

## Maternal and neonatal health skills of nurses working in primary health care centre of Eastern Nepal

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### Abstract

**Background:** Nepal has one of the world's highest maternal and neonatal mortality. In Nepal, 73% of delivery is take place at home without trained attendant. Delivery by trained persons is 27% which reflects the need for attention of women's health in particular reproductive health. **Objective:** To assess knowledge and performance skills of nurses regarding maternal and neonatal health. **Methods:** Descriptive analytical study was carried out on nurses working in selected primary health care center of eastern region of Nepal. Random sampling technique was used to select 10 PHC and purposive sampling technique was used to select nurses in different primary health care center. Nurses were interviewed using pre-designed questionnaire and performance skill check list. Collected data were entered in SPSS 10.5 software package and analyzed. **Results:** The study showed that knowledge of auxillary nurse midwife/staff nurse was satisfactory in antenatal, intra-natal and post natal care of mother while they were relatively poor in newborn resuscitation. ANM/staff nurses showed very poor skills i.e. only 16.7%, 36.7% and 7% were competent in providing antenatal, intra-natal and post natal care respectively. Unfortunately none were found to be competent in newborn resuscitation. **Conclusion:** Birth handling competence levels are generally low in ANM/Staff nurses working in PHCCs.

**Key Words:** Auxillary nurse midwife, staff nurse, performance skill

### Introduction

One of the most daunting challenges facing the world today in the field of health is the

issue of maternal mortality. Over the previous few decades remarkable progress has been made in almost every sector of development. More children now survive in developing countries than ever before and more of them now go to school. Unfortunately the situation in terms of maternal mortality has not

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changed much for many developing countries. It is estimated that 585,000 maternal deaths occur annually worldwide, 99 percent of this in developing countries<sup>1</sup>. The world has utterly failed to do much in this respect. This has been rightly called scandal of the century<sup>2</sup>. It is not that there is nothing that can be done. All developed countries and some in the developing world have been able to bring the maternal mortality rate down significantly. But for a vast majority of the poor countries it is a 'neglected tragedy' for effective interventions are available to deal with this persistent crisis. Reducing maternal mortality ratio by two-thirds between 1990 and 2015 is the target under the Millennium Development Goals for the international community<sup>3</sup>.

Nepal has one of the highest maternal and neonatal mortality (i.e., maternal mortality rate 539/100000 live birth, Neonatal Mortality rate 38.5/1000 live birth and perinatal mortality rate 25.6/1000 live birth) in South Asia region<sup>4</sup>. The overall poor health status of women and child is due to lack of access of quality maternal and child health service especially those who are residing in rural area. In Nepal 73% delivery takes place at home without trained attendant. Among them 67.4% maternal death occurs at home, 11.4% on the way to health facilities, 21.2% after reaching the health facilities. Delivery by trained persons is 27%, which reflects the

need for attention of women's health in particular reproductive health<sup>4</sup>.

High infant mortality (i.e., 64.2/1000 live birth) and neonatal mortality rate (i.e., 38.5/1000 live birth) is also one of the important causes of the high fertility rate, which in turn, has a direct bearing on maternal morbidity and mortality. It is estimated that in Nepal, nearly 50,000 children under one year of age die every twelve months. Two third of them die within 28 days of age, resulting in over 30,000 neonatal death per year. Among those dying within the neonatal period, 20,000 (two third) die in first week of life. Nearly the same numbers of babies are still born. More than 16,000 of those dying within the first week of life die within 24 hours. As things stand, this means that three to four newborns are dying every hour in Nepal. The contributing factors to maternal neonatal death were found to be due to delay in deciding to seek care, delay in reaching care and delay in receiving care<sup>4</sup>.

## **Methods**

Descriptive analytical study design was used to find out performance of ANM/Staff nurses on maternal and neonatal health skills. The research was conducted in selected Primary Health Centre of Ilam, Jhapa, Sunsari, Saptari and Dhankuta district. Random sampling technique was used to select 10 PHCC from five districts and purposive

sampling technique was used to select ANM/Staff Nurses in different Primary Health Care Centre. All ANM staff nurses i.e. 30, workings in selected (sampled) PHCC were included in the study. Data was collected using structured, semi-structured questionnaire and skill check list based on the objective with simple and understandable language.

Descriptive statistics were used to analyze the data. Overall knowledge was categorized

in three groups based on score obtained by each staff. One who scored <60% in each specific area was poor while 60-80% scorers were awarded to have fair and good knowledge. Similarly for the level of competency, one who performed >80% of required tasks as per standard set and measured by check list were considered competent in specific area of their practice. The scoring system is used by other researchers of same field<sup>5</sup>.

## Results

**Table 1: Characteristics of the respondents (n = 30)**

S.N.	Characteristics	Frequency	%
1.	Cadre		
	Staff nurse	3	10.0
	Senior ANM	4	13.3
	ANM	23	76.7
2.	Age in years		
	20 – 30	10	33.3
	30 – 40	3	9.9
	40 – 50	12	40.0
	> 50	5	16.6
	* Mean- 38.46 years		
3.	Professional education		
	Certificate nursing	3	10.0
	Assistant nurse midwife	27	90.0
4.	Experience (years)		
	0 – 10	11	36.7
	10 – 20	4	13.2
	20 – 30	15	50.1
	*Mean- 16.63 years		

5.	Training received		
	Midwifery refresher training	11	36.66
	Emergency obstetric care	1	3.33
	Basic obstetric care	1	3.33
	Reproductive health	4	13.33
	Post abortion care	2	6.66
	Comprehensive family planning	2	6.66
	Family planning (IUD Insertion)	3	10

**Table 2: Distribution of respondents by self reported services attended per week and type of services (n = 30)**

S.N.	Type of service	ANM staff nurses	
		No.	%
1.	ANC attended per week		
	0 – 10	3	10
	11 – 20	6	20
	21 – 30	13	43.33
	31 and over	8	26.66
	Mean: 32.93		
2.	Births attended per week		
	1	17	56.66
	2	10	33.33
	3	3	10
	Mean: 2.83		
3.	PNC attended per week		
	0 – 5	25	83.33
	5 - 10	5	16.66
	Mean: 2.16		

**Table 3: Distribution of the respondents by the type of problems/issues (n = 30)**

S.N.	Problem/issue	No.	%
1.	Inadequate refresher training related to midwifery	27	90
2.	Lack of proper supplies ( equipments/drugs)	30	100

3.	Lack of proper accommodation and security	25	83.33
4.	Inadequate monitoring and evaluation	28	93.33

**Table 4: Distribution of respondent's overall knowledge score (n=30)**

S.N.	Knowledge	Poor (<60%)		Fair (60-80%)		Good (≥80%)		Remarks
		No.	%	No.	%	No.	%	
1.	Antenatal history, physical examination and basic care	1	3.33	20	66.66	9	30	Mean: 75.1
2.	Normal labor, child birth and immediate newborn care	0	0	15	50	15	50	Mean: 78.17
3.	Post partum, history, physical examination (mother and baby), and basic care	1	3.33	26	86.58	3	10	Mean: 70.1
4.	Newborn resuscitation	6	20	20	66.66	4	13.33	Mean: 69.76

**Table 5: Maternal and newborn skills assessed during supervision by assessment tool (n= 30)**

S.N.	Skills	In anatomical model		In woman	
		No.	%	No.	%
1.	Antenatal history, physical examination and basic care	0	0	30	100
2.	Normal labor, child birth and immediate newborn care	28	93.34	2	6.66
3.	Post partum history, physical examination (Mother and Baby), and basic care	0	0	30	100
4.	Newborn resuscitation	30	100	0	0

**Table 6: Nurse assessed as competent in essential maternal and neonatal health skills (n= 30)**

S.N.	Skills	Competent			
		Yes	%	No	%
1.	Antenatal history, physical examination and basic care	5	16.7	25	83.3
2.	Normal labor, child birth and immediate newborn care	11	36.7	19	63.3
3.	Post partum history, physical examination (mother and baby), and Basic care	2	6.7	28	93.3
4.	Newborn resuscitation	0	0	30	100.0

### Discussion

Nepal is multiracial, multicultural country and has varied disparities on ecological pattern. In such case no single, localize study can claim to represent the whole country. Pregnancy related deaths and disabilities result not only in human suffering but also in losses to social and economic development. The women who die are in the prime of life, responsible for the health and well-being of their families. They generate income, grow and prepare food, educate the young, and care for children, elderly and the sick. Their deaths represent a drain on all development efforts. Pregnancy is not a disease, and pregnancy related mortality and morbidity are preventable with attainable, simple and cost effective interventions. Failure to do so is to deny

women a fundamental human right – the right to the highest attainable level of health.

Based on the background characteristics of population, majority of them were ANM (76.6%). Thus majority of people who are utilizing the services of PHCC are directly served by ANMs. Among all ANM staff nurses 90% were married, with mean age of 38.46 years, 100% had professional education, and 50.1% had job experience of 20 - 30 years with mean duration of 16.63 years. Most of them had some kind of training in MCH including maximum of 36.66% MRT. Therefore we claim to have experienced health workers serving our people in the periphery.

According to the self reported service attended by nurses, each and every representative were found to be involved in

MCH activities especially 43.33% were attending 21 – 30 antenatal mothers, 55.66% had an opportunity to conduct a delivery at PHCC and majority were involved in providing postnatal care to the mothers. Though the number of delivery conducted at PHCC and services to the post natal mother seem to be lesser than expected, it is not because health workers who are not willing to extend their care rather very few mothers are coming for delivery and postnatal services. Based on the finding related to over all knowledge score in various areas, majority of ANM/ Staff Nurses (66.66%) had fair knowledge of antenatal care, 50% had good knowledge regarding child birth and immediate new born care, 86.58% had fair knowledge about post partum care and 66.66% fair knowledge about newborn resuscitation. As per assessment of skills, 100% of the respondents demonstrated their skills on antenatal and postnatal mothers. Knowledge is the back bone of skill & practice. While assessing the knowledge about antenatal care, history taking and physical examination were focused. Our findings showed that 66.66% ANM/Staff Nurses had fair knowledge, 30% had good knowledge and only 3.33% had poor knowledge about antenatal care. As ANM Staff Nurses working at PHCC get frequent opportunity for antenatal care this might have contributed to their knowledge.

The study revealed that 50% ANM/Staff Nurses at PHCC had fair and rest 50% had good knowledge about normal labor. Though opportunities for caring mothers in labor are least at PHCC, ANM and staff nurses had good knowledge. This might have appeared because they have more interest in intranatal events and care. Being less frequently involved in relatively high risky practice, intranatal care might have got extra attention by ANM Staff/Nurses. In reference to knowledge about postnatal care 86.58% ANM Staff/Nurses had fair knowledge while 10% had good knowledge. Even though they had more opportunity to interact with postnatal mothers in compare to intranatal mothers, the knowledge of ANM/Staff Nurses were more about intranatal events and their care. This is significantly similar finding conducted by Harvey SA et al. (2007) in which knowledge score in Nicaragua was 74%; the mean skills score was 46%. Similarly, the mean knowledge score on management of postpartum haemorrhage was 63%; the skills scores for manual removal of the placenta and bimanual uterine compression – basic evidence-based interventions to control postpartum haemorrhage – were 41% and 22% respectively<sup>3</sup>. Newborn care is essential component of MCH care. The study showed that 66.66% respondents had fair knowledge, 13.33% had good knowledge and 20% had poor

knowledge regarding newborn resuscitation. In comparison with antenatal, intranatal, postnatal knowledge about newborn resuscitation was least among all. The reason behind compromised status of knowledge regarding newborn resuscitation among ANM Staff Nurses might be an inadequate opportunity to resuscitate the newborn baby at PHCC.

Skills of ANM/Staff Nurses working at various PHCC of eastern region of Nepal were assessed on pregnant mothers at real clinic set up and anatomical model. All ANM Staff Nurses had opportunity to demonstrate their skill about antenatal & postnatal care on pregnant mother at PHCC while only 6.66% had opportunity to show their skills of intranatal care in actual situation, rest 93.33% on anatomical model. Similarly all ANM/Staff Nurses demonstrated their skills for newborn resuscitation on anatomical model.

While providing antenatal care to the mothers, 83.3% ANM/Staff Nurses were incompetent. The finding is similar with the finding of the study conducted by Carlough M et al. in which majority of nurses were not competent in providing antenatal care<sup>1</sup>. The fact might have appeared because health workers do not find it essential to provide complete comprehensive antenatal care and tend to escape several components. Similarly, 63.3% ANM/Staff Nurses were

incompetent to conduct normal delivery at PHCC. The particular findings might be because ANM/Staff Nurses have less opportunity to conduct delivery at PHCC. Another reason for the same might be the traditional techniques of conducting delivery which they are not able to eliminate from their practice despite they have good knowledge.

The study did not find any one individual competent for providing newborn resuscitation. Unfortunately most of the PHCC were lacking resuscitation equipments at clinic; some of the ANM Staff Nurses had never used those equipments and few were not able to recognize AMBU bag. Thus it appeared to be an immediate concern for all of us.

### **Conclusion**

Results indicate that maternal and neonatal health care competence levels are generally low. Key life-saving skills, active management of 3<sup>rd</sup> stage labor, bimanual uterine compression, and newborn resuscitation are rarely performed. While our competency measurement instruments worked well in general, they need some refinement before they could be applied on a large scale. Both knowledge and skills tests should be shortened. A group of expert clinicians (doctors and nurses) should be employed to help fine-tune measurement methods. Senior clinicians and health program managers in



our country could apply these methods without assistance from international consultants, but anatomical models should be available at the district or health facility level. Appropriately refined, our methods for measuring skilled birth attendant competence could help improve targeting of scarce training and supervisory resources. They could also serve as one key component of a more comprehensive effort to improve quality of maternal and neonatal health care in our country settings.

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