Original article

The strategy of community counselling combined with health education in reducing the maternal mortality rate

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Abstract

The current health-care delivery in Bangladesh only considers pharmacological approach to every/curing patient with physical illness. The effectiveness of community counselling on public health outcome is undeniable. In addition to associated heath and socio-economic factors, this complication contributes to increased maternal mortality rate in Bangladesh significantly. The objective was to find beside therapeutic treatment can "effective counselling and health education" reduce maternal mortality rate due to eclampsia/pre-eclampsia. This was a cross-sectional study with a sample size of 110 aged between 15 and 35 years were interviewed with a semi-structured questionnaire. The frequencies of the different variables were analyzed using SPSS 20 software, and the Chi-square test was done to observe the associations. The average age of the participants was 23 years. Over 40% of the women had their first delivery between the ages of 16–18 years and the same percentage of them had never taken antenatal checkup during their pregnancy. Gestational hypertension/pre-eclampsia was found in nearly 35% and eclampsia in 20% of the women. Previous maternal mortality cases before March, 2017 due to eclampsia in the sample community was 8 cases. Over a period of five months by early detection of cases, no maternal death was recorded due to eclampsia/pre-eclampsia among the studied community after extensive counselling and health education. Despite the common therapeutic treatment for gestational hypertension, pre-eclampsia/eclampsia community counseling demonstrates significant impact on reducing mortality rate and strongly supports the association of community counselling and health education on reducing maternal mortality cases.

Keywords: Maternal mortality, eclampsia/pre-eclampsia, community counseling.

Introduction

The World Health Organization defines Counseling like a well-focused process, limited in time and specific, which uses the interaction to help people deal with their problems and respond in a proper way to specific difficulties in order to develop new coping strategies. In medical settings, the process of counseling represents a valid intervention made of a quality interaction between the counselor (doctor, health worker, nurse, midwives) and the patient, characterized by the capacity of the counselor to educate the patient and give them a proper guideline.[1] In this paper, the proposal is to show the importance of a combined and co-relationship between therapeutic management and counselling and bringing concrete and important advantages of counselling along with health education. Here, the role of the counselling profession in public health and its engagement and the solidification within the spectrum of maternal health services, are explored.[2]

Eclampsia is an emerging global health problem and is significantly more prevalent in resource-limited countries than in high-resource countries[1] It has been defined as an "acute and life threatening complication of pregnancy, characterized by the appearance of tonic-clonic seizures usually in a patient who has developed pre-eclampsia or gestational hypertension".[2] According to the World Health Organization (WHO)/USAID, maternal mortality rate in Bangladesh is 194 per 100,000 live births and 20% of maternal death caused by eclampsia which is the second leading cause after post-partum hemorrhage.[3] Furthermore, globally eclampsia and pre-eclampsia account for 63000 maternal death annually.[4] The perinatal mortality rate from eclampsia in developed countries such as in Australia is still 10% and in USA and Great Britain ranges from 5.6% to 11.8%.[4,5]

Pre-eclampsia is characterized by high blood pressure (>140/90mmhg), severe headache, upper abdominal pain, blurred vision and the presence of protein in urine which typically develop after 20 weeks of gestation.[6] Pre-eclampsia can lead to eclampsia when seizure appears with the above symptoms. The risk factors of eclampsia are gestational or chronic hypertension, age >35yrs and <20yrs, twin pregnancy, nulliparity/ first time pregnancy, multiple pregnancy, interval between pregnancy, obesity, diabetes, kidney disease etc.[7] The conventional

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therapeutic treatment for gestational hypertension and pre-eclampsia are Labetalol, Nifedipine, Hydralazine, Alapha methyldopa, Aspirin, Mg supplementation.[8] Finally delivering baby by emergency caesarian section remains the only choice if above measures fails.[9] Prevention and treatment of this condition are contributory to achieving Sustainable Development Goal 3, which is improving maternal health.[10] This condition can be prevented by assessing antenatal care from the very beginning. Health-care facilities and access to cesarean delivery are poorly available in rural areas as compared to urban.[11] Despite increasing health facility-based deliveries in Bangladesh, rural people are less likely than urban people to avail facility-based delivery (8.2% vs. 31.0%) and to receive cesarean section (5.0% vs. 15.5%). Past studies have identified several potential barriers to have emergency C-section in the rural areas leading to home delivery, such as long distance from a health facility and with poor transportation, costs of care, including informal charges or expenses, opportunity costs from time lost, perceived low-quality care in facilities, or sociocultural barriers to professional health seeking (stigma, fear, inability for women to travel alone, or seen by male doctors and social norm).[12-16] Some major factors of developing pre-eclampsia/eclampsia are early marriage (31% girls aged 10-19 have begun childbearing), obesity (17% of married women aged 15-49 are obese), diabetes (11% women have diabetes and 25% women are pre diabetic), social status (Husband and mother-in-law are the decision makers) and also iatrogenic, genetic and indirect causes that might be sustained during the delivery period. In Bangladesh, the poor literacy rate among rural women acts as an additional contributing factor for limited usage of reproductive health services, a concern which requires urgent attention from the authorities.[14]

Methodology

A cross-sectional analytical study was conducted in the "shutrapur" ward of Dhaka city with a sample size of 110, using face-to-face interview technique using a semi-structured interviewer-administered questionnaire from female patients with gestational hypertension, pre-eclampsia, eclampsia between 15 and 35 years of age. Data were collected between March 2017 and June 2017 over four months. Blood pressure was measured according to the BHS (British hypertension society) scale score. All these data were analyzed with the help of SPSS version 20.0. and placed in appropriate tables and charts.

Ethical issues

Ethical Approval for the study was obtained from BRAC. Written informed consent was obtained from the study subjects.

Results

Socio-demographic domain

Of the 110 respondents, the majority (65.7%) belonged to 16–25 years of age, 69.5% had literacy, 87.7% were married and the rest (13.3%) were either separated or divorced, 92.3% belonged to Muslim community, and 72.4% were unemployed. The mean age for the respondents was 22.46 (standard deviation ± 4.82) years, and the mean family income was 5,500 Bangladeshi Taka (BDT; equivalent to US $64.78). The majority (52%) of the respondents had completed their primary education, 16% completed their secondary level education, and 25.3% were illiterate, whereas 6.7% said that they had received informal education. About 61% of the patients were unemployed, 13% worked as a maidservant, 1% non-governmental organization worker, 21% garment workers, and 4% had some other jobs. The sociodemographic data of the participants indicated that most of them belonged to a poor socio-economical background [Table 1].

Table No. 1: Distribution of the respondents by socio-demographic characteristics (n=110)

Category	Frequency (%)
Age	
15-25	65.7%
26-35	34.3%
Marital status	
Married	87.7%
Separated	11.1%
Divorce	1.2%
Educational status	
Illiterate	25.3%
Primary level	52%
Secondary level	16%
others	6.7%
Religion	
Islam	92.3%
Hindu	7.7%
Occupational status	
Unemployed	61%
Maid	13%
NGO workers	1%
Garments workers	21%
others	4%

Obstetric domain

Most participants (78.6%) reported their age of marriage below 18 years and their age of first delivery (38.7%) between 16 and 18 years (legal age of marriage for girls in Bangladesh is 18 years). Most of the respondents (42.8%) never had an antenatal checkup (ANC) for their first delivery. The number of children per women was mostly (41.4%) one, with a mean number 1.83. Approximately 47% were between 19 and 21 years of age during their first delivery, and the second-highest group, 38.7% belonged to 16–18 years during their first delivery. Only 9.4% of the respondents said that their age was between 22 and 24 years at the time of their first delivery [Table 2].

Table No. 2: Distribution of the respondents by fertility pattern (n=110)

Frequency (%)	
Age of marriage	
Below 18	78.6
Above 18	21.4
Age of first delivery	
Below 16	4.9
16-18	38.7
19-21	47
22-24	9.4
ANC during first delivery	
0 times	42.8
1 times	26
2 times	19.2
3 times	12
Number of gravidas	
1	41.4
2	29.4
3	18.6
4	7.1
5	4.5

Gestational hypertension/pre-eclampsia/eclampsia status

Patients were found to suffer from, gestational hypertension (60.9%), and pre-eclampsia (25.4%), eclampsia (13.6%) [Table 3].

Table No. 3: Distribution of the respondents by gestational hypertension, pre-eclampsia and eclampsia (n=110)

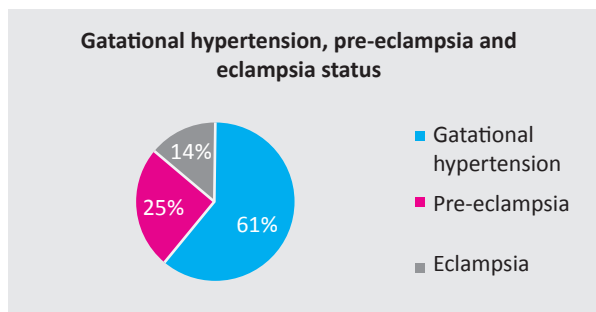| Category	Average Blood pressure (by BHS model)	Percentage/frequency
Gestational hypertension	135/85mmhg	60.9%(67)
Pre-eclampsia	140/90mmhg	25.4%(28)
Eclampsia	155/95mmhg	13.6%(15)

Fig. No. 1: Percentage distribution of gestational hypertension, pre-eclampsia and eclampsia

The respondent's age and current marital status were found to have a statistically significant relationship with gestational hypertension/pre-eclampsia ($P< 0.05$) [Table 4]. [Table 4] shows that patients older than 25 years were suffered more from gestational hypertension, pre-eclampsia, eclampsia than patients younger than 25 years. However, patients older than 25 years were more prone to have gestational hypertension/pre-eclampsia than patients younger than 25 years.

Table No.4: Distribution of the respondents by the relationship between socio-demographic characteristics and gestational hypertension, pre-eclampsia and eclampsia (n=110)

	Gestational hypertension	Pre-eclampsia	Eclampsia	P value
Age	43	21	14	
>25	24	7	1	
<25				
Occupation	51	19	13	
Unemployed	16	9	2	P<0.05
Employed				
Marital status				
Married	61	26	14	
Separated/Divorced	6	2	1	

97% of the selected cases were on antihypertensive medication (methyldopa, lebetolol). In contrast, 3% were not receiving any medication. Extensive counselling was implemented along with proper monitoring of antihypertensive medication consumption. Among 110 mother it revealed 67 mothers were in gestational hypertension stage, 28 were in pre-eclampsia stage and 15 of them experienced seizure at least once. There were 04 maternal deaths in February 2017. Next one month 110 women has been selected as high risk for eclampsia and they have been sorted into 3 category GTN (gestational hypertension), pre-eclampsia and eclampsia. According to the category we approached with a strategy of identifying which cases needs how much counselling and monitoring. We divided "Shastho Kormi" into three groups then deployed them into those

groups. It was certain that eclampsia group needed the strictest monitoring and counselling. Therefore, the most efficient "Shastho Kormi" had been attached with the eclampsia group. Among the 15 eclampsia mother 5 needed hospital management for recurrent convulsion, remaining 10 mother managed only by antihypertensive and occasional Mgso4. Pre-eclampsia cases outcome was most astonishing because it took only one month after the first month of case detection, for the presence of protein in urine to become nil. Moreover, hypertension was managed by proper diet and strict monitoring by "Shastho Kormi" along with single antihypertensive agent. Lastly, gestational hypertension again managed by regular counselling about lifestyle modification and monitoring of antihypertensive drug consumption. It has been found that counselling had a major role to stop the progression of GTN or pre-eclampsia cases to become eclampsia cases. So, out of all 15 eclampsia cases 10 of them needed caesarian section and five of them had maternity center delivery. There were no pre-eclampsia cases after four months, since the first case detection and all delivery occurred at maternity center as per advised. Gestational hypertension cases were successfully managed from the beginning by the same method and approximately 70% delivery took place at maternity center.
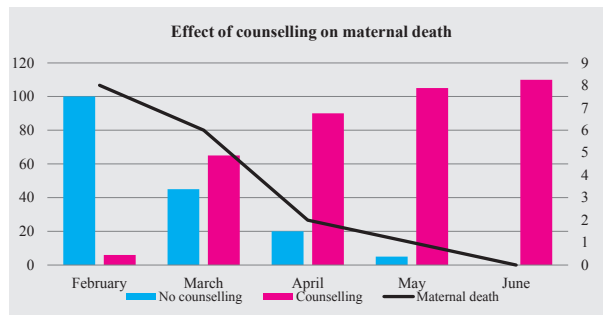

Fig. No. 2: Graphical representation of effects of counselling on maternal mortality over time.

Discussion

The reproductive health issue is the major health problem faced by women in Bangladesh due to a poor health system, lack of awareness, and negligence. Eclampsia is the most prevalent case in obstetrical wards at every hospital in Bangladesh. The present study not only highlights the factors associated with eclampsia but also the effect of this disease, especially on maternal mortality. Different studies found that around 28% of pregnant women develop gestational hypertension, 19% develop pre-eclampsia, 7% develop eclampsia. However, in our findings, we have found that around 51% of the selected women suffered from gestational hypertension, 25% from pre-eclampsia, and 13% from eclampsia which is almost double compared to earlier study.[15,16] It

might be due to the small sample size and recruitments of the patients from a high-risk group in the community. As per the WHO, eclampsia can be prevented by delaying the age of marriage, delaying the age of first pregnancy, and timely access to obstetric care.[3] In our study, of the total participants, the majority (65.7%) belonged to the age group of 16–25 years (mean age was 22.46 years). Approximately 75% of the respondents were literate, ranging between primary and secondary education. Over 47% of the respondents reported that they had their first baby after 18 years. An Ethiopian study found similar findings where the mean age of the first marriage and delivery was 14.7 years and 17 years, respectively.[15] In our study, nearly 38.7% of the participants reported that their first delivery was at the age of 16–18 years; 3.7% had their first baby born before they were 16 years old. Moreover, 42.8% of the respondents did not avail any antenatal checkup, with only 4% reported being taking full antenatal checkup.

Women who are affected by eclampsia/pre-eclampsia tend to suffer more from any other gynecological patients, as evident in our study. A similar response was obtained in another qualitative study representing various parameters of mortality among women suffered from eclampsia.[16] The severity of eclampsia was found more in the case of older (25 years or more) patients compared to women younger than 25 years old. Our study has established an association of counselling, early detection and proper monitoring which can halt the development of eclampsia/pre-eclampsia.

Till 2017 March within the studied community maternal mortality rate due to eclampsia was 14 in number. At the end of the year, after four months of extensive work of "shashtho kormi" (field level health care workers) and maternity center's heath workers there was no death from eclampsia. The study demonstrates how a proper community counselling can play a major role to improve a critical health status like eclampsia. Only conventional treatment was used to treat pre-eclampsia/eclampsia patients before the sudden rise of mortality rate due to eclampsia in February 2017, which intrigued us to find a solution which was community counselling with early case detection and strict monitoring. Maternal mortality rate came down to nil from 3.64% in the same year with the same community.

Conclusion

The purpose of this study was to explore the outcome of counselling and early case detection over traditional treatments to reduce maternal mortality due to eclampsia. The study findings support the association of counselling along with conventional therapeutic treatment is extremely effective. The study also shows different factors associated with developing eclampsia along with sociodemographic characteristics of the participants.

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