudycanbeconductedonlarger group with lesser sessions.
- Comparativestudycanbedonebetweenteaching&hospital faculty
- Practicalorienteddifferenttopicscanbeselected
- Asimilarstudycanbereplicatedondifferentfocusedgroup for further generalization of study findings.
- Asimilarstudycanbeconductedbyfocusingonaparticular national programe or schemes.

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