

RESEARCH ARTICLE

CAUSES OF NEONATAL ILLNESS ADMITTED IN INTENSIVE CARE UNITS (ICUS) OF TWO HOSPITALS IN KABUL, AFGHANISTAN.

Dr. Ahmad Zia Shahid.

Jodhpur School of Public Health (JSPH) Maulana Azad University, Jodhpur, India.

Manuscript Info	Abstract
Manuscript History	Background : Newborn health and survival depend on the care
Passivad: 28 May 2017	provided to the newborn. Newborn care is essential element in
Final A accented: 20 June 2017	According to the Afghanistan Demographic Health Survey 2015
Published: July 2017	(DHS) the less than one year mortality rate is 45 per 1000 live birth while significant percentage of this morality is happening during the neonatal period.
	Poor knowledge of mothers low level of education, unskilled birth
	attendants, unhygienic delivery practices, malnourished mothers, late breast feeding, no breast feeding, newborn immediate bathing, poor access to required health services, very late arrival to health facilities, poor quality of services at the health facilities and poor commitment of Governments are the main contributing factors in newborn death.
	To identify the most common causes and basic factors of neurborn
	illness admitted to Intensive Core Units
	To describe the strengthe and limitations of noonetal health core in
	two padiatria hospitals in Afghanistan
	Method: A cross sectional study is conducted in two Hospitals in
	Kabul The sample size was 400 child care takers
	Findinge
	The finding from this survey indicates that Neonatal Jaundice makes
	17% of total admission Sensis(19%) hirth asphysia(10%)
	Congenital Heart Diseases (6%), Meconium Aspiration(2%), Premature(8%), Low birth weight (12%), Bleeding disorder(2%), Congenital anomalias(2%), Vary Savar Programming (10%) and due to
	Congenital anomanes (2%) , very sever riteumonia (19%) and due to winter season Distribution (20%)
	Conduction:
	Colliciusion: Mother advantion level makes great difference in shild earn
	community awaranass for early soaking health care and timely
	decision making is important availability of skilled birth attendance
	during delivery and delivery at suitable health facilities provision of
	early and properly health/medical care are very essential in neonatal
	mortality reduction. Improve referral linkages, strong governance/policy dimensions, strong health system supports in the process of neonatal health care/neonatal survivals are very much
	needed.

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Acknowledgements:-

I, the author of this paper acknowledge the efforts of child survival and pediatric service providers and individuals who contributed substantially to the success of this study. I would like to express my sincere thanks to my professors at Jodhpur School of Public Health (JSPH), Maulana Azad University, Dr. LatikaNathSinha, Dr.Nitin Joshi, Dr. PramilaVivek for their technical instructions, support and assistance on how to conduct a research. Also I appreciate the efforts of Dr. Mohammad Essalbrahimi, Gender National Coordinator of the Ministry of Public Health of Afghanistan and is my co-facilitator for this research who supported me throughout the process of my research design, implementation and finalization. I would also like to acknowledge the efforts of the teams of Indira Gandhi Institute for Child Health (IGICH) and French Medical Institute for Children (FMIC) in Afghanistan without whose assistance this research could not be completed.

I am grateful to Maulana Azad University for providing me with a great opportunity to improve my knowledge and worldview in public health. I would also like to wholeheartedly thank my supervisor for his valuable advice and continuous support towards completing my thesis.

Finally, I express my appreciation to the survey respondents (mothers, health workers and child caretakers) who generously devoted their time to provide me with the information that forms the basis of this study.

Rationale and Background:-

The greatest gap in newborn care is often during the critical first week of life when most neonatal and maternal deaths occur at home and without any contact with the formal health sector. Some unacceptable practices such as unskilled birth attendants during unhygienic delivery practices. This study, therefore, sought to identify the gaps in the knowledge and practices of newborn care and to providing inputs into developing feasible and sustainable community-based interventions to improve neonatal survival.

Policies will be developed pertaining to neonatal health and survival. Thereafter all stakeholders will be tasked to implement the policies in order to give neonatal survival issues the needed attention. Community-based volunteers will be trained and equipped with the necessary skills to ensure that the needs of neonates and their mothers are met. Newborn health and survival depend on the care given to the newborn.

Although newborn care is a very essential element in reducing child mortality, it often receives less than optimum attention. There have been agreements to affirm the world's commitment to improving newborn health. Current global evaluations confirm that commitment to improving newborn health makes meaningful socio-economic contribution (Yinger and Ransom, 2003).

Various reasons can be attributed to why the health of the newborn has been neglected despite the high mortality rates and why most neonatal deaths are unseen and undocumented. Although child survival programs have helped reduce death rate among children under-five years over the past 25 years, the biggest impact has been on reducing mortality from diseases that affect infants and children over one month old.

As a result, greater proportions of infant mortality occur during the first month of life(the neonatal period), a period when a child's risk of death is nearly 15 times greater than at any other time before the first birthday(Yinger and Ransom, 2003).

Tinker and Ransom (2003) stipulate that though newborn health is closely related to that of their mothers, newborns have a unique need that must be addressed in the context of maternal and child health services. They further argued that millions of newborn deaths could be avoided if more resources were invested in proven low-cost interventions designed to address newborn needs. It is estimated that almost two-thirds of infant deaths occur in the first month of life, of whom, more than two-thirds die in their first week, and among whom, two-thirds die in their first 24 hours (Lawn et al., 2001).

The World Health Organization (WHO) stresses the need to focus more on the most vulnerable newborns. Many conditions resulting in newborn deaths can either be prevented or treated using low-cost interventions. There is the

need for a combined approach to the mother and her baby during pregnancy, to have someone with knowledge and the skills with her during child birth and effective care for both mother and baby after birth (Brundtland cited in WHO, 2002).

Addressing neonatal mortality requires continuity in the elements of care, which is lacking in many settings/communities with care for the neonates often receiving little attention in either maternal or child health programs. The greatest gap in care often occurs during the critical first week of life when most neonatal and maternal deaths occur, usually at home and without any contact with the public health sector (Lawn et al, 2005). About 70 percent of all sickness care take place at home (WHO, 2002). It is estimated that 60 percent of newborn deaths occur on the first day of delivery as a result of asphyxia, 47 percent on the second day due to infections, and 81 percent are due to severe infections. However, triplets have 4 times risk of dying; twins have 5 times risk, low birth weights babies have 8 times risk of dying and partially breastfed babies have 4 times risk of dying (WHO, 2006). The average neonatal mortality rate in developing countries is over eight (8) times (33/1000 live births) prevailing in developed countries (4/1000 live births), (Parlato et al., 2004).

With 41 neonatal deaths per 1000 live births, the risk of neonatal death is the highest in Africa with the sub-Saharan African regions of Eastern, Western and Central Africa having between 42 and 49 neonatal deaths/1000 live births. This is closely followed by South-Central Africa with 43 neonatal deaths/1000 live births, whereas the neonatal mortality rate for Latin America and the Caribbean is 15/1000 live births (WHO, 2006). The neonatal mortality rate (NMR) in Ghana is 43 per 1000 live births (GSS, NMIMR &ORC Macro, 2004), and the neonatal mortality rate for 2008 is 31 per 1000 live births (GSS, GHS & MEASURE DHS, 2009). Many factors account for this high NMR and these include household practices such as inappropriate cord care, bathing babies immediately after delivery, socio-cultural beliefs and practices. The ideal situation is to admit every ill newborn baby to hospital but hospitals with facilities for newborn care are inaccessible for rural populations. Parents may be unwilling to move ill newborn babies from home because of traditional beliefs and practical difficulties; so most newborn deaths occur at home. As a result of serious difficulties in transporting sick newborns to hospital, those who arrive are generally seriously ill and eventually die.

Prenatal and neonatal problems are now the leading causes of death in children under five years. The baby may have been born at home or a health facility. For babies born at a health facility circumstances around delivery are handled by well- trained health workers, while for the one born at home they may not. For all babies, the interval between onset of illness and death can be in a matter of minutes or hours. It is ,therefore, very important for you to recognize and plan for the care of the newborn.

The most common causes of neonatal deaths are preterm birth complications, newborn infections and birth asphyxia. They account for over 80% of all global neonatal deaths. A newborn baby who is born preterm or has a potentially life-threatening problem is in an emergency situation requiring immediate diagnosis and management. Delay in identification of the problem or in providing the correct management may be fatal.

Preterm and/or low birth weight infants need special care, including additional attention to breastfeeding and to keeping them warm at home and in health facilities. Those with preterm birth complications, including respiratory problems need appropriate treatment in hospitals.

Appropriate care during labor and childbirth combined with neonatal resuscitation, when needed, can substantially reduce mortality due to birth asphyxia. Newborns with severe asphyxia need post-resuscitation care in hospitals. Early identification of newborn infections with prompt and appropriate antibiotic treatment will substantially reduce mortality due to newborn sepsis and pneumonia. Newborns with serious infections need intramuscular or intravenous antibiotics and supportive care in hospitals. Where hospital referral is not possible, intramuscular antibiotics delivered by skilled healthcare providers will save lives.

Other common newborn problems are jaundice, eye infections and diarrhea, which may be managed at health facilities or hospitals depending on their severity. The Integrated Management of Childhood Illness (IMCI) training materials and Essential Newborn Care Course aim to improve skills of healthcare staff for managing newborn illness at first level health facilities. The Pocketbook for Hospital Care for Children and Managing Newborn Problems aims to improve case management of severe newborn illness in hospitals. The first 28 days of life of the neonatal period represent the most vulnerable time for a child's survival. Reducing neonatal mortality is increasingly important not

only because the proportions of under five deaths that occur during the neonatal period is increasing as under five mortality rate declines but also because the health interventions needed to address the major causes of neonatal deaths generally differ from those needed to address other under five deaths. Globally, every year about four million babies die in the first 4 weeks of their life. A similar number of babies are still born. In Ethiopia 120,000 babies die every year in the 4 weeks of life, about 90% of deliveries in Ethiopia take place at home with other low maternal health services. Neonates are more prone to show subtle signs of illness. Slowness or difficulty of feeding is sometimes the only signs present, and the three major causes of neonatal deaths worldwide are infection, diarrhea (36%), prematurity (28%) and birth asphyxia (23%). It is estimated that 75% of neonatal deaths could be avoided with simple low cost tools like: antibiotics for pneumonia and sepsis, sterile blades to cut the umbilical cords, and using kangaroo care to keep babies warm. This is only possible if mothers' knowledge regarding the above neonatal danger signs is good enough to make decision to seek health services. The repeatedly reported danger signs were difficulty in breathing, poor sucking, and lethargy. Generally, reducing neonatal morbidity and mortality requires immediate caregiver's recognition of suggestive danger sign in the neonates and visiting the nearby clinic. Therefore, improving maternal knowledge concerning neonatal danger sign is a key entry points.

Literature Review:-

Extensive review of many journals, books and magazines for neonatal illness and mortality

Survival of the newborn is an issue of great concern especially for the developing world.

Care for the neonate often receives little attention in maternal and child health programs. Although various efforts have been made by governments to reduce infant mortality, neonatal mortality keeps increasing. Of the approximately four million global neonatal deaths that occur annually, 98 percent occur in developing countries, where most newborns die at home while they are provided care among those, more than two-thirds die in their first week and among those, two thirds die in their first 24 hours after birth (Lawn *et al*, 2001).

Improvement in the survival of the newborn is dependent on healthcare that spans antenatal, intranasal and postnatal periods, i.e. interventions directed to mothers during pregnancy; labor and delivery have a profound impact on newborn survival, especially during the first week of life when three-fourths of neonatal mortality occur. Improvements in the survival of the newborn include the care given to women during pregnancy, for example, nutrition of young girls can have an impact on their adult height which in turn can influence outcomes for labor and delivery. Another example would be that the pregnancy folic acid status of the mother can determine the incidence of some congenital abnormalities. Maternal care is, therefore, not only important for reducing maternal mortality but also neonatal mortality. It is estimated that about 12million pregnant women in Sub-Saharan Africa do not get tetanus immunization, however, the presence of a midwife, nurse or doctor at child birth in developed countries is taken for granted (Vinod, 2005).

Another study in Nepal reports that newborn babies are considered dirty since they came out of their mother's womb, so almost all newborn babies are bathed within the first hour of birth (Yadav, 2007). However, a study conducted by Yadav (2007) on traditional practices in newborn care in

Nepal shows that colostrum is regarded as dirty milk in some communities, and babies were fed with cow or goat milk immediately after birth for the popular belief that it will make the baby become more intelligent.

A study conducted in Haryana, India revealed that 75 percent of newborns were given prelacteal feeds of honey, tea and diluted milk, and babies are often not breastfed during the first three days. They are often given sweetened water; presuming that colostrums should be discarded (Bhandari*et al.*, 2003).

Morbidity Pattern and Hospital Outcome of Neonates Admitted in a Tertiary Care Teaching Hospital, Mandya, India (2015):-

Total of 1487 neonates were admitted to NICU during the study period, 54 neonates left against medical advice, 79 were referred to other centers hence excluded from analysis. The ratio of the males to females admitted was 1.45:1. The major

Causes of morbidity were neonatal sepsis (28.8%), respiratory distress syndrome (RDS) (23.85%), and birth asphyxia (17.72%),

Neonatal jaundice (7.02%) and meconium aspiration syndrome (5.47%). In this study, the overall mortality rate was 7.16%. Most of the deaths were due to RDS (43.3%), birth asphyxia (37.11%), neonatal sepsis (8.25%), and congenital anomalies (8.25%).

Neonates with birth weight <1500 g had poor outcome compared to neonates with birth weight more than 2500 g.

Management of Newborn Illness:-

Other common newborn problems are jaundice, eye infections and diarrhea, which may be managed at health facilities or hospitals depending on their severity. The Integrated Management of Childhood Illness (IMCI) training materials and Essential Newborn Care Course aim to improve skills of healthcare staff for managing newborn illness at first level health facilities. The Pocketbook for Hospital Care for Children and Managing Newborn Problems aims to improve case management of severe newborn illness in hospitals (WHO report 2015).

Causes of Neonatal Admissions and Deaths in South Africa:-

One of the Millennium Development Goals (MDG-4) is to reduce child mortality by up to two-thirds by 2015. In most developing countries, higher proportions of neonatal deaths are observed. We quantify the causes of neonatal morbidity and mortality at a rural hospital. A retrospective review of consecutive neonatal admissions to Empangeni Hospital, between January and December 2005, was conducted. Of 1,573 admissions, male babies made up 57.8% of admissions and 63% of the deaths. The most common causes of admission were birth asphyxia (38.2%), prematurity (23.5%), and infection (21%). The average length of stay was 9.2 days (SD 12 days). The overall mortality rate was 13.8% but higher (23.4%) among the referred babies. Admission and death rates of low birth weight babies (<2,500g) were 53% and 84%, respectively. Two-thirds (67.7%) of those babies who died were born preterm. Over half (56.6%) of the deaths took place within the first three days of life. Logistic regression showed that extremely low birth weight (OR=13.923, 95% CI: 5.759; 33.656), male babies (OR=1.633, 95% CI: 1.132; 2.356), and preterm delivery (OR=2.975, 95% CI: 1.296; 6.836) were significant predictors of neonatal death. A substantial proportion of neonatal mortality occurs in the hospital Neonatal Unit. Asphyxia, prematurity, low birth weight and neonatal mortality occurs in the hospital Neonatal Unit. Asphyxia, prematurity, low birth weight and neonatal infection are the leading causes of neonatal hospitalization and deaths. Several simple and effective interventions exist to minimize neonatal admissions and deaths in South Africa.

Objectives:-

Objectives:-

To identify the most common causes and basic factors of newborn illness admitted to Intensive Care Units of two hospitals in Kabul.

To describe the strengths and limitations of neonatal health care in two pediatric hospitals in Afghanistan

Study Design:-

The study which was a cross-sectional design, involving 400 mothers, took four months.

Study Population:-

The study population was mothers and/ or caretakers of newborn babies in the Indra-ghandi Institute of Child Health (IGICH) and French Medical Institute for Children (FMIC), Kabul.

Sample selection:-

The author used the hospital register of neonatal admission and randomly selected each third child in the list. 400 children selected from total of 1000 admitted during the period of February 2017 to May 2017.

Methodology:-

The present study was carried out in the Indra-gandi Child Health Institute (IGICH) and French Medical Institute for Children (FMIC), Kabul. Data were collected from 400 mothers who come from different parts of Kabul districts and Kabul city.

Live births within one month prior to the study were eligible for the study. A structured questionnaire was used to elicit data pertaining to socio-demographic characteristics such as respondents' education, occupation, religion, knowledge of the availability of health facilities in their communities.

Data Collection Techniques and Tools:-

Data were collected using a structured questionnaire on socio-economic factors, delivery practices, knowledge of newborn danger signs as well as traditional practices. The Author conducted this study himself and additional surveyors were not used in this survey.

Duration of the Study:-

The study took over four months from February to May 2017.

Data Handling and Analysis and Statistical Methods:-

At the end of data collection, the tools were checked for accuracy and consistency.

Questionnaires judged to be incorrectly filled were either rejected or the data collector had to return to the data collection site to correct the errors. Data collected were kept in a cabinet under lock and key to protect the study participants and to ensure confidentiality of data collected. Data were coded, cleaned, and double-entered. Microsoft Excel 2007 software was used to analyze and enter the data.

Data Source:-

The data is collected from the direct interview withmothers/child care takers of theill newborns admitted in Intensive Care Unit filling the questionnaire.

Data Analysis:-

The collected date will be sorted out and will be analyzed through computerized system and available software. The data was analyzed in Excel.

Results:-

This chapter presents the findings of the study. All tables and graphs in this chapter are computed from the data collected from mothers and other relatives of the ill newborns in (IGICH) who come from the community. The study population consisted of 400 mothers and other relatives who were interviewed.





Table 2:-Giving Fluid/ Tea after Birth:

Did you give fluid or tea after birth?	Frequency	Percentage (%)
Yes	216	54
No	184	46
Total	400	100%

Out of the 400 mothers interviewed, 184 mothers did not give any fluid to their babies,

Whereas216 of respondents gave fluids such as water and glucose to their babies after delivery.

Table 3:-Cleaning of Breast before Feeding:

Cleaning of Breast before Feeding		
Yes	100	
No	300	
Total	400	

Out of 400 mothers who were interviewed 300 of them did not clean their breasts before feeding and 100 of mothers said that before feeding, they had cleaned their breasts.

Table 4: Place Where Delivery Takes Place:

Place of Delivery	R .Frequency	Percentage (%)
Home	85	21
Hospital	315	79
Total	400	100%

Out of 400 mothers who were interviewed in (IGICH) about 85 of them delivered at home and 315 of them delivered in hospital.

Table 5:-Instruments Used to Cut the Cord:

Instruments used to cut the cord	Persons	Percentage (%)
Sterilized scissors	290	54
new blades	70	42
cannot tell	40	5
Total	400	100%

Out of 400 mothers for 216 of them sterilized scissors were used to cut the cord of their newborn babies, 70 respondents said new shaving blades were used to cut the cord of their newborn babies after delivery and 144 respondents could not remember exactly what was used to cut the cord of their newborn babies after birth.

Table 6:-Gender-wise Distribution:

Admission	Number	Percentage (%)
Male	185	46
Female	215	54
Total	400	100

This table shows that out of 400 babies delivered, 185 of them were males and 215 of them were females.

Table 7: Time of Initiating the First Bath:

Time of initiating the first bath	Frequency	Percent (%)
Day(s) after birth	50	4
5-6 Hours	70	13
3-4 Hours	58	6
1-2 Hours	110	28
Immediately	92	23
Cannot tell	20	28
Total	400	100

About 50 respondents had bathed their babies some days after delivery, 70 respondents had bathed their babies 5-6 hours later, 58 respondents bathed their babies 3-4 hours later, 110 respondents bathed their babies 1-2 hours later, 92 respondents bathed their babies immediately and 20 of them said they did not know.

Table:-4.8 Disease Distributions among N	Newborns fi	rom 400 Samp	ples Taken during	g Four Months.
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Name of Decease	Frequency	Percentage (%)
N.N. Jaundice	50	13
N.N. Sepsis	85	21
Birth- Asphyxia	25	6
CHD	15	4
Meconium Aspiration	25	6
Prematurity	32	8
L.B.W	46	12
Bleeding Disorder	9	2
Congenital Anomalies	9	2
V.S.Pneumonia	74	19
Diarrhea	30	8
Total	400	100%



Figure1:-Shows the Time of Initiating the First Bathing.

Among 400 babies admitted in NICU in Indira Gandhi Hospital 13% of them had N.N jaundice, 21% of them had N.N Sepsis, 6% of them had birth Asphyxia, 4% of them had CHD, 6% of them had Meconium Aspiration, 8% of them were born premature, 12% of them had LBW, 2% of them had bleeding disorder, 2% of them had congenital anomalies, 19 of them were suffering from V.S Pneumonia and 8% of them were suffering from diarrhea.







Figure3:-Shows the Number of Visits of Mothers to Clinic during Pregnancy.

This graph shows the number of visits of mothers to clinics during their pregnancy10% of mothers visited the clinic 2times during pregnancy, 27% of mothers visited the clinic three times during pregnancy, 15% of mothers visited the clinic four times during pregnancy, and 12% of them did not say anything about visiting the clinic.



70 out of 400 mothers started breastfeeding immediately after birth, 188 mothers started breastfeeding after one hour, 50 of the mothers started breastfeeding after 2-4 hours, and 25 of the mothers started breastfeeding after some days.





Figure6:-Screening for Blood Group of Mothers.

Ethical Consideration:-

- 1. The research is approved by MoalanaAzad University;
- 2. The consent of the MoPH is obtained;
- 3. The consent of the Directorate of Hospitals is obtained;
- 4. A written consent from all interviewed mothers and other members of the family is obtained before interview.

Limitation:-

Low level of mothers' and caretakers' education

Discussion:-

This survey provides very good information for service providers and program management officers, policy makers for selection of appropriate interventions for neonatal care at all levels.

From among the mothers interviewed 60% of them did not go to school and are uneducated. The mother education level make great differences for child care and child survival. Mothers and family economy status is important in the process of child care at the household and even at the hospital level and 62.5 percent of the mothers do not have job and may not have adequate level of income.

Exclusive breastfeeding must be practice by all mothers and we noticed that only 46% of mother practiced exclusive breast feeding. Hygienic condition for breast feeding and cleaning breast before feeding prevent illness unfortunately 75% of mothers are not clean their breast before breastfeeding.

General sepsis(septicemia) was major contributing factors of newborn admission in the hospital(21%) and very sever pneumonia was making 19% of admission followed by low birth weight and jaundice. Less than 15% of mother came one time to clinic for antenatal care(ANC) and from the total of 400 mothers only 50% of the interviewer reported four times to clinic for ANC. Early and immediate breastfeeding is important and we identified that only 17% of mother practice immediate breast feeding and 6% begin breast feeding after 24-48 hours. Families practice of giving medication to newborn are interesting and 45% of them are getting medicine without prescription from doctors, 10% provide self medication and home remedies and 35% go to the hospital.

If we compare this situation of Kabul city finding from the two important pediatrics hospitals with the health services in far remote villages and districts in Afghanistan for sure we can say that the newborn care practices at the household level and at the health facilities will be much worse than the situation highlighted in the study. We

should think about the provinces and district with very fragile condition and low level of security and we should think about the district with low level of family's income and high level of mother illiteracy. We do think that the Afghan families particularly in the rural areas are living under very bad situation and child survival issues are issue of immediate concern.

Government and Government partners must focus on girl's education. Primary and secondary health care must be extended to the rural areas. The quality of available health services should be improved. Health workers training on neonatal case management need improvement and training should be tailored to the problems of the country. Health Education on diseases prevention and better care during pregnancy, delivery and child birth must address the root causes of neonatal problems.

Quality assurance of the system for child and newborn care as well as mother care should be improved. More important we must look for the opportunity that Government official and Government donors should refresh their commitment for support to the health sector and proper budget allocation should be made.

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