

Health Staff Perspectives on the Quality of Maternal and Neonatal Care in Banke, Nepal

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Abstract

Introduction: Quality care on maternal and neonatal health care service of Nepal is remains to challenges. This study aimed to measure the structural and process aspects of the quality of maternal and neonatal care in the primary health care settings of Banke district, Nepal.

Methods and Materials: Both qualitative and quantitative (mixed method) was used in this study. Record review, observation and semi-structured interview method were applied in this study. Twenty Seven Auxiliary Nurses Midwives (ANM) working in three Primary Health Care Centers (PHCCs), eight Health Posts (HPs) and Eight Sub Health Post (SHPs) of Banke district Nepal was selected by using purposive sampling and the questionnaire were applied them. The statistical analysis was done on SPSS-16. The data were collected in 2010.

Results: The 89% of ANMs had good knowledge on maternal and neonatal; 33% of ANMs had positive attitudes towards patient caring and caring of neonatal was crucial for them; 59% of ANMs provided good level maternal and neonatal care and were able to properly use safe delivery kit boxes.

Conclusions: This study found that the majority of ANMs had good knowledge and provided good level of care but only one third had positive attitudes towards their work. The governmental policy, strategies, guidelines and protocols are not fully effectively applied at working level. Delivery and neonatal care were perceived more difficult than pregnancy and post partum care.

Keywords: Maternal care; Neonatal care; Quality of care; Staff needs; Nepal

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Introduction

The prevalence of maternal deaths is unexpectedly high and 358,000 women die during pregnancy and child birth in the world, among them one third in South Asia region [1]. Maternal mortality ratio (MMR) of 281 per 100 000 live births and neonatal mortality rate of 33 per 1000 live births is unacceptably high in Nepal [2]. Nonetheless, the MMR is on decreasing way 170/100000 live birth in 2013 that have to be reduced to 134 by 2015 to meet the health MDG [3]. Still the safer motherhood program remain to success in reducing maternal and neonatal deaths of Nepal [4]. However; Nepal has received a Millennium Development Goal (MDGs) award for outstanding national leadership, commitment and progress towards the achievement to improve maternal health where MMR has decreased by 47% in 2006 and 58% in 2010 [5]. On the other hand, neonatal deaths decreased by 12% in 2001 and by 23% in 2006, which means the neonatal mortality

rate did not decrease much [6]. Further, significant disparities are observed in geographical regions, different castes, and levels of education.

Good quality, regular and client-oriented maternal and neonatal care would be crucial especially in the primary health care settings of Nepal. Antenatal care (ANC) during pregnancy appears to have a positive impact on the utilization of postnatal services. Empirical evidence shows that four visits are sufficient for uncomplicated pregnancies and more are necessary only in cases of complications, hence the World Health Organization (WHO) currently recommends at least four ANC visits in the course of pregnancy [7]. However, about 89% of pregnant women receive 1st visit of ANC by trained or untrained health staff, and only 56% of them attend the recommended 4th ANC visit in Nepal [8]. The number of ANC visits varies between urban (52%) and rural (26%) areas and 70% of mothers in rural areas do not have postnatal check-up in comparison to 45% mothers in urban areas [9]. Eighty

percent of the deliveries in Nepal happen at home with less than 1/5th of all deliveries being attended by Skilled Birth Attendants (SBA); the rest of them are attended by family members [8]. In general, 23.4% of women receive maternal services from trained health staff [10]. About 37% of mothers saved money for delivery as a component of birth preparedness but nearly one in two pregnant mothers had not made any preparation at all [9]. Capacity building for health staff and availability of resources (money, building, materials and medicines) are the key factors to enhance knowledge and skills for ensuring the quality of care of maternal and neonatal services. The structural and process aspects of maternal and neonatal health care services are rather poor in Nepal. The main constraints in maternal care are inadequately skilled human resources and their management: training, supervision, monitoring and accountability on one hand and poor quality of care, supplies and support on the other [11,12]. The major causes for maternal deaths are haemorrhage (25%), sepsis (15%), eclampsia (12%), unsafe abortion (13%) and obstructed labour (8%) and other direct (8%) and indirect 20% causes; [10] neonatal deaths are due to prematurity, low birth weight, severe infection, birth asphyxia, birth trauma and congenital abnormalities [13]. The intervention to improve access to and quality of maternal and neonatal care can lead to significant reduction in maternal and neonatal deaths [14]. However, both access to and quality of maternal and neonatal care especially at primary health care settings is yet to be optimized. Therefore, an assessment of the maternal and neonatal health status and underlying factors would be crucial to provide information to improve the situation. The study objective was to measure the structural and process aspects of the quality of maternal and neonatal care in the primary health care settings of Banke district, Nepal.

Materials and Methods

The present study site was in the western part of Nepal. Purposive sampling technique, based on the district public health office records on working ANMs, was used. ANMs have a training of maternal and child health, which is recommended by the Government of Nepal. A cross-sectional descriptive study using qualitative and quantitative methods was carried out. The information was collected through a) individual interview; b) focus group discussion (FGD); c) observation and record checking. The total of 27 ANMs working in 19 health institutions: three primary health care centres (PHCC), eight health posts (HP), and eight sub health posts (SHP) were interviewed and observed. The observation was done on structural aspects. The quality of care criteria were assessed in terms of staff needs and clients'

right perspectives, which were guided through the principles of teamwork, system and process, training, good supplies and timely supervision and monitoring [15].

The interview guide was pre-tested in the Kathmandu district. The final version of the individual interview questions (n=109) covered antenatal, natal and postnatal care related to knowledge, attitudes and practices (KAP). The FGD guide included seven in-depth questions which were translated from English into the Nepali language by the second author. The FGD was recorded and the first author took notes. The ethical permission was obtained from Nepal Health Research Council, Kathmandu. The interview data were analyzed by using SPSS-16 software and the FGD data analyzed in terms of general themes and quality of care indicators and for this manuscript translated into English.

Results

Two thirds of the 27 interviewees were in the age group of 30-39 years and almost half had 11 to 20 years of working experience in maternal and newborn care (**Table 1**). More than 1/5th of ANMs provided primary health care outreach clinic (PHC/ORC) services at community level. Usually, ANMs were directly involved in PHCC, HP and SHP for antenatal, natal and postnatal services.

Knowledge of ANMs about maternal and neonatal health care

The majority of the respondents had good knowledge about the core concepts of maternal and neonatal health care, definition of reproductive health, physical changes during pregnancy, and danger signs during pregnancy and about the three delays. On the other hand, none of the ANMs could mention all eight components of reproductive health. Less than a half of the ANMs had the correct answer about the stages of labour.

The majority of ANMs were knowledgeable about the key danger signs during delivery (**Table 2**). Nevertheless, seven ANMs gave wrong answers such as sleeping problems and itching. Two thirds of the ANMs had given correct answers about the birth preparedness package (BPP). Likewise, the majority of ANMs had right answers about post partum care activities and most also knew danger signs during this period. Twenty ANMs gave correct answers about post partum hemorrhage (PPH). The most ANMs knew correct answers about new borne baby care and danger signs (**Table 2**). The 70% of ANMs had good knowledge on average about maternal and neonatal care.

Table 1 Demographic characteristics of the health staff (ANMs).

Age group (yrs)	No (%)	Caste	No (%)	Working experience	No (%)
21-29	3(11%)	Brahmin	33%	<1 yrs	3 (11%)
30-39	16(59%)	Chhetri	26%	1-10 yrs	6 (22%)
40-49	6(22%)	Janajati	15%	11-20 yrs	12 (44%)
50+ over	2(8%)	Dalit	11%	21+yrs	6 (22%)
		Indigenous	15%	-	
Total	27(100%)	-	100%	-	27 (100%)

Table 2 Knowledge of ANM about maternal and neonatal health care, N and % of responses ticked (n=27).

Phases	Indicators	Options	N (%)
Antenatal			
Concept of maternal and neonatal health care		Service provided to mother& baby before and after delivery.	24 (89%)
		Service provided to mother and baby after delivery.	2 (7%)
		Service provided to pregnant mother.	1 (4%)
		Total	27 (100%)
Components of reproductive health		Safe Motherhood.	24 (89%)
		Family planning.	23 (85%)
		Adolescent and youth health.	23 (85%)
		Sex education and counseling.	17 (63%)
		Prevention and management of abortion	9 (33%)
		Prevention and management of RH tract infection.	3 (11%)
Definition of safe motherhood		After getting pregnant to until 45 days after delivery.	17 (63%)
		Ensuring that all mothers receive care they need to be safe and healthy during pregnancy and child birth.	8 (30%)
		Provide Immunization services	4 (15%)
		Good health of the child in the first 28 days after birth.	4 (15%)
		Others: family planning, women's health, child care, decreases of maternal mortality and infant mortality.	7 (20%)
Basic emergency obstetric care		Health care service facilities.	10 (37%)
		Management of pregnancy complications by assisted vaginal delivery (forceps /vacuum delivery).	9 (33 %)
		Central management and effectiveness.	7 (20%)
		Availability of adequate maternal resources.	6 (22%)
		Awareness, education and instrumental display	5 (19%)
Physical changes during pregnancy		Abdomen enlargement, uterus, breast and nipples blackening	23 (85%)
		Vomiting, loss of appetite, weakness and weight loss.	11 (41%)
		Skin problems and rashes.	10 (37%)
		Broadening of waist	9 (34%)
Knowledge about care during pregnancy		Regular health checks up.	27 (100%)
		Information about danger signs, nutrition and counseling.	26 (96%)
		Good environment creation.	19 (70%)
		Advice for adequate rest.	18 (67%)
Knowledge about danger signs		Severe lower abdomen pain, swelling of arms, feet & face.	25 (93%)
		Vaginal bleeding.	22 (74%)
		Fever and foul smelling vaginal discharge.	20 (74%)
		Convulsion/fainting.	4 (15%)
Knowledge about three delay		Delay in decision making.	23 (85%)
		Delay on the way.	24 (87%)
		Delay in the health care settings	21 (78%)
		Donot know	1 (4%)
Natal			
Stages of labour		Three	12 (45%)
		Four	9 (33%)
		Donot know	6 (22%)
Importance of institutional delivery by skilled health staff		To prevent from risk during pregnancy.	25 (93%)
		To prevent from infection.	22 (82%)
		To assess the health condition of mother and foetus.	18 (67%)
		To confirm the position of foetus.	14 (52%)
		To control vaginal bleeding.	2 (7%)
Maternal and neonatal services need to be provided from primary health care institutions		Regular health checks up.	22 (82%)
		Referral service.	20 (74%)
		Supply for safe delivery kits box.	17 (63%)
		Obstetric care.	12 (44%)
Knowledge about birth preparedness		Transportation, blood and clothes for mother and baby.	8 (30%)
		Clean safe delivery kit boxes.	7 (26%)
		Money.	6 (22%)

Danger signs	Prolonged labour.	26 (96%)
	Vaginal bleeding and unconsciousness.	24 (89%)
	Severe headache.	20 (74%)
	Swelling of hands, feet and face.	18 (67%)
	Foul smelling discharge.	17 (63%)
	Sleeping problem.	4 (15%)
	Itching.	3 (11%)
	Do not know	1 (4%)
Post Natal		
Major tasks during post natal period at primary health care settings	Checking vital signs of foetus& massage of uterus.	26 (96%)
	Mother counseling about breastfeeding & placenta remove.	24 (89%)
	Naval cutting and prevent from infection.	23 (85%)
	Others: Immunization, F/P services, hygiene and Inj. Oxytocin	5 (19%)
Post partum haemorrhage	Vaginal bleeding in excess of 500 ml of blood after child birth.	20 (74%)
	Any amount and type of blood bleeding after delivery.	4 (15%)
	Vaginal bleeding excess of 1000 ml of blood after child birth.	2 (7%)
	Vaginal bleeding less than 500 ml of blood after delivery.	1 (4%)
Neonatal period	Four weeks after birth	22 (81%)
	45 days from birth	4 (15%)
	Do not know	1 (4%)
Immediate new born care for baby	Safe curd cut and Skin to skin contact with mother.	25 (93%)
	Drying and keeping new borne baby at warm room.	24 (89%)
	Counseling on breast feeding and infection prevention.	20 (74%)
	Vitamin A for baby	1 (4%)
Normal weight of new borne baby	<2500 gm	1 (4%)
	2500- 3000 gm	26 (96%)
	Total	27 (100%)
Knowledge about necessary things needed for new borne baby care	Clean towel	26 (96%)
	Clean and warm room	20 (74%)
	Safe delivery kit boxes	18 (67%)
	Other supplies and logistics	14 (52%)
	BCG vaccine	12 (44%)
	Vitamin A capsule	5 (19%)
	Other: kawajmalam ¹	1 (4%)
Breast feeding	First feeding within an hour of birth and two hour interval.	15 (56%)
	Within half an hour of birth and with no two hour interval.	12 (44%)
	Total	27 (100%)
Danger signs for mother	Severe vaginal bleeding.	26 (96%)
	Frequent unconsciousness.	24 (89%)
	Sepsis and severe headache.	21 (78%)
	Swelling of hands and feet.	19 (70%)
	Severe vomiting	15 (56%)
	Itching	2 (7%)
	Do not know	1 (4%)
Danger signs for new born baby	High fever	25 (93%)
	Difficulty of breathing	24 (89%)
	Pale, yellow and blue and complexion	22 (81%)
	Cord/naval bleeding	19 (70%)
	Jaundice	18 (66%)
	Difficulty in sucking	9 (33%)
	Others: multiple wounds, abnormal chest sound, umbilical infection, difficulty in breast feeding	2 (7%)

¹ A kind of antiseptic ointment that can be used during infection

Perceptions and opinions of ANMs

Perceptions and attitudes related to antenatal, natal and post natal care were asked in the interviews. The perceived easiness of caring varied a lot across questions asked. One third of ANMs found neonatal care risky; two thirds saw neonatal period as crucial in providing services and only eight percent of ANMs felt easy to handle neonatal care (Table 3). 33% of ANMs had positive attitude towards patient caring (Table 4).

Practice of ANMs during pregnancy, delivery and post delivery periods

The ANMs provided the services to pregnant and lactating mothers mentioned as Inj. Tetanus Toxoid administration, iron, folic acid and albendazole distribution, taking vital signs and fetus heart sound, nutrition advice, urine and blood for routine examination and hygiene and sanitation education In average the

59% of ANMs provided good level of maternal and neonatal care (Table 5).

Resources, training and management

Only half of the institutions studied had adequate staff, medicine, instruments and a separate reproductive health unit. Hardly any SHP had support staff and PHCC had lack of medical doctors. Only 11 ANMs answered that the institution provided the recommended 24 hours maternal care, and only one health institution usually hired ambulance in case of emergency and some institutions had a bicycle ambulance but did not use it. Less than half of the ANMs had got midwifery training, three ANMs had received Skill Birth Attendance (SBA) training by the date of data collection, only few ANMs had received reproductive health clinical protocol training, however no ANM had got infection and prevention training. All but few health institutions organized staff meetings, but most of them were not actively functioning due to in-sufficient staff attendance. Similarly, all health institutions had established health management committees, but most of them were not well functioning. Methods applied to enhance community participation included individual counseling, mass campaigns, collaborative approach, and group discussions. The average waiting time for maternal and neonatal service was nine minutes. Majority of the ANMs got feedback of their service during the second round of check-up.

Major responsibilities of ANMs and their expectations

Most ANMs had key responsibilities in antenatal, natal and post natal services given by local health facilities and sometimes in the community during home visits. Normally ANMs focused on safe motherhood, family planning services, immunization, nutrition and diet, health education, sanitation and emergency funds. They had a practice of referring complicated cases when they realized to refer. The main causes of low health institutional

delivery service rate for women were perceived to be lack of awareness and shyness among women. More than two thirds of the ANMs were satisfied with their job. Majority of ANMs expectations were: establishment of peace from government and local administrative authority, good buildings and equipments, coordination and collaboration, increasing salaries and facilities, up-dated training on reproductive health, avoiding discrimination during staff recruitment and transfer.

Discussion

Nepal has made significant progress in maternal and newborn health in the last decade. The progress could be much accelerated if the quality of care could be ensured at health care facilities. Still Nepal has higher maternal and neonatal mortality ratio/rates compared to other Asian and developed countries. However, the maternal mortality ratio of Nepal is better than Nigeria's 545, Ethiopia's 470, and Rwanda's 383 per 100000 live births [14].

The present study was done systematically using mixed methods (qualitative and quantitative) to find out the KAP of ANMs. The interviews revealed that the knowledge level was found to be rather good and the well-known issues were: concept of maternal and neonatal care, symptoms of physical change during pregnancy, danger signs, three delays, and emergency funds; on the other hand, less known issues were: definition of safe motherhood, and basic emergency obstetric care. Attitudes were found to be positive towards case handling during prenatal and post natal care; on the other hand, attitudes were negative towards caring of neonatal baby and delivering mother. Similarly, the good practice was found in: providing tablet albendazole, iron and zinc table, inj. TT during pregnancy and vitamin A capsule during post delivery period and counseling, usage of safe delivery kit boxes and BCG vaccination for new born baby, whereas negative practice was related to poor conducting PHC/ORC, staff meetings and not keeping diaries updated.

Table 3 Attitudes and feelings of ANMs (n=27) concerning antenatal, natal and post natal care.

Phases	Indicators	Scale	N (%)
Pregnancy	Perceived difficulty to provide antenatal care	Very easy	2 (7%)
		Easy	12 (44%)
		Neither easy nor difficult	7 (26%)
		Difficult	5 (19%)
		Very difficult	1 (4%)
		Total	27 (100%)
Delivery	Perceived difficulty to provide natal care	Very easy	1 (4%)
		Easy	7 (26%)
		Neither easy nor difficult	11 (41%)
		Difficult	5 (19%)
		Very difficult	3 (11%)
		Total	27 (100%)
Post delivery	Perceived difficulty to provide postnatal care	Very easy	0 (0%)
		Easy	13 (48%)
		Neither easy nor difficult	3 (11%)
		Difficult	8 (30%)
		Very difficult	3 (11%)
		Total	27 (100%)

Table 4 Practice of ANMs during pregnancy, delivery and post delivery period (n=27) .

Phases	Indicators	Options	N (%)
Antenatal			
Service provided during pregnancy		Inj. Tetanus toxoid, Iron and folic acid distribution and albendazole distribution	27 (100%)
		Taking vital signs and Foetus Heart Sound	26 (96%)
		Nutrition advices	15 (56%)
		Urine for Routine examination	5 (19%)
		Blood for routine examination	4 (15%)
		Hygiene and sanitation education	1 (4%)
Practice of started to provide Iron for mothers		16 week of pregnancy till 42 days after child births	27 (100%)
Practice of started to provide tablet albendazole		16 weeks of pregnancy	26 (96%)
		24 weeks of pregnancy	1 (4%)
Inj. T. T started to administer mother		The first dose soon after pregnancy and 2 nd dose one month after first dose	2 (7%)
		The first dose 12 weeks of pregnancy and 2 nd dose one month after first dose	15 (56%)
		The first dose 12 weeks of pregnancy and 2 nd dose six months after first dose	3 (11%)
Management of danger signs during pregnancy		Refer to women hospitals for further treatment	21 (85%)
		Provide medical intervention themselves	3 (11%)
		Do not know	3 (11%)
Natal			
Usages of Birth preparedness packages during delivery		Safe delivery kit boxes	15 (56%)
		Transportation, stretcher and ambulance	6 (22%)
		Finance	5 (19%)
		Blood	4 (15%)
		Clean clothes for babies and mother	4 (15%)
Usage of safe delivery kit boxes		Use	21 (78%)
		Donot use	3 (11%)
		Missing	3 (11%)
Post natal			
Best practice during post natal care		Post natal counseling and provide Vitamin A capsule	24 (89%) 17 (63%) 16 (59%) 3 (11%)
		Talk to mother in-law and husband of lactating mothers	
		Advice on the importance of trained health staff during after delivery	
		Information about post partum hemorrhages	
Management of danger signs during post partum phase (for both mother and baby)		Refer to women hospitals for further treatment	21 (78%)
		Provide medical intervention themselves	6 (22%)
BCG vaccination for new borne baby		Soon after baby birth and within the first months of child birth	27 (100%)

The results revealed a clear indication for improvement. The low standing in quality of maternal and newborn health care ultimately reflects poor impact of the whole health infrastructure and manpower on ultimate improvement of maternal and neonatal health. The study also explored the existing barriers to quality of maternal and neonatal care such as staff-patient relationship, the technical competencies among staff, access to information, follow-up services, and management issues including supplies and logistics.

This study shows somewhat better level of knowledge than the results of the Nepal Safer Motherhood Project (NSMP), in which correct knowledge was reported by 68.5% of the midwives in the districts supported by the Project and 54.9% in the unsupported ones. This difference is not big, but it probably shows that the maternal health care staff is becoming more knowledgeable day by day and getting better opportunities than before. The present study was done six years after the Nepal Safer Motherhood Project study. It can be anticipated that the government of Nepal

Table 5 Main findings of research on knowledge, attitude and practice about maternal and neonatal care of ANMs.

Variables	N & (%) found
Understanding of MNHC	24 (89%)
Safe motherhood as a component of RH	24 (89%)
Definition of safe motherhood	10 (37%)
Basic Emergency Obstetric Care	9 (33%)
4 th . ANC visit	27 (100%)
Danger signs during pregnancy	19 (71%)
Stages of labour	12 (45%)
Birth preparedness packages	7 (27%)
Danger signs during delivery	23 (85%)
Danger signs during post partum	23 (85%)
Definition of PPH	20 (74%)
Neonatal period	22 (81%)
Normal weightof baby	26 (96%)
First time breast feeding	15 (56%)
Danger signs for baby	17 (63%)
Three delays	22 (81%)
Average good knowledge	19 (70%)
Feeling easy during pregnant check up	14 (52%)
Feeling easy during delivery care	8 (30%)
Feeling easy during postnatal care	13 (48%)
Feeling easy/normal care for newborn baby	2 (11%)
Average positive attitudes	9 (33%)
Provided Iron tablet	27 (100)
Provided Deworming	26 (96%)
Provided inj. TT 2 dose	17(63%)
Check up and case management during pregnancy when danger signs seen	7 (26%)
Check up and case management during delivery when danger signs seen	3 (11%)
Check up and case management during post natal period when danger signs seen	4 (15%)
Availability of delivery kit box in health institution	15 (56%)
Always usage delivery kit boxes	21 (78%)
Check up and case management during danger signs appears for New born baby	6 (21%)
Practiced done for vitamin A distribution	24 (89%)
Provided BCG vaccine	27 (100%)
Visit mother group at community	25 (93%)
Conducted ORC	12 (44%)
Discussed on safe motherhood issue during group meeting	19 (70%)
Practiced of mentioning diary	6 (22%)
Applied own knowledge for case refer	20 (74%)
Average good Practice	16 (59%)

will continue to improve the quality of care and provision of physical and intellectual resources in maternal and neonatal care.

The results indicated that in the PHCC available resources, good logistics and team work approach was better with maternal care. Especially in the SHP, lack of staff, medicines and equipment influenced the staff negatively. Overall, prenatal and post natal care was perceived easier than delivery and neonatal care, because delivery and neonatal care can be critical in terms of emergencies. The attitude level of ANMs was rather negative. This is similar to the study of Support to the Safe Motherhood Program (SSMP), which found that ‘them-and-us’ attitude prevailed between the health staff and the clients [16].

The relatively less good practice (n=16, 59%) (**Table 5**) of the

ANMs in maternal and neonatal care was found in this study compared with the study of the NSMP, where good practice was found in 81.1% of maternal and neonatal care in the supported districts and 52.6% in non-supported districts [17]. The infection prevention practice was not on the acceptable level especially in SHP but PHCC and HP staff had relatively good practice. Good infection prevention practice in the NSMP study in 2004 was found in 66.7% of the midwives in the program districts and 25% in no program districts [17]. Proper hand washing practice, sterilization techniques, decontamination and waste disposal practice was observed to be poorer than the corresponding NSMP study findings in 2004, probably because of poor management, improper disposal of waste materials, inadequate human resources and staff biasness habits of chief. All these findings

came from both interviews with ANMs and from focus group discussions. The health staff thought the cleaning and waste material disposal should be done only by the support staff but there were not enough such staff at primary health care settings.

This study showed that there were inadequate resources for maternal and neonatal health care; the overall provision of medicines and equipments was poor, which is similar to many other developing countries like Bangladesh, India, Pakistan, and Afghanistan due to low economic resources in the country and poor logistics and management system [9]. The Department of Health Service, Logistic Management Division targeted 45% of its resources, and district public health office targeted 55% to supply primary health care settings [18]. Still the government target did not seem to meet the standard in order to supply medicines and equipments in the health institutions. This is one of the consequences of poor availability of resources in health care settings in Nepal.

Training is one of the priority areas for Ministry of Health and Population of Nepal. SBA strategy (2006-2012) was launched in 2006 to reduce maternal and neonatal mortality and morbidity by ensuring the accessibility, access to and utilization of skilled care at every birth [19]. In this study only a few ANMs had received SBA training, which is much lower than the national coverage (381 out of 306 targeted in 2007/08 among all 12896 medical doctors, staff nurses and ANMs). In Bangladesh there were 2500 community SBAs working on the community level in 2007 and there was a long-term target to reach 900 to 1800 SBA per year until 2015 to have an adequate SBA coverage in all rural Upazillas and districts [20]. Similarly, only few ANMs of this study area had received reproductive health clinical protocol training. Midwifery refresher training was more common as almost a half of ANMs had it; however, no ANM from primary health care settings of this study had got infection prevention training, whereas 65% of 340 planned health workers were trained in 2006/07 in Nepal. Nationally around 900 of the 4000 MCHW working in SHP have been up-graded [21]. The rest are not eligible for training because they do not meet the educational requirements [19]. The SBA training, reproductive health clinical protocol training, upgrading training and other relevant trainings are ongoing processes. Training for ANMs should not include only technical skills but it should also include management training skills and behaviour change skills. The training coverage was relatively lower in the study area compared to the national figures.

Utilization of external and internal resources for good quality maternal and neonatal services in health institutions is a key strategy for the government of Nepal. Majority of ANMs used governmentally supplied essential drugs and equipments. These services aim to meet national and district level targets of health services. The Government of Nepal has already started to supply maternal and child health commodities in 2004 and thereafter Banke district also received this commodities [15]. However, it was observed in this study that most of the health institutions did not have sufficient medicines stocked due to poor management and supply from the government. All but six ANMs always used safe delivery kit boxes. The ANMs from Bankatuwa and Laxmanpur PHCC and Sonapur HP used sterile delivery sets at

health institutions. The ANMs recruited on contract basis by local government, called Village Development Committees (VDC), had relatively lower knowledge compared to government employed about the usage of safe delivery kit boxes. Using sterile safe delivery kit boxes reduces infection and neonatal tetanus toxoid. The overall good practice of either kit boxes or sterile delivery sets at health institutions plays significant role for eliminating neonatal tetanus.

The results showed that there were relatively good buildings within PHCC and HP compared to SHP, the latter having poorer buildings. There is a lack of good practice of health staff since they did not use resources what they had locally. Although all ANMs used maternal care register (HMIS-10) during the service, other forms and registers were not often used because of care less behaviour and poor supervision and monitoring system of monthly perform safe mother hood activities by ANMs at health facilities level.

To overcome these problems at first all staff should change their working behaviour and they need to use government guidelines and protocols correctly. They have to make community aware about their health and establishment of credibility of maternal services. Staff's low accountability and poor punctuality and poor monitoring and supervision system are further challenges for the quality of care. There should be regular good supervision and monitoring system to ensure quality of maternal and neonatal health care service at SHP, HP and PHCC.

Conclusion

The safe motherhood policies and strategies give a clear message to all health care providers and stakeholders for improving quality of care in maternal and neonatal health. This study was conducted to address the questions of what are the present levels KAP of ANMs working in the primary health care settings. Further, the study observed available resources, infrastructure and management system. Thus both structural and process aspects were studied. This study found that the governmental policy, strategies, guidelines and protocols were not effectively applied at working level. Delivery and neonatal care were perceived more difficult than pregnancy and post partum care. The results showed ANMs were skillful health personnel at taking vital signs during pregnancy period, at growth monitoring of babies and at providing iron tablet, albendazole and vitamin A capsule and administration of Bacillus Calmette Guerin (BCG) vaccine compared to handling of danger signs. They were rather conscious to refer patients to medical doctor for further management. Some of the information related to services differed between interview findings, observation and FGD. Health workers were dissatisfied with their working environment because of inadequate staff and infrastructure, low salaries, lack of training and rewards, insecurity, political influences, poor management and lack of coordination. Therefore, the health care providers, management committees, other stakeholders and health service receivers should be conscious about services. The

most important ways of improving quality of care of maternal and neonatal service at health care setting were observed: updated training, staff fulfillment, adequate medicine and instruments, security, effective health education and awareness programs at target levels, support from local administration, and health facility operation and management committee (HFoMC) and regular monitoring and supportive supervision.

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