Research Article

EFFECT OF PLANNED TEACHING ON THE KNOWLEDGE, ATTITUDE AND SKILLS OF THE HEALTH WORKERS REGARDING CARE OF NEWBORN AT BIRTH IN SELECTED TRIBAL COMMUNITY OF THE DISTRICT RAIGAD

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ABSTRACT

Birth asphyxia is a major cause of neonatal morbidity and mortality. Resuscitation of the newborn presents a different set of challenges than resuscitation of the adult or even older infants.

Aim of the study: study is intended to find out the effect of knowledge, attitude and skills of health workers regarding care of newborn at birth.

Material and Method:
Pre-experimental research design was used. Study was conducted at Panvel Taluka, Wavanje primary health Centre. The samples were enrolled from 20 ANM and 20 ASHA working under Wavanje health Centre. Investigator had prepared structured tool for assessing knowledge, attitude and skills of health worker regarding care of newborn at birth.

Results: Before training ANM's were higher in the knowledge as well as skills than the ASHA's. Meanwhile score improved in the 2 groups. There was statistical significant difference seen after post training in both the group.

Conclusion: If training and retraining on care of newborn at birth is provided to ASHA's, they are trainable. ASHA's can be absorbed as a helping hand to ANM's during delivery. Training has increased knowledge as well as skills of ASHA workers as well as ANM.

INTRODUCTION

The birth of a healthy newborn is one of the finest gifts of nature. The birth process takes only few hours but it is the most hazardous period of life since it is associated with the largest number of deaths as compared to any other phase of life. At birth, the baby has to adapt from uterine life to outside uterine life .All the body systems undergo some changes. Respiration is stimulated by low carbon dioxide within the blood (1). The first one minute after birth, which is regarded as the "Golden minute" the baby should be breathing well. The failure of the newborn to establish and sustain respiration at one minute of life results to the condition known as birth asphyxia. Birth asphyxia is recognized as an important cause of neonatal morbidity and mortality (2).

India has witnessed a significant reduction in the number of neonatal deaths. From 1.35 million in 1990, to around 0.76 million in 2012. Over that period, from 1990-2012, while neonatal deaths reduced by 44%, child deaths (under 5 years) reduced by 59%. As a result, the contribution of neonatal deaths to under-5 deaths increased from 41% in 1990 to 56% in 2012, which is higher when compared to the contribution observed globally (44%). During the same period, the global under-5 death rate reduced by 50%, and the global neonatal mortality rate by only 37 % Therefore, in order to reduce child mortality and end preventable deaths, intensified action and guidance are needed to ensure newborn survival, as 56% of under-5 deaths are neonatal deaths (3).

India accounts for 27.3% of total neonatal deaths in the world. This rate is highest in poor and marginalized areas like hilly regions of Uttarakhand that lack medical facilities. The newborns referred from here and admitted as out born neonates contribute to the high neonatal mortality rate (NMR) of India,

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To study the demographic profile and morbidity-mortality pattern of neonates admitted in Sick Neonatal Care Unit (SNCU) and study the difference between inborn and out born neonates. A retrospective study of medical records for 1 year (2013-2014). The age, sex, gestational age, and morbidity and mortality profile of all SNCU admissions in 1 year was determined, and the difference between inborn (those born in Teaching Hospital) and out born (neonates delivered outside and referred) was calculated. Modifiable risk factors to reduce NMR in Uttarakhand were determined. The data were analyzed using appropriate statistical tools in software Statistical Package for the Social Sciences (SPSS)-18. Of the 721 neonates admitted, 63.25% neonates were males, and 53.54% were out born and 46.46% inborn. Approximately, 60% were low birth weight and 50% preterm. Respiratory distress syndrome (RDS) (21.9%), sepsis (19%), perinatal asphyxia (16.37%), and jaundice (12.9%) were the chief morbidities. The chief causes of mortality were prematurity (25.6%), sepsis (21.6%), and perinatal asphyxia (19.5%), and RDS (17.3%) with a statistically higher rate in the out born in comparison with inborn. Total 20.5% neonates died due to poor outcome of out born neonates. Hence study flash lights on the burden of neonatal death among the out born is due to preventable causes like asphyxia and infections in Uttarakhand. Health policies must ensure increased access to essential services to target sick neonates who are born. (4).

There has been growing evidence that a simple intervention can save a large number of babies from intrapartum hypoxia. Among the 10-20% of babies who do not breathe at birth, many respond to drying, warming, clearing of the airways, and specific stimulations. Only a small number (an estimated 3-6%) require bag-and-mask ventilation, and less than 1% require advance methods of resuscitation, such as chest compressions and medications. These babies can be helped, if healthcare professionals present at the time of birth are skilled in the art of neonatal resuscitation. Neonatal resuscitation program started in 2009 to train health professionals. However, there is shortage of trained professional (5).

Sr.No.	Particulars	Required In position	Shortfall
1	Sub-center	13410	10580
2	Primary Health Centre	2189	1811
3	Community Health Centre	547	363
4	Health Worker (Male) at Sub Centers	10580	6665
5	Health Assistant (Female)/LHV at PHCs	1811	2413
6	Pediatricians at CHCs	363	181
7	Health worker (Female)/ANM at Sub Center & PHCs	12391	22135
8	Doctor at PHCs	1811	2760
9	Obstetricians & Gynecologists at CHCs	363	180
10	Total specialists at CHCs	1452	514

Health Infrastructure of Maharashtra (Source: RHS Bulletin, March 2012, M/O Health & F.W., GOI)

Most mothers in rural India deliver on their own, with neonatal asphyxia at birth. Due to inappropriate immediate newborn care resulting in death within an hour. The question remains if Trained birth attendant (TBA) and Accredited social health activist (ASHA) workers are around to provide care to the community, why are they are not being utilized.

The important reason for them not being utilized is lack of adequate training. If Neonatal Resuscitation is implemented by providing teaching to these community health workers, it will aid in reducing neonatal mortality rate at grass-root levels in India.

Awareness about health care programs and facilities is the essence for the success of any health care initiative, which is closely linked with human development. The Government launched the National Rural Health Mission in 2005 to provide accessible, affordable and quality health care to rural population. One of the key components of the Mission is to provide every village with a trained female community health activist called ASHA or Accredited Social Health Activist (6). ASHA is selected from the village itself and is accountable to it. ASHA acts as a bridge between the ANM and the village. She is accountable to the Panchayat. She is an honorary volunteer, receiving performance-based compensation for promoting universal immunization, referral and escort services for RCH, construction of household toilets and other healthcare delivery programs. The ASHA is a female village resident, preferably a daughter in-law, with a minimum of 8 years of formal school education. She is expected to serve a population of 700 in tribal areas and 1,000 in rural villages. She is selected by the community-level governance body (Panchayat), its leader (Sarpanch), other villagers, and officials from health and aligned departments at a formal village-level meeting (Gram Sabha) (7). The ASHA undergoes a training of 23 days, conducted under the guidance of the health department (7). The ASHAs are supervised at the primary health center (PHC) level and receive India launched its CHW programme in 1977 and then again, in a new form, in 2005 (7). The recent programme was launched as a part of a larger health sector reforms initiative, known as the National Rural Health Mission (NRHM), an umbrella programme of the health department of Government of India (GoI). The cornerstone of NRHM is recruiting one female volunteer as an Accredited Social Health Activist (ASHA) to serve as a health educator and promoter, helping the community access health services. More than 0.8 million ASHAs have already been recruited and placed across India (7).

Nursing assessment of the baby at birth, help to identifying the need for resuscitation early and the skillful resuscitation of the asphyxiated new born to restore health and prevent further complications may depend on the three interrelated factors of knowledge ,attitude and skills of the nurses. Knowledge is the condition of knowing something with familiarity gained through experience or association (8). Adequate knowledge and awareness about neonatal resuscitation plays a major role in early diagnosis, appropriate management and reduction of adverse consequences resulting from birth asphyxia (8). Attitude also influences individual's choice of action and responses to challenges, incentives and rewards. Attitude may be affective relating to emotions or feelings linked to an object, cognitive relating to beliefs, thoughts and attributes that is associate with an object. Positive attitude of nurses help in successful nursing practice. Nursing practice is an act of providing care to patients and in so doing nurses implement nursing care plan, which is based on the conditions of the patient (9)

It is time that all health care professional organizations engaged in newborn care join hands to facilitate every newborn's right to have a birth attendant skilled in basic neonatal resuscitation, at the time of delivery.

Objectives

1. To assess the pre-test and post-test knowledge of the health workers regarding care of newborn at birth within the group
2. To assess the pre-test and post-test attitude of the health workers regarding care of newborn at birth within the group.
3. To assess the pre-test and post-test skills of the health workers regarding care of newborn at birth within the group.
4. To compare the pre-test and post-test knowledge, attitude and skills of the health workers regarding care of newborn at birth within the group.

MATERIALS AND METHODS

Pre-experimental research design was used to assess the knowledge, attitude and skills of health workers regarding care of newborn at birth. Sample size was total 450, which includes 50 General Nurse Midwives, 150 ANM's and 200 ASHA's. Census sampling technique was used for this study. Self-developed structured tool was used for assessing knowledge, attitude and skills of health workers. The instrument after review of tool review committee was used for pilot study. Since the 10% of the population is used for pilot study only 20, ANM's and 20 ASHA's were used for pilot study for the primary health Centre of Wavanje from Panvel. The reliability of the knowledge tool was determined by administering it to 40 samples. Responses were analyzed by using Spearman formula for coefficient of correlation. The coefficient of correlation was 0.8. The reliability of skills tool was determined by Cronbach's Alpha method and the score was 0.9. Responses of attitude scale were analyzed by using Spearman formula for coefficient of correlation and it was 0.8.

The tool of ANM's and ASHA consists of Section A included socioeconomic questions comprising of age,education, professional qualification, years of working experience, training on neonatal resuscitation, knowledge about neonatal resuscitation.

Section B consists structured questions on the knowledge regarding neonatal resuscitation The knowledge part consisted of 20 questions which covers general information of neonatal resuscitation .It was measured by multiple choices score of one (1) was assigned for the correct answer and score zero(0) was assigned for incorrect answer. Maximum possible score in section B is 20.

Section C1 consists of five-point Likert scale to assess the attitude of ANM's in term of strongly agree (SA), Agree (A), Undecided (UD), Disagree (DA), Strongly disagree (SD).The questions were scored with 5 points for SA, 4 for agree, 3 for UD, 2 for DA and 1 for SD. Therefore, since the questions were 15 and the highest point on the Likert scale is 5, the highest score is 75. Section C2 consists of five-point Likert scale to assess the attitude of ASHA's in term of strongly agree (SA), Agree (A), Undecided (UD), Disagree (DA), Strongly disagree (SD).The questions were scored with 5 points for SA,

4 for agree, 3 for UD, 2 for DA and 1 for SD. Therefore, since the questions were 08 and the highest point on the Likert scale is 5, the highest score is 40.

Section D consists of 3 point checklist formulated to assess the skill of neonatal resuscitation in terms of completely done, incompletely done and not done. The points were scored with 3 points for completely done, 2 points for incompletely done and zero point for not done.

An approval to collect data was sought and obtained from ethical review committee of MGM institute of health sciences. Permission was obtained from the concerned authority-Directorate of Health Sciences. The participants were assured that all information provided by them will be kept confidential. The investigator ensured that participation in the study was a voluntary and only the participants that gave consent participated in the study. The interviewing technique was used to gather information from the respondents. Obsevation technique was used to observe the skills of the respondents.

Descriptive and inferential of mean and percentage were used as well as t test for hypothesis.
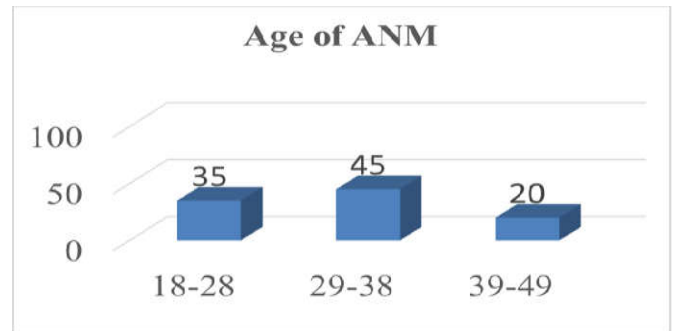
RESULTS

Figure 1 Distribution of ANM with regard to their age

From the above table, it shows that forty five percent of the ANM belongs to the age group of 29-38 years. Only twenty percent of the group belongs to the age group of 39-49 years of age.
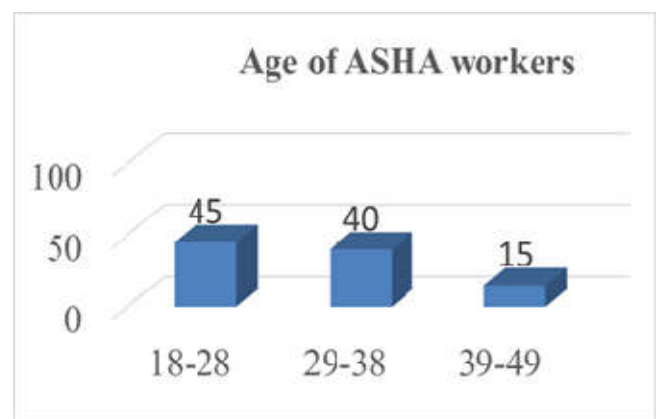

Figure 2 Distribution of ASHA with regard to their age

From the above table, it shows that forty five percent of the ASHA belongs to the age group of 18-28 years. Only fifteen percent of the group belongs to the age group of 39-49 years of age.
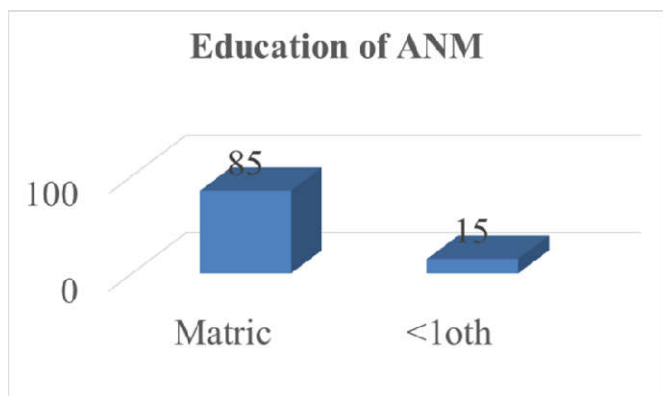
Figure 3 Distribution of health worker with regard to their education

From the above table, it shows that eighty five percent of the ANM studied up to matric. Only fifteen percent of the group studied less than matric.
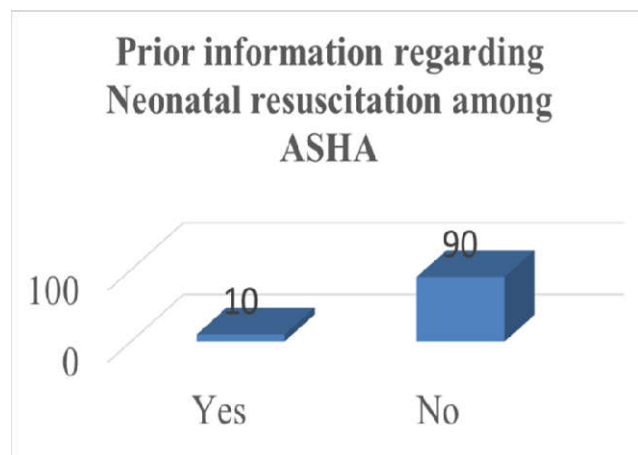

Figure 4 Distribution of health worker with regard to their education

From the above table, it shows that seventy five percent of the ASHA belongs were studied 8th to 10th. Fifteen percent of the group has received education of 5th to 7th standard.

Figure 5 Distribution of sample with regard to their prior knowledge on Neonatal Resuscitation

From above table, showed ninety five percent of the ANM has prior information of neonatal resuscitation whereas only five percent of the sample did not had any information about neonatal resuscitation.

Figure 6 Distribution of sample with regard to their prior knowledge on Neonatal Resuscitation

From above table, showed ten percent of the ASHA has prior information of neonatal resuscitation whereas ninety percent of the sample did not had any information about neonatal resuscitation.
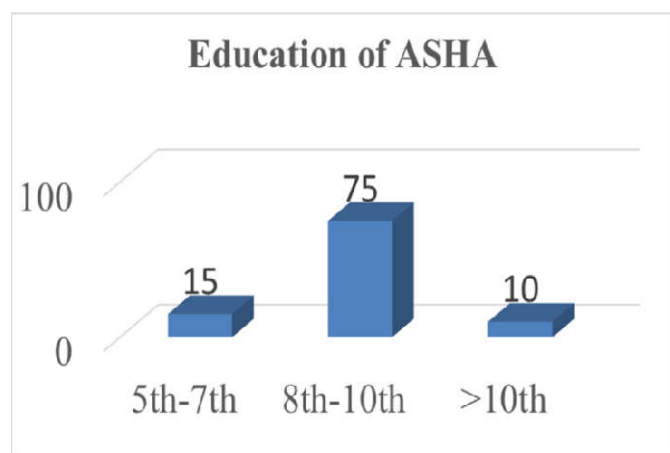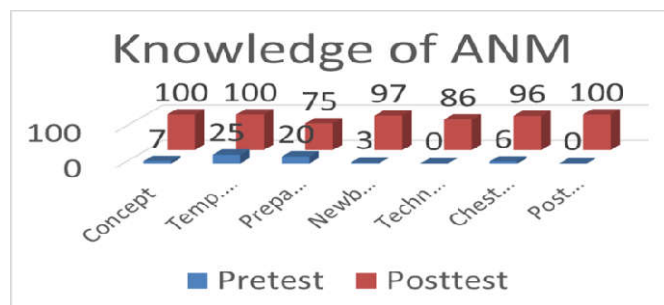

Figure 7 Distribution of ANM with regard to their knowledge of care of newborn at birth

The above table depicts that, before teaching ANM had up to twenty five percent knowledge regarding neonatal resuscitation but followed of teaching knowledge improved up to seventy five to full hundred percent.
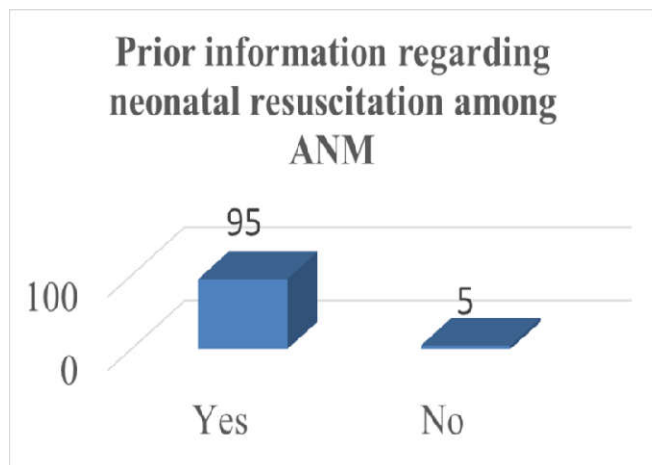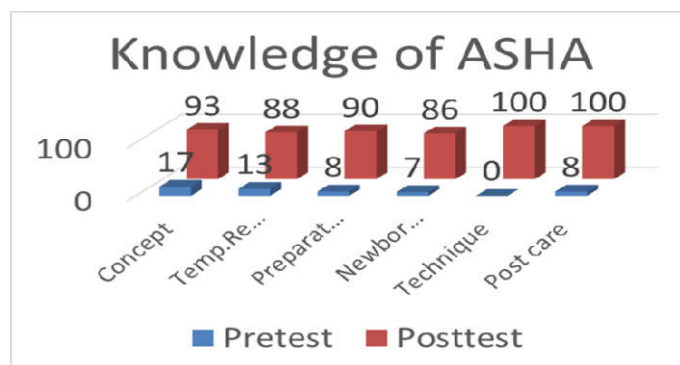

Figure 8 Distribution of ASHA worker with regard to their knowledge of care of newborn at birth

The above table depicts that, before teaching ASHA had up to seventeen percent knowledge regarding neonatal resuscitation but followed of teaching knowledge improved up to eighty six percent to full hundred percent.
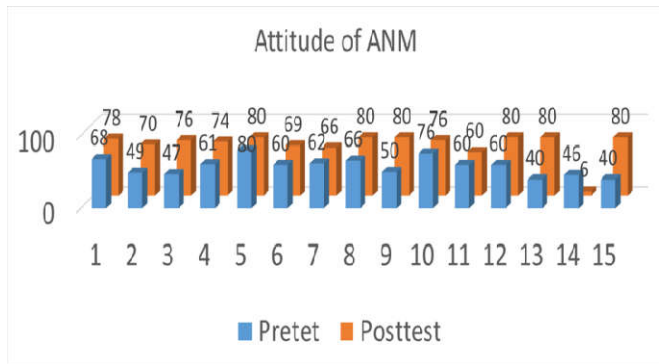
Figure 9 Distribution of ANM with regard to their attitude of care of newborn at birth

From the above table it depicts that, Attitude of ANM regarding care of newborn at birth. It was noted that attitude was ranging from forty percent to maximum eighty percent before planned teaching but after the teaching attitude has increased compared to the before teaching score. The attitude score increased within the range of sixty percent to eighty percent.
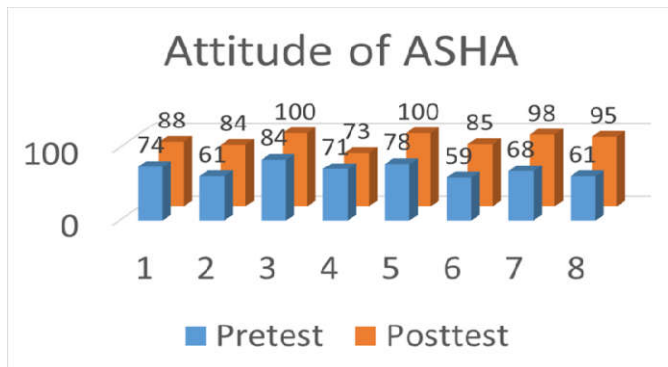

Figure 10 Distribution of ASHA worker with regard to their attitude of care of newborn at birth

From the above table it depicts that, Attitude of ASHA regarding care of newborn at birth. It was noted that attitude was ranging from fifty nine percent to maximum eighty percent before planned teaching but after the teaching attitude has increased compared to the before teaching score. The attitude score increased within the range of seventy percent to complete hundred percent.
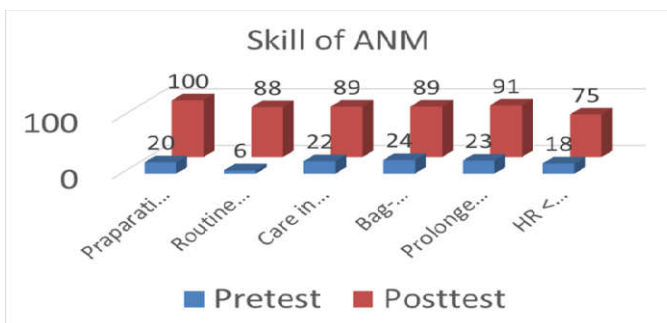

Figure 11 Distribution of ANM with regard to their skills of care of newborn at birth

From above the table it depicts the increased in skill regarding care of newborn at birth. It was noted that, ANM were not aware of skills which shows with the low percentage. Their skill was ranging between six percent to twenty four percent.

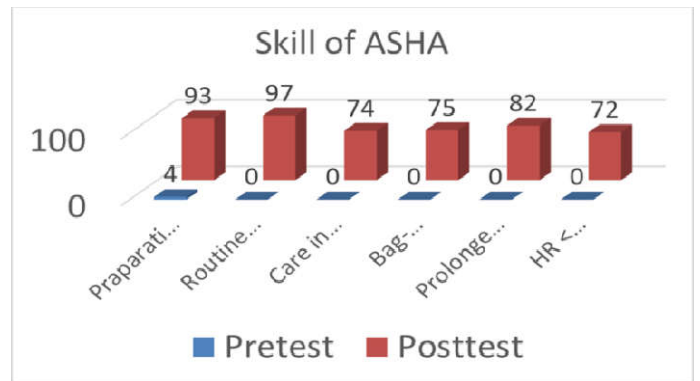But after the planned teaching score improved from six percent to seventy five percent.

Figure 12 Distribution of ASHA worker with regard to their skills of care of newborn at birth

From above the table it depicts the increased in skill regarding care of newborn at birth. It was noted that, ASHA were not aware of skills which shows with the low percentage. Their skill was ranging between zero percent to only four percent. But after the planned teaching score improved from zero percent to seventy two percent.

Table 1 Comparison between pre-test and post-test knowledge of ANM regarding care of newborn at birth

	Mean D	SDD	SDD	SEMD	t
Pretest					
Posttest	20.45	477.305	21.847	4.885	4.186

The calculated "t" value for the knowledge score of ANM before and after planned teaching was found to be 4.186, which is significant at 0.01 level of significance. Thus, the null hypothesis HO (1 A) is rejected and the alternate hypothesis H1 (1B) is accepted.

Table 2 Comparison between pre-test and post-test knowledge of ASHA workers regarding care of newborn at birth

	Mean D	SDD	SDD	Semd	t
Pretest	16.8	324.5911	18.01641	4.028592	4.170191
Posttest					

The calculated "t" value for knowledge score of ASHA before and after planned teaching was found to be 4.170191 ($p < 0.01$).Thus, the null hypothesis HO (1A) stands rejected and alternate hypothesis H1 (1B) accepted.

Table 3 Comparison between pre-test and post-test attitude of ANM regarding care of newborn at birth

	Mean D	SDD	SDD	SEMD	t
Pretest					
Posttest	9.205	18.875	4.3446	0.971	9.480

The calculated "t" value of the attitude score of ANM before and after planned teaching was seen to be 9.480, which is significant at 0.01 level of significance. Thus, the null hypothesis HO (1A) is rejected and the alternate hypothesis H1 (1B) is accepted.

Table 4 Comparison between pre-test and post-test attitude of ASHA workers regarding care of newborn at birth

	Mean D	SDD	SDD	SEMD	t
Pretest Posttest	6.2	6.4	2.529	0.565	10.960

The calculated "t" value of the attitude score of ASHA before and after planned teaching was seen to be 10.960, which is significant at 0.01 level of significance. Thus, the null hypothesis HO (1A) is rejected and the alternate hypothesis H1 (1B) is accepted.

Table 5 Comparison between pre-test and post-test skills of ANM regarding care of newborn at birth

	Mean D	SDD	SDD	SEMD	t
Pretest Posttest	14.033	17.690	3.955	3.955	3.547

The calculated "t" value for skills score of ANM before and after planned teaching was found to be 3.547(p < 0.01). Thus, the null hypothesis HO (1A) stands rejected and alternate hypothesis H1 (1B) accepted

Table 6 Comparison between pre-test and post-test skills of ASHA regarding care of newborn at birth

	Mean D	SDD	SDD	SEMD	t
Pretest Posttest	19.556	19.584	3.835	4.379	4.465

The calculated "t" value for skills score of ANM before and after planned teaching was found to be 4.465 (p < 0.01). Thus, the null hypothesis HO (1A) stands rejected and alternate hypothesis H1 (1B) accepted

Comparison of knowledge among ANM and ASHA regarding care of newborn at birth

F value for knowledge shows 2.1(p< 0.01 level), table value is 5.11.Weak relationship between knowledge score among ANM and ASHA

Comparison of attitude among GNM, ANM and ASHA regarding care of newborn

F value for knowledge shows 0.5(p < 0.01 level), table value is 5.11.Weak relationship between attitude score among ANM and ASHA

DISCUSSION

Nursing is a profession that deals with human health and thus life. It therefore demands high professional knowledge for effective and efficient management of human health. Amin H., Aziz K., Halamek L., Beran T., had conducted study on simulation-based learning on neonatal resuscitation .The study was conducted in Canada and total 17 were the samples. Pre and Post comparison showed significant improvements in participants perceptions of their ability to conduct a simulation. (level of significance p<0.05).Neonatal resuscitation training program was conducted by the Department of Pediatrics, MGIMS, KHS hospital, Sevagram. A total 107 samples were given pre and posttests were included in the study group. Significant improvement was observed in the post-test score (p< 0.000). Bookman L. *et al* had done study on educational impact of a hospital based neonatal resuscitation program in Ghana in 2009. Total fourteen midwives were participated in the study. Both written and practical evaluation of neonatal resuscitation skills increased after training. The percentage of items performed correctly on the practical evaluation of skills increased .These results were sustained 9-12 months after the initial training.

This study reveals that, after implementation of a neonatal resuscitation program in rural area, ANM and ASHA showed improvement in knowledge as well as improvement in neonatal resuscitation skill ability. This research highlights the importance of culturally and regionally relevant training, in improving the knowledge and skills of health workers. Results reveals that training retraining helps the non-skill person to perform neonatal resuscitation skillfully by simulation method.

CONCLUSION

The rising incidence of birth asphyxia that result into increase in neonatal mortality rate and thus, it is an indication of missing links among the indicators of professional nursing practices. These indicators were identified to be years of experience, professional qualifications, attitude of nurses and professional skills. These factors inter-play to bring about quality service in health management. Majority of ANM's have very good knowledge of care of newborn at birth. They have positive attitude in managing newborn cases but lack appropriate ability to put the skills into practices for professional care. With positive attitude ASHA has leant the care of newborn at birth. Enthusiasm was throughout the learning process. However, no authority to use their skills into practices.

This study reveals that unskilled person like ASHA can be trained and retrained in helping nurses at the time of the delivery. They can be definitely a helping hand in emergencies like birth asphyxia. If training and repeated evaluations and supervision of ASHA's skills are done periodically, they can be trainable and will be the helping hand with short of health professionals.

Recommendation

Based on the findings of the study, the following recommendations were made:

1. Refresher courses on professional skills and practices involving lives should be regularly given to nurses, doctors and significant others especially on the care of newborn at birth.
2. There should be regular training and retraining for nurses and volunteers of health care delivery system.
3. More nurses should be sponsored to specialize in pediatric nursing.

Conflicts of Interest Disclosure

The authors declare that they have no conflict of interest.

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