***PREMATURE BABY-CARE SERVICE***

Jabid Hasan Pappu  
Department of Electrical & Computer Engineering  
North South UniversityDhaka, Bangladesh  
jabid.pappu@northsouth.edu

Sharif Ahamed  
Department of Electrical & Computer Engineering  
North South UniversityDhaka, Bangladesh  
sharif.ahmed@northsouth.edu

Sayef Sarkar Eashan  
Department of Electrical & Computer Engineering  
North South UniversityDhaka, Bangladesh  
sayef.eashan@northsouth.edu

**ABSTRACT:**

Women in Bangladesh does not get a proper guidance in the preterm or post term pregnancies. It becomes more complicated when the newborn baby born as a premature baby. In the rural areas parents face worse conditions. Those mother take care of their child as normal child. For a parent there is no easy way to get this kind of help. In this paper, we report on a qualitative study conducted in various locations of Bangladesh, especially in the rural areas where mother are not conscious about this. Giving birth a premature baby is really terrifying, shocking and sad and when you cannot find any small help quickly it becomes really worse. In Bangladesh here is no web based platform to help the parents. Besides the research, we want to make a web based platform which language will be Bangla to help the parents of Bangladesh.

**1.INTRODUCTION:**

Bangladesh is a country of about 166 million people with an annual growth rate of 1.03% [2]. The fertility rate of our country is 2.19%. It is a country with a mass number of population. The number of new born babies in each year is almost 2.9 million [3]. Of them, about 439000 are born too soon in each year and 26100 under five die due to direct preterm conditions. Preterm birth rate (babies born <37 weeks): 14%. Babies born per year <28 weeks: 22,000 [1,5].

The number of preterm babies is huge. It should be in concerned of people. The babies those are born before 37 week of gestation are called the premature babies. Currently, prematurity is one of the leading cause of death among the children under five of the world.Low birth weight (newborns weighing less than 2,500 grams at birth), due to prematurity and/or restricted growth in utero, is also a major contributor of newborn and child deaths, as well as disability and non-communicable diseases globally.

Nearly 85 percent of preterm babies are born between 32 and 37 weeks of gestation and most of these babies need intensive care to survive. Solutions to improve the survival and health of vulnerable preterm and low birth weight babies exist. Essential newborn care (drying, warming, immediate and exclusive breastfeeding, hygiene and cord care) as well as basic care for feeding support, infections and breathing difficulties can mean the difference between life and death for small babies.

More than 64% people lives in the rural areas of Bangladesh. So, this number should be a great concerned. The people who lived in the urban or city areas most likely to get the good medical care. For this we are making an online based platform with Bangla language so that people can easily access this kind of issues and their solutions.

In this paper, we mainly focused on

* What is the most common problem the parent of a premature baby is facing?
* How we can reduce this kind of issues?

Our report results from a study with 10 parents who has a preterm baby. Of them 8 mother and 2 father helped us by participating the survey. Among our key findings there was, after the birth of a preterm baby, the parents are really in fear that will the baby can survive? We found that those parents are quite conscious about their baby’s health and about his time to time grown up. But some of them are treating the preterm baby as a normal baby.

This paper is structured by this following way. We begin by situating our research with the related works. We then describe our study methodology and follow with our results.

**2. RELATED WORK:**

To situate our paper contribution, we discuss related work on the World Bank project called KMC (Kangaroo Mother Care). Incident and risk factors of preterm babies in rural areas and another research on Retinopathy of prematurity in Bangladeshi neonates.

**2.1 Kangaroo Mother Care**

We got that, there is a service by the World Bank which us called the Kangaroo Mother Care. Kangaroo Mother Care (KMC) is a standout amongst the most encouraging approaches to spare preterm and low birth weight babies in high-and low-wage settings alike. This type of care, started in healing facilities, includes showing moms and different parental figures how to keep infants warm through persistent skin-to-skin contact on the mother's (or other relatives) chest. KMC has been appeared to counteract diseases, advance breastfeeding, direct the infant's temperature, breathing, and mind action, and energizes mother and infant holding. Bangladesh declared KMC as a priority intervention for ending preventable child deaths and endorse KMC national guideline and also developed training materials. It is developing day by day in our country since it has been established.

KMC was first bring into Bangladesh by Lamb Hospital in Dinajpur in the late 1990s yet not until 2007, KMC was increased there. Along these lines in 2007, as a component of its maternal, neonatal and kid wellbeing venture, KMC was presented in Matlab doctor's facility of ICDDR’B. Dhaka Shishu Hospital started KMC in 2013 to additionally substitute the proficiency for preterm neonates and to control the legislature to scale-up this basic technique in general wellbeing offices in Bangladesh with help from WHO, Bangladesh Country Office.

**2.2 Incident and risk factors of preterm babies in the Rural areas.**

In this article we found that they have worked on the risk factors of the preterm babies in the rural areas. They added that 85% of the world premature babies born in the Asia and African region. They were working between June 2007 and September 2009 for collecting data. They worked on 32126 mother-live-born on baby pairs. They found that 22.3% were delivered as a premature baby. Overall, the majority was late preterm.

They stated that, preterm birth risk could be reduced by close monitoring and/or frequent follow-up of women with history of child death and antenatal complications, by encouraging women to seek antenatal care from qualified providers, to adopt birth preparedness planning and to maintain good nutritional status. [6].

**2.3 Retinopathy of prematurity in Bangladeshi Neonates**

Retinopathy of rashness (ROP) is a conceivably blinding eye issue that basically influences untimely newborn children weighing 1250 g less or who are conceived before 31 weeks of growth [1]. The more preterm a child is during childbirth, the more probable the infant is to create ROP. Expanded

survival of to a great degree low birth weight newborn children because of advances in antenatal and neonatal care has brought about an expanding populace of babies at high danger of creating ROP. In addition, birth weight and rashness, different elements adding to the danger of ROP incorporate oxygen treatment, especially fluctuating FiO2 of supplemental oxygen; sepsis; intraventricular discharge; introduction to light; iron deficiency; blood transfusion and mechanical ventilation. Shockingly, most preterm babies are presented to a few of these hazard factors. Despite the fact that oxygen treatment builds the danger of ROP in preterm newborn children, ROP can happen even with cautious control of oxygen presentation or without oxygen treatment.

ROP happens when strange veins develop and spread all through the retina in untimely babies. These strange veins are delicate and can spill, scarring the retina and hauling it out of position.

The five phases of ROP go from mellow (Stage 1) to serious (Stage 5). In Stage 1, the external part of the retina is influenced by the reduced blood supply and is unmistakably outlined from ordinary retinal tissue. This more often than not settle suddenly with no critical impact on vision [14]. In Stage 2 ailment, any harm stays in the external part of the retina yet the division line ends up thickened and furrowed. Stage 3 is portrayed by new strange veins creating on the edge. These unusual vessels can free their flexibility and start to contract, prompting Stage 4 in which the contracting veins start to pull the retina far from the back of the eye. In Stage 5, the retina is completely disconnected from the back of the eye. Serious ROP may prompt stamped visual anomalies or visual impairment. The most essential factor in result is early discovery and treatment.

In their research they have worked with five babies. Five preterm babies (4.4% of children seen in follow-up), three boys and two girls, born at gestational ages of 31–32 weeks and birth weight of 935–1635 g were found to have ROP (Table 1). All of them were out-born, two were home-delivered and three were delivered at clinics by normal vaginal delivery. They were kept in incubators, given oxygen supply and other supportive measures as needed, as described previously [7].

**3. METHODOLOGY**

Our project focuses on helping parents by giving proper guidance to maintain a premature baby. The research was conducted from May to July of 2018. For collecting data, we took opinions from parents who have premature babies. We took this data from hospitals. In total, we conducted fieldwork across Bangladesh. We conducted focus on parents who have premature babies. Each survey session lasted between 15-20 minutes on average. There are some questions given below that we asked to the parents: (1) Birth week of baby? (2) Height and weight of baby? (3) Was there any problem of mother before the birth of baby? (4) Is it the only premature baby? (5) What is the physical problem of the baby? (6) Was there any physical or mental problem of mother after the birth of the baby? (7) What were the steps doctor took after the birth of the baby?

Here we describe participant recruitment, data collected, analysis, and ethical considerations in reporting this research.

** Participant recruitment**

# We communicated with the parents through our doctor friends. They helped us to collect the data from the parents. In order to obtain a well-balanced sample, participant recruitment was divided such that roughly a third of participants each were of high, medium, and low socioeconomic status.

** Moderation and incentives**

# We collected the data through our doctor friends by taking a survey on parents who have premature babies. We asked some questions in the survey which are given above. All participants were verbally thanked for their time at the end of survey.

** Analysis**

Surveys were conducted in local language. We focused on the main problems related to premature baby in the survey question. From a close reading of survey, we developed questions and clustered excerpts together, conveying key themes from the data. Two team members created a code book based on the themes, with four top-level questions (Problems of the baby, Problems of mother (Before birth), Problems of mother (After birth), Steps taken by doctors).

**Codebook:**

|  |  |
| --- | --- |
| Questions | Codes |
| 1.Problems of the baby | 1.Breathing  2.Eye problem  3.Jaundice  4.Brain injury  5.Growth problem  6.Weakness |
| 2.Problems of mother  (Before birth) | 1.High BP  2.Over weight  3.Migraine  4.Chicken pox |
| 3.Problems of mother  (After birth) | 1.Scizure  2.Mental breakdown  3.Pain |
| 4.Steps taken by doctors | 1.Incubator  2.No step taken |

** Research ethics**

For the data we tracked down the parents who have premature baby with the help of our doctor friends and asked them if they have some free time. When they said yes, we explained them about our project and the survey. We also told them data will be used in our project only. When they agreed we took the survey. And we assured them we won’t take any picture. All data were stored on a locked Google Drive folder, with access limited to the research team.

**4. Findings**

An overarching theme in our results is that parents really want a web platform where they can find all the information related to premature baby. They want to have a platform where they can find the solutions of simple problems to solve by themselves.  In the first section below, we describe the common health issues a premature baby can have after their birth. It is really important because premature babies can be very vulnerable and they need extra care to survive. In the second section below we describe the common health issues of a mother which can be a result of the birth of a premature baby. In the third section below, we describe the health issues a mother can have after giving the birth. In the fourth section we discuss about the steps doctors took after the birth of a premature baby and in the fifth section we describe about what features parents want in a web-based platform.

**4.1 Health issues of a premature baby**

After birth a premature baby can be so weak and can have multiple serious diseases. The most common problem a baby can have is breathing problem.  A baby born preterm may not have fully developed lungs. Immature lungs can be dangerous for a baby. A typical treatable condition is hyperbilirubinemia, which influences 80% of untimely newborn children. Children with hyperbilirubinemia have abnormal amounts of bilirubin, which is created by the ordinary breakdown of red platelets. This high bilirubin level prompts jaundice. Another common disease a premature baby can have eye problem. As per the National Eye Institute, eye problem is most common among babies conceived before 31 weeks or at a low birth weight. There are also many other diseases a premature baby can have like, weakness, brain injury and growth problem etc. And they need serious treatment to fight with their diseases.

**4.2 Health issues of mother before giving birth**

Sometimes, diseases or conditions the mother had before she became pregnant can lead to complications during pregnancy. In our survey we found in Bangladesh most mother had high blood pressure before or during their pregnancy. And this is the most common problem they had before giving the birth. The next most common problem of a mother can probably have diabetes or overweight.

In Bangladesh as well as in the world diabetes and overweight are one of the main problem which cause the birth of premature babies. If a mother suffering from diabetes or overweight problems during their pregnancy then the chances of giving birth of a premature baby is very high. There are some other problem that a mother can have like, some kind of allergy, mental shock etc.

**4.3 Issues of a mother after giving birth**

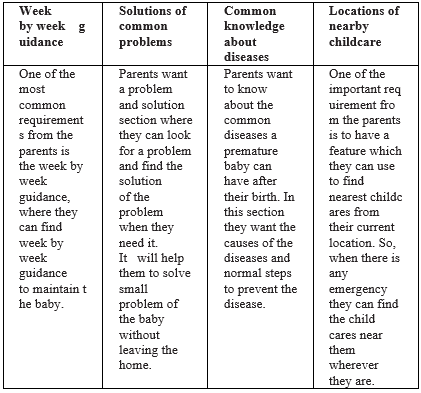
It is really common that a mother can have serious health and mental issues after giving birth. The most common issue that can happen to a mother is mental breakdown. Giving birth to a baby very prematurely is terrifying, shocking and sad. And it leads to a really bad mental breakdown. Sometimes it’s worse than any health issue. There are also some health issues which can be really bad for a mother like seizure, pain in the body, long time weakness etc. This issues can become really serious if no proper treatment is taken.

**4.4 What steps doctors take for a premature baby?**

In our research, we found that in Bangladesh most of the cases after birth doctors placed the baby in an incubator. And in rare or severer cases they transfer the baby at NICU. After your premature baby is moved to the NICU, he or she may undergo a number of tests. Some are ongoing, while others may be performed only if the NICU staff suspects a particular complication. Possible tests for a premature baby may include: **breathing and heart rate monitoring, fluid input and output, blood tests, ultrasound scan, eye exam etc. Based on the results of the tests doctors decide the situation of the baby and take the next steps.**

**4.5 What parents really want in a web-based platform?**

We asked parents what features they want in a web-based platform and the features are given below:

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# 6. LIMITATIONS

We have faced some problems to collect the data. At the first many parents denied to do the survey due to lack of privacy. Then we contacted our doctor friends to convince them. We ensured them that data will be secured and we only use the data for our research paper only. For this limitations we could not able to collect so many data.

**7. CONCLUSION**

Untimely premature babies are not completely furnished to manage life in our reality. Their little bodies still have immature parts that incorporate the lungs, stomach related framework, insusceptible framework and skin. Gratefully, medicinal innovation has made it workable for preemies to survive the initial couple of days, weeks or long stretches of life until the point that they are sufficiently solid to make it all alone. Commonly hospitals help them in their process, but when they go home from hospital they still need extra care than other normal babies. But in Bangladesh here the resources about maintaining a premature baby are really not sufficient. So the parents also don’t have enough knowledge about maintaining their premature baby. In this situation a web based platform can perform a really good role.

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