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Assessment of Knowledge and Practice of Neonatal Care among Post Natal Mothers attending in Ayder and Mekelle Hospital in Mekelle, Tigray, Ethiopia 2013

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Abstract

The most recent estimates suggest that 130 million babies born every year, 4 million die in neonatal period. Neonatal mortality now accounts for approximately two-thirds of the 8 million deaths in infants less than 1 year of age and nearly four tenths of all deaths in children less than 5 year of age. Worldwide 98% of all neonatal death occurs in developing countries .Mostly at home, and attributable to infection birth asphyxias, injuries and consequences of prematurely, low birth weight and congenital anomalies. To assess the knowledge and practice of neonatal care among

post natal mothers attending in governmental hospitals found in Mekelle town, Tigray, Ethiopia 2013. Study was conducted on knowledge and practice of neonatal care among post natal mothers and the study design of the research project is facility based cross-sectional study design was used. The data period from May—June 2013 .The data was collected from 290 post natal mothers by trained interviewers using structure questionnaire .The data was analyzed using Microsoft excel 2007. Out of the total 290 respondents 153 (53%) were in the age group of 25-29 years and the remaining 45 (16%) were 30-34 year and 18 (6%) were between 35-39 years. The mean age were 27.04(± 5.9). Out of the total study participants 220(75.86%) of the respondents were knew that vaccine given to prevent from infection, 53(18.28) of them responded that to improve the health of the baby. Of the total respondents 247(85.17%) responded that nothing should be put on the umbilical cord to dry, 43 (14.83%) of the respondents put something to the umbilical cord stump such as animal dung and butter .Of the total study participants 112(38.6%) of the mothers said that first bath should be started after twenty-four hour, but more than half of the respondents 178(61.4%) were not. Out of total study participants the total 107(36.9%) were practiced traditional malpractice, like uvulectomy 58(20%). majority of mothers have had good knowledge, toward benefits of vaccination, initiation of Brest milk, umbilical care and new born danger sing. Health education played significant role to increase their knowledge. This study revealed that malpractice was still concern in the study area and significant number of study participants conducted malpractice and lack of awareness was main reason for traditional malpractice.

Key words: Knowledge, practice, neonatal care and Antenatal care.

Introduction

Children are an embodiment of our dreams and hopes for the future. For a nation to grow and progress, the well being and the health of the children is of crucial importance. Today, babies have more opportunities than ever before to grow into healthy children, adolescents and adults. Advances in medical research , the advent of new technologies have helped improve the healthcare of both well and sick newborn babies .Further innovation in baby care equipment have made the task of caring for babies much easier [1].

A neonate is a newborn infant, especially one less than four weeks old. Mother's knowledge on neonatal care and practice accordingly plays an important role in bringing down the mortality as well as morbidity. Skilled professional care during pregnancy, at birth and during the postnatal period is as crucial for the newborn baby as its for its mother package of newborn care practices exists, which has a proven impact on reducing mortality. Child birth and the neonatal period are culturally important times, during which there is strong adherence to traditional practices [2].

The normal practices of neonatal care include breast feeding, maintenance of body temperature, baby massage, skin care and baby bath, care of the umbilical stump, care of eyes, dresses for the baby, immunization practices. Many potentially harmful newborn care practices are being carried out such as unhygienic cord cutting, delayed breastfeeding and early bathing this was found out by a study which was conducted in 2010 in rural Karnataka with an objective to determine the healthy and harmful practices regarding neonatal care .It explores local newborn practices and beliefs, analyses their harmful or beneficial characteristics. Mother is the closest person to a neonate. Knowledge of mothers on neonatal care and proper practice of that knowledge could help many unexpected situations [3.4].

The problem was Global rate of under 5 and infant mortality have declined over the past four decades, but high rates neonatal mortality have remained unchanged [5-7]. Two-third of all infant deaths and 38% of all under 5 deaths occur during neonatal period resulting in about 4 million neonatal deaths globally per year [5, 7-9].

Infant & child mortality rates have improved significantly in many regions worldwide by reducing deaths due to diarrhea, pneumonia, vaccine preventable infections and malaria. Nevertheless, most improvement has been due to live saved after the first four week of life. Globally about10, 000 new bore each day. About 1million new born (infant under the age of 28 days) annually die during their first week. These deaths in the first months of life reflects primarily factors associated with health of the mothers before and during pregnancy and the

special problems of the new born. Death in this age range result chiefly from in adequate intrauterine growth (prematurely, IUGR) and congenital anomalies as a result, Neonatal mortality rates provide an indicator of the factors affecting pregnancy delivery, the neonate and the adequacy of services in the prenatal, intrapartum and neonatal periods [10].

Statement of the problem

In Ethiopia around 120,000 new born die every year and the neonatal mortality rate is 37/1000 live birth. The common causes of neonatal mortality in Ethiopia are infection, asphyxia and preterm birth [11]. Many women do not generally seek formal health care during pregnancy, child birth and puerperal. This has a major impact on care seeking for and survival of the new born. Less than third of women receive antenatal care and 90% are assisted by unskilled attendants: TBAs (26%) relatives (58%) or alone (6%).Almost no one (3.5%) receives postnatal care [12]. One of the MDG is to reduce the child mortality rate by two-third by the year 2015(MDG 4) from a base line in 1990...WHO estimates that a significant proportion (40%) of all under 5 deaths occur in the neonatal or prenatal (0 to 28 day of life) periods. The prenatal period is recognized as the most dangerous period of life because of various problems faced by the neonatal [13].

Significance of study

Farther more, the new born health challenges faced in Ethiopia are more formidable than that experienced by any other country in the world. It is estimated that 120,000 new born die every year. There are no studies that have examined knowledge and practice of neonatal care among post natal mothers despite high neonatal mortality rate nationally. The present study is intended to assess knowledge and practice of neonatal care among post natal mothers attending in hospitals in Mekelle town ,Tigray region and will used as a base line for further studies.

Methodology

Study Area and Study Period: The study area is Mekelle town, Tigray regional state. Tigray is

located in northern part of the country has total of 7 zones and population size 4,685,617 .Mekelle is capital city of the region one among 7 zones of Tigray region and is 783 km away from the capital (Addis) .Mekelle has a total population of 232,119 which is projected by 2.5 growth rates of 2007 central statistical data [13]. Mekelle has 8 governmental and private hospitals, 9 governmental health centers all of them are giving delivery service, postnatal care according to regional health bureau. This study was done from May—June 2013 Mekelle, Ethiopia at Ayder and Mekelle hospital.

Study design, source and study population: The study design was institutional based cross sectional study was conducted. The source population was all mothers found in the age group of 15-49 who was visited the selected hospitals for one or another care during the study period. The study population was all post natal mothers age 15-49 which are healthy and have alive neonate at the time of data collection period.

Eligibility Criteria: The Inclusion criteria all postnatal mothers age 15-49 those who have alive babies and exclusion criteria were non responsive postnatal mothers and lose their babies during or after birth were excluded from the study.

Sample size Determination and sampling procedure: Sample size was computed based on single population proportion formula, and using the prevalence of knowledge and practice 50.3 % since lack of similar study in Ethiopia, z-value of 1.96 at 95% confidence interval and margin of error is 5%, non-response rate 5%. Using single population proportion formula, n= 385 but source population of the research project was less than 10,000 (N=969), correction formula was used; to be n= 275. After adding the non response rate, the sample size was increased to 290.

Corrected sample size= $\frac{\mathbf{n \times N}}{\mathbf{n+N}} = \frac{\mathbf{969 \times 385}}{\mathbf{969+385}} = \mathbf{275.52}$

After adjustment for a dropout rate of about 5%, the sample size was increased to **290.**

Data collection procedure: Data collection and Data quality management was Post natal mothers was came to the hospitals was interviewed using structured questionnaire. Data collectors were nurses

who work in a health facility and supervisor was BSC, nurse who has been working in under 5 clinic who had training on IMNCI. Two days training was given to data collectors using lecture which was focused on introduction of tools and was given for one day.

Data management and quality assurance: Questionnaire was pre-tested in Quiha hospital before the start of the study depending on findings correction, rearrangement and adjustment was made for the questionnaire to make clear and understand able. Data collector was verify the post natal period according to standard definition before starting interview .If any doubt was consult supervisor and after interview data collector was also check questionnaire for completeness before admiring them and let the interviewee go. Supervisor was check all the questionnaires that are going to fill up per day so that any mistake or missing was discussed and corrected afterward. This was conducted from June 1-June 15 2013.

Study variables: The Independent variables socio-demographic characteristics-Educational status, Occupation, place of residence Age, monthly income parity, and religion. ANC, number of children, breast feeding, umbilical cord and the dependent variables were knowledge and practice.

Data analysis, interpretation: The data analysis procedure, data was entered using Microsoft excel 2007 soft ware; data was cleaned during template formation by providing good skipping pattern and after data entry by looking consistency and outliers sample listing. Analyzed data was presented by Microsoft excel 2007 soft ware and frequency tables, graphs, pie charts for descriptive statistics/epidemiology. If .P-value is less than 5% (0.05) it was considered as statistically significant. And confidence interval of 95% was accepted as statistically significant test for analysis of findings.

Ethical consideration: Ethical clearance was secured from institution review board, nursing department, Mekelle University. After having the ethical clearance of the university, it was presented to the Regional Health Bureau, finally to respective health facility to get permission

and support letter to carry out the study. Orally purpose of study was explained and makes them to understand. The mothers in the study had the right to participate or not. For those study subject who was agreed to participate was continued as study participant confidentiality and privacy was maintained by assigning data collectors other than these working health facility and interviewing study participants in separate room with in the health facility those that are not voluntary to participate in the study was represented by their decision.

Dissemination of the study findings: After data collection, analysis and result were disseminated to all respected stockholders which are Tigray Regional Health Bureau and Mekelle University College of Health Science Department of Nursing.

Result

All mothers expected to participate were interviewed (N = 290). Out of the total 290 respondents 153 (53%) were in the age group of 25-29 Year the remaining 45 (16%) were 30-34 Year and 18 (6%) were those between 35-39 year. The average age of respondents were 27.04 (± 5.9). Of the total study respondents 226(77.93%) were married, 140(48.28%) house wife and 235(81.03%) were orthodox. From the total respondents 228(78.62%) and 62(21.38%) were urban and rural respectively. Regarding education 156(46.82) were attend formal school (Table 1).

Of the total respondents 239(82.41%) had 1 to 3 number of pregnancy in their life time. Almost all 280(96.55%) of the respondent were attended antenatal care, 163(58.25%) were visited 4 or more time through 9 month of pregnancy. More than half 150(53.57%) were attended antenatal care follow up at health center (Table 2).

Concerning about health education, the majority study participants 270(93.1%) said that they had health education on neonatal care, an half of respondents 135(50%) had the information from health workers. One third of respondents 220(75.86%) knew that vaccine given to prevent from infection, 53(18.28) of them responded to improve the health of the baby, only 14(4.83

Table1: Findings of Socio-demographic characteristics of the respondents Mekelle 2013(n=290).

Variable	Categories	Frequency	Percent
Maternal age	15-19	16	6
	20-24	39	13
	25-29	153	53
	30-34	45	16
	35-39	18	6
	40-44	15	5
	45-49	4	1
Marital status	Married	226	77.93
	Single	24	8.28
	Divorced	31	10.69
	Widowed	9	3.10
	Total	290	100
Religion	Orthodox	235	81.03
	Catholic	4	1.38
	Protestant	19	6.55
	Muslim	32	11.03
	Total	290	100
Place of residence	Urban	228	78.62
	Rural	62	21.38
	Total	290	100
Distance of health facility from residence	<5km	148	51.03
	5-10km	92	31.72
	11-20km	29	10
	>20km	21	7.24
	Total	290	100
Had ever attend school	Yes	156	46.82
	No	134	53.18
	Total	290	100
If yes level of education	1-4	25	11.26
	5-8	66	29.73
	9-12	65	29.28
	Total	156	100
Average monthly income	<500 ETB	64	22.07
	500-1000ETB	58	20
	>1000ETB	168	57.93
	Total	290	100

Table 2: Distribution of Obstetric history of the respondents Mekelle 2003(n=290).

Variable		Frequency	Percent
Number of total pregnancy	1-3	239	82.41
	4-6	44	15.17
	>6	7	2.41
	Total	290	100
Number of family	1	190	65.52
	2	87	30
	3	12	4.14
	4	1	0.34
	Total	290	100
Attend ANC for recent pregnancy	Yes	280	96.55
	No	10	3.45
	Total	290	100
Number of ANC visit	1	9	3.21
	2	26	9.29
	3	82	29.29
	4	163	58.21
	Total	280	100
Health facility attended ANC	Referral Hospital	47	16.79
	General Hospital	15	5.36
	District Hospital	14	5
	Health center	150	53.57
	Health post	8	2.86
	Private center	46	16.43
	Total	280	100
Mode of delivery	VD	178	61.38
	C/S	112	38.62
	Total	290	100
Number of total family size	1-3	116	40
	4-6	162	55.86
	7-8	12	4.14
	Total	290	100
	No	20	6.9
	Total	290	100

%) reported that to prevent from infection and improve the health of the baby. The vast majority respondents 279 (96.21%) reported that TT immunization was important but only 44(15.77%) of the respondents said that TT immunization protect the pregnant mother as well as the baby from infection, 18(6.45%) of them did not knew the advantage of TT vaccine. 148 (51.03%) of the respondents said that keeping the baby close to the mother body was the method to keep the baby warm. More than half 162(55.86%) of the mothers reported that breast milk should be given immediately after birth for the new born 161(55.52%) of the mothers said that breast feeding should be started immediately after birth within one hour. Of the total respondents 247(85.17%) responded that nothing should be put on the umbilical cord to dry, 43 (14.83%) of the respondents put something to the umbilical cord stump like animal dung, butter .Of the total study participants 112(38.6%) of the mothers said that first bath should be started after twenty-four hour, but more than half of the respondents 178(61.4%) were not, 251(86.5%) of the respondent responded that colostrums was important for the new born around 39(13.4%) of the mothers said that it had not impotence. 188(64.88%)of the respondents knew two or more newborn danger sign followed by fever 38(13.1%).Of the respondents 235(81.03%) of the mothers responded that they had gone to hospital when their neonate sick(Table 3).

Regarding malpractice of the respondents, of the total study subject 52(17.9%) were practiced pre-lacteal feeding the reason of most respondents 29(55.77%) were because of lack of breast milk, 16(30.8%) to soften the intestine and 7(13.46%) did not know the reason, why they practiced. Out of total study participants the total 107(36.9%) were practiced traditional malpractice, like uvulectomy 58(20%), those practicing two or more malpractice 25(8.62%), giving sugar water 16(5.52%) and those who practice butter swallowing were 8(2.76%).

Discussion

Global rate of under five and infant mortality have declined over the past four decades

Table 3: Distribution of respondents knowledge about Neonate care, Mekelle, 2013 (n=290).

Variable	Categories	Frequency	Percent
Every Attend Health education On neonatal care	Yes	270	93.1
	No	20	6.9
If by whom	Health worker	135	50
	TV	30	11.11
	Radio	18	6.67
	Answer two or more of above	87	32.2
Ever put something on the cord	Nothing	247	85.17
	Animal dung, butter	43	14.83
Kind of feed given immediately after birth	Breast milk	162	55.86
	Sugar Water	34	11.72
	Butter	16	5.52
	Nothing	78	26.90
When did you give breast Milk after birth	Within one hour	161	55.52
	After one hour	129	44.48
When did you give first For the new born	Before 24 hr	178	61.38
	After 24 hr	112	38.62
Does colostrums important	Yes	251	86.5
	No	39	13.5
What are the important of Colostrums	High nutrient	46	18.32
	Easily digestible	9	3.59
	Protect from infection	148	58.96
	Answer 2 & above	39	15.54
	I don't know	9	3.59
What are the new born Danger sign	Fever	38	13.10
	Unable to suck Breast milk	24	13.10
	Fast breathing	1	0.34
	Grunting	3	1.03
	Jaundice	1	0.34
	Other	35	12.07
	Answer 2 & above	188	64.85
Where you go when your Neonate get sick	Hospital	235	81.03
	Pharmacy	1	0.34
	Stay Home	2	0.69
519	Health center	47	16.21

	Private clinic	5	1.72
How do you warm new Born baby	Warm cloth Keeping close mother body Kangaroo mother care Answer 2 & above	148 119 12 11	51.03 41.03 4.14 3.8
Number of < 5 children	< or equal 2 years >2 & <5 years	256 34	88.27 21.73
Traditional malpractice	Uvulectomy Butter feeding other	223 30 37	117 16 19

Practice of the respondents

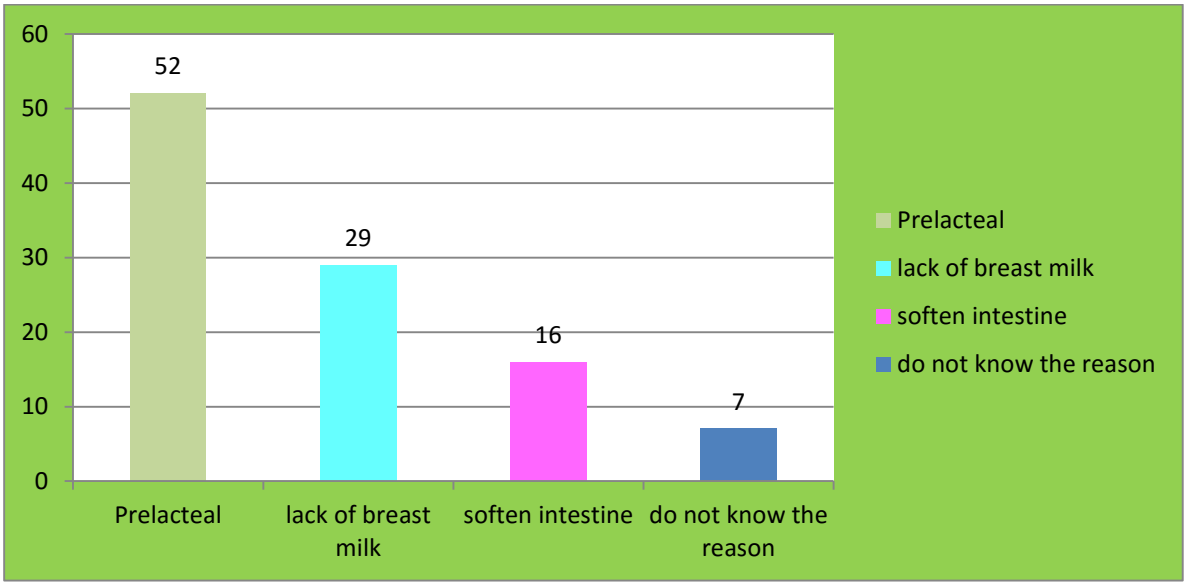

Fig 1: Distribution of respondents about Malpractice of women in Ayder and Mekelle hospitals 2013.

but high rates neonatal mortality have remained unchanged [5-7] two third of all infant deaths and 38% of all under five deaths occur during neonatal period resulting in about 4 million neonatal deaths globally per year [5,7-9]. In Ethiopia neonatal mortality and morbidity now are among the highest in the world and stem for range of socio-economic, political and demographic

factor. In Ethiopia around 120000 new born die every year and the neonatal mortality is 37/1000 live birth (Central statistical Authority (CSA).

Out of the total 290 respondents 153 (53%) were in the age group of 25-29 year the remaining 45 (16%) were 30-34 year and 18 (6%) were those between 35-39 year. The average age of respondents were 27.04 (± 5.9). Of the total study respondents 226(77.93%) were married, 140(48.28%) house wife and 235(81.03%) were orthodox. From the total respondents 228(78.62%) and 62(21.38%) were urban and rural respectively. Regarding education 156(46.82) were attended formal school. These findings were also in line with the study conducted Gondar town, Ethiopia, all mothers expected to participate were interviewed (N = 603). The mean age of the mothers was 28 (SD ± 5.86) years. Four hundred eighty-nine (81.1%) mothers were married, and the majority of them 460 (76.3%) were Orthodox Christianity followers. One hundred forty-two (23.5%) mothers had completed grade 9 and 10. This similarity might be due to the similar in socio-cultural and socio-economic in these study settings.

TT immunization protects the mother and baby against tetanus, a life threatening disease. In this study majority of the respondents 279(96.2%) responded that TT immunization was important but only 44(15.77%) of the respondents said that TT immunization protect the pregnant mother and the baby from infection 18(6.45%) of the respondents did not know the advantage of TT vaccine. Of the total respondents 161(55.52%) of the mothers responded that breast feeding should be started within one hour of birth.

Study done in South India shows that although 92% of the mothers know the recommendation of initiating breast feeding within one hour only 36% had actually done it, the data in various studies in India shows that initiation rate vary from 16% to 54% (Gupta A et al).According to Bangladesh demographic health survey 2007 about 19% of the new born were breast fed immediately after birth.

Of the total respondents 239(82.41%) had 1 to 3 number of pregnancy in their life time. Almost all 280(96.55%) of the respondent were attended antenatal care, 163(58.25%) were

visited 4 or more time through 9 month of pregnancy. More than half 150(53.57%) were attended antenatal care follow up at health center. These finding is more than Similar study done in Gondar town, Ethiopia showed that, among the interviewees, 350 (58%) were attended ANC for their last pregnancy, of whom, 172 (28.5%) attended less than four times. One hundred ninety-four (32.17%) mothers were gave birth at home. This could be due to health coverage and awareness is better than Gondar town.Proper umbilical cord care reduces bacterial colonization and infection of the cord as well as neonatal tetanus and sepsis.

In our study 85.17% of the mothers said that nothing put on the umbilical cord. Study done in South India knowledge of mothers was inadequate in area of umbilical cord care 35% (Gupta A et al). Studies done in developing countries have reported that 65% of mothers responded that they would leave the cord stump as such [13]. This might be due to cultural differences of these two countries and due to the difference of study period.

It is important for the mother to know that the first bath to the new born should be given after 24 hour because new born acclimatizes the temperature changes from womb of mother and outside environment during this period any sudden temperature change may cause hypothermia to the neonate and would also be hazardous for the delicate skin. In our study of the total respondents 112(38.62%) of the mothers responded that first bath should be given after twenty-four hour of birth study done in south India 74% of the mothers had the right knowledge (Gupta A et al). According to Bangladesh demographic health survey 2007 only 10% of babies had a bath with in 24 hour or more after birth [14]. This study has similar setting with Bangladesh that is it is found in the developing country Ethiopia.

The unique nutritional and antibody properties of colostrums and the disadvantages to those infants not fed with colostrums are now well recognized and documented. Of the total respondents 251(86.5%) responded that colostrums was important. Study done in south India only 56% of the mothers knew that colostrums needs to be given which is very low [15]. Other studies done in India where the importance of colostrums was known to 75-90% of the mothers [16,17].

One hundred sixty one (55.5%) of the respondents said that breast milk should be given immediately after birth, 52(17.9%) mothers said butter and sugar water should be given after birth. Study done in Bangladesh demographic health survey pre-lacteal feed such as honey and water is widely practiced [14]. Another study implemented in an urban slum in Delhi reported that 48% of babies were given pre-lacteal [18].

Knowledge about the importance of vaccine immunization does not come under the essential new born care practices. It is crucial that mothers should learn regarding immunization before they get discharged from hospital. Of the total respondents 220(75.86%) of the mothers knew that vaccine were given to prevent from infection, whereas 53(18.28%) of them responded that it improves the health of the baby, 14(4.83%) responded it prevents from infection and improves health of baby. In this study 107(36.90%) was practiced traditional malpractice like uvulectomy 58(20%) butter swallowing 8(2.76%) giving sugar water 16(5.52%) and practicing two or more malpractice 25(8.62%).This might be due to the fact that the traditional malpractices considered culture by the mothers throughout the study setting.

Conclusion

Literatures agreed that mothers can have a prominent role in caring new baby. Hence it is important that assessing of mothers knowledge and practice to help them handle such responsibility. The result of this study suggested that majority of mothers have had good knowledge, toward benefits of vaccination, initiation of Brest milk, umbilical care and new born danger sing. Health education played significant role to increase their knowledge. This study revealed that malpractice was still concern in the study area and significant number of study participants conducted malpractice and lack of awareness was main reason for traditional malpractice.

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Authors Column

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