



## \*Essential newborn care practices of birthing attendants: an observational study

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### ABSTRACT

**Background:** One baby or mother dies every eleven seconds somewhere around the globe. Majority of newborn mortality can be preventable. The high death and disease/injury rates among neonates are due to inappropriate hospital practices. In the Libya, there is a slow decline of less than five-year-old mortality, but neonatal mortality has not improved. Care of newborn after delivery by birthing attendants and mothers, called as Essential Newborn Care (ENC), promotes wellness and can heighten neonate's survival. **Objective:** The purpose of this study is to evaluate the newborn care practices of the birthing attendants in Al-Bayda Medical Center and to confirm whether the birthing attendants are performing the four basic premise of essential newborn care as mandated by WHO. **Method:** The study used a descriptive non-experimental observational qualitative method to objectively illustrate how Essential Newborn Care (ENC) mandated by the World Health Organization (WHO) is being practiced by the birthing attendants of the Obstetrics Department in Al-Bayda Medical Center, Al-Bayda City, Libya in 2021. The researchers used purposive non-random sampling to observe all the 20 birthing attendants after 100 normal spontaneous vaginal deliveries. Data were presented using texts and tables. **Results:** All the 20 birth attendants are between ages 30-55. All have been practicing for 10 years and longer. 13 are high school graduates, 5 are have diploma, and 2 holds bachelor's degree (botany and zoology). During the 1<sup>st</sup> 30 seconds of delivery, 100% of the babies weren't properly and thoroughly dried. 27 (27.0%) out of 100 babies receive the proper delayed cord clamping on duration time (after three minutes). 4 (4%) out of 100 mothers started early breastfeeding the while (96%) did not initiate early breastfeeding. 100 out of 100 (100%) of the mothers weren't encouraged to have an uninterrupted skin-to-skin contact with the baby. **Conclusion:** Results revealed that the essential newborn care practices of the birthing attendants in the hospital was generally low. Four points for observation were not done according to the suggested timeframe, out of 100 well babies: immediate drying of the baby-10; delayed cord clamping- 27; early breastfeeding-4; uninterrupted skin-to-skin contact- 0. The problem rooted from low level of awareness, poor training, and understaffing.

### Keywords:

Essential newborn care (ENC)•Birthing practice•Birthing attendants •Skin-to-skin Breast-feeding•Cord-clamping

### Introduction

Globally, newborn deaths, which occur within the first 28 days of life, account for 44 percent of the mortality in children under five years old. In 2012, 2.9 million newborn deaths occurred worldwide; Southern Asia and sub-Sahara Africa bore the heaviest burden, with both the largest number of annual births and the highest neonatal mortality rates as stated in the National Health Strategic Plan in 2011-2015, Zambia. [1]



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Neonatal death is documented to be more than half a million each year and the common cause is sepsis.<sup>[2]</sup> Most of the mortality happened in the first two days of newborn's life.<sup>[3]</sup> It was realized that infection develops within the first 3 days after birth. Around 30-40% of births resulted to sepsis and eventual death.<sup>[4]</sup> This concludes that the death was due to inappropriate handling of the newborn.

In previous years, notable progress has been made to lessen the number of child death. This has been due mainly to available interventions to lower child death after the first month of life. Even though the mortality rate among children under the age of five years has dropped globally by almost 50% (from 90 deaths/1000 live births in 1990 to 48 deaths/1000 live births in 2012), the neonatal mortality rate reduced only 36%, from 33 deaths/1000 live births to 21 deaths/1000 live births, over the same period. As a consequence, the quantity of deaths in children under five years of age that occur in the neonatal period increased from 37% in 1990 to 44% in 2012. Deaths were mostly due to preventable causes.<sup>[2]</sup> A more rapid drop in neonatal mortality is critical to achieving Millennium Development Goal (MDG).<sup>[4]</sup>

The majority of neonatal mortality, 35 percent, result from complications of preterm birth, while 23 percent occur from problems during birth<sup>[3]</sup>, usually due to asphyxia. More than 1.1 million children die annually due to complications of preterm birth, and many others experience a lifetime of disability. About 80 percent of preterm births occur between 32 and 37 weeks of gestation, and most of these babies would survive if they were given proper, essential newborn care; 75 percent of deaths of preterm babies can be prevented without intensive care.<sup>[4]</sup> Many of these deaths are preventable.

Care of babies after birth by health workers and mothers, often called Essential Newborn Care (ENC), promotes health and can increase newborn survival. Many babies die during the first day and first week, some because they do not receive this care. The ENC for every baby aims at giving providers the knowledge and skill to provide most elements of ENC and assist mothers and families in providing this care.

Essential newborn care for every baby is the immediate care right after birth specifically within the first 90 minutes of life. ENC refers to key routine practices in the care of the newborn, particularly at the time of birth and over the first hours of life, whether in the health facility or at home.<sup>[5]</sup> In 2013, the World Health Organization on Recommendation for Newborn Health created a certain evidence-based guideline that included the following ENC interventions: Clean delivery practices and infection prevention; Initiation of breathing and resuscitation; Thermal care and protection; Cord care; Eye care; Early initiation and exclusive breastfeeding; Management of preterm birth and the low birth weight newborn; Immunization; Management of newborn illness and appropriate referral; and Counselling on the care of every newborn.

The first part of newborn care happens within the first 30 seconds of life. Drying the baby thoroughly is pivotal to its adaptation. Immediately dry the baby thoroughly using a clean and dry cloth. Wipe the eyes, face, head, front, back, arms, and legs. While doing these, simultaneously check the baby's breathing. Remove wet cloth and place baby in skin-to-skin contact with the mother. It allows mom natural warmth to help the neonate adjust to life.<sup>[6,7,8]</sup> Skin-to-skin contact not only provides heat to the baby through conduction but also makes the very young baby cardio-pulmonary function



more stable. This practice may cause fewer episodes of apnea.<sup>[9,10,11]</sup> Newborn when having hypothermia may also have respiratory distress, which may cause death to an infant.<sup>[12]</sup> First principle: the prevention of hypothermia by immediate and through drying of the newborn and early skin-to-skin contact between mother and newborn the ENC actions for the first 30 seconds as stated in the AO DOH 2009-0025.<sup>[6]</sup> Do not do suctioning in the first 30 seconds. Do not suction unless the mouth, nose is/are blocked, and do not suction meconium only if the baby is not vigorous.<sup>[13]</sup>

The second part of newborn care happens from 30 seconds to 3 minutes, which is the prevention of sudden stop of supply of blood from the mother to neonate. Failure to do so may cause internal bleeding. To prevent this from happening, clamping must be done when pulsation of the cord stops or waiting for three minutes before clamping. Delayed clamping of the cord also prevents anemia.<sup>[7,8,9]</sup> Second principle: the prevention of intraventricular hemorrhage by properly-timed cord clamping and cutting. The ENC implementation for the first 3 minutes of neonate's age as recommended DOH AO 2009-0025 meeting the second principle.<sup>[6]</sup>

The third principle consider that baby who require more heat need more fuel to may cause stress to the newborn. When this happens, the newborn's supply of glucose in the body is slowly being depleted which causes hypoglycemia. Increased oxygen demand to supply the neonate's tissues and vital organs may cause hypoxia or hypercapnia to other organs of the body. During periods of mild asphyxia, adapted oxygen supply to the brain, heart, and adrenal gland. This is accomplished through an increase in redistribution of the cardiac output. Supply of blood to skin, muscles kidneys, and gastrointestinal tract is sacrificed to maintain blood flow to the vital organs.<sup>[13,14,10]</sup> Aside from regulation of constant warmth, hypoglycemia can be prevented through early breastfeeding. Breastmilk contains highly digestible glucose.<sup>[11,15]</sup>

The fourth principle is the provision to the baby of direct uninterrupted skin-to-skin contact to the mom skin for 90 minutes. This action not only prevents hypothermia but also enhances the neonate's growth of the endogenous bacteria, which a mother has. The newborns have passive immunity from the mother's antibodies through placental blood and breastmilk.<sup>[15]</sup> When a baby is exposed to their parent's skin bacteria, colonization starts, which trigger the autoimmune system activities (maternal, newborn, child and adolescent health: newborn care at birth, DOH AO 200-005<sup>[6]</sup>: adopting policies and guidelines on essential newborn protocol additionally prolonged continuous skin-to-skin enhances practices of breastfeeding.<sup>[15,16,17]</sup> Third and fourth principle: the prevention of hypoglycemia through early breastfeeding initiation and the stimulation of autoimmune system.<sup>[18,19,20]</sup> The ENC implementation for the first 90 minute of neonate's age.

### Significance of the Study

The purpose of this study is to evaluate the newborn care practices of the birthing attendants in Al-Bayda Medical Center. The researchers sought to answer whether they are performing the four basic premise of essential newborn care as mandated by WHO:

1. Immediate drying of the baby within the first 30 seconds of life.
2. Delayed clamping of the cord for at least three minutes.
3. Initiation of early breastfeeding within the first 90 minutes of life.



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#### 4. Uninterrupted skin-to-skin contact for the first 90 minutes of life.

##### **Methodology:**

This is a descriptive non-experimental observational qualitative study, where the researchers objectively illustrate how the Standards of Maternal and Neonatal Care of the World Health Organization (WHO), specifically the Essential Newborn Care, is being practiced by the birthing attendants, including midwives and nurses, who are conducting the normal vaginal delivery in Al-Bayda Medical Center as of March 2021. The researchers used purposive non-random sampling method. They targeted the birthing attendants responsible for conducting the normal vaginal delivery of the hospital. They are the one who have the direct access to the patients, the mother and the newborn.

The hospital has 20 employed birthing attendants. Three to four nurses/midwives are present in each shift. The researchers decided to observe each of them for at least two times. In order for them to do this, they observed 100 NSVD. All the 20 birthing attendants were observed at least thrice in the 100 normal deliveries that they have witnessed.

Birth attendant's profile are the inter-dependent variables of this research. Although the researchers did not explore the significant relationship of their profile to their practice, the researchers took their profile. The age range of the nurses are between 28-48. 11 of them are married, the rest is either single, widowed, or divorced. All of them declared that they Libyans. 13 of them only finished high school, 5 have diploma in nursing, and 2 are college graduates, but from different field (botany, zoology). All of them have more than 10 years of experience. All of them just gained their knowledge and skills from their experience. Names of the birthing attendants were kept confidential.

The researchers formulated a data gathering instrument in a form of a table in order to objectively evaluate the actions of the participants being observed. On the top horizontal row of the table, you will see the four major principles of the essential newborn care set forth by the WHO namely: 1. thoroughly drying the baby; 2. Proper cord-clamping and cutting; 3. Initiate breastfeeding; 4. Skin-to-skin contact of mother and baby. The first column on the left side of the table is the number of delivery (1-100) and the column next to it is the assigned birth attendant being observed (1-20). The researchers stated when participants accomplished the four principles mentioned above, or whether it was not done at all and indicated the time when it was specifically done. The time-frame was classified into (a) 0-30 seconds; (b) 31-90 seconds; (c) 90 seconds-3minutes; (d) 3 minutes-90 minutes. They used check to indicated it was done, and indicate the respective letter for the timing.

The researchers identified their topic of interest, and made a research proposal which was examined, and eventually approved. They looked for literatures and journals that are related to their topic. Afterwards, they formulated a table that will help them objectively record the data they needed to acquire. The instrument was checked and revised by their adviser until it was ready for use. They secured letter from the College so they will have an official letter that shows they are conducting a formal research. They also asked the permission from the hospital director and from the head of the department so they can start conducting their study. At the time the participants were being observed, the participants don't know that a research was being performed so to



prevent changes or bias in the actual response of the birth attendants. Afterwards, the results were shown and discussed with the participants. All of them gave their permission to include them in the study.

This study used a percentage frequency distribution to display data that specifies the percentage of observations that exist for each data point or grouping of data points. It is a particularly useful method of expressing the relative frequency of survey responses and other data.

#### **Limitation of the study:**

The researcher conducted this study exclusively in the delivery room of Al-Bayda Medical Center around February and March 2021. They observed only the nurses and midwives who are conducting the actual delivery and the one who catches the baby. They watched 100 actual deliveries. All of the respondents are female, between the age 30-55, and have been practicing for over 10 years in the area. The researchers overlooked the educational attainment of the respondents.

The researchers limited their observation to only four principles of the essential newborn care: 1. Immediate and thorough drying of the newborn; 2. Delayed cord-clamping; 3. Uninterrupted skin-to-skin contact; 4. Early exclusive breastfeeding. The babies included in this study is limited to well babies.

#### **Results and Discussions:**

Within the first 30 seconds: dry and provide warmth and skin-to-skin contact.

Figure 1. Drying: The Time Bound Intervention in First 30 Seconds  
(n=100)

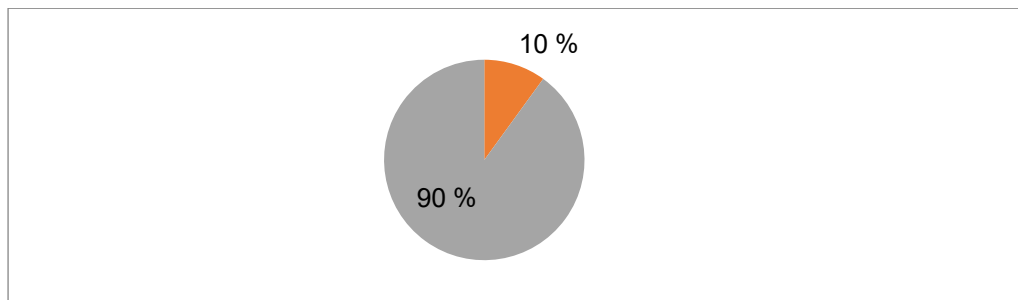


Figure 1 shows that majority (90%) of birth attendants did not perform the immediate drying of baby within the time duration (1<sup>st</sup> 30 seconds). While (10%) wiped the baby within the time duration, unfortunately it was not done thoroughly. Right after the baby is delivered, the birthing attendants will catch the baby with a clean cloth. They will clamp and cut the cord, and put the baby on the basinet. They cover the baby to keep it warm. Some blood will just be wiped away, mostly in the face. The researchers asked how do they clean the baby, all of the birthing attendants answered that the baby will be cleaned by their respective families. The families would love that their babies will look pleasant as other people will be visiting their baby. As for the reason why they don't do it in the delivery room, they answered that it is due to the bulk of work in the labor room and delivery room with only 2-3 birthing attendants versus a lot of patients. The stressful nature inside the area, they don't have the benefit of time



to do all the ideal cleaning. They will just be focused on the safe delivery of the baby, bleeding prevention from the mother side, and send her off to the post-natal ward.

Figure 2 Cord clamp: the Time Bound Intervention for the First 30 minute (n=100)

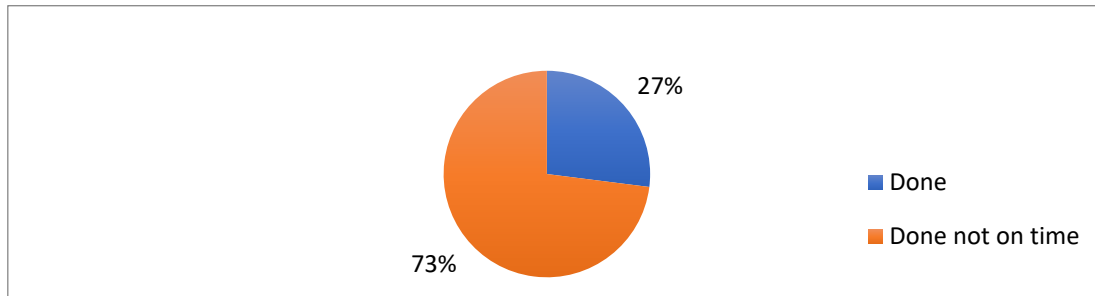


Figure 2 shows majority 73 (73.00%) of birth attendants did not perform the ENC protocol of delayed cord clamp on duration time. 27 (27.0%) of them did the proper delayed cord clamping on duration time. Most of the nurses are not aware of the importance of delayed cord-clamping, and the benefit of waiting for the stoppage of the pulse. They even thought that the faster they finish the work, the more it will be beneficial to the babies. They are also very conscious of the time. They are rushing to finish the work, so they will go to work on the next patients. They also mentioned being responsible until the patient is still under their care. They wanted to shift the patient to the ward to decrease their concerns. Partly, one of their reasons is also to be able to have a break once the work is done. Again, this is the practice they were trained to do, and is still practicing.

Figure 3. Breastfeeding: The Time Bound Intervention in First 90 Minute (n=100)

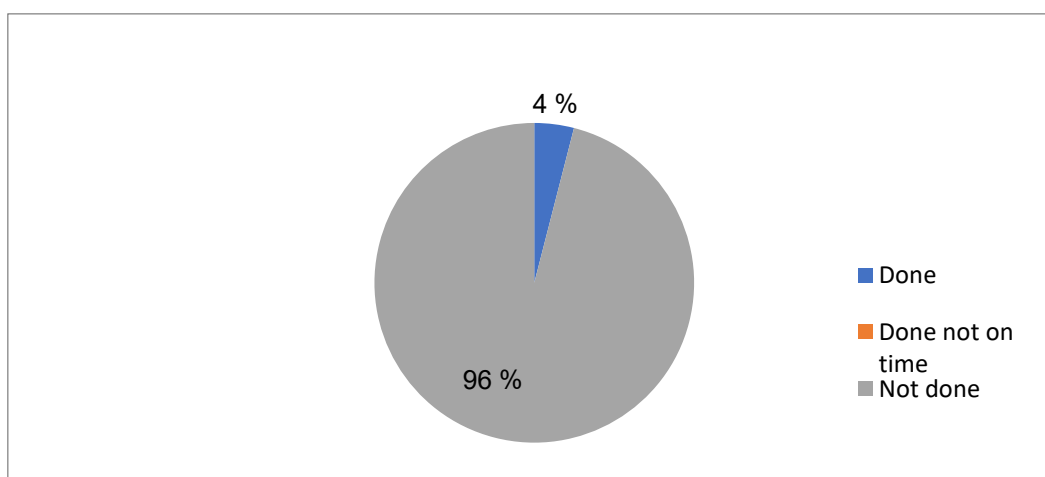


Figure 3 showed that only 4 (4%) out of 100 mothers started early breastfeeding the while 96 (96%) did not perform the ENC protocol of early breastfeeding. The four mothers who feed the baby on time are multipara (meaning they have more than 3 babies), and when asked why they started breastfeeding early on, they said that they are



fully aware that the first milk of the baby contains vitamins and minerals that will help the baby's immunity. On the other hand, all the mothers who failed to feed the baby in the first 90 minutes stated that they don't know the importance of colostrum. Almost all mothers who didn't feed the baby within the time duration (first 90 minutes), conveyed that they feel tired. They gave the task of feeding the baby to their watchers, and the watchers will be feeding the baby with a formula milk that was recommended by the family or friends. This has been the practice they saw being performed by their ancestors. A few of the mothers who didn't observe this protocol reported that they don't have milk on their breast. The birthing attendants thought that breastfeeding is not their responsibility anymore.

Figure 4. Skin- to- Skin Contact Intervention in First 90 minutes  
(n=100)

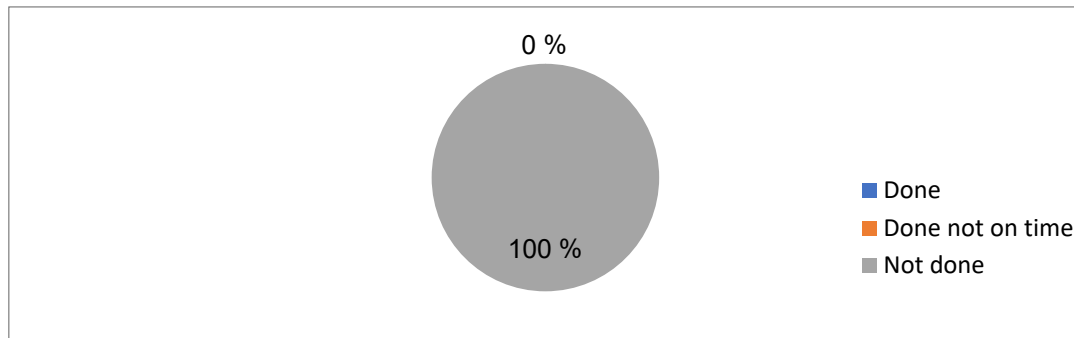


Figure 4 revealed that 100 out of 100 (100%) of the mothers weren't encouraged to have an uninterrupted skin-to-skin contact with the baby. This must be started and initiated in the first minute of life. All the nurses and the mothers don't know that skin-to-skin contact of the mother and the babies must be done. The birthing attendants will just show the face of the baby to the mother, and let the mother, who at that time is still lying on the delivery bed, to recognize the gender of the baby. The birthing attendants will put the baby on the blanket after clamping and cutting of the cord. The birthing attendants will place the baby on the basinet, check the length and weight, give vitamin K, and cover the baby with blanket, while they focus on the delivery of the placenta, injection of oxytocin and methergin, IV fluid regulation and stitch if necessary. After this, they will dress the baby. Once it is finished, they will clean the mother, have her stand up, and endorse them to the ward. This is the practice they were taught, and are still practicing. The mothers will usually rest, and sleep, or talk to the relatives and friends who are paying their visit, while the baby will either be sent home or will be held by the watcher. All the care will be provided by the watcher who is present with the mother. Skin-to-skin must be uninterrupted up to the first 90 minutes of life.

## Conclusion:



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This study evaluated to newborn care practices of the birthing attendant in Al-Bayda Medical Center. The four basic premise of newborn care as mandated by WHO that were observed were:

1. Immediate drying of the baby within the first 30 seconds of life.
2. Delayed clamping of the cord for at least three minute.
3. Initiation of early breastfeeding within the first 90 minute of life.
4. Uninterrupted skin-to-skin contact.

100 actual deliveries performed by labor room nurses and midwives were covertly and directly observed. All of the respondents are female, between the age 30-55, and have been practicing for over 10 years in the area. 5 of whom had diploma and 2 bachelor's degrees (but from different fields: botany, zoology), and 13 finished high school.

The study showed that the first part of essential newborn care, immediate and thoroughly drying of the baby, only 10 (out of 100) babies were dried thoroughly within the first 30 seconds. The 90 other babies will just be covered with a cloth, then the birthing attendant will attend to the mother for injection of medicine (Oxytocin) and the delivery of the placenta. Then they go back to the baby, wipe the baby, weigh the baby, give injection (Vit.K), dress the baby, and give to the watcher/relatives. 23 babies were placed under a warmer, because the mother has no relative to claim the baby.

The study revealed that the delayed clamping was only practiced 27 times in a hundred normal spontaneous vaginal deliveries. The birthing attendants were very quick to clamp the umbilical cord, and cut it right away.

Initiation of early breastfeeding was only done by 4 mothers after they were sent to the ward. Thirty 30 babies were given dextrose as a prophylaxis to possible hypoglycemia. Other babies were given milk formula right away after they were endorsed to relatives.

About the 90 minutes of uninterrupted skin-to-skin contact, between the mothers and the newborn as suggested by the protocol, no newborn got the full 90-minute mother to baby skin-to-skin contact.

The level of coverage of essential newborn care practices in the hospital was generally low, also coverage of skills and knowledge at delivery was very low.

Similarly, poor and high risk newborn care practices are common place, all of which point to the need for an urgent pragmatic intervention. Its stakeholders should not only concentrate efforts of reducing neonatal deaths at the institution, but also intensify implementation of protocols and policies accordingly. They should also encourage community-based newborn care strategies and create strong linkages between health facilities and hospital to effectively handle risk factors which lead to morbidity and mortality.

Lastly, there were no seminars and workshops to educate midwives, nurses and department heads to render the best quality newborn care.

### **Recommendations:**

Based on the result of the analyzed relationship, we strongly recommend to the following to:





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Hospital, ensure that all nurses department heads and staff nurses have clinical supervision and coaching on a regular basis. Organizations are encouraged to include the professional development and updates of nursing practice guidelines in their annual review of performance indicator/quality improvement, and accreditation bodies are encouraged to incorporate nursing best practice guidelines into their standards.

Patients (mother and newborn) must make a review whether practices they receive in the hospital is aligned with the guidelines set forth by the WHO. Making sure that the hospital, particularly the birth attendants, is following the WHO guidelines in providing ENC, promote a healthier birthing experience for the patients. They must also consider going for antenatal care. Resources of their inquiry may be readily available in the internet. They can ask questions freely. This will help them alleviate their fear, and widen their knowledge on how to get optimum care for them, and for their babies.

Nurses and birthing attendants: follow the protocol in the workplace, and know the rationale behind. Apply the knowledge and skills that they have acquired in the university, for a safer health care practice. Increase awareness of the ENC guideline that help the health workers promote health and wellness by providing efficient teaching to patient and their family. Attend educational seminars and lectures that help in better health care.

Community: develop and improved system for the care of mother and newborn. Heighten the awareness of the community about the importance of the maternal and neonatal health. Stakeholders must be supportive of taking care of the health of its people.

Education: develop their knowledge and skills in assessing situation through observation and interviews, identifying problems, planning for intervention, implementing their plans and evaluating the process.

Student nurse: the student nurse should strictly comply with the requirements and the habits that their instructor implement for better practice. Acquiring information and knowledge and developing their skills and practices, specifically, less errors to be committed during practices care.

Future researchers: use the data as basis for future studies in connection with newborn care practices. They can explore more on the limitations of this research so to see picture of the reality in the hospital on a wider scale. They can make the same research to validate the results of this study.

### Abbreviations

ENC- Essential Newborn Care

WHO- World Health Organization

MDG- Millennial Developmental Goals

DOH AO- Department of Health Administrative Order

NSVD- Normal Spontaneous Delivery

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