Impact of Mothers Awareness on Newborn Health in Bangladesh

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Abstract

Background: Globally, maternal and infant morbidity and mortality is a serious public health problem. Maternal mortality rate in Bangladesh is 176 per lack live births which remain high as Government set target to be achieved by 2016. Antenatal care is extremely important health care service for the mothers' and unborn fetus during pregnancy. It is well recognized that good antenatal care improves maternal, perinatal and neonatal outcomes.
Objective: To identify the maternal awareness of antenatal care on impact of mothers' and newborn health in Bangladesh.
Methods: The study was conducted by using descriptive and cross-sectional design. This study was approved by the appropriate authority and informed consent forms were obtained from the participants.
Result: Maternal' awareness of antenatal care; impact of mothers' and newborn health were found statistically significant ($t = 68.54$, $p < 0.001$) and ($t = 59.11$, $p < 0.001$) different among rural and urban mother's. It was observed that maternal' awareness of antenatal care and impact of mothers' and newborn health were significantly difference between rural and urban mothers' ($x\ 2 = 211.869$, p 0.004 and ($x\ 2 = 157.772$, p 0.002 respectively).
Conclusions: The findings indicated that maternal' awareness of antenatal care on impact of mothers' and newborn health was statistically significant different between rural and urban mothers'. Further intervention study is needed to evaluate the effect of intervention on maternal and child health outcomes that represent the whole population.

Keywords: *Awareness, Impact, Mothers, Newborns, Antenatal Care.*

Introduction

Globally, maternal mortality and morbidity is a serious public health problem. Every year approximately 303,000 women die while pregnant and within 42 days after termination of pregnancy. Of these 99% of 800 maternal deaths per day occur in developing countries. Each year 2.7 million newborns died within the first 28 days of life and 2.6 million babies' stillbirths, of which approximately 45% occur during labor and birth. In Bangladesh, the rate of maternal mortality, neonatal mortality, and stillbirth are 176/100,000 live births, 24/1000 live births, and 36/1000 births respectively. The low birth weight is 33/1000 live births. Moreover a study found 22.6% low birth weight. The overwhelming majority of these deaths could have been prevented. Antenatal care (ANC) is an effective tool to reduce both infant and maternal mortality and morbidity. The principle of ANC is to provide advice, education, reassurance, and support; to address and treat the minor problems of pregnancy; and to provide effective screening during the pregnancy. It is well recognized that good antenatal care improves maternal, perinatal and neonatal outcomes. Ministry of Health and Family Welfare (MOHFW) initiated the Health, Population, and Nutrition Sector Development Program (HPNSDP) for five years, from July 2011 to June 2016. Antenatal care service is one of the programs which is working toward achieving Millennium Development Goals 4 and 5 (child mortality and maternal health). ANC is one of the programs which can achieve the Millennium Development Goals 4 & 5. So it is needed to see the maternal awareness about antenatal care whether antenatal care services effectively achieved.

Objectives of Study

1. To identify the maternal awareness of antenatal care on impact of mothers' and newborn health in Bangladesh.
2. To examine the relationship between the awareness and impact on ANC of mothers;
3. To determined the level of awareness and impact of antenatal care of the mothers.

Conceptual Framework of the Study

The conceptual framework of this study guided by the literature on Antenatal care-World Health Organization (Ornella, L., Seipati, M. A., Patricia, G., and Stephen, M. (n.d)). And Awareness and Practices on Diet, Weight management and Antenatal care (Prptiva, R. S., and Haque, M. M. 2015), Millennium Development goals progress report of Government of the Republic of Bangladesh 2012 and WHO Country Cooperation Strategy Bangladesh 2014-2017 to developed conceptual frame work. In this study mainly three domain were used. This includes 1) socio-demographic like refers to age, religion, education, occupation of mother, occupation of husband, family income, number of family member, number of children, gestational age and condition during pregnancy which are affect of awareness and impact of mothers awareness; 2) awareness refers to knowing about meaning, important ANC visits, colostrums, benefits of colostrums and breastfeeding, duration of exclusive breastfeeding, duration of breastfeeding with complementary feeding, nutrition during pregnancy, place of delivery and postnatal care which are influence to impact of mothers awareness; and 3) impact refers to outcome of mothers awareness on antenatal care after delivery regarding place of delivery, birth attendants, face any problem during delivery, birth weight of newborn, condition of baby during and after birth, condition of mother during and after delivery, first initiation of feeding, when start colostrums and exclusive breastfeeding which influence by the socio-demographic and awareness of mothers.

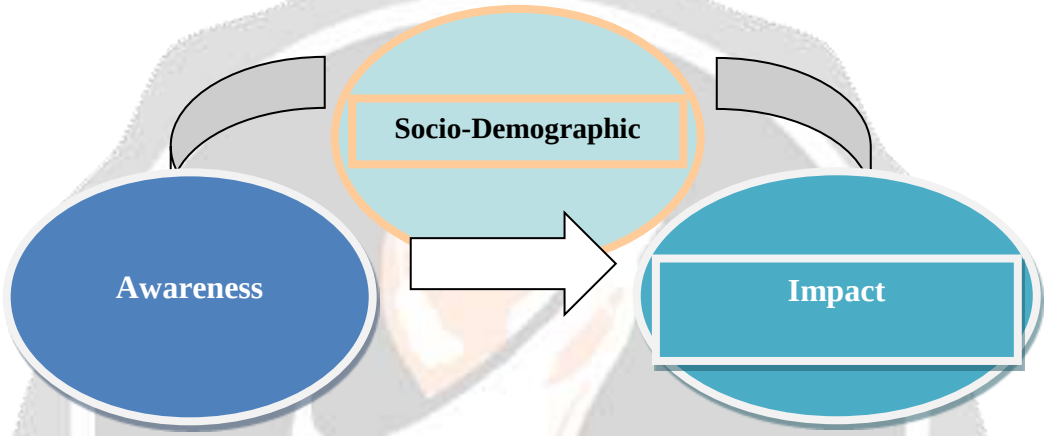

Figure 1: *Conceptual Framework of the study*

Significance of the Study

Pregnant mothers are always feeling uncomfortable because pregnancy is a transitional period where every system in the body is affected. This involves biological, psychological and social changes that begin from pregnancy and extend to the postpartum period (Dutta, D.C, 2014). Bangladesh is the largest and most densely populated of the least developed countries. The population of the country is approximately 150 million with the area is only 147,570sq.km. (World's Midwifery, 2011). Most of the women in Bangladesh undergo pregnancy and give child birth with no trained or skilled midwives to support and assist them. Many women die every year during pregnancy, when giving birth and after delivery because of absence of trained and skilled midwives (Hossain, P.H.M., Erken, A, 2010, BDHS, 2007). According to the BMMS (2010) and Countdown (2015) reported that maternal death occurs due to haemorrhage, sepsis, hypertension, abortion, indirect cause and other direct cause due to lack of proper antenatal care during pregnancy and child birth beyond after birth. Antenatal care is important for the prevention of maternal and fetal mortality and morbidity (Sadiq, N, et.al. 2011). Since the inter-relationship between the baby and the mother is well known, there is no better time to begin the care of the baby than whilst it is still a fetus. Various maternal factors such as maternal age, parity, spacing between children, her health and nutritional status and care during pregnancy all have effects on the growth and well being of the fetus. Agarwal (2005) recommends to raise the status of women in terms of education and socio-economic status, and to improve provision of health education to women on intensify individual counseling of women on hospital delivery and on individual birth preparedness (Agarwal & Reddaiah, 2005). Improving the health of pregnant women is crucial to their prospects of surviving pregnancy and childbirth and to their long-term health. It is also pivotal to improving the survival and health of children.

Methodology of the study

Population

The population of this study was postpartum mothers.

Setting

This study was conducted at labour wards and postnatal wards of the Dhaka Medical College Hospital (DMCH) and Sir Salimullha Medical College (SSMC), Mitford Hospital Dhaka. DMCH is the biggest hospital in Bangladesh. This hospital is equipped with 1800 beds. There are 28 departments and 72 wards/units including both inpatient and outpatients departments. The labour ward consists of four sections and 62 beds (the observation area had=8 beds, postoperative caesarean section had=8 beds, postnatal section had 30 beds, and antenatal section had=16 beds). Approximately 20-30 postpartum mothers are admitted to the postnatal section per day. On the other hand SSMC, Mitford Hospital Dhaka is also a second biggest hospital in Bangladesh. This hospital is equipped with 900 beds. There are also 28 departments and 32 wards/units including both inpatient and outpatients departments. The labour ward consists of four sections and 62 beds (the observation area had=8 beds, postoperative caesarean section had=8 beds, postnatal section had 30 beds, and antenatal section had=16 beds). Approximately 25-35 postpartum mothers are admitted to the postnatal section per day. There are many tertiary secondary hospitals in Dhaka. However, this two hospital was selected for the research setting because this hospital located in central Dhaka and is considered as top referral and specialized hospital of the country. A large number of mothers were coming from different places to receive antenatal care, child birth and postnatal care. This study intended to examine the impact of rural and urban mother's awareness gained through antenatal care on mothers and newborn health. Therefore, the subjects drawn from these setting considered being an appropriate representation of all postpartum mothers in Bangladesh.

Sample and Sample size

The sample of this study was the postpartum mothers admitted to the labour and postnatal wards of DMCH and SSMC Mitford Hospital, Dhaka. The sample size in this study was estimated by using formula (Daniel, 1991, Kothair, 1985).

$$N = \frac{Z^2 p\,(1-p)}{d^2}$$

Where n is sample size, Z = is the level of confidence or level of significance, d is the standard error, p is the proportion in the population possessing of interest. However, there is no prevalence study in Bangladesh. It is estimated that average 45-50 mothers have to give childbirth per day. The 'p' is the proportion in the postpartum mother's which is obviously known. Since p = 0.5 in the formula yield the maximum value of 'n' and the sample will yield at least the designed precision. A 95% confidence interval (z = 1.96) with 0.05 standard error (d = 0.05) is desired in this study. Hence, the sample size is as follows:

$$\text{(a) } n = \frac{(1.96)^2\,(0.5)(0.5)}{(0.05)^2} = 384.16$$

However, the final sample size for data analysis in this study was 442 postpartum mothers. Among them 241 mothers from rural and 201 mothers from urban area as considered their living place. Determinant the living place: those mothers were living outside the Dhaka or far from Dhaka city, they are considered as rural mothers and those mothers were living within the Dhaka city or near the Dhaka city, they are considered as urban mothers.

Sampling Method

Systematic random sampling method was used to recruit the eligible subjects in this study. Postpartum mothers who were given child birth before one day at postnatal and labour wards and who were meet the selection criteria. Systematic random sampling were done by distribution of patients' bed i.e. two alternative bed selection to prevent bias. If the selected patient of the bed is unable to meet the selection criteria then next patient of the bed were included for sampling.

Preparation Phase

Approval of the research proposal was given by the American World University (USA). The researcher took written permission from the Director of the DMCH and SSMC Mitford Hospital, Dhaka. This was done to collect the data.

Data Collection Phase

1. After getting permission from the Director of DMCH and SSMC Mitford Hospital, Dhaka, the researcher met with the head nurse of postnatal and labor wards and explained the purpose of the study and data collection procedure.

2. Before collecting the data, the researcher approached the mothers who met the inclusion criteria, and introduced her-selves. She briefly explained the purpose of the study, the procedure for collecting data, and their rights about participating in the study.
3. The researcher asked mothers to sign an informed consent form that stated they had the right to refuse to participate in the study at any time.
4. The researcher gave the questionnaire to the mothers who decided to participate in this study. The researcher read the questions to the mothers 'word by word' and asked them to provide the answers in accordance with the questions being asked.
5. The researcher checked that the questionnaires had been completed.

Data analysis

Both descriptive and inferential statistics were used for analyzing the data. The descriptive statistics including frequencies, percentages, mean, and standard deviation were used for analyzing the demographic characteristics; awareness related and impact related data. The inferential statistics including chi-square test were used for analyzing the co-association between urban and rural mothers awareness. Correlation and one sample test with significant test was used for analyzing the relationship between demographic, awareness and impact of information.

Results

Descriptive Statistics of Mothers Awareness and Impact score on ANC:

Table 1 shows the descriptive statistics of each independent variable and a dependent variable. The mean score of the rural mothers awareness was 18.55 (SD=2.77). The highest and lowest scores were 2.00 and 22.00 respectively and the mean impact score was 9.39 (SD=2.14). The highest and lowest scores were 2.00 and 12.00 respectively. On the other the mean score of the urban mothers awareness was 19.69 (SD=2.16). The highest and lowest scores were 2.00 and 22.00 respectively and the mean impact score was 9.39 (SD=2.25). The highest and lowest scores were 2.00 and 12.00 respectively. The mean score of all mothers awareness was19.07 (SD=2.57). The highest and lowest scores were 2.00 and 22.00 respectively and the mean impact score was 9.40 (SD=2.18).

Table 1. ***Descriptive Statistics of Mothers Awareness and Impact score on ANC***

Items	M	SD	Median	Min	Max	Skewness	Kutosis
Rural mothers (N=241)							
Awareness Score	18.55	2.77	19.00	2.00	22.00	-2.82	10.46
Impact Score	9.39	2.14	10.00	2.00	12.00	-1.39	1.60
Urban (N=201							
Awareness Score	19.69	2.16	20.00	10.00	22.00	-2.07	5.76
Impact Score	9.39	2.25	10.00	2.00	12.00	-1.67	2.30
All mothers (N=442)							
Awareness Score	19.07	2.57	20.00	2.00	22.00	-2.61	9.99
Impact Score	9.40	2.18	10.00	2.00	12.00	-1.54	1.99

Table 2 shows the descriptive statistics of each independent variable and a dependent variable. The mean percentage of the rural mothers awareness was 84.30 (SD=12.61). The highest and lowest percentages were 100.00 and 9.09 respectively and the mean impact was 78.42 (SD=17.76). The highest and lowest percentages were 100.00 and 16.67 respectively. On the other the mean percentage of the urban mothers awareness was 89.52 (SD=9.84). The highest and lowest percentages were 100.00 and 45.45 respectively. The mean percentage of impact was 78.31 (SD=18.78). The highest and lowest percentages were 100.00 and 16.67 respectively. The mean percentage of all mothers' awareness was 86. 68 (SD=11.71). The highest and lowest percentages were 100.00 and 9.09 respectively and the mean percentage of impact was 78.37 (SD=2.18). The highest and lowest percentages were 100.00 and 16.67 respectively.

Table 2: ***Descriptive Statistics of Mothers Awareness & Impact score as percentage on ANC***

Items	M	SD	Median	Min	Max	Skewness	Kutosis
Rural mothers (N=241)							
Awareness Score (%)	84.30	12.61	86.36	9.09	100.00	-2.82	10.47
Impact Score (%)	78.42	17.76	83.33	16.67	100.00	-1.41	1.71
Urban (N=201)							
Awareness Score (%)	89.52	9.84	90.90	45.45	100.00	-1.67	2.30
Impact Score (%)	78.31	18.78	83.33	16.67	100.00	-1.67	2.30

All mothers (N=442)							
Awareness Score (%)	86.68	11.71	90.90	9.09	100.00	-2.61	9.99
Impact Score (%)	78.37	18.21	83.33	16.67	100.00	-1.54	1.99

Part II. Relationship between Impact and Awareness of mothers gained through antenatal care on mothers and newborn health:

Table 3 shows the result of chi-square test for different level of score of rural mothers by their demographic data. The total score is classified into 3 levels, ranging from a minimum of 2 to maximum of 22 according to the number of correct answers given. The awareness score of mothers was 18.55 (SD=2.77) on average out of 22 questions, which is calculated as 84.3% achievement. Monthly family income, number of family member and number of children were found to be highly correlated (p=.000***, .009***, .000***) respectively with the awareness of rural mothers. But the age, education and gestational age of rural mothers did not found significant (p=.557, .997, 1.00) with the awareness on ANC.

Table 3: ***Matrix distribution of rural mother's demographic data by awareness:***

Answered	**Score (2-8)**	**Score (9-15)**	**Score (16-22)**	**Significant p value**
Age				
▪ 18-21 years	1 (1.8)	8 (14.3)	47 (83.9)	
▪ 22-25 years	1 (.9)	3 (2.8)	101 (96.2)	
▪ 26-29 years	1 (1.4)	6 (8.2)	66 (90.4)	
▪ 30-33 years	0	2 (33.3)	4 (66.7)	
▪ Above 33 years	0	0	1 (100.0)	P=.557
Education				
▪ Illiterate	1 (2.7)	2 (5.4)	34 (91.9)	
▪ Primary	2 (1.4)	12 (8.7)	124 (89.9)	
▪ SSC	0	5 (9.8)	46 (90.2)	
▪ HSC	0	0	10 (100.0)	
▪ Bachelor Degree	0	0	3 (100.0)	
▪ Master Degree	0	0	2 (100.0)	P=.997
Monthly income				
▪ Less than 5000 Taka	1 (4.0)	7 (28.0)	17 (68.0)	
▪ 5000-10000 Taka	2 (1.3)	9 (5.8)	145 (92.9)	
▪ 11000-15000 Taka	0	3 (7.3)	38 (92.7)	
▪ 16000-20000 Taka	0	0	10 (100.0)	
▪ 21000-250000 Taka	0	0	3 (100.0)	
▪ Above 25000 Taka	0	0	6 (100.0)	P=.000***
Number of family member				
▪ Less than 4 person	1 (2.5)	0	39 (97.5)	
▪ 4- 6 person	2 (1.3.0)	10 (6.5)	143 (92.3)	P=.009***
▪ 7-9 person	0	7 (20.0)	28 (80.0)	
▪ Above 9 person	0	2 (18.2)	9 (81.8)	
Number of children				
▪ Less than 2 child	1 (1.1)	8 (8.4)	86 (90.5)	
▪ 2-3	2 (1.4)	11 (7.7)	130 (90.9)	
▪ 4-5	0	0	3 (100.0)	P=.000***
Gestational age				
▪ Term	3 (1.5)	16 (7.8)	185 (90.7)	
▪ Preterm	0	3 (8.6)	32 (91.4)	
▪ Post-term	0	0	2 (100.0)	P=1.00

Table 4 shows the result of chi-square test for different level of score of urban mothers by their demographic data. The total score is classified into 3 levels, ranging from a minimum of 10 to maximum of 22 according to the number of correct answers given. The awareness score of urban mothers was 19.69 (SD=2.16) on average out of 22 questions, which is calculated as 89.52% achievement. This section age was found highly significant correlated (p=.000***) with the urban mothers awareness. Monthly family income also found correlated (p=.093*) with the awareness of urban mothers. But number of children, education and gestational age did not found significant (p=.405, .556, 1.00) with the urban mothers awareness on ANC.

***Relationship between mother's awareness and impact of mother's health and newborn health on ANC by chi-square test probabilities*:**

Table 04 shows the relationship between mother's awareness and impact on mother's health by chi-square test on ANC. The result showed, among the mothers awareness only importance of ANC and face any problem during delivery was found moderate correlated (.019**). Advised about place of delivery during pregnancy and mothers condition after birth with face any problem during delivery were found highly correlated (p=.001*** and p=.043**). Advised about PNC during pregnancy and face any problem during delivery was found moderate correlated (.022**). The other areas of mothers awareness: meaning of antenatal care, place of ANC provide, receive ANC , important of ANC visit, component of ANC, number of ANC visit, If less than 4 visit, why, idea of colostrums, meaning of colostrums, benefit of colostrums, benefit of breastfeeding, idea about exclusive breastfeeding, duration of exclusive breastfeeding, when start complementary feeding, breastfeeding continue with complementary feeding, advised about extra nutrition and advised about postnatal care during pregnancy did not found correlated with the impact on new born health by chi-square test probabilities on antenatal care.

Table: 4 ***Relationship between awareness and impact on mothers' health by Chi-Square test probabilities on ANC***

Impact on mothers health → Awareness on antenatal care ↓	**Face any problem during delivery**	**Mothers condition during delivery**	**Mothers condition after delivery**
Meaning of ANC	.726	.982	.416
Place of ANC provide	.917	.133	.810
Were you taken of ANC	.932	.306	.468
Important of ANC	.019*	.609	.259
Important ANC visit	.290	.377	.230
Component of ANC	.389	.472	.609
Number of ANC visit	.278	.453	.973
If less than 4 visit, why	.553	.387	.680
Idea of clostrum	.533	.968	.546
Meaning of colostrums	.986	.531	.811
Benefit of colostrums	.465	.561	.801
Benefit of breastfeeding	.615	.115	.383
Idea about exclusive BF	.634	.431	.729
Duration of EBF	.533	.480	.811
Start complementary feeding	.138	.704	.341
BF continue with complementary	.898	.973	.830
Advised about extra nutrition	.168	.138	.077
Advised on place of delivery	.043**	.001***	.230
Were you advised about PNC	.022**	.176	.623

Table 04 shows the relationship between mother's awareness and impact on newborn health by chi-square test on ANC. The result showed that some area of mothers awareness with the impact on newborn health significant relationship. Regarding number of received antenatal visit and the babies condition during birth was moderate correlated (p=.046**). Idea of colostrums and babies condition after birth with first feeding after birth were found moderate correlated (p=.014**, p=.031**). Meaning of colostrums and babies condition after birth with exclusive breastfeeding after birth were found to be highly correlated (p=.001***, p=.008***) and also moderate correlated (p=.046**, p=.030**) with the birth weight of newborn & first feeding after birth. Benefit of colostrums and babies condition after birth, first feeding after birth & exclusive breastfeeding were found highly correlated (p=.001***, p=.002*** & p=.006). Benefit of breastfeeding and babies condition after birth was found to be highly correlated (p=.009***). Duration of exclusive breastfeeding and first feeding after birth was found moderate correlated (p=.030**). When start complementary feeding and exclusive breastfeeding with first feeding after birth were found to be highly correlated (p=.001*** & p=.008***). Advised about extra nutrition during pregnancy and exclusive breastfeeding was found to be highly correlated (p=.001***) and also moderate & mild correlated (p=.043**, p=.030** & p=.050*) with the babies condition after birth and first feeding after birth. Some other area regarding meaning of antenatal care, place of ANC provide, receive ANC , important of ANC visit, component of ANC, If less than 4 visit, why, idea about exclusive breastfeeding,

breastfeeding continue with complementary feeding, advised about place of delivery and advised about postnatal care during pregnancy did not found correlated with the impact newborn health on antenatal care.

Table 05: Relationship *between awareness and impact on newborn health by Chi-Square test probabilities on ANC (N=201)*

Impact on newborn health → Awareness on antenatal care ↓	**Birth weight of newborn**	**Babies condition during birth**	**Babies condition after birth**	**First feeding after birth**	**Exclusive breastfeeding after birth**
Meaning of ANC	.774	.774	.383	.222	.324
Place of ANC provide	.932	.932	.914	.506	.241
Were you taken of ANC	.592	.388	.468	.753	.616
Important of ANC	.544	.584	.472	.732	.536
Important ANC visit	.456	.456	.501	.520	.448
Component of ANC	.544	.544	.584	.493	.536
Number of ANC visit	.990	.046**	.695	.925	.339
If less than 4 visit, why	.634	.223	.737	.189	.378
Idea of clostrum	.210	.610	.014**	.030**	.055
Meaning of colostrums	.046**	.210	.001***	.030**	.008***
Benefit of colostrums	.048**	.048**	.001***	.002***	.006***
Benefit of breastfeeding	.190	.190	.009***	.081	.212
Idea about exclusive BF	.519	.519	.071	.096	.180
Duration of EBF	.610	.210	.397	.030**	.055
Start complementary feeding	.781	.737	.499	.008***	.001***
BF continue with complementary	.867	.520	.534	.134	.092
Advised about extra nutrition	.299	.050*	.043**	.030**	.001***
Advised on place of delivery	.387	.387	.289	3.99	.448
Were you advised about PNC	.499	.127	.335	.548	.337

Table 5 shows the relationship between mother's awareness and the impact of rural mother's health by chi-square test on ANC. The result showed that some area of awareness significant relationship with the impact on newborn health. Regarding meaning of antenatal care and mothers condition during delivery with mothers condition after delivery were found to be highly correlated (p=.000*** & .000***). Place of antenatal care provide and mothers condition during and after delivery were found to be moderate correlated (p=.011** & p=.010). Received number of ANC visit and mothers condition during delivery was found mild correlated (p=.074*). If less than 4 visit, why and birth weight of newborn was found mild correlated (.048*). Duration of exclusive breastfeeding and mothers condition during delivery with mothers condition after delivery were found moderate and mild correlated (p=.034** & p=.069*). When start complementary feeding and mothers condition after delivery was found moderate correlated (p=.041**). Breastfeeding continue with complementary feeding and mothers condition after delivery and mothers condition during delivery were found highly and mild correlated (p=.001***, & p=.085*). Advised about extra nutrition and mothers condition during delivery and mothers condition after delivery were found highly and mild correlated ()p=.007*** & p=.064*). Some other area of mothers awareness regarding receive ANC, important of ANC, important of ANC visit, component of ANC, idea of colostrums, meaning of colostrums, benefit of colostrums, benefit of breastfeeding, idea about exclusive breastfeeding, advised about place of delivery and advised about postnatal care during pregnancy did not found correlated with the impact on new born health after delivery.

Table 06: Relationship *between awareness and impact on mothers health by Chi-Square test probabilities on ANC (N=241).*

Impact on mothers health → Awareness on antenatal care ↓	**Face any problem during delivery**	**Mothers condition during delivery**	**Mothers condition after delivery**
Meaning of ANC	.986	.000***	.000***
Place of ANC provide	.633	.011**	.010**
Were you taken of ANC	.918	.074	.616
Important of ANC	.846	.302	.376

Important ANC visit	.683	.803	.974
Component of ANC	.554	.669	.890
Number of ANC visit	.069*	.074*	.215
Less than 4 visit, why	.048*	.509	.643
Idea of clostrum	.092*	.157	.120
Meaning of colostrums	.246	.157	.120
Benefit of colostrums	.732	.294	.271
Benefit of breastfeeding	.277	.139	.264
Idea about exclusive BF	.014**	.295	.544
Duration of EBF	.021**	.034**	.069*
Start complementary feeding	.546	.556	.041**
BF with complementary	.419	.085*	.001***
Advised about Place delivery	.686	.931	.156
Advised about extra nutrition	.283	.007***	.064*
Were you advised about PNC	.912	.676	.913

Table 06 shows the relationship between mother's awareness and impact on newborn of rural mothers by chi-square test on ANC. The result showed that some area of mothers awareness significant relationship with the impact on newborn health. Regarding meaning of antenatal care and birth weight of newborn, babies condition during birth were found to be highly correlated (p=.004***, p=.004***). Place of antenatal care provide and babies condition during birth was found to be highly (p=.001***). Received antenatal care and birth weight of newborn, babies condition during birth, with first feeding after birth were found to be highly and moderate correlated (p=.000***, p=.019**, & p=.041**). Component of ANC and birth weight of newborn, babies condition after birth, first feeding after birth with exclusive breastfeeding after birth were found to be highly and moderate correlated (p=.009***, p=.019**, p=.041** & p=.031**). Idea of colostrums and birth weight of newborn, babies condition after birth with exclusive breastfeeding after birth were found moderate and mild correlated (p=.031**, p=.042**, & p=.075*). Meaning of colostrums and birth weight of newborn, babies condition after birth with exclusive breastfeeding were found moderate and mild correlated (p=.031**, .042**, & p=.075*). Benefit of colostum and birth weight of newborn, babies condition during birth with babies condition after birth were found highly and mild correlated (p=.003**, p=.069* & p=.075*). Benefit of breastfeeding and birth weight of newborn, babies condition during birth, babies condition after birth, exclusive breastfeeding after birth with first feeding after birth were found to be highly, moderate and mild correlated (p=.000***, p=.017**, p=.028**, p=.049 & p=.068*). Idea about exclusive breastfeeding and birth weight of newborn with exclusive breastfeeding after birth were found moderate and mild correlated (p=.026** & p=.097*). Breastfeeding continue with complementary feeding and first feeding after birth was found highly, moderate and mild correlated (p=.003***). Advised about place of delivery during pregnancy and birth weight of newborn was found moderate correlated (p=.002**). Advised about extra nutrition and exclusive breastfeeding after birth, first feeding after birth and birth weight of newborn were found highly and moderate to be correlated (p=000***, p=.001*** & p=.017**). Advised about postnatal care and birth weight of newborn was found highly correlated (p=.002***). Some other area of mothers awareness regarding important of ANC, number of ANC visit, Less than 4 visit, why, duration of exclusive breastfeeding and when start complementary feeding did not found correlated with the impact on newborn health of rural mothers awareness by chi-square test on ANC.

RECOMMENDATIONS

Findings showed that all level of ANC has greater achievement. Not only that 4 visit >50% mothers has completed during pregnancy, more than 93% delivered in hospitals, 75% did not face any problem during and after child birth, above 80% baby's birth weight was normal, >73% baby's condition was good during child birth, >77% mothers condition was good during and after child birth, >82% baby's first feeding was colostrums after child birth, >84% baby's exclusively breastfeeding after birth. But the present study has made some recommendation to be achieved:

1. Encourage the mother and family about 3 delays during ANC.
2. Increase to use the partograph during labour to reduce Caesarean section because normal delivery decreases complication than Caesarian section.
3. Increase the mother's awareness about initiation of breastfeeding within half hour.
4. Based on the results and limitation of the present study, the findings of the study can be used in further experimental study to represent the whole population.

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