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National Skills Training Centre– "Daksh"- An Evaluative Study to Assess the Effectiveness of Training in terms of Knowledge Retention and Expressed Practice, among Participants from Delhi State, India

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Abstract

Background: India is combating with a major issue of a high maternal and infant mortality rate and Government of India ensured the availability of quality services through public health institutions, National Health Mission has introduced competency based training and certification programme to be implemented through skills laboratories.

Objective: To assess the effectiveness of training in maternal and child health (MCH) care held at National Skills Training Centre (NSTC) – "Daksh", Jamia Hamdard among participants from the Delhi State, in terms of knowledge retention and expressed practice and to find out the association between the knowledge and expressed practice scores.

Method and Materials: A descriptive evaluative study was conducted among 30 participants who had their training on MCH care held at NSTC– "Daksh", among the Delhi state selected by purposive sampling technique from various institutions where the participants were presently working. Data was collected using structured knowledge questionnaire and practice checklist through paper and pencil method and interview. Data analysis was done through SPSS version 20.

Results: The results revealed that out of 30 participants, 24 (80%) participants were having adequate knowledge, while 6 (20%) participants were having inadequate knowledge. There was significant difference between post test knowledge scores on the last day of training (K1) and knowledge scores assessed during the study (K2). Regarding expressed practice, 24 (80%) participants were having good practice while, 6 (20%) participants were having poor practice. In skill -management of postpartum haemorrhage, the participants scored highest rank, whereas in skill - management of pre-eclampsia/ eclampsia skill, participants scored the least rank. There was positive correlation (0.46) between knowledge and expressed practice scores of training in MCH held at NSTC-"Daksh".

Conclusion: The study concluded that the training was effective in improving the knowledge and practice of participants.

Keywords: MCH, Knowledge retention, Expressed practice, NSTC-"Daksh".

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Introduction

Ensuring the health of women and children is a universally acknowledged priority and is a basic human right. Improving the survival and health of mothers and children is central to the achievement of India's national health goals under the National Health Mission (NHM) as well as achievement of the Millennium Development Goals (MDG) 4 and 5.[1]

In recent years, India has made significant progress in its quest to improve maternal and child health. As per Registrar General of India – Sample Registration System (RGI-SRS) Report, Maternal Mortality Ratio (MMR) in India has decreased from 212 (2007-09) to 130 (2014-16) per 100,000 live births. Similarly, as per the RGI – SRS Report 2014, the overall infant mortality rate declined from 64 to 40 per 1000 live births. In India, the percentage of women who deliver at a health facility has increased from 47.1 to 74.4 percent between 2008 and 2013 and the Total Fertility Rate has decreased from 2.9 to 2.4 per woman between 2005 and 2012 reflecting a significant improvement in maternal and reproductive health services coverage.[1]

The quality of services during and after child birth is a key determinant of the rate of reduction in maternal and infant mortality rates. Improvement in quality of health care services can only take place if the healthcare delivery system has technically competent health professionals able to provide Reproductive Maternal and Newborn Child Health and Adolescent (RMNCH+A) services. Capacity building of these healthcare providers to ensure they are proficient with regard to both technical skills and knowledge is therefore a key intervention.[1]

In light of the above observations, comprehensive skills labs with skills stations have been designed to facilitate the training of healthcare providers in the necessary skills with a view to improve the quality of RMNCH+A services.[1]

Skills labs serve as prototype demonstration and learning facilities for healthcare providers and focus on competency based training. Skills labs provide the opportunity for repetitive skills practice, simulation of clinical scenarios and training under the supervision of a qualified trainer.[2]

The National Skills Training Centre (NSTC) "Daksh", Jamia Hamdard was established first among the 5 skills labs in New Delhi and NCR regions. It was established on October27, 2014 by Rufaida College of Nursing, Jamia Hamdard in collaboration with Ministry of Health and Family Welfare (MOHFW) and Liverpool School of Tropical Medicine (LSTM).[1]

The objectives of establishing these skills lab were, to facilitate acquisition / reinforcement of key standardized technical skills and knowledge by service providers for RMNCH services, to ensure the availability of skilled personnel at health facilities and to improve the quality of pre service training provides Continuing Nursing Education /Continuing Medical Education.[2]

A study was conducted by Anita Bag, Smritikana Mani, Ananya Bhakta[3] on Effectiveness of Skill Training Programme on Knowledge and Practice of ANM(R) s regarding IUCD services in selected sub-centres of Birbhum District, West Bengal. 40 ANM(R)s from two BPHCs, Nanoor and Labhpur BPHC were selected by purposive sampling. Pre-test post-test control group design was used. Structured questionnaire used to collect demographic variables, a knowledge questionnaire to assess knowledge, an observation checklist to observe practice and an opinionnaire to determine the opinion of ANM(R)s regarding skill training programme. Results of the study revealed that there was significant difference between pre-test and post-test knowledge scores {'t' (19) = 15.42, $p<0.05$}and practice scores {'t' (19) = 41.31, $p<0.05$}of experimental group. The study revealed that there was significance difference between post-test knowledge scores {'t' (39) = 9.73, $p<0.05$}and practice scores {'t' (39) = 39.2, $p<0.05$}of experimental and control group. Researcher concluded that the knowledge and practice of ANM(R)s regarding IUCD services has been increased with skill training programme.

Another study conducted by R. Danasu, R. PriyaDharshini[5] on effectiveness of skill training programme on selected obstetrical emergencies with objectives to assess the skill and effectiveness of skill training among staff nurses on selected obstetrical emergencies using observation checklist and to associate the skill with selected demographic variables. Quantitative pre experimental one group pre test post test method research design was adopted. 30 staff nurses of Sri Manakula Vinayagar Medical College and Hospital were selected by convenient sampling technique. Investigator revealed that the mean pre test score 42.60 and the post test mean score was 88.23 and this concluded that the skill training programme on management of selected obstetrical emergencies was effective in improving skills among staff nurses.

By doing this study, the researcher will be able to measure the translation of training into knowledge and practice and further recommendations based on the study can be given to Nodal officers and Ministry of Health and Family Welfare (MOHFW), so that they refine or do the needful changes based on these recommendations in their skill training. Thus, the researcher felt the need to conduct the study on effectiveness of training in MCH

held at NSTC- "Daksh", in terms of knowledge retention and expressed practice among participants from the Delhi State.

Objectives of the Study

1. To assess the effectiveness of training in maternal and child health care held at National Skills Training Centre- "Daksh", Jamia Hamdard among the participants from the Delhi State, in terms of knowledge retention.
2. To assess the effectiveness of training in maternal and child health regarding selected skills held at National Skills Training Centre- "Daksh", Jamia Hamdard among the participants from the Delhi State, in terms of expressed practice.
3. To find out the association between the knowledge and expressed practice of training in maternal and child health care held at National Skills Training Centre- "Daksh", Jamia Hamdard

Materials and Method

A descriptive evaluative research designwas chosen for the present study. 30participants were selected using purposive (non- random) sampling technique who had their training in MCH care held in NSTC– "Daksh", among the state of Delhi. The pilot study was conducted at LNJP Hospital New Delhi (ND) and UPHC Jungpura and final study was conducted at M&CW Centre Dakshin Puri ND; Maternity Home, Sriniwaspuri; Dr. N.C. Joshi Hospital Karol Bagh; UPHC, Munirka; UPHC, Tughlakabad; RAK College of Nursing, ND. After getting ethical permission from Jamia Hamdard Institutional Review Board, formal administrative approval was obtained from the concerned authorities Dr. S.P.M., DHA, Civic Centre, ND-110002; Dr. Amar Singh CMO, Dr. NC Joshi Hospital; Medical Superintendent of LNJP Hospital, ND; Principal Rajkumari Amrit Kaur College of Nursing.

The purpose and confidentiality of responses and the anonymity were explained to them after obtaining their willingness to participate in the study. Demographic data of participants were collected and structured knowledge questionnaire and practice checklist were administered to assess their knowledge retention and expressed practice respectively. Reliability for Structured Knowledge Questionnaire was established by Kuder Richardson 20 formula and found to be 0.98. Reliability for Practice Checklist was established by Cronbach's Alpha method and was found to be 0.90. The practice checklist was found to be reliable. Descriptive and inferential statistics were used for data analysis.

Results

The results of the study are presented under the following sections:

Section I – Findings related to Demographic Characteristics of Participants

Most of the participants were working in Out Patient Department (36.67%) whereas only 3.33% in Operation Theatre. Most of the participants (33.33%) were having ANM qualification, followed by 16.67% having B.Sc. Nursing qualification, 10% were having DGNM, M.Sc. Nursing and MBBS qualification, and 3.33% were having MD qualification. Most of participants (53.33%) were having experience between 0 to 5 years, whereas only 3.33% were having 15-20 years and 25-30 years of experience.13.33% participants have attended other trainings after Daksh training and 86.67% participants have not attended any other training after Daksh training.

Section II – Findings related to the Knowledge Scores of Participants

Section II.1 – Findings related to Categories of Knowledge Scores, Obtained Range and Possible Range of Scores, Frequency, and Percentage Distribution of Knowledge Scores of Participants

Table 1: Categories of Knowledge Scores, Obtained range of Scores, Possible Range of Scores, Frequency, and Percentage of Knowledge Scores of Participants

n=30

Categories of Knowledge Scores	Possible Range Knowledge of Scores	Obtained Range Knowledge of scores	Frequency (f)	Percentage (%)
Inadequate Knowledge <68%	0 – 75	45 – 74	6	20
Adequate Knowledge ≥68%			24	80

The data presented in table 1, shows that 20% of participants were having inadequate knowledge, while 80% of participants were having adequate knowledge.

Section II.2–Finding related to assess the Effectiveness of Daksh Training in terms of Knowledge Retention.

Table 2: 't' test between the Post Test Knowledge Scores on the last day of training and Knowledge Scores assessed during the study

n =30

Knowledge Score	Mean	't' value	'p' value
K1	21.53	5.15	0.0001*
K2	18.82		

* Significant at 0.05 level of significance, $t_{(29)} = 2.05$

Data presented in table 2, shows that calculated value i.e. 5.15 is greater than the table value of t i.e. 2.05 at 0.05 level of significance, thus we the reject null hypothesis and accept the research hypothesis, which is there is a significant difference between the post test knowledge scores on the last day of training (K1) and knowledge scores assessed during the study (K2).

Section III – Findings related to Expressed Practice Scores of Participants

Section III.1 – Findings related to Expressed Practice Scores of Participants

Table 3: Categories of Expressed Practice Scores, Obtained Range of Scores, Possible Range of Scores, Frequency and Percentage of Expressed Practice Scores of Participants

n=30

Categories of Expressed Practice Scores	Possible Range Expressed Practice of Scores	Obtained Range Expressed Practice of scores	Frequency (f)	Percentage (%)
Poor Practice <67%	0 – 100	62 – 96	6	20
Good Practice ≥67%			24	80

The data presented in table 3, shows that 80% of participants were having good practice, while 20% of participants were having poor practice.

Section III.2– Findings related to Modified mean and Rank order of Expressed Practice Scores of participants

Table 4: Mean, Modified Mean and Rank Order of Expressed Practice Scores of Participants

n=30

S. No.	Skill	Mean	Modified Mean	Rank Order
1.	Management of Hypovolemic Shock (Skill 1)	24.9	0.803	II
2.	Management of Postpartum Hemorrhage (Skill 2)	30.76	0.83	I
3.	Newborn Resuscitation (Skill 3)	12.73	0.78	III
4.	Management of Pre-eclampsia/ Eclampsia (Skill 4)	11.03	0.68	IV

The data presented in table 4, it can be concluded that participants ranked highest (0.83) in expressed practice scores of skill – 'management of postpartum hemorrhage skill', followed by skill –'management of hypovolemic shock' with modified mean value of 0.803, then in skill –'newborn resuscitation skill', participants were ranked III with modified mean value of 0.78 and skill –'management of pre-eclampsia/ eclampsia', participants ranked the least for their expressed practice scores with a modified mean value of 0.68

Section IV – Findings related to Mean, Median and Standard Deviation of Knowledge & Expressed Practice Scores of Participants

Table 5: Mean, Median, and Standard Deviation of Knowledge & Expressed Practice Scores of Participants

n=30

Score	Mean	Median	Standard Deviation
Knowledge Score	56.46	56.5	7.07
Expressed Practice Score	79.43	82.5	9.98

The data in table 5, presents the mean knowledge score computed was 56.46, with a median value of 56.5 and a standard deviation of 7.07. Whereas the mean

expressed practice score was 79.43 with a median of 82.5 and standard deviation was 9.98. The closeness between mean and median scores indicates that there is normal distribution of data.

Section V- Finding Correlation between Knowledge Scores and Expressed Practice Scores of Training in MCH Care held at NSTC– "Daksh", Jamia Hamdard

Table 6: Correlation between Knowledge Scores and Expressed Practice Scores of Participants who attended training at National Skills Training Centre–"Daksh", Jamia Hamdard

n=30

Scores	Mean Score	Standard Deviation	'r' value	'p' value
Knowledge Score	56.46	7.07	0.46	0.01*
Expressed Practice Score	79.43	9.98		

* Significant at 0.05 level of significance, $r_{(28)} = 0.36$

The data presented in table 6 shows that the coefficient of correlation between knowledge and expressed practice scores of training on MCH held at NSTC– "Daksh" is 0.46, highlighting a positive correlation between knowledge scores and expressed practice scores.

Discussion

The present study findings revealed that 53.33% participants were having good practice, while 46.67% participants were having poor practice and 63.33% participants were having inadequate knowledge where as 36.67% participants were having adequate knowledge. The findings are similar to the study conducted by Anita Bag, Smritikana Mani, Ananya Bhakta[3] et al, a quasi-experimental study on Effectiveness of Skill Training Programme on Knowledge and Practice of ANM(R) s regarding IUCD services in selected sub-centres of Birbhum District, West Bengal. Researcher concluded that the knowledge and practice of ANM(R)s regarding IUCD services has been increased with skill training programme.

Another study conducted by R. Danasu, R. Priya Dharshini[5] on effectiveness of skill training programme on selected obstetrical emergencies with objectives to assess the skill and effectiveness of skill training among staff nurses on selected obstetrical emergencies**.** Investigator revealed that the mean pre test score 42.60 and the post test mean score was 88.23 and this concluded that the skill training programme on management of selected obstetrical emergencies was effective in improving skills among staff nurses.

Similar study has been conducted by Shereen Zulfiqar Bhutta and Haleema Yasmin[4] on Comparative Effectiveness of Teaching Obstetrics and Gynaecological Procedural Skills on Patients versus Models with an objective to compare the effectiveness of learning procedural skills on patients versus mannequins and models. Researcher concluded that for developing procedural skills, simulations using models and mannequins can be readily incorporated in training programs with potential benefits for teaching infrequently performed or more difficult procedures. The study findings are similar to the present study findings in which 53.33% participants were having good practice, while 46.67% participants were having poor practice.

Conclusion

The major conclusions were drawn on the basis of the findings of the study are:

Most of the participants were working in OPD i.e. 36.67% where as only 3.33% in OT, which indicates that the participants did not get enough opportunities to translate the knowledge gained and skills learnt during the trainings, into practice, which indirectly might have affected their knowledge retention and expressed practice scores.

The participants scored the least rank (modified mean of 0.68) in the skill –'management of pre-eclampsia/ eclampsia', which suggests more training required in this area.

Coefficient of correlation between knowledge and expressed practice scores of training on MCH held at NSTC– "Daksh" is 0.46, showing a positive correlation between knowledge and expressed practice.

There was significant difference between the post test knowledge scores on the last day of training (K1) and knowledge scores assessed during the study (K2), which infers that the participants need more refresher trainings, in order to retain their knowledge and skills.

Conflict of Interest: None

Funding: Self

Ethical Clearance: Institutional Review Board Jamia Hamdard

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