

Evaluation of Knowledge on Antenatal Care Of Maternal and Child Health Workforces at Selected Sub-District Level Health Centers in Bangladesh-2017.

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Abstract

Background: An estimated, in 2017, 295000 maternal deaths occurred during the pregnancy, delivery and post delivery period and 94% of these deaths happened in low income countries. Antepartum is a vital period, where the pregnant mother need extra care. Due to deficiency of maternity care, during maternity period, a mother may infrequently be fallen in threatening situation. The purpose of this study was to evaluate the level of knowledge of maternal and child health professionals on antenatal care at a sub-district level Health Centers in Bangladesh.

Methods: A descriptive cross sectional study was carried out at Chattak in Sunamganj district located in north-eastern Bangladesh. We did not use any specific technique of sampling. Instead, we provided attention to ensure participation as many service providers as possible under the sub-district who were involved with maternal and child health services. To evaluate the knowledge of maternal health care providers on contents of antenatal care, we formulate a composite score of knowledge. **Results:** The study observed still deficiency in knowledge of maternal and child health workforces on antenatal care. The knowledge of maternal and child health workforces on 'antenatal care', 'pregnancy complications with danger signs & symptoms' and 'birth assistance & emergency obstetric care' were found to have 'poor' among the 41.25%, 45.0% and 53.75 of maternal and child health workforces respectively. **Conclusion:** Considering 'poor' knowledge of the greater parts of health workforces on the contents of maternal components, it is challenging to play a prime role to improve antenatal and delivery services for the pregnant women'. The study suggests, urgently, knowledge and skills of the health workforces need to be developed on basic maternal and child health through enduring medical education and appropriate training.

Key Words: Maternal and child workforces, Antenatal care, Pregnancy complication, Composite scores of knowledge, Maternal deaths.

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I. Introduction

An estimated, in 2017, 295000 maternal deaths occurred during the pregnancy, delivery and post delivery period and 94% of these deaths happened in low income countries; of which, bulk amount of deaths were avoidable[1]. Direct obstetric maternal complication accounted for most of the deaths; includes, severe bleeding, maternal infections, eclampsia, obstructed labour and unsafe abortion[2]. Pregnancy Induced Hypertension (PID) is the second leading cause of maternal death during pregnancy and this threat is responsible 10-15% of maternal deaths in income countries [3]. The highest mortality is reported among the mothers aged under 15 years and maternal complication during pregnancy [4].

Even though Bangladesh has performed a remarkable achievement to meet the MDG goal and decreased the rate during the past 20 years nevertheless, the rate is still high compared to middle and high income countries. The rate of the maternal death is 176 per 100,000 live births [5][6]. There is significant role of this improvement resulting from increasing access to maternal care facility delivery and Emergency Obstetric and Neonatal Care (EmONC)[7].

Antepartum is a vital period, where the pregnant mother need extra care. Due to deficiency of maternity care, during maternity period, a mother may infrequently be fallen in threatening situation[8]. But there is a still gap in coverage of skilled maternal care, poor knowledge of service providers and unfairness of maternal health services. Moreover, insufficient maternal health service providers in rural community settings still challenge [9]. Difference between wealthy and underprivileged population is also a concerning issue. Where wealthy women are 6 times likely to seek healthcare in a health center than underprivileged. The previous study observed that due to a poor documentation of patient profile and healthcare records in the health

centers, especially more vulnerable in rural Bangladesh [10]. Very limited or study was conducted on knowledge and competency of the maternal and child health care providers; consequently, to evaluate the quality of treatment is very difficult in Bangladesh. The purpose of this study was to evaluate the level of knowledge of maternal and child health professionals on antenatal care at a sub-district level Health Centers in Bangladesh.

II. Methods & Materials

Study design and settings:

A descriptive cross sectional study was carried out to evaluate the knowledge on antenatal care of maternal and child health workforces in different government led health centers under the selected sub-district of Chattak in Sunamganj district located in north-eastern Bangladesh within the Sylhet Division. The study was taken place between September and December, 2017

Characteristics of health centers and sampling

The study involved different health centers including only one Upazila Health Complex (UHC) and different health centers in the rural area under the sub-district of Chattak of Sunamganj District in Bangladesh. The total population of the sub-district Chattak is approximately 0.45 million; among them, there are approximately 9000 pregnant women in the area where only 70% of the pregnant mothers receive 1st ANC visit in the center per year from the rural sub-district upazilla health complex and other health centers. [11]

Health system in Bangladesh in a sub-district is three levels; categorized by lowest level named community clinic (CC) in rural community level, then in union level named Union Sub Centre (USC) and Union Health & Family Welfare Centre (UH&FWC) and finally in sub-district level named Upazila Health Complex (UHC) [9].

The investigator sampled the population from the Upazila Health Complex and other health posts under the sub-district who were involved with maternal and child health services like; doctors, nurses, midwives and community health workers named Family Welfare visitor, Health Inspector, Family Welfare Assistant, Sub Assistant Community based Medical Officers (SACMO), Community Health Care Providers (CHCP) [12][13].

Since only one UHC and different health posts under a selected sub-district were included in the study, hence, we did not use any specific technique of sampling. Instead, we provided attention to ensure participation as many service providers as possible.

Data collection technique and quality control

We used a semi-structured questionnaire to collect the data on age, sex, religion, types of profession, education status, professional training through face-to-face interview. The questionnaire was divided into three sections. Section 'A' contained demographic characteristics, section 'B' contained knowledge of maternal and child health professionals on antenatal care, pregnancy complications with danger signs & symptoms, birth assistance & emergency obstetric care.

Prior to collect the final data, the questionnaire was pre-tested and adapted the findings found. Two day training on the objectives of the study and techniques was given to the dedicated enumerators to conduct face-to-face interview with health professionals. Subsequent to collect data, all data were checked, cleaned and edited based on its completeness and consistency. We described the questionnaire in both English and Bengali languages; so that, participants can understand the questions perfectly and answer accurately.

Data analysis

The collected data was exported into STATA-16 for analysis. We used descriptive statistics to summarize the data and interpreted findings through tables and proportions. To evaluate the knowledge of selected maternal health care providers on contents of antenatal care, pregnancy complications with danger signs & symptoms, birth assistance and emergency obstetric care, we formulate a composite score of knowledge.

To assess the knowledge of health workforces, we used a scale of scoring between '0' and '25' points which indicated minimum score '0' and maximum score '25' points. In this study, the scores were stratified by the percentage. The respondents who scored below 45%, we classified them as having 'poor knowledge' on the contents. We classified the respondents as 'average knowledge' who scored between 45% and below 60%, the respondents whose scores were between 60% and below 80%, we classified them as 'good knowledge' and finally, the respondents who scored 80% and above we classified them as 'excellent knowledge'. Mean value of the scores was used for additional interpretation. For each content of maternal and child component, each respondent was asked 25 of respective sub-contents and we scored 1 for one known sub-content of the respondents.

Ethical consideration:

The ethical review board of the leading university, Sylhet, Bangladesh approved to conduct this study and prior to data collection, all health centers was sought permission to continue data collection. Dedicated data collectors obtained an active informed consent from all of the service providers participated in the study prior to the start of any data collection and refusal to participate was respected at any point after participation into the study. The personal identification, information of the subjects involved in the research were replaced by codes in the protected archived computer data files.

III. Results and Findings

To assess the knowledge on antenatal care among the maternal and child health workforces, a total 80 respondents were enrolled who were involved in the maternal and child health care services. The mean age of the workforces participated were found to have 28.63 (SD±13.41) years. Most of the respondents of the study were in the age group of (20-29) years and followed by (30-39) and above 40 years respectively. A bulky numbers of respondents were from Muslim community 50 (62.5%) and majority respondents were male 49 (61.25%). More than half of the respondents 48 (60%) did have lowest education status (HSC); contrary, only 5 (6.25%) respondents were medical professional degree holders. An ordinary numbers of the respondents 17 (22.25%) received professional training.

Table 1: Distribution of demographic characteristics:

Characteristics	Frequency (n=80)	Percentage (%)
Age Group (years)		
20-29	46	57.5
30-39	22	27.5
> 40	12	15.0
Religion		
Islam	50	62.5
Hindu	30	37.5
Sex		
Male	49	61.25
Female	31	38.75
Educational status		
MBBS	5	6.25
Diploma in nursing/midwifery	14	17.5
Diploma in medical assistant course	3	3.75
Bachelor degree	10	12.50
Higher secondary certificate (HSC)	48	60.0
Professional training		
Yes	17	21.25
No	63	78.75

Among the respondents, Medical officer were only 5 (6.25%). Senior staff nurse and Sub Assistant Community Medical Officer (SACMO) were 14 (17.15) and 3(3.75%) respectively, Family Welfare Visitor (FWV) and Family Welfare Assistant (FWA) were only 4 (5%) each, in contrast, Health Assistant (HA), Community and Health Care Provider CHCP) were large numbers 26(32.5%) and 24(30%) respectively.

Knowledge of health workforces on antenatal care:

Each respondent was asked 25 of sub-contents about antenatal care. On average, a single health worker had been acquainted with 13 (52%) sub-contents out of 25 (100%). Knowledge of the most of the health workforces on antenatal care was found to have ‘poor’. Less than 7 (below 45%) sub-contents were known out of 25 by less than half of respondents 33 (41.41%). 18 (22.5%) of respondents did have ‘average’ knowledge (45%-59%) on the antenatal care and a low number respondents 15 (18.75) and 14 (17.5%) did have ‘good’ (60%-79%) and ‘excellent’ (80%&above) knowledge respectively on antenatal care.

Table-2: Distribution of the respondents by their designation of job (n=80):

Types of professions	Frequency (n=80)	Percentage (%)
Medical officer (Physician)	5	6.25
Senior staff nurse	14	17.5
Sub Assistant Community Medical Officer (SACMO)	3	3.75
Family Welfare Visitor (FWV)	4	5.0
Family Welfare Assistant (FWA)	4	5.0
Health Assistant (HA)	26	32.5
Community Health Care Provider CHCP)	24	30.0

Knowledge of health workforces on danger signs & symptoms and complications of pregnancy:

Likewise, knowledge of the health service providers on the contents of the pregnancy complication with danger signs and symptoms was found to have ‘average’. On average, a single health service provider had been acquainted with 12 (48%) sub-contents out of the 25 pregnancy complication with danger signs and symptoms. Akin to knowledge level of the service providers on antenatal care, knowledge on pregnancy complication with danger signs and symptoms was found slightly less than half 36 (45%) as ‘poor’ level followed by ‘average’ knowledge 17 (21.25%) and concerning knowledge level of ‘good’ and ‘excellent’ were found to have 14 (17.5%) and 13 (16.25%) correspondingly.

Knowledge of health workforces on antenatal care:

We also asked each of the health service providers about 25 sub-contents of the birth assistance and emergency obstetric care (EOC). We found that regards to knowledge of the service providers on birth assistance and emergency obstetric care (EOC) was ‘poor’. On average, a single health service provider had been acquainted with 10 (40%) sub-contents out of the 25 sub-contents. Concerning ‘poor’ level of knowledge of the service providers was found to have more than half of the respondents 43 (53.75%). 15 (18.75%) and 12 (15%) of the respondents did have ‘average’ and ‘excellent’ knowledge level respectively on the service providers on birth assistance and emergency obstetric care (EOC) and ‘excellent’ level of knowledge was found among only 10 (12.5%) respondents.

IV. Discussion and conclusion

Despite Bangladesh have gained a great achievement in the maternal and child health improvement, country have been facing still challenges in shortage, mal-distribution and lack of knowledge of the service providers especially in rural health centers in Bangladesh [14]. The study observed still deficiency in knowledge of maternal and child health workforce on antenatal care as well. Only 17.5%, 16.25% and 12.5% of respondents did have the ‘excellent’ knowledge on the contents of ‘antenatal care’, ‘pregnancy complications with danger signs & symptoms’ and ‘birth assistance & emergency obstetric care’ respectively. Contrary, Most of the participants did have ‘poor’ knowledge on the mentioned main three contents considered. The knowledge of maternal and child health workforces on ‘antenatal care’, ‘pregnancy complications with danger signs & symptoms’ and ‘birth assistance & emergency obstetric care’ were found to have ‘poor’ among the 41.25%, 45.0% and 53.75% of participants respectively. These rates were found as severe concerning when we considered the level of knowledge ‘poor’ and ‘average’ together. Over three quarters of respondents did have the ‘poor’ and ‘average’ knowledge together in each contents and the study identified the content of the ‘birth assistance & emergency obstetric care’ as the most vulnerable. 72.5% of the respondents did have the ‘poor’ and ‘average’ knowledge together.

Table-3: Evaluation of the knowledge on the reported contents based on obtained scores by health workforces (n=80):

Contents of knowledge	Frequency (n=80)	Percentage (%)
Knowledge on antenatal care		
Poor (below 45%)	33	41.25
Average (45%-59%)	18	22.5
Good (60%-79%)	15	18.75
Excellent (80% & above)	14	17.5
Knowledge on danger signs & symptoms and complications of pregnancy		
Poor (below 45%)	36	45.0
Average (45%-59%)	17	21.25
Good (60%-79%)	14	17.5
Excellent (80% & above)	13	16.25
Knowledge on birth assistance and emergency obstetric care		
Poor (below 45%)	43	53.75
Average (45%-59%)	15	18.75
Good (60%-79%)	12	15.0
Excellent (80% & above)	10	12.5

Among the maternal and child health service providers, majority of the workforces did not have technical knowledge, neither academic education nor professional training (maternal & child health). Only 22 (27.5%) of the service providers did have the medical graduations and professional diploma out of 80. While only 17 (21.25%) of the service providers received professional training.

Results of this study reflected the health system in Bangladesh, where mostly NGOs provided the training for the health professionals with absence of proper guidelines and quality control and a few

government institutes are currently providing training for the Medical assistants and family welfare visitors in basic level [15]. Contributions of the country's GDP to the public health sector continuously less than 1% of the GDP (0.8%). This is also less than India, Sri Lanka, Nepal and Bhutan and decreased from previous years [16].

V. Conclusion and Recommendations

Considering 'poor' knowledge of the greater parts of health workforces on the contents of 'antenatal care', 'pregnancy complications with danger signs & symptoms' and 'birth assistance & emergency obstetric care', it is challenging to play a prime role to improve antenatal and delivery services for the pregnant women'. The study suggests, urgently, knowledge and skills of the upazila (sub-district) level health workforces need to be developed on basic maternal and child health through enduring medical education and appropriate training. These initiatives can be able to decrease maternal and child deaths and disabilities caused by maternal complications.

Conflicts of interests:

The authors declare that they have no conflicts of interests.

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