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Dissertation

Maternal and children's health care utilization

A qualitative research in Cox's Bazar, Bangladesh

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List of acronyms

ANC	Antenatal care
ORS	Oral Rehydration Solution
TBA	Traditional birth attendant

Preface

My choice of topic comes from my personal interest and some coincidence. I'm personally interested in public health, as this will be my Master's next year. I'm interested in how different cultures influence the health care utilization. However this topic was not chosen until Hope Foundation was looking for a research volunteer and I was looking for a dissertation topic that would not end up in the basement of IOB, but that could be useful to someone. Moreover, it is important to know about factors influencing health utilization and which health practices people apply, in order make health care accessible for everyone.

In the first place, I want to thank my supervisor, Dr. Kristof Titeca. He supported me the whole ride: in deciding on a topic, which took quite some time for me and a lot of different topics, during my fieldwork in Bangladesh and during the processing of my dissertation with useful feedback.

My fieldwork in Bangladesh was enriching, both personally and academically. I want to thank the women that I interviewed, for giving me some insight in very personal aspects of their lives. For the good conduct of the interviews, I have to thank Hazera, my interpreter, she managed to translate all my questions in a way the interviewees understood and to make them feel comfortable. I would also like to thank Hazera and Willy for introducing and explaining me the Bangladeshi culture and for helping me around, during times of floods and Ramadam. I also want to thank Hope foundation for women and children of Bangladesh. Their office in Miami helped me with all my questions before arriving in Bangladesh and their Cox's Bazar office helped me to understand the ANC program and to contact respondents. Special thanks to Hasnain, the country director. I hope my research will be helpful for their work. To all these people in Bangladesh: *dhonnobad!*

I want to thank my parents for making the fieldwork possible financially. I'm thankful to my parents and brothers, Joris and my fellow students at IOB, especially those who shared a desk with me for weeks, for their support and kind words. Lastly, special thanks to Dries and Aditi for reviewing my dissertation.

After these words of gratitude, I invite you to have a look at the result of my research in Bangladesh.

Executive summary

This dissertation looks at the use of maternal health services and the health care utilization for children. To reduce maternal and childhood mortality, more information is needed on the subject.

Andersen's health behavioral model, the factors affecting maternal and children's health care found in the literature were categorized into predisposing, enabling and need factors.

From the literature the following factors were identified for maternal health care utilization. The predisposing factors were religion, maternal education and health beliefs. Distance and transport to health facilities, waiting times at the health facility, cost, autonomy and domestic chores were the enabling factors. The need factors were fear for complications and unawareness of the importance of delivering with a skilled birth attendant.

The following factors were identified for health care utilization for children. As predisposing factors, maternal education and health beliefs came up in the literature. Decision-making and the cost were the enabling factors and the severity of the disease is the need factor.

In the analysis the factors were also categorized in the same groups and there was a more explicit focus on the different health behaviors.

Field work was undertaken in Cox's Bazar in Bangladesh. 27 interviews with women who recently delivered took place. 19 of these interviews were undertaken after these women were contacted through Hope Foundation. Eight interviews were gained through personal contacts from the interpreter. Apart from these interviews, there were also interviews with the country director of Hope foundation, some of the doctors from Hope hospital and one former nurse. The interviews were analyzed with Nvivo.

The health behaviors for the mothers were the following: everyone attended ANC, although a bit over one in three reached the recommended four visits. For delivery women in this analysis had four options: deliver at the hospital (Hope hospital or another hospital), deliver at home with a traditional birth attendant, deliver at home with a skilled birth attendant or deliver at home without an attendant. Most home deliveries were performed with a traditional birth attendant.

From the analysis we found the following factors for maternal health care utilization. The predisposing factors were religion, maternal education and health beliefs. Transport to health facilities, cost and autonomy were the enabling factors. The need factors were women's perception of their own condition fear for complications and unawareness of the importance of delivering with a skilled birth attendant.

For diarrhea, there were four health behaviors, whether or not combined: baby taken to the doctor, baby taken to the pharmacy, ORS given to the baby or traditional medicines given to the baby. For fever and cold, there were also four health behaviors: baby taken to the doctor, baby taken to the pharmacy, self-medication or traditional medicines given to the baby. All mothers stated that their children had all necessary vaccinations, with the exception of one mother who missed some because she was on holiday.

The following factors were identified for health care utilization for children in this study. As predisposing factors, this study found only health beliefs present. Decision-making and the cost were the enabling factors and the severity of the disease was the need factor.

Introduction

This dissertation looks at the use of maternal health services and the health care utilization for children.

The maternal mortality ratio, this is the annual number of deaths of women from pregnancy-related causes per 100 000 live births in 2012 was 220, and the under-five mortality rate, the probability of dying between birth and exactly five years of age expressed per 1 000 live births, was 41 in Bangladesh (Unicef, 2013).

Women face socioeconomic and cultural barriers to access maternal health services (Syed, Khadka, Khan, & Wall, 2008). These barriers need to be reduced in order to reduce the maternal mortality. The accessibility of primary health care services is important in reducing child mortality in developing countries (Fosu, 1994).

This dissertation looks at both the forms, as well as the factors influencing the utilization of maternal health care and health care for children. To make sense of the factors influencing health care utilization, I use Andersen's behavioral model. In this model I zoom in on the population characteristics influencing health care utilization, which can be grouped in three components: predisposing factors, enabling factors and need factors.

Field work was undertaken in Cox's Bazar in Bangladesh. 27 interviews with women who delivered recently took place. 19 of these interviews were undertaken after these women were contacted through Hope Foundation. 8 interviews were gained through personal contacts from the interpreter. Apart from these interviews, there were also interviews with the country director of Hope foundation and with doctors from Hope hospital and one former nurse. The interviews were analyzed with Nvivo.

First, the research question and the research design will be explained. Next, this dissertation presents a short literature review, where the Andersen's health behavior model is explained and applied on maternal health care utilization and health care utilization for children. Next, the sample and the possible biases are described in the section about methodology. Then, the actual analysis is reached. Here the interviews of the 27 women are analyzed and structured according to the Andersen' health behavior model. Lastly, this dissertation gives some recommendations about maternal health care utilization and health care utilization for children.

1. Research question

This dissertation wants to explore why women choose to deliver at home without skilled attendance despite receiving antenatal care at a hospital.

This can be translated to the following research questions: Which forms of health behavior do women display in relation to maternal care? Which factors influence their maternal health care utilization?

This dissertation also wants to explore how women who had antenatal care act when their child has fever or diarrhea, and if their child is immunized. The discussion of children's health care utilization focuses less on the factors affecting the health care utilization of children and more on the forms of health care: what do mothers do when their baby is sick.

The research questions which are connected to this are: Which forms of health behavior do mothers display regarding their children? Which factors influence the health care utilization for children?

2. Research design

For this research, first a literature review is undertaken. Here the model of Andersen's is explored and applied on the factors found in the literature.

Next, the analysis is a case study from fieldwork in Cox's Bazar Bangladesh. In this fieldwork data was obtained from interviews with women who had delivered recently, and with the country director of Hope foundation, doctors from Hope hospital and with one former nurse. The Andersen's health behavior model offers a framework to make sense of the different findings from the field work.

3. Literature review

First, some information is given about Bangladesh and the millennium development goals. Next, the health behavior model of Andersen is explained. This is followed by an overview of factors influencing maternal health care utilization and children's health care utilization.

3.1. Bangladesh

Bangladesh is located in the Indian subcontinent in Asia. Bangladesh has seven divisions: Rangpur, Rajshahi, Dhaka, Sylhet, Khulna, Barisal and Chittagong; 64 districts and 545 upazilas/thanas, which are subdistricts (National Institute of Population Research and Training (NIPORT), Mitra and Associates, & ICF International, 2013). It is the most densely populated country in the world.

3.2. Millennium development goals

The fourth Millennium goal states the commitment to reduce the under-five mortality rate by two thirds, between 1990 and 2015 (United Nations, 2008). Antenatal care plays an important role here, since it serves two functions. The first one is that it reduces directly child morbidity and mortality directly. Secondly, it increases the chances that the mother will access subsequent health care services for her child, which in turn reduces child mortality indirectly (Choi & Lee, 2006).

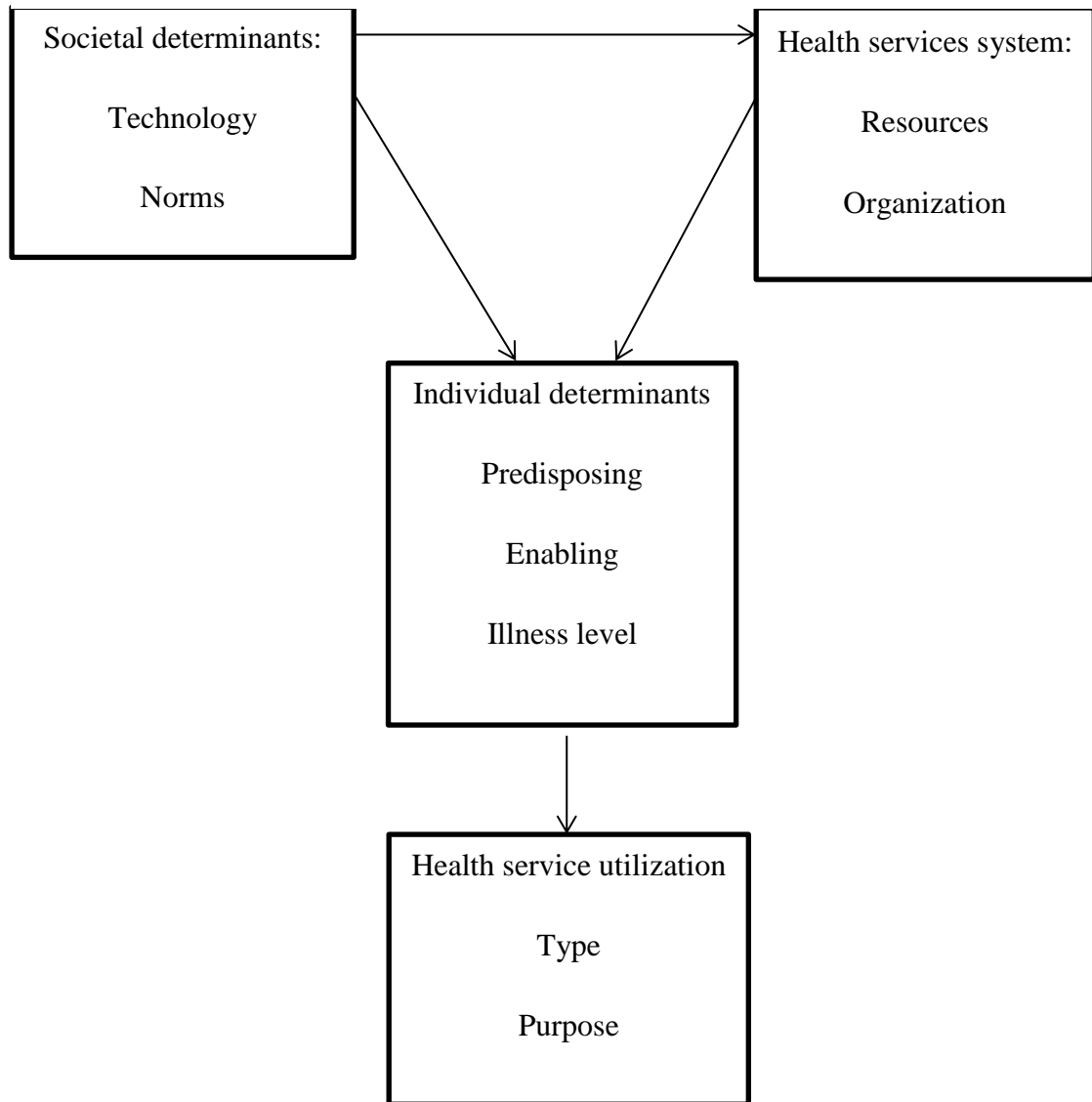
The fifth millennium goal consists of two components, the first one is to reduce the maternal mortality ratio by three quarters between 1990 and 2015, and the second one is to achieve, by 2015, universal access to reproductive health by 2015 (United Nations, 2008). Antenatal care and skilled birth assistance are important to reduce maternal mortality.

The Bangladeshi government is working towards achieving the Millennium Development goals. To achieve the fourth and the fifth goal, they want to streamline and expand the access to and quality of maternal, neonatal, and child health services, and, in particular, supervised deliveries (National Institute of Population Research and Training (NIPORT) et al., 2013).

3.3. Andersen's Behavioral Model

Andersen & Newman (1973) developed a framework for health services utilization in the United States. Societal determinants of utilization affect the individual determinants both directly and indirectly through the health services system. Various individual determinants then influence health services used by the individual.

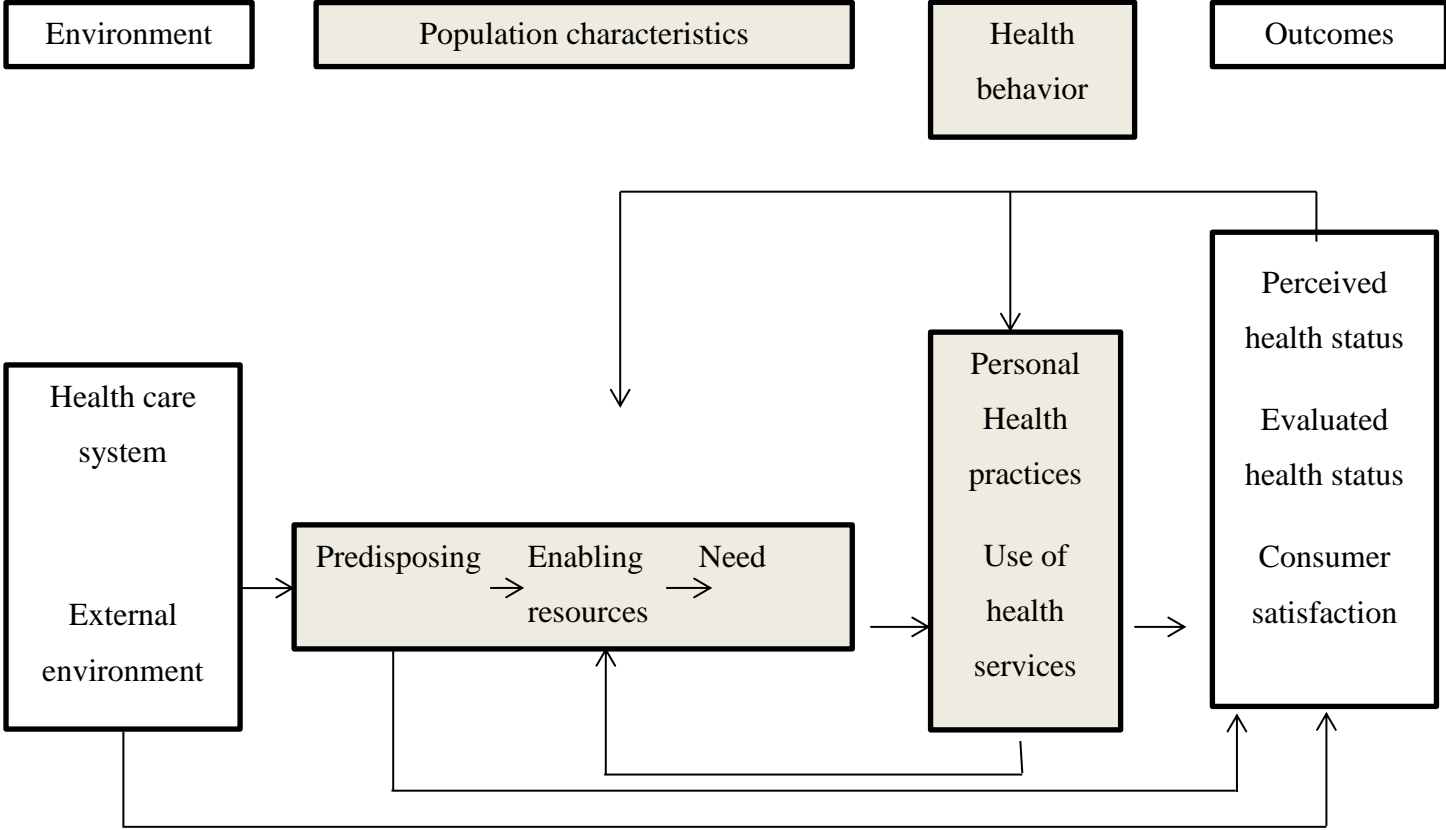
Figure 1: Framework for Viewing Health Services Utilization



Source: Andersen & Newman (1973)

This developed into the following model.

Figure 2: Health behavioral model



Source: Andersen (1995)

The model of Andersen predicts the health care utilization. The utilization depends on the interaction between environmental factors, characteristics of the population and particular health-related actions of the individual. The environmental factors are the health care system and the external environment, these factors form the setting in which utilization occurs. The population characteristics are divided in three groups: factors that predispose an individual to use health services, factors that enable a person to use services, and the individual’s need for care (Andersen, 1995). Health behavior consists of personal health practices and the use of health services, this is the particular health behavior of the individual. Lastly, the outcome is the perceived health status, evaluated health status and consumer satisfaction. To give a more general view about health care utilization and for reasons of completeness and correctness, this whole model is included, however this dissertation only looks at the population characteristics influencing the health behavior, which are marked in gray.

The predisposing characteristics influence an individual to utilize services, as these are the variables within a population that contribute to an inclination or natural tendency for an individual to behave in a specific way. These encompass the demographic factors, which suggest the likelihood that people will need health services. It also entails social structure, which includes the factors that determine the status of a person, their ability to cope with problems and how healthy or unhealthy the environment is likely to be (Andersen, 1995). The third component are the health beliefs, these are “attitudes, values and knowledge that people have about health and health services that might influence their subsequent perception of need and use of health services” (Andersen, 1995: 2). The predisposing factors reflect that some families have a greater propensity to health care utilization based on family characteristics, which include demographic and health-related attitudinal (Fosu, 1994). This group of characteristics includes age, gender, residence, occupation, education, ethnicity, and attitudes toward health (Rööst, Jonsson, Liljestränd, & Essén, 2009).

An enabling factor is defined as a “condition which permits a family to act on a value or satisfy a need regarding health service use”(Andersen & Newman, 1973: 109). These factors enhance the ability to obtain and access health care. The enabling factors encompass family resources and characteristics of the community, that affect the availability and accessibility of health care, and personal factors such as knowing how to take advantage of what is offered (Andersen, 1995; Rööst et al., 2009). The enabling factors reflect that, although the family may be predisposed to health care utilization, it must have some means to obtain it (Fosu, 1994). These include personal enabling factors like wealth, insurance, regular source of care, distance to health care, waiting times, and organizational factors of the health care system that enable use, for example the distribution of health facilities, presence of and availability of medical staff (Mcglynn, 2012).

Although the predisposing and enabling factors are necessary, they are not sufficient: a perception of need is needed (Fosu, 1994). Types of illness, perceived health status, evaluated health status, and expected outcome of treatment are grouped under need factors (Andersen, 1995; Rööst et al., 2009).

This dissertation does not strive to give an overview of all possible factors affecting health care utilization. This framework is used to make sense out of the information that was given during the interviews in Bangladesh. This framework allows structuring the data from the

field work in a way that helps understand the maternal health care utilization and the health care utilization for children.

3.4. Maternal health care utilization

The first form of health care utilization in this dissertation is maternal health care utilization. This dissertation looks at the utilization of antenatal care and assistance during delivery. First, I look at the literature about antenatal care and assistance during delivery. Secondly, the different factors contributing to or preventing health care utilization are categorized under the categories from the Andersen's behavioral model.

The World Health Organization states that women should have at least four antenatal visits, that are spaced at regular intervals and commence as early as possible in the first trimester (World Health Organization, 2006).

In the study of Barnett et al. (2006) in 2006, 90% of the 6785 deliveries took place at home. 11% of the women were attended by a doctor or nurse and 52,7% were attended by a traditional birth attendant (TBA). Less than half of the women received antenatal care and only 11% received the recommended minimum of four visits (Barnett et al., 2006). Goodburn, Gazi, & Chowdhury (1995) did focus group interviews with 90 women in 1995. In their interviews all women delivered at home. TBAs were seen as the best birth attendant and none of the women wanted to go to the hospital. Women have four options to deliver: at the hospital, at home with a traditional birth attendant, at home with a trained birth attendant and delivery at home without any assistance.

The study of Paul & Rumsey (2002) in Bangladesh showed that one of the factors for determining the use of health care for childbirth is antenatal care.

The factors affecting maternal health care utilization are categorized according to the Andersen behavioral model. The predisposing factors are religion, maternal education and health beliefs. The enabling factors are distance and transport to the health facility, waiting time at the health facility, cost, autonomy and domestic chores. And the need factors are the fear for complications and the unawareness of the importance of delivering with a skilled birth attendant.

The study of Parkhurst, Rahman, & Ssengooba (2006) in the southwest of the country looked at ways to overcome barriers. Unqualified local healers or traditional birth attendants were among the individuals who could influence care seeking in Bangladesh, but also the opinion of the mother in law played an important role. Cost and transport barriers were often overcome through social networks.

3.4.1. Predisposing factors

Under predisposing factors two demographic factors are discussed: religion and maternal education and three factors under health beliefs.

The first predisposing factor is religion. Simkhada, Van Teijlingen, Porter, & Simkhada, (2008) systematically reviewed the literature about antenatal care and stated that ethnicity, caste and religion played a significant role in ANC utilization. The study of Gabrysch & Campbell (2009) gives an overview of the factors influencing maternal health care utilization from studies from all over the world. They state that ethnicity, religion and traditional beliefs generate mixed results. The rationale behind the influence of religion is that certain cultural backgrounds, beliefs, norms and values as well as discrimination may decrease care seeking.

Maternal education is the second predisposing factor. Raghupathy (1996) concludes from her study that there is a clear positive effect from schooling on the use of antenatal care, but that the effect of schooling on delivery assistance only emerges after secondary schooling. Overall, secondary education emerges as the most consistent predictor of health service use. In the study of Tsawe & Susuman (2014) in South Africa, secondary education is one of the factors with higher probability to access maternal health care. The effect of women's secondary education was also found in the study of Furuta & Salway (2006) in Nepal. The study of Gabrysch & Campbell (2009) gives an overview of the factors influencing maternal health care utilization. They conclude that higher maternal education is among the factors that increase use. Chowdhury, Islam, Gulshan, & Chakraborty (2007) came to the same conclusion from their study in Bangladesh. Another study in Bangladesh, the study of Paul & Rumsey (2002), also showed that one of the factors determining the use of health care for childbirth is parental education. Maternal education can be considered one of the strongest factors associated with receiving trained assistance at delivery (Paul & Rumsey, 2002). The rationale behind the link between mother's education and skilled delivery use is that mothers with higher education have knowledge, access to written information, modern culture, more

confidence, higher earnings, control over resources and better communication with their husband and the health providers (Gabrysch & Campbell, 2009). Education enables women to take responsibility for their health and their children's health.

As stated above health beliefs are “attitudes, values and knowledge that people have about health and health services that might influence their subsequent perception of need and use of health services” (Andersen, 1995: 2). This includes a wide range of factors. The factors discussed here are cultural norms and beliefs, perception of the attitudes of health workers and the reputation of health facilities.

Cultural norms and beliefs are known to delay and sometimes even stop women from accessing health care for delivery (Choudhury & Ahmed, 2011). In Sierra Leone, traditional birth attendants are giving health services to the community for a long time, they are members of traditional sociocultural clubs and this gives them supernatural powers, according to their culture, which makes women decide to deliver with them (Oyerinde et al., 2013). Women often preferred to deliver at home, because delivering at a health facility is often seen as something shameful. There is also the cultural practice of untouchability in Nepal, this mean that women should be isolated during and a few days after delivery (Onta et al., 2014). The study of maternal care practices among the ultra-poor of Choudhury & Ahmed (2011) in northern Bangladesh showed that cultural beliefs and norms have a strong influence on maternal care utilization for poor households. A cultural norm is that women delivering at home are often attended by traditional birth attendants. They often wait long until they refer women to a clinic, which puts them in danger (Sialubanje, Massar, Hamer, & Ruiters, 2014).

A second factor that can be categorized under health beliefs is the perception of the attitude of health workers. The study in Nepal showed a scarcity in health workers, which made the available ones overburdened and affected their motivation and performance. The skilled birth attendants in peripheral areas had limited training and thus were unable to handle complicated deliveries (Onta et al., 2014). In the studies of Chi et al. (2015), Oyerinde et al. (2013) and Tsawe & Susuman (2014) it was said that health workers were not always present and that there are shortages in health personnel. Some women in Malawi had negative experiences with health workers, for example they were shouting and were being rude (Kumbani, Bjune, Chirwa, Malata, & Odland, 2013). Some patients experienced abuse, disrespect and neglect from health workers in the study of Oyerinde et al. (2013). The ultra-poor in Bangladesh in the study of Choudhury & Ahmed (2011) perceived poor attitudes of health staff to exist in

most health facilities. Women who have had bad experiences tend to utilize maternal health services less frequently than those who have had good experiences (Chi et al., 2015; Tsawe & Susuman, 2014).

The third health belief is the bad reputation of the hospitals. The health facilities have inadequate health infrastructure and logistics (Onta et al., 2014). In the study of Oyerinde et al. (2013) health facilities had a bad reputation because they were under resourced in terms of equipment and supplies. Mother's negative perception of the quality of services influences their decision to use maternal healthcare services (Sialubanje et al., 2014).

3.4.2. Enabling factors

Five factors can be grouped under enabling factors, these are distance and transport to the health facility, waiting time at the health facility, cost, autonomy and domestic chores.

The first enabling factor is the distance and transport to the health facility. In numerous studies the factor of travel distances and transport to a health facility is shown to contribute to the utilization of maternal health care (Chi et al., 2015; Oyerinde et al., 2013; Sialubanje et al., 2014; Story et al., 2012). Travel distance is also a predictor in the quantitative study of Edmonds, Paul, & Sibley (2012). The study of Onta et al. (2014) adds the poor road condition to the inadequate and inappropriate transport and travel distances. The reasons given in the study of Kumbani, Bjune, Chirwa, Malata, & Odland (2013) in Malawi are also related to transport: onset of labor at night and rainy season. If there was adequate transport, this would not be an issue. This made women deliver at home instead of at the hospital.

The second enabling factor is the waiting time in the health facility. Long waiting times were pointed out as a barrier to maternal health care utilization (Oyerinde et al., 2013). In the study of Kumbani et al. (2013) delay in care made the women perceive the care received in the health facility as poor care.

Thirdly, the cost plays a role. The cost of services in health facilities is an important barrier in numerous qualitative studies (Chi et al., 2015; Onta et al., 2014; Oyerinde et al., 2013; Somé, Sombié, & Meda, 2013; Story et al., 2012). It is not only the cost of the delivery, but also the indirect costs, like transport, food, living arrangements for the people accompanying the pregnant woman and baby clothes (Onta et al., 2014; Sialubanje et al., 2014). In the study of

Choudhury & Ahmed (2011) of maternal care practices among the ultra-poor in northern Bangladesh it was shown that when complications arose, financial constraints delayed care seeking.

Autonomy is the fourth enabling factor. Women often lack autonomy in decision making and their husband or household head decides whether they should go to a health care facility (Onta et al., 2014). However, in Nepal, family members were increasingly supportive in recent years (Onta et al., 2014). The study of Somé et al. (2013) in Burkina Faso explained that women have to request permission before seeking maternal care. This request for permission is also necessary for financial reasons. If the husband grants permission, he will pay the bill.

The last enabling factor is the household chores. Women have to take care of their other children and they have to do the household, and often there is no adequate family support to go to the health facility and leave the house and the children (Onta et al., 2014). The high burden of domestic chores may discourage women to access health care (Chi et al., 2015).

3.4.3. Need factors

The first need factor is the fear for complications. One of the factors Andersen (1995) puts under need factors is worries about their health. This factor of fear can be categorized under this. In the research of Sialubanje, Massar, Hamer, & Ruiters (2014) in Zambia young respondents preferred to deliver at the hospital because they had no experience in giving birth and they feared to develop complications at home. In the study of Oyerinde et al. (2013) in Sierra Leone, it were also the young respondents who said that they delivered with the trained birth attendants because they were inexperienced. Previous experience with or fear of a complicated delivery were reasons to access maternal health care in Burundi and Northern Uganda (Chi et al., 2015).

Another need factor according to Andersen (1995) is whether or not people judge their problems to be of sufficient importance and magnitude to seek professional help. Therefore, the unawareness of the importance of delivering with a skilled birth attendant is categorized under need factors. However it could also be argued that this factor should be placed under predisposing factors under health beliefs, because it is can also be seen as the belief that women should deliver at home when it is a normal delivery. According to the qualitative study of Onta et al. (2014) in Nepal a delay in seeking care was often caused by unawareness

of the importance of delivery by skilled birth attendants. Lack of knowledge about the importance was also pointed out as a reason for the low health care utilization in South Africa by health professionals (Tsawe & Susuman, 2014). The study of Paul & Rumsey (2002) in Bangladesh showed that one of the factors for determining the use of health care for childbirth is delivery complications.

3.4.4. Conclusion

The barriers identified in the literature are religion, low maternal education, cultural norms and beliefs, rude attitude of the health staff, bad reputation of the health facilities, long distance and inadequate transport to the health facility, long waiting times, high costs, lack of autonomy, the burden of the household, unawareness of the importance and no fear for complications.

3.5. Health care utilization for children

The focus of the section about children lies more on the health behavior, and only on a limited number of predisposing, enabling and need factors.

First, I look at the reason why it is important to look at care seeking behavior for children. Early care seeking is associated with reduced rates of neonatal mortality (Barnett et al., 2006). Arifeen et al. (2008) suggest that improving healthcare-seeking patterns of caregivers of under-five children in Bangladesh could reduce child mortality.

Fever and diarrhea are two of the major contributors to childhood morbidity and mortality in Bangladesh (National Institute of Population Research and Training (NIPORT) et al., 2013).

Diarrheal disease is the second leading cause of death in children under five years old, and is responsible for causing the death of 760 000 children every year (WHO, 2009). Globally, there are nearly 1.7 billion cases of diarrheal disease every year. The key measures according to the WHO are rehydration: with oral rehydration salts (ORS) solution. ORS is a mixture of clean water, salt and sugar. It costs a few cents per treatment. ORS is absorbed in the small intestine and replaces the water and electrolytes lost in the faeces. Next, the WHO suggests zinc supplements: zinc supplements reduce the duration of a diarrhea episode by 25% and are associated with a 30% reduction in stool volume. Thirdly, the suggest nutrient-rich foods: the

vicious circle of malnutrition and diarrhea can be broken by continuing to give nutrient-rich foods – including breast milk – during an episode, and by giving a nutritious diet – including exclusive breastfeeding for the first six months of life – to children when they are well. Lastly, they suggest consulting a health professional, in particular for management of persistent diarrhea or when there is blood in the stool or if there are signs of dehydration. (WHO, 2009)

The qualitative research of Blum, Oria, Olson, Breiman, & Ram (2011) in Kenya about the use of ORS pointed out some of the barriers: caregivers preferred to treat diarrhea with western drugs, the distance to health facilities, inconsistent advice from health workers the cost and lack of knowledge. Many respondents reported that they lacked confidence in administering ORS without a prior consultation with a health provider.

There is still a lot research to be done about how mothers treat their sick children, this will be explored in depth more in the analytical part of this dissertation. Now I will take a closer look at the factors influencing the health care utilization for children. The predisposing factors are maternal education and health beliefs. The two enabling factors are decision-making and cost.

3.5.1. Predisposing factors

The predisposing factors under health care utilization for children are maternal education and health beliefs.

First I will look closer at the predisposing factor maternal education. The multivariate logistic regression in the research of Charles, Udonwa, Ikoh, & Ikpeme (2008) in Nigeria, indicated that maternal education is related to the choice of treatment of a febrile child, this is a child with fever, at a health facility. A study of Becker, Peters, Gray, Gultiano, & Black (1993) in the Philippines demonstrated that maternal education was associated with increased health care utilization for children with diarrhea in both urban and rural areas. There was also an effect of women's education on ORS knowledge and use. Literacy was one of the factors in the research of Coreil & Genece (1988) in Haiti that determined the use and choice of treatment for children with diarrhea. The link between maternal education and immunization is widely documented. In the study of Sullivan et al. (2010) maternal education was positively associated with the vaccination of the children. The research of Nath et al. (2007) in India concludes that an illiterate mother is a predictor of a partial immunized status. The study of

Bondy, Thind, Koval, & Speechley (2009) in the Philippines concludes that mothers who have less education are also less likely to have fully immunized children (Bondy et al., 2009). The research of Perry, Weierbach, Hossain, & Islam (1998) concluded that educational level of the mother is one of the factors associated with the completion of the entire series of childhood immunizations. In the study of Breiman et al. (2004) children of mothers with higher education were associated with full DTP immunization. Likewise, the research of Rahman & Obaida-Nasrin (2010) concludes that full vaccination is positively associated with the education level of the mother. Finally, the research of Chowdhury, Bhuiya, Mahmud, Abdus Salam, & Karim (2003) demonstrates that immunization coverage was higher for children whose mothers were more educated.

Cultural beliefs play a role in care seeking for children. the study of Winch et al. (2005) in the Sylhet division of Bangladesh showed that failure to seek care outside the home for a sick neonate is seen as fatalism. It can also be seen as risky since it exposes the child to cold, bad spirits and jealous people. The need factor is the severity of the disease.

3.5.2. Enabling factors

Two factors are discussed under enabling factors, these are decision-making and cost.

Decision-making is the first enabling factor. The research of Charles, Udonwa, Ikoh, & Ikpeme (2008) in Nigeria investigated the factors that influence the decision of the mother to seek medical help for their febrile child. This decision was made in consultation with the mother-in-law or father-in-law in the absence of the husband. A qualitative research of Chibwana, Mathanga, Chinkhumba, & Campbell (2009) in Malawi noted that decision-making within families, particularly maternal empowerment issues, affect health care seeking decision for a child with fever.

The second enabling factor is cost. The quantitative study of Najnin, Bennett, & Luby (2011) researched care seeking for febrile illness of under-five children in Urban Dhaka. Children from the highest wealth quintile were significantly more likely to be taken to a trained healthcare provider compared to the poorest group.

3.5.3. Need factor

The perception of the severity of the disease is grouped under need factors. Research of Pillai et al. (2003) in Kerala, India showed that parents did not seek professional health care when the illness was mild. The quantitative study of Najnin et al. (2011) researched care seeking for febrile illness of under-five children in Urban Dhaka. Children with a decreased level of consciousness were more likely to be taken to a health care provider.

3.5.4. Conclusion

The barriers to health care utilization for children are low maternal education, cultural beliefs, decision-making not in the hands of the mother, cost and when the disease is not seen as severe.

3.6. The link between antenatal care and children's health care

The study of Butz, Funkhouser, Caleb, & Rosenstein (1993) in the United States showed a significant association between adequate prenatal care and adequate use of infant health care. Adequate prenatal care was defined as care which started before 28 weeks' gestation and including more than four prenatal visits in the hospital. The study of Cardol et al. (2005) in the Netherlands showed that the use of health care of mothers is strongly correlated with the use of health care of children. The study of Minkovitz, O'Campo, Chen, & Grason (2002) in the United states showed the use of health care services is similar between mothers and children, both for preventive care as for acute care. The study of Reichman, Corman, Noonan, & Schwartz-Soicher (2010) in the United states has found that ANC visits are associated with adequate use of preventive health care services for the baby. The study of York, Tulman, & Brown (2000) in the United States, comes to a different conclusion than the previous ones, they conclude that women who had no ANC visits have fewer acute-care visits than children whose mothers received adequate, intermediate, or inadequate ANC visits.

There is also a link between antenatal care and immunization. Munshi & Lee (2000) conclude that children in Pradesh, India are more likely to be fully immunized if their mother received antenatal care. Research of Dixit, Dwivedi, & Ram (2013) which also took place in India, shows that both women with one or two ANC visits as the women with more than two visits have higher child immunization than the group of women who have not made any ANC visits.

The study of Feemster, Spain, Eberhart, Pati, & Watson (2009) in the US concluded that fewer prenatal care visits are a strong predictor of being a late starter and time to first immunization. The study of Sullivan, Tegegn, Tessema, Galea, & Hadley (2010) concludes that children in rural Ethiopia were more likely to be vaccinated if the mother had antenatal care. The study of Hemat, Takano, Kizuki, & Mashal (2009) in Afghanistan concluded that attendance at antenatal care in the city center was positively associated with full immunization. Institutional delivery was also positively associated (Hemat et al., 2009). The study of Bondy, Thind, Koval, & Speechley (2009) in the Philippines concludes that women who have not attended four antenatal visits are less likely to have fully immunized children. Research of Sahu, Pradhan, Jayachandran, & Khan (2010) in India concludes that the number of antenatal care visits has a predictive role for potential immunization.

Barnett et al. (2006) concluded from their quantitative research in Bangladesh that antenatal care is associated with reduced rates of neonatal mortality.

Lee (2005) states that there are different aspects to his links. The first one is learning by doing: participation in a health program gives women the access to information about the benefits and costs of other programs. Another aspect is complementarity: it is likely that a mother who chooses prenatal care may also engage in complementary behavior such as immunization.

4. Methodology

First, some more information is given on the setting, which is the intervention of Hope foundation. Next, the sample and the bias are discussed.

4.1. Intervention of HOPE foundation

Hope Foundation for women and children of Bangladesh is an NGO striving to improve maternal health in Cox's bazar in the Chittagong division in Southeastern Bangladesh.

HOPE Foundation started their antenatal care program on 5 May 2014. Since then, they have reached more than 700 women. Pregnant women can buy a card for 200 TK, or €2,27, and with this card, they get four antenatal visits with free consultation and supplementation. They also get educated about family planning and maternal nutrition. They encourage women to deliver at the hospital or in the presence of a skilled/trained birth attendant. With this

intervention they hope to increase the immunization rate but it is also hoped that the women who participated in this program, will access health care for their sick children more easily.

4.2. Sample

Details were obtained of 117 women who delivered at the hospital and 82 women who delivered at home. Women with variations over relevant dimensions were contacted through telephone, until ten women who delivered at home and ten women who delivered at the hospital agreed to have a face to face interview. 19 women showed up, eight who delivered at home and eleven who delivered at Hope. The eleventh woman was on the list of deliveries at home, but reality she delivered at Hope. At the time of the interviews, there were floods which made it difficult for some women to come to the hospital. Eight other women were contacted through personal contacts of the interpreter in the area of Bhacharchara in Cox's Bazar.

The respondents were selected according to the diverse case method. This means that the research strives to have variation over the relevant dimensions (Gerring, 2008). Nonetheless, there are practical considerations. Ideally, the sample would include respondents living close and respondents living far, since distance to the health facility to the health facility is a factor in the studies of Chi et al. (2015) and Oyerinde et al. (2013). However the respondents had to come to the NGO for the interviews. Therefore, the decision was made to contact only women who were living less than 2 hours away. The respondents also have some characteristics in common. The women who had ANC with Hope foundation all gave birth in the past 12 months. The women contacted outside Hope foundation, through personal contacts of the interpreter, gave birth in the past 18 months. The difference between twelve and eighteen months is because of practical reasons. By expanding the time range for women outside Hope a little, it was easier to find suitable candidates. And the difference between 12 and 18 months should not be that significant that it would affect the research. Usually there is no difference between how women remember their delivery, whether it was 12 or 18 months ago. Neither should there be a difference between the treatment of a sick child at 12 months or at 18 months. There is variation on the following dimensions: age, religion, place of delivery and place of residence (but this last variation is between 10 minutes and 2 hours).

These 27 women participated in face to face interviews with a local interpreter, who was not associated with Hope foundation. Some women preferred doing the interview in company of another woman who was contacted, because it made them feel more comfortable. The interviews took place in an office, neighboring to the Hope Hospital, for the women contacted through Hope, and in the home of the mother of the interpreter, for the eight other women.

The women who came to Hope hospital received 100 TK (€1,10) as a compensation for transport costs. The women contacted through the interpreter, did not receive a compensation for transport since they did not take any transport, but they received a small gift instead.

For the women who were contacted through Hope, it was explained at the beginning of the interview that the interviews were conducted for a dissertation and that the researcher was not working for Hope Foundation. It was highlighted that their participation would not influence the service they would get in the future at Hope Foundation. Their names were noted in order to be able to look them up in the hospital files, but it was explained that later these would not be linked to their answers. For the women contacted through the interpreter, their names were not asked in order to guarantee anonymity and they were also explained that the interviews were conducted for a dissertation.

Apart from these 27 interviews, there were also some interviews with the country director of Hope Foundation and some doctors of Hope hospital. Since there might be some sensitive information in the interviews with the doctors, and that it might be traced back to them since there are not many doctors at Hope hospital, the decision was made to exclude all quotes from the doctors at Hope hospital in the version of this dissertation that will be sent to Hope foundation.

Billiet & Waege (2003) point out the advantages of interviews. Interviews give the opportunity to switch the order of the questions, to go deeper into a specific answer, to observe nonverbal reactions, to have control over the setting, and to have control over the completeness of the interviews. Moreover, respondents cannot just skip a question like with a questionnaire. Despite efforts to make the respondents comfortable, to point out the anonymity and to be as clear as possible, there is always the possibility that there are sources of error. Two sources of error that are important for this dissertation is the obstruction of communication and the role expectations (Billiet & Waege, 2003). Firstly, there can be

obstruction of communication. On the one hand, this obstruction is reduced by using a translator who speaks the local dialect. On the other hand, working with a translator does have the disadvantage that the researcher has to give up control over the communication partly. The researcher cannot know exactly how the question is asked in the local language. Moreover, some nuances can get lost in translation. The second possible source of error is role expectations. When the interviewees meet a female researcher from a European country, they have certain expectations which may influence their answers.

4.3. Bias

Except from the above mentioned sources of error, it is also possible that bias was created. The women were phoned by someone of Hope foundation to ask if they were willing to come to the hospital for an interview and the interviews took place in an office next to Hope hospital. Although there were no people of Hope hospital present during the interviews, the impression might be given that the researcher was linked to Hope hospital and Hope foundation. To reduce this bias, at the beginning of each interview it was clearly stated that the interview would be used for a dissertation at a Belgian university and that the researcher was not working for Hope foundation. The goal was to clarify that their future service at Hope hospital would not be influenced by their given answers. The decision to interview the women at this specific place and not at their home was taken for time and resource constraints. Most women gave only the general area where they were living, when asked by the hospital. This means it would have cost a lot of time and resources to find every woman at her home, both because this would have required a lot of work and because the areas indicated by the respondents were widespread.

Another bias is that women had to leave their house for the interview, this means women whose husband didn't gave them permission to leave the house, were not included.

As mentioned before, only women living within a distance of two hours were contacted, which also creates a bias.

Despite limiting the research to women who gave birth in the last 12 months (for women contacted through Hope), and 18 months (for the other women), it is possible that there is a recall bias since women were asked questions about things in the past: how the delivery went,

how long they had to wait before seeing someone for ANC, how they treated their children etc.

Another bias in this study is that the information given by the mothers was self-reported. This might have had an influence on the information about vaccinations. Most women do not know the difference between the vaccines or how many doses the baby should get of each. It is possible that they would have said that their child had all the necessary vaccinations because they honestly believed it, while in fact the child didn't because the mother didn't know enough about the vaccinations. A weakness in this dissertation might be that the women were not specifically asked to bring their vaccination card for the interview. However, it is unsure if this would have removed the bias since a number of women reported to have lost their card.

4.4. Method of analysis

All interviews were recorded and later transcribed in Word. Reading and re-reading of the transcripts was undertaken to allow familiarization with the text. Then, they were coded in Nvivo.

5. Analysis

In this section, I want to analyze the collected field data. In line with the research questions, I want to explore which health practices mothers use for maternal care and which factors influence the maternal health care utilization. Secondly, the health practices of mothers for their children and the factors influencing children's health care utilization are analyzed.

The purpose is not to give an overview of all health practices and all factors, but only of the ones brought up in this study.

5.1. Maternal health care utilization

First the maternal health service utilization, which includes both antenatal care and delivery is analyzed. This analysis starts with a look at some general statistics. Afterwards I look at the information from this study.

In the literature review the difference was explained between predisposing, enabling and need factors in the model of Andersen (1995). This research zooms in on a number of predisposing, enabling and need factors influencing maternal health care utilization.

5.1.1. Antenatal care

ANC is important because it serves two functions, as shown in the literature. First, there is the direct link with child morbidity and mortality. Secondly, it increases the chances that the mother will access subsequent health care services for her child, which in turn reduces child mortality indirectly (Choi & Lee, 2006).

First, I take a look at the general statistics. According to the UNICEF statistics, 52,5% of the pregnant women in Bangladesh had at least one ANC visit in 2013. 25% of the pregnant women had at least four visits (Unicef, 2013). The Demographic and Health Survey in Bangladesh in 2014 shows that 79 percent of the women who gave birth in the past three years had antenatal care. 64 percent received antenatal care from medically trained providers (National Institute of Population Research and Training (NIPORT), Mitra and Associates, & ICF International, 2015). The recommended four or more visits was only obtained by 31 percent (National Institute of Population Research and Training (NIPORT) et al., 2015). This is a little higher than the 25 percent in the UNICEF statistics of 2013, however this can be due to different data sources.

All women in this study, both the ones contacted through Hope and the others, had at least one ANC visit. All women who had their ANC at Hope reported they would suggest other women to participate in the ANC program of Hope. The ANC program of Hope includes free supplements, which is an important pull factor according to the doctors of Hope Hospital. All women said that there was clear communication between doctors and patients.

Most women were accompanied by a family member or by their husband. One woman was not accompanied by her family or husband, but she came with other women from her village that were pregnant.

The information in the files from Hope hospital and the information given in the interview about the number of ANC visits does not always correspond. The reason for this was explained by the country director of Hope foundation.

“Sometimes what happens is... they come between the scheduled dates of ANC’s for some other illness (not related to pregnancy) but at the same time they have the check-up which are not recorded as ANC’s. That’s how you might hear that she had come thrice but see in the record that she had actually come once.”

- Interview Country director of Hope, 9 July 2015

For most of the women, the ANC visits meant they had to go to Hope hospital and were attended there, however two women had a home visit from a Hope nurse. The women who came to Hope for their ANC visits were always attended by a nurse and a doctor. The intervention of Hope states that an ANC visit includes a checkup, supplements, counseling of dos and don’ts, breastfeeding education, family planning, immunization and nutritional counseling. However, some women reported that they were not told how to look after their children. This shows a discrepancy between how the intervention is planned and how it is carried out in reality.

The women contacted outside Hope all went to a hospital for ANC, some were attended by a doctor and a nurse, but most were only attended by a nurse.

The women who participated in the ANC program of Hope did on average have fewer visits and had their first visit later than the women who had ANC at another hospital. If the numbers from the files of Hope are used, then only two women out of 19 had the recommended four visits. If the women who reported themselves that they had at least four visits are added, 7 out of 19 women reached the recommended amount of visits. This 37% is higher than the 25% and the 31% of UNICEF and Demographic and Health Surveys, but still low because it’s only the percentage of the women who were enrolled in the ANC program. Since most women in the ANC program start late in their pregnancy with antenatal care, it is unlikely that they will reach the recommended 4 visits. This problem is acknowledged by Hope Foundation.

Interviewer: “You explained that with the card the women bought for ANC, they could get 4 ANC visits. However not a lot of women actually did 4 visits... Do you have an explanation for this? Is it because they often come when they are already late in their pregnancy?”

Country director of Hope Foundation: “Yes, they often come when they are already late in their pregnancy. It is more to do with their culture of not keeping up with time

- Interview, 9 July 2015

From the women who had their ANC at another hospital, 6 out of 8 women reported having had four visits or more. This indicates that although Hope Foundation is able to reach women that would not have been reached otherwise, the amount of women that receives the recommended ANC is low.

5.1.2. Delivery

Of the pregnant women in Bangladesh in 2013, 34,4% delivered with a skilled birth attendant, 32,8 % had an institutional delivery and 21% had a caesarean (Unicef, 2013). The Demographic and Health Survey in Bangladesh in 2014 shows us that 37 percent of the births in Bangladesh between 2011 and 2014 took place at a health facility (National Institute of Population Research and Training (NIPORT) et al., 2015). 23 percent of the births were caesarean, which means that six in ten births in a health facility were caesarean (National Institute of Population Research and Training (NIPORT) et al., 2015), this is two percent point higher than the UNICEF statistics, but this might be due to different data sources and the way of measuring.

In this study, fifteen women delivered at a hospital and twelve women delivered at home. From the women who had ANC with Hope, eight delivered at home and eleven at Hope hospital.

All women who were asked, said that they would suggest others to give birth at Hope hospital.

During most home deliveries, there was a traditional birth attendant present. The traditional birth attendant didn't wear gloves and most of the times the cord was cut by a blade that was boiled beforehand in order to clean it. The research of Barnett et al. (2006) showed that in 61% of the deliveries with a traditional birth attendant, the instrument was boiled.

“Untrained birth attendants don't use gloves. And they cut the cord with bamboo, but it's not really cutting... it's tearing... This is very unhygienic and is one of the biggest causes of death. The other two are pneumonia and diarrhea.”

- Interview Doctor at Hope Hospital, 12 July 2015

Only one of the home deliveries happened in the presence of a trained birth attendant. There was one woman who gave birth on the way to the hospital. She did not have a birth attendant. Another woman gave birth alone.

One of the doctors explained why a lot of births are not attended by trained birth attendants.

“First, there are not enough trained birth attendants. Second, people don’t understand the concept of trained birth attendants. The midwives are often still young and people think: this girl is young and has not yet given birth, what can she know about delivering, they prefer a grandmother who had 10 babies.”

Interview Doctor at Hope hospital, 5 July 2015

5.1.3. Predisposing factors

The most important predisposing factor which this research zooms in on are health beliefs. Afterwards, religion and maternal education are studied

Cultural norms and beliefs are categorized under health beliefs. In the literature it was shown that they have an influence (Choudhury & Ahmed, 2011; Onta et al., 2014; Oyerinde et al., 2013), but this study offers more insight in what these norms and beliefs in Bangladesh are. Hope Foundation pointed out that there is a belief that all deliveries in the hospital happen with a caesarean.

“Women think that if they deliver at the hospital, they will have to get a caesarean.”

- Interview, Country director of Hope foundation, 1 July 2015

One of the doctors also pointed out this was one of the reasons why women deliver at home.

“They think doctors prefer to do caesarean because they get a higher fee from it. But there is an explanation for the high number of caesareans. Because most hospitals don’t have any medical material to check how the baby is doing, when they have doubts, they don’t want to take the risk and they will do a C-section.”

- Interview Doctor at Hope Hospital, 5 July 2015

One of the women who had ANC in another hospital than Hope hospital, gave this as a reason for delivering at home.

“I was worried. If I had gone to hospital, they would asked me to have a C-section.”
- Interview 23-year-old mother, second delivery, 8 July 2015

The rate of women giving birth through caesarean is high. From the 117 women who delivered at Hope hospital, for which details were available, 37 had a caesarean, which is 33 percent. The ideal rate for caesarean sections is since 1985 stated as between 10% and 15%, but since then caesarean sections have become increasing common (World Health Organization, 2014). When there is a medical reason for it, it can prevent maternal and perinatal mortality and morbidity. Nevertheless, there is no evidence that an unnecessary caesarean has any benefits, while it still is a surgery with its associated short and long term risks. The World Health Organization stated in 2014 that rates higher than 10% are not associated with reductions in maternal and newborn mortality rates (World Health Organization, 2014).

Some women pointed out that it was important that the doctors were female.

“My husband doesn’t have a problem that I deliver here, because there are female doctors. If it would be male doctors, it would be a problem.”
- Interview 30-year-old mother, 3th delivery, 7 July 2015

The second category under health beliefs is the perception of the attitude of health workers. The women who said something about the attitude of the health staff at Hope hospital, said they were friendly. This perception of friendly health staff stands in contrast with the perception of rude health staff in the studies of Tsawe & Susuman (2014) in South Africa, Kumbani et al. (2013) in Malawi and Chi et al. (2015) in Burundi and Northern Uganda. In these studies the rude attitude of the health staff influenced the use of maternal health services. A related factor, the bad reputation of health facilities was not mentioned in these interviews. In contrast to the studies of (Oyerinde et al., 2013; Sialubanje et al., 2014)._Some women said the good service was a reason to choose for Hope.

Another predisposing factor is religion. Five Hindu women were included in the interviews and all five of them gave birth at the hospital. One of the doctors of Hope Hospital explains why she thinks that Hindi women prefer the hospital.

“Hindus have belief of small families and there is no divorce. Multiple marriages is strictly prohibited among them. So they try to take good care up to their best level.”

-Interview Doctor at Hope Hospital, 9 July 2015

The study of Gabrysch & Campbell (2009) gives an overview of the factors influencing maternal health care utilization from studies from all over the world. They state that ethnicity, religion and traditional beliefs generate mixed results. The rationale behind the influence of religion is that certain cultural backgrounds, beliefs, norms and values as well as discrimination may decrease care seeking. The only study in Bangladesh that looks at religion is the qualitative study of Story et al. (2012), in this study the numbers of Muslim, Hindi and Christian women delivering with a skilled birth attendant are exactly the same as the numbers delivering with an untrained birth attendant. This study does not confirm the idea of the doctor. And no study could be found with the same perceptions about Hindi women.

The third and last predisposing factor is maternal education. When I look closer at the difference between the women who gave birth at home and the women who gave birth at a hospital, regardless whether it was Hope Hospital or another hospital, a difference in the level of education can be seen. Of the women who had no schooling, four out of five delivered at home and one delivered at a hospital. Out of the women who finished at least their primary school, six delivered at home, while 12 out of 18 delivered at the hospital. For the women who started primary school, but did not finish it, two delivered at home and two delivered at the hospital.

In the Demographic and Health Survey of 2014 the same trend can be noticed. Of the women with no education, 15,7% delivered at a health facility. Of the women who started primary school, but did not complete, 23% delivered at a health facility. Of the women who completed primary education, 29,6% delivered at a health facility. Of the women who started secondary school and did not finish, 40,3% delivered at a health facility. Lastly, of the women who completed secondary education or who had higher education, 68,9% delivered at a health facility.

Numerous studies have already found a link between maternal education and place of delivery (R. I. Chowdhury et al., 2007; Furuta & Salway, 2006; Gabrysch & Campbell, 2009; Paul & Rumsey, 2002; Raghupathy, 1996; Tsawe & Susuman, 2014).

In the study of Furuta & Salway (2006) in Nepal women's secondary education was strongly associated with greater use of maternal health care. In the study of Raghupathy (1996) in Thailand, secondary education is the most consistent predictor of the utilization of maternal health care

Table 1: Distribution of place of delivery according to religion and education

	Hospital	Home
Religion		
Hindu	5	0
Muslim	12	9
Education		
No schooling	1	4
Started primary school, but did not finish	2	2
Finished primary school	5	1
Started secondary school, but did not finish	6	1
Finished secondary school	1	2
Higher education	0	2

Source: data from own interviews

5.1.4. Enabling factors

Enabling factors are the factors that make it possible for people to access health care. The enabling factors here are distance and transport to the health facility, lack of autonomy, cost long waiting times and household chores.

The first enabling factor is distance and transport to the health facility. The women contacted outside Hope Hospital, but who delivered at a hospital, gave distance and transport as a reason to deliver at the hospital. The hospital was not that far from their area, so it was rather easy to reach.

There were also some women who planned to deliver at the hospital, but failed to get there.

“I planned to deliver at Hope, but it happened on the way. It was complicated, something inside happened... the urine canal was destroyed, I had an operation, a very complicated operation, they had to cut inside, they had to cut in my vagina and had to operate it and stitch it up, I had to stay for long time in the hospital.”

- Interview 23-year-old mother, second delivery, 7 July 2015

“I wanted to deliver at home, but the day of the delivery, there was a strike and I couldn't get to the hospital”

- Interview 24-year-old mother, second delivery, 8 July 2015

This barrier was also known to the doctors.

“Sometimes woman take transport to get to the hospital, but they deliver on the way and then they will decide to go back home instead of to the hospital.”

- Interview Doctor at Hope hospital, 5 July 2015

Lack of transport is one of the reasons given in this research for delivering at home. Transportation was often cited in other studies (Chi et al., 2015; Onta et al., 2014; Oyerinde et al., 2013; Sialubanje et al., 2014; Story et al., 2012).

“The plan was to deliver at Hope, but it was nighttime and it was difficult to find transportation.”

- Interview 25-year-old mother, 3th delivery, 8 July 2015

Onset of labor at night was also cited as a reason in the study of Kumbani et al. (2013) in Malawi.

One woman reported that there even was no time and so she had to deliver at home. This could also be seen as a matter of transport and distance. If an ambulance was used to take her to the hospital, she might have reached it in time.

“Nobody was there [at home], it just happened, I was alone. There was even no time to call a traditional birth attendant.”

Interview 30-year-old mother, 3th delivery, baby died after 18 days, 7 July 2015

In this research the problem lies more in the lack of adequate transport than in the distance. However, this might be due to the bias that only women were contacted who lived less than two hours away.

Another enabling factor is the lack of autonomy, which is in fact not enabling but a hindering factor. Most women are required to ask their husbands' permission before making any decisions. The research of Onta et al. (2014) in Nepal and Somé et al. (2013) also pointed out that women often lack autonomy in decision making and their husband or household head decides whether they should go to a health care facility. None of the women interviewed for the dissertation were forbidden to go to antenatal care by their husbands and most of them were encouraged. This result may be a form of bias since husbands who do not allow their wives to go to ANC will probably not allow them to participate in an interview.

An important factor in the decision to participate in ANC is the opinion of the mother in law. Most women were encouraged by husband and family in law to go to the hospital for ANC and delivery.

“The decision of the mother-in-law is really important. If she [the pregnant woman] is healthy, they will not go to the doctor because then she cannot work in the house. If she is in bed, it will be more likely that they will go to the doctor.”

- Interview Doctor at Hope hospital, 5 July 2015

“My mother in law decides... Whatever my mother in law thinks that is better, will be done.”

- Interview 23-year-old mother, second delivery, 7 July 2015

“My mother in law did not want a delivery at home. She decided that the delivery had to be at the hospital.”

- Interview 22-year-old mother, 2nd delivery, 7 July 2015

In the study of Parkhurst et al. (2006) in the southwest of the country, it was also shown that the opinion of the mother in law played an important role, for both ANC and delivery.

Cost is another enabling factor. For the women who delivered at Hope Hospital, the most cited reasons were that it was cheap and nearby.

“I thank god it was a normal delivery at home, if it was complicated, I would have to come to the hospital for the delivery. Delivering at home is easier and cheaper.”

Interview 30-year-old mother, fourth home delivery, 8 July 2015

“I wanted to go [to the hospital], but my family in law did not allow, there was no money to deliver... I was obliged to deliver at home.”

Interview 19-year-old mother, first delivery, 8 July 2015

Lack of money was cited as a reason to deliver at home in this study, but it was also given as a reason by the husbands of women who delivered at home in the research of Story et al. (2012). The cost was given as a reason in the study of Oyerinde et al. (2013) in Sierra Leone, Onta et al. (2014) in Nepal, Chi et al. (2015) in Burundi and Northern Uganda, Somé et al. (2013) in Burkina Faso, Story et al. (2012) in Bangladesh. Of the poorest 20% in Bangladesh, 15,4% gave birth with a skilled birth attendant. Of the richest 20%, 59,6% gave birth with a skilled birth attendant (Unicef, 2013). This shows that cost is an important factor, but even if cost is less an issue, 4 in 10 women would still not deliver with a skilled birth attendant. The cost is important but it is not the only factor that influences the decision. This can also be deducted from the following quotes.

A number of women also reported that if it was free, more people would come.

“If ANC was free and delivery was free, more women would come.”

- *Interview 19-year-old mother, first delivery, hospital delivery, 7 July 2015*

However, three women stated that even then she still would not have come.

“All deliveries were at home, so there was no need for me to deliver at the hospital, even if it was free.”

- *Interview 30-year-old mother, fourth delivery, 8 July 2015*

“If delivery at hospital was free, I would not go because they do C-sections. And the hospital is not hygienic.”

- *Interview 23-year-old mother, second home delivery, 12 July 2015*

Something linked with the cost is the practice in hospitals in Bangladesh that patients are asked for extra money on top of the bill. This can be a reason to avoid going to the hospital.

“People also see coming to the hospital as a hassle because sometimes the sisters who take care of mother and child ask for illegal money. When they deliver at home, they will not have to go through this.”

Interview Doctor at Hope Hospital, 5 July 2015

“During daytime, doctors want to deliver the babies themselves, because then they get money from the family”

Interview former nurse at Hope Hospital, talks about her experience at the hospital where she is currently working, 3 July 2015

From the women who delivered at Hope hospital, none of them reported being asked for extra money. However, some reported giving money because they were happy. It could be possible that they prefer to frame it like this because they were close to Hope Hospital, but the interviewer did not get this impression. It might be however that they were not specifically asked for money, but that they felt obliged. Five women who delivered at Hope reported giving extra money, for example to the cleaners

“Nobody asked me to give some extra [money]. But I was happy... I did give some money to people who helped”.

Interview 25-year-old mother, second delivery, but first baby died, 7 July 2015

One of the women, who did not deliver at Hope, but at another hospital, reported that she was asked for money. Others said that they gave some because they were happy.

“They demanded money. I had to pay extra to the midwife.”

Interview 23-year-old mother, second delivery, 12 July 2015

A frustration for a number of women was that there was no clarity about the costs at Hope hospital. They had bought a health card and some said they had to pay consultation fees while others did not. Two women reported that they felt like being cheated because of the inaccuracy.

Another enabling factor is the inability to leave the household behind. The reason given in the studies of Onta et al. (2014) in Nepal and of Chi et al. (2015) in Burundi and Northern Uganda, that the care of the household and the other children poses a barrier to access health care, was given by one of the doctors in the hospital. However, none of the mothers gave this as a reason.

“For women who already have a number of children, this also raises a problem because there is nobody to take care of them, because the father is working outside the household.”

- Interview Doctor at Hope hospital, 5 July 2015

The last enabling factor is the waiting time at the health facilities. Some of the women in the study of Oyerinde et al. (2013) in Sierra Leone had to wait five hours to a whole day in the health facility, which is one of the reasons to give birth with a traditional birth attendant. This was also given as a reason in the study of Kumbani et al. (2013), women perceived care as poor care when they had to wait a long time before being attended in the antenatal clinic, which influenced their decision. However, at Hope hospital, most women had to wait only 20 to 40 minutes before seeing someone for ANC. The shortest time was 10 minutes, the longest 2 hours. None of the women gave this as a reason for not using maternal health services.

5.1.5. Need factors

A woman's perception of her condition was a need factor. Some women gave their own condition as a reason to deliver at the hospital. In the literature, this was not specifically given as a factor influencing place of delivery.

“I did not take proper medication while I was pregnant. My condition was bad. I was swollen up. It was risky for my life, I was very weak.”

- Interview 30-year-old mother, 3th delivery, previous deliveries were at home, 7 July 2015

One woman went to the hospital because she felt it was an emergency.

“I was beaten by my husband, and at the same time I had internal problems. So I went to the hospital. My water was moved, the heartbeat of baby was low, I was brought by ambulance to Chittagong, otherwise they could not save the baby, my life was in danger.”

- *Interview 18-year-old mother, first delivery, 12 July 2015*

The second need factor that influenced maternal health care utilization is the unawareness of the importance of delivery with a skilled birth attendant.

In the interviews it became clear that some women thought it was unnecessary to go to the hospital because they expected a normal delivery.

“The plan was to deliver at Hope, but it was an easy and uncomplicated delivery, it went quick... so I stayed at home, I had no time to come to here [Hope Hospital]. I didn't come here for any treatment because it was not necessary”

- *Interview 22-year-old mother, first delivery, 8 July 2015*

This points out the lack of knowledge about the importance of having a skilled birth attendant. This was one of the main reasons of the study of Onta et al. (2014) in Nepal and in the study of Paul & Rumsey (2002) about the ultra-poor in Bangladesh. Lack of knowledge about the importance of skilled attendance was given as one of the main reasons that contribute to women not using maternal health services by health professionals in South Africa (Tsawe & Susuman, 2014).

The last need factor is the fear for complications. Women felt safer delivering at the hospital and they did not want to take any risks. Some women were scared to deliver at home.

“I was scared to deliver at home. Nobody was there to help. My husband was not at home. The nurse told me, “why did you take a baby after long time? The baby might be dead” That's why I was scared her.”

- *Interview 40-year-old mother, 4th delivery, previous three deliveries were at home, 8 July 2015*

Fear for complications and no experience with giving birth was also given as a reason for not delivering at home by young respondents in the research of Sialubanje et al. (2014) and by respondents in Burundi and Northern Uganda in the study of Chi et al. (2015).

5.2. Health care utilization for children

First, I will look at how children are treated, which forms of health behavior are used for sick children. Next, the predisposing, enabling and need factors which affect the health care utilization are analyzed.

In this study, seven of the babies had diarrhea. In Bangladesh in 2013, 77,6% of the children with diarrhea were treated with ORS (Unicef, 2013). In this study, three stated that they gave their baby ORS, for one of them it was suggested by the doctor, for another one by the pharmacy, the third one decided on it herself. Two of the babies were taken to the hospital and treated with medicines. The mothers did not know with which medicines. One mother reported that the medicines from the hospital were free. One mother went to a traditional doctor and got “liquid water”, which was not ORS.

“I did not bring the baby [to the doctor] because it would cost more to see the doctor, so I went to the traditional doctor, I got some liquid water... it was not saline.”

Interview 25-year-old mother, delivery at Hope hospital, 2nd delivery, 7 July 2015

Eight mothers whose baby did not have diarrhea said that they would bring their baby to the doctor or to the hospital if he or she had diarrhea, two of them said they would already give them ORS. Six mothers said they would give their baby ORS if he or she had diarrhea, two of them added that if they had severe diarrhea, they would take them to the doctor. Two mothers would take their baby to the pharmacy, and if it was severe to the doctor. Finally, two women said they would bring their baby to a traditional doctor or to the pharmacy. When mothers who didn't get explanation about feeding, take their baby with diarrhea directly to the pharmacy, there can be a wrong diagnosis.

“When they [pregnant women] don't see a doctor for delivering, they don't know how to increase breast milk. They give them sugar water or rice water or cow milk, which causes diarrhea. Then they go to the pharmacy because their baby had diarrhea and the pharmacy will sell them antibiotics, but since it is not caused by infection, but by faulty feeding, that will not help.”

-Interview, Doctor at Hope, 9 July 2015

Eleven babies had fever. Most of them were taken to the hospital or to the doctor. Two of them were taken to the pharmacy. One of those two mothers also gave the baby traditional medicines. Most of the mothers whose baby did not have fever, would take their child to the doctor or to the hospital. Two mothers said they would go to the pharmacy or to the traditional doctor. One mother said she would give the child traditional medicines and another would give her child paracetamol. Two other mothers said they would take the child to the pharmacy.

Seventeen babies had a cold. Most mothers took the baby to the doctor or the hospital. Some of them even made visits to several hospitals because the child did not get better. Four women gave their babies traditional medicines for the cold. One of the doctors gave some explanation for the high number of babies with a cold.

“Women explain pneumonia and bronchiolitis as cold. Weather change frequently and sudden flood is also there a 17 yes old mom with two baby fail to look after all issues simultaneously... In our pharmacy meds are sold like foods... A rickshaw puller dad first goes to pharmacy for cough med and anti-pyretic meds... Then they pass time baby gets more ill... Finally they come to doctor when there is no more chance to save.

They don't understand the concept of keeping the baby warm, they leave it at the house and the other kids will touch it and cough and sneeze on it.”

- Interview Doctor at Hope hospital, 9 July 2015

In Bangladesh, for 43,2% of the children with symptoms of pneumonia care was sought from an appropriate health provider. 87% of the children with symptoms of pneumonia got antibiotic treatment. (Unicef, 2013)

Some women gave their children traditional medicines. They often do it, because they are cheaper. One of the doctors pointed out that this might have dangers.

“Many women buy on the markets traditional medicines. These are most of the time smashed leaves, so they don't really know what is in it. This can also worsen the condition of the baby because often they are not cleaned properly.”

Interview Doctor at Hope hospital, 9 July 2015

Two of the women were confronted with this.

“My baby was sick, she was crying very hard. I gave her traditional medicines... but it was too much. My baby was almost unconscious, she was not waking up. I took her to the pharmacy, they told me to go to hope. She was admitted and treated here [at Hope hospital]. I didn't tell my husband how much I actually gave her. I thought it would be okay...”

Interview 18-year-old mother, first delivery, 8 July 2015

“I gave him traditional medicines because he had fever, but he vomited”

Interview 18-year-old mother, first delivery, 12 July 2015

In Bangladesh, you don't need prescriptions to go to the pharmacy and the pharmacists do not need any degree. Ahmed et al. (2005) state that in Bangladesh drugstore salespeople are usually unlicensed and untrained but they diagnose illnesses and sell medicine. This influences the health care utilization of mothers for their children. Half of the women reported that if their child was sick, they would take them or had already taken them to the pharmacy.

“When my baby had fever, I took her to the pharmacy.”

Interview 25-year-old mother, second delivery, 7 July 2015

“The pharmacists are not trained, they are businessmen. This can do harm. Often they give medicines that don't work and make the baby vomit. Only then they [the mothers] will come to the doctor.”

Interview Doctor at Hope Hospital, 9 July 2015

In 2013, 3 137 700 babies were born in Bangladesh. In 2013, The number of under five deaths in 2013 was 129 000 (Unicef, 2013), which means that the mortality rate is 41 out of 1000 or 4,1%. In 2014, 28 deaths out of 1000 live births were neonatal, this is within the first month. 38 deaths out of 1000 live births were infant, this is before the first birthday, and 46 out of 1000 live births were under 5, this is if they died between their birth and their fifth birthday (National Institute of Population Research and Training (NIPORT) et al., 2015). There is thus a small difference between the number of UNICEF for 2013 and the number of the Demographic Health Survey in 2014. The under-five mortality rate in 2011 was 53 out of 1000, according to the Demographic and Health Survey (National Institute of Population Research and Training (NIPORT) et al., 2013) which indicates that the difference between the

number of 2013 of UNICEF and the numbers of the Demographic Health survey is probably attributable to different data sources and not to a rise in under five mortality.

A rather large number of women in this study lost a child. Three women lost a child, and four women lost their last baby. Of the women who lost their last baby, for one it was because it was a premature birth at 6 months, the other three reported that their baby died of pneumonia. These three women also delivered at home. However, one of the doctors at Hope Hospital commented on the cause of death.

“They often say their baby died of pneumonia, but they don’t really know what it is, they just say it is pneumonia.”

- Interview Doctor at Hope hospital, 9 July 2015

According to UNICEF the immunization coverage in 2012 for BCG, DPT1, DPT3, polio3, MCV, HebB3, Hib3 and tetanus ranges between 94% and 99% (Unicef, 2013). In the Demographic and Health survey of 2014 the vaccination coverage for BCG, penta3, polio3 and measles is 97,9%, 91,3%, 91,4% and 86,1%. 83,8% had all basic vaccination when they were 12 months old. The report highlights that the proportion of children receiving all basic vaccination when 12 months old decreased by 5 percentage points between 2011 and 2014, which is a reason for concern. This decrease is possibly caused by rumors of sickness and death caused by immunization (National Institute of Population Research and Training (NIPORT) et al., 2015).

In this study, all mothers reported that their babies were vaccinated, except for one mother whose baby died after 18 days, she said her baby was too small. One mother said that she missed two injections because she was on holiday. It is possible that there is a self-report bias here. Most women do not know the difference between the vaccinations, so it is possible that they will say that their child had all vaccinations, even if he or she did not have all. Some women also reported that their vaccination cards got lost in the floods. But when compared to the number of UNICEF and the Demographic and Health, the findings in this study seem plausible.

There is some support for both the aspects of the link between antenatal care health care utilization for children. The first one is learning by doing: participation in a health program gives women the access to information about the benefits and costs of other programs (Lee, 2005). This is supported by some women since they reported that they learned more on how

to care for their sick children during ANC. Another aspect is complementarity: it is likely that a mother who chooses prenatal care may also engage in complementary behavior such as immunization (Lee, 2005). This is supported by women who stated that ANC did not change anything about how they treat their child, that they already knew these things.

5.2.1. Predisposing factors

Maternal education was seen as a factor in several studies (Becker et al., 1993; Charles et al., 2008; Coreil & Genece, 1988). In this study traditional medicines are used by women with all levels of education. It was used by three women with no schooling, by two women who started primary school, but did not finish, by two women who finished primary school, by two women who started secondary school but did not finish, by one woman who finished secondary school and by one woman who had higher education. When the focus is on the women who did not apply appropriate care, this means, not going to the doctor or not giving ORS for diarrhea and not going to the doctor for fever, there are two women with no schooling, one woman that finished primary school and two women who started secondary school but did not finish. From these interviews it cannot be unequivocally concluded that there is a clear link between maternal education and health care utilization for children.

The second predisposing factor, cultural beliefs, can also be found in the interviews. Some events can be attributed to higher powers, for example the passing of a child.

“My boy was unbelievable... he was so beautiful. God had to take him away”

- Interview 35-year-old mother, 6th delivery, 12 July 2015

This points at the fatalism that was also present in the study of (Winch et al., 2005).

5.2.2. Enabling factors

One of the enabling factors is decision making by the household head. In all, except two, the husband was the household head. One woman reported that they are both the household head, one woman said she was the household head because her husband was severely sick. When the husband was household head, the mothers reported they had to ask permission to leave the house, for example to go to the doctor with their baby. This was also the case in the study of Chibwana et al. (2009) and of Charles et al. (2008) Some women said that if it was emergency, they could leave the house and take their baby to the doctor without permission of the husband.

The second enabling factor is cost. The cost also influences the treatment of the children.

“My baby had a cold, I took the baby to children’s doctor in Cox. The doctor treated my baby and gave medication. I treated my baby with injections, because I didn’t have money and my husband was not yet home... I treated her as said on the syringe... it said how much I had to give... I called my sister who could read and write, and according to a paper I treated my baby.”

Interview 30-year-old mother, fourth delivery, one baby died, 8 July 2015

According to Unicef (2013) 81,2% of the poorest 20%, treat their baby with ORS, compared to 82,3% of the richest 20%. This shows that for the treatment of diarrhea, the cost is not that important.

In the study of Najnin et al. (2011) the children from the highest quintile were more likely to be taken to the doctor, which shows that cost is an important factor in the choice of treatment.

5.2.3. Need factors

The severity of the disease is a need factor. A number of women reported they take the severity of the disease into account.

“If my baby had severe diarrhea, I take him to the doctor. If it not severe, we go to the pharmacy to get treatment”

- *Interview 30 year-old-mother, 3rd child, delivery at Hope hospital, 7 July 2015*

“If the baby had not too much fever. I observe for a day or 2. I go to the doctor if it stays and becomes serious”

- *Interview 23 year-old-mother, 2nd child, delivery at home, 12 July 2015*

That the perceived severity of the disease influences the health care utilization was also shown in the research of Pillai et al. (2003) and Najnin et al. (2011)

6. Recommendations

An important recommendation is health education. Nobody will deny the benefits of educating women about maternal and children’s health. And health education and the spreading of information is the best way to change attitudes of people. The health education

should show the benefits of delivering with a skilled birth attendant and of taking your baby to the doctor on time. It is important to overthrow some the current beliefs. Women have to realize that they cannot know beforehand with certainty if it is going to be a normal delivery and that it will be safe to deliver without skilled attendants. In this study it was shown that the role of the husband and mother in law are very important, so to obtain improvement on maternal and children's health care utilization, these should be targeted too. There should also be a dialogue with religious and cultural leaders since they have a strong influence on people and it is important that they do not advice against delivery with a skilled attendant and taking the baby to the doctor.

A recommendation to Hope foundation is to remind themselves of the gap between the plan and the reality. A number of women were not told how to take care of their children, this might be due to the heavy workload of the doctors. However a non-clinician could receive a short training on how to educate women on this, and this could reduce the problem.

Although Hope reaches a lot of women that normally would not participate in antenatal care, it is important that they persuade them to come more often and earlier in order to obtain the recommended four visits. They have to show them the benefits of these visits.

A recommendation to policy makers in Bangladesh, is that there should be a dialogue with the traditional birth attendants to find a place for them in a system with skilled attendance at deliveries. Traditional birth attendants have a strong status in society, which will not be changed by a ban on traditional birth attendants.

To my opinion, the pharmacies pose a true challenge. When untrained and unlicensed salespeople sell medicines, it can be dangerous. In the short term, I would suggest to give them some form of training, in the long term they should be licensed and trained properly.

Another challenge is the use of traditional medicines. As stated by the doctor and experienced by some of the mothers, the traditional medicines can be a danger. However, it is possible that they work for some problems, for example for cough. More research from someone with a background in medicine is necessary. The answer here is again to educate people, to show the possible dangers and to show the alternatives. For example for diarrhea, ORS is cheap and effective, so for this it should be recommended not to use traditional medicines.

In this study, transportation appeared to be more of a problem than distance. This is caused by lacking infrastructure and resources and ideally this would be improved. But an ambulance for women who have to deliver could offer some improvement on short term.

As stated above, the rate of caesareans is too high. A recommendation to Hope hospital and to other hospitals is to establish a structure in which the difference between a caesarean and a normal delivery is not reflected in the wage of the doctors, which removes the financial incentive of doctors to do a caesarean over a normal delivery. However, there is another aspect to this problem, namely that doctors do a caesarean out of uncertainty about the condition of the baby because they have no equipment to check it. Stating that there is a need for more advanced technology is stating the obvious here. Even if the rate of caesareans lowers, efforts will still need to be made to make the myth disappear that all deliveries in the hospital happen through caesarean.

I would recommend Hope foundation to make sure that they have a good data system. A flaw that I encountered in their current system is that the number of ANC visits is not always accurate because when women come to Hope for something else and have a checkup at the same time a checkup, this is not added to their number of ANC visits. This is important both because of the evaluation of their own intervention, and considering future research with their organization. If the information is accurate, it will be possible to do quantitative analyses with their database.

The cost of delivering was sometimes given as a reason to deliver at home. However, to tackle this obstacle, there would need to be a general reform of the health care system, since hospitals cannot just reduce their price without getting more resources. An aspect that could be changed however, is the practice of health personnel asking for extra money. As this can scare patients away, hospitals should have a policy where this not allowed. A recommendation specifically for Hope is that it must be clearer what the health card exactly covers, some women reported having to pay consultation fees while others did not and some felt cheated. This can easily be improved with more transparency.

Conclusion

With the framework of Andersen, I organized the literature by categorizing the factors affecting maternal and children's health care utilization under predisposing, enabling and need factors.

From the literature the following factors were identified for maternal health care utilization. The predisposing factors were religion, maternal education and health beliefs. Distance and transport to health facilities, waiting times at the health facility, cost, autonomy and domestic chores were the enabling factors. The need factors were fear for complications and unawareness of the importance of delivering with a skilled birth attendant.

The following factors were identified for health care utilization for children. As predisposing factors, maternal education and health beliefs were found in the literature. Decision-making and the cost were the enabling factors and the severity of the disease is the need factor.

In the analysis the factors were also categorized in the same groups and there was a more explicit focus on the different health behaviors.

This dissertation analyzed, through Nvivo, 27 interviews with women who had delivered with the country director of Hope foundation, doctors of Hope hospital and a former nurse.

The health behaviors for the mothers were the following: everyone attended ANC, although a bit over one in three reached the recommended four visits. Women in this analysis had four options: deliver at the hospital (Hope hospital or another hospital), deliver at home with a traditional birth attendant, deliver at home with a skilled birth attendant or deliver at home without an attendant. Most home deliveries were performed with a traditional birth attendant.

From the analysis we found following factors for maternal health care utilization. The predisposing factors were religion, maternal education and health beliefs. Transport to health facilities, cost and autonomy were the enabling factors. The need factors were the women's perception of their own condition, fear for complications and unawareness of the importance of delivering with a skilled birth attendant.

For diarrhea, there were four health behaviors, whether or not combined: baby taken to the doctor, baby taken to the pharmacy, ORS or traditional medicines given to the baby. For fever

and cold, there were also four health behaviors: baby taken to the doctor, baby taken to the pharmacy, self-medication, traditional medicines given to the baby. All mothers stated that their children had all necessary vaccinations, with the exception of one mother who missed some because she was on holiday.

The following factors were identified for health care utilization for children in this study. As predisposing factors, this study found only health beliefs present. Decision-making and the cost were the enabling factors and the severity of the disease was the need factor.

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