"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE".

By

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CERTIFICATE

This is to certify that, this thesis, titled **"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE"** submitted by **Ms. REVATHI.K M.Sc, Nursing (2010-2012 Batch)** Vivekanandha college of Nursing in partial fulfillment of the requirement of the Degree of master science (Nursing) from the Tamilnadu Dr. M.G.R Medical University is her original work carried out under our guidance.

This thesis or any part of it has not been previously submitted for any other Degree or Diploma.

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DECLARATION

I hereby declare that this thesis entitled **"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE"** is the outcome of the original research work undertaken and carried out by me under the guidance and direct supervision of **Prof.R.KANAGAVALLI, M.Sc(N), (Ph.D.,)** and specialty guide **Mrs. A.SUJAATHA, M.Sc,(N),** Department of maternity nursing, Vivekanandha college of nursing, (Sponsored by Angammal Educational Trust), Elayampalayam, Tiruchengode, Namakkal District.

I also declare that the material of this thesis has not formed in any way the basis for award of any other Degree, Diploma or Associate fellowship previously of the Tamil Nadu Dr. M. G. R Medical University.

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ABSTRACT

ABSTRACT

The thesis titled **"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE."** was conducted by **MS.REVATHI.K** in partial fulfillment of the requirement for the degree of master nursing during the year 2011-2012.

OBJECTIVES OF THE STUDY

- To assess the knowledge of antenatal women regarding selected early neonatal infections
- To determine the relationship between knowledge and demographic variables such as age, religion, educational status, occupation, family income, type of family, place of residence, trimester, immunization status and source of information.
- To prepare the health education package on selected early neonatal infections based in identified needs of the antenatal mother

The conceptual framework adopted for this study was based on Pender's health promotion model.

The research design adopted for this study was descriptive in nature. The sample consists of 80 antenatal mothers from Government

Head Quarters Hospital, Erode. Convenient sampling technique was used for the selection of the sample. The reliability of the tool was r=0.94 for knowledge test.

The collected data was analyzed by using descriptive and inferential statistics in terms of frequencies, percentage, mean, standard deviation and chi square analysis.

MAJOR FINDINGS OF THE STUDY

Finding related to selected socio demographic variables

- In the present study the maximum number of subjects 36(45%) were in the age group of 21-25 years, 24(30%)mothers were in the age group of 25 to 30 years,14(17.5%)mothers were in the age group of above 31 years and only 6(7.5%) were in the age group of below 20 years.
- Out of 80 antenatal mothers, majority 65(81.25%) were Hindus, 9(11.25%) were Christians and only 6(7.5%) belongs to Muslim religion.
- The maximum number of antenatal mothers 28(35%) were studied primary school, 24(30%) were studied Higher secondary school, 26(32.25%) were Illiterate and only 2(2.5%) were completed their graduate.

- The maximum number of antenatal mothers 42(52.5%) were housewife, 26(32.5%)) were private employee, 11(13.75%) were coolie and only 1(1.25%) were government employee.
- The maximum number of antenatal mothers 27(33.75%) were in the income of Rs.≤2000/-, 25(31.25%) were in the income of Rs.2001-3000/-, 15(18.75%) were in the income of above Rs.4001/- and 13(16.25%) were in the income of Rs.3001-4000/-.
- The majority of antenatal mothers 61(76%) were belongs to nuclear family and 19(24%) were belongs to joint family.
- The majority of antenatal mothers 34(42.4%) were residing of urban area and 46(57.5%) were from rural area.
- The maximum number of antenatal mothers 30(37.5%) were in third trimester, 28(35%) were belongs to second trimester and 22(27.5%) were in first trimester.
- The majority of antenatal mothers 70(87.5%) have received tetanus toxoid immunization and only 10(12.5%) mothers not received tetanus toxoid immunization.
- The majority of antenatal mothers 27(33.75%) have received information regarding neonatal infection from health care workers, 53(66.25%) have received from family members, none of them have received information from newspaper and television.

Findings related to knowledge level of antenatal mothers on selected early neonatal infections

Result indicates that 74(92.5%) antenatal mothers had inadequate knowledge, 6(7.5%) of them had moderate knowledge and none of them had adequate knowledge regarding selected early neonatal infections.

Findings related to knowledge score of antenatal mothers on selected early neonatal infections

Result revealed that, overall knowledge score of antenatal mothers on selected early neonatal infections was rated for the maximum possible score of 76.It ranged 11-41 with mean score of 24.125% and standard deviation percentage of 7.65%.The mean score percentage of overall knowledge was 31.7%.

Findings related to aspect wise knowledge level on selected early neonatal infections among antenatal mothers

In the present study reveals that general knowledge about selected early neonatal infections 71(88.75%) number of antenatal mothers had inadequate knowledge and 9(11.25%) had moderate knowledge. Similarly in other areas, 74(92.5%) numbers of antenatal mothers had inadequate knowledge about neonatal sepsis and 6(7.5%) of them had moderate knowledge. The 76(95%) number of antenatal mothers had inadequate knowledge about neonatal meningitis and 4(5%) of them had moderate knowledge. The mother knowledge about neonatal tetanus

61(76.25%) mothers had inadequate knowledge and 19(23.75%) of them had moderate knowledge. The mother knowledge about neonatal omphalitis 70(87.5%) mothers had inadequate knowledge and 10(12.5%) of them had moderate knowledge. The 61(76.25%) number of antenatal mothers had inadequate knowledge about ophthalmia neonatrum and 19(23.75%) of them had moderate knowledge. The 43(53.75%) number of antenatal mothers had inadequate knowledge about neonatal hepatitis and 37(46.25%) of them had moderate knowledge and the 76(95%) number of antenatal mothers had inadequate knowledge about congenital herpes simplex virus infection and 4(5%) of them had moderate knowledge. Most of them had inadequate knowledge about selected early neonatal infections

Findings related to aspect wise knowledge score on selected early neonatal infections among antenatal mothers

General knowledge on infection and newborn, represents the mean score percentage of knowledge was 28.8%, mean of 2.6 and standard deviation 1.39 as variations in their knowledge. The mean score percentage of knowledge regarding neonatal sepsis was 31.4%, mean was 3.77 and standard deviation was 1.03. The mean score percentage of knowledge regarding neonatal meningitis was 29.58%, mean was 3.55 and standard deviation was 1.14.

The mean score percentage of knowledge regarding neonatal tetanus was 31.78%, mean was 2.22 and standard deviation was 1.61. The mean score percentage of knowledge regarding neonatal omphalitis was 30.2%, mean was 2.725 and standard deviation was 1.34.

The mean score percentage of knowledge regarding ophthalmia neonatrum was 30.15%, mean was 2.41 and standard deviation was 1.71. The mean score percentage of knowledge regarding neonatal hepatitis was 39.5%, mean was 3.16 and standard deviation was 1.51. The mean score percentage of knowledge regarding congenital herpes simplex virus infection was 33.4%, mean was 3.67 and standard deviation was 1.08.

Findings related to association between knowledge on selected early neonatal infections among antenatal mothers with selected demographic variables

The present study reveals that knowledge on selected early neonatal infections was influenced by the socio demographic variables of the antenatal mothers such as religion, education, type of family and source of information. Age, occupation, monthly family income, place of residence, trimester of pregnancy and tetanus toxoid immunization status were not significantly associated with the knowledge on selected early neonatal infections among antenatal mothers.

RECOMMENDATIONS

- A comparative study can be conducted to assess knowledge regarding prevention of neonatal infections among antenatal mothers residing in selected urban and rural area.
- A quasi experimental study can be conducted with a structure teaching programme on prevention of neonatal infections among antenatal mothers.
- A study can be conducted to assess the knowledge of postnatal mothers regarding prevention of neonatal infection.
- A study can be conducted to assess the knowledge of prevention of early neonatal infection among infected mothers
- A comparative study can be conducted to assess knowledge regarding prevention of neonatal infections among selected literate and illiterate antenatal mothers.
- A study can be conducted to assess the knowledge and attitude of prevention of early neonatal infection among postnatal mothers
- A study can be conducted to assess the knowledge of prevention of early neonatal infection among staff nurses.

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CHAPTER I

INTRODUCTION

"Carrying a baby is the most rewarding experience women can enjoy''

- Jayne Mansfield

Child birth is a universally celebrating event, on occasion for dancing, flowers fireworks and gifts. Yet an everyday and every minute thousands of women having child birth experience not as a joyful event as it should be.

Human reproduction is intimate spheres of an individual's life. Pregnancy is a normal life event that involves considerable physiological and psychological adjustments of the mother .Every women desires to deliver a healthy baby. The antenatal period is journey which includes many changes in the women in order to facilitate for healthy baby and delivery.

Soon smiles dapple the sunlight; gurgles soften the edges of silence. The newborn emerges from its warm womb and balances on each new moment, unfolding a pattern of expressions and moods to the delight of all .The birth of the baby is one of the most awe inspiring and emotional events that can occur in one's lifetime. After 9 months of anticipation and preparation, the neonate arrives amid a flurry of excitement. (Dorothy R.Marlou)

The journey to birth is nothing more than an incredible miracle of life. This journey needs a number of successful transition in the mother if the newborn to survive. In utero, the fetus is entirely dependent on the placenta to sustain physiologic functions necessary for optimal growth and development of the fetus. (Lynna Y.Littleton, 2002)

"Congratulations on the birth of child" is a common expression heard by many parents after the labour is over. A newborn or baby is the very young offspring of humans. A newborn is an infant who is within hours, days, or up to a few weeks from birth. In medical context, newborn or neonate derived from Latin word, "neonates ''. It means an infant in the first 28 days after birth. The first 24 hours of life can be the most precarious. (Verklan, 2002)

Beginning in early pregnancy, the immune system of the fetus is developing the capacity to respond to foreign antigen. Immune system is necessary to equip the neonate to meet the new numerous environment challenges associated with extra uterine environment. (Lowdermilk, 2007)

The cells that provide immunity to the neonate are developed early in fetal life. However, the immunity is not activated for several months. For the first three months of life the neonate is protected by passive immunity received from the mother. (Kathryn Rhodes Alden, 2004)

Looking forward to the arrival of a healthy baby is every prospective parents dream. Sadly for sometimes this dream is shattered when the presence of some critical or infection is recognized prenatally, at birth or in the neonatal period. (Tom turner, 2006)

Infection is the invasion of tissue by pathogenic micro organisms, the degree to which the results in ill health relates to their virulence and number of micro organisms. Infecting parasites seek to use the host's resources to reproduce often resulting diseases. Infections are usually caused by microorganisms and microorganisms like bacteria, virus, parasites and fungi. (Sally Marchant, 2004)

The range of pathologic conditions produced by infectious agents is large, and the difference between the maternal and fetal effects caused by any one agent is also great. Some maternal infections during early gestation can result fetal loss and the fetal immunologic system is unable to prevent dissemination of infectious agent to various tissue. (Donna L. Wong, 2003)

All newborns, especially low birth weight babies and preterm babies high risk for infection is one of the leading causes of neonatal morbidity and mortality. The greatest risk factor for neonatal infections is prematurity, because of immaturity of the immune system. Other risk factors include premature rupture of membrane, maternal fever, antenatal

and intrapartum asphyxia, invasive procedures, stress and congenital anomalies. (Dear, 2005)

Newborn may acquire infections, through the placenta as they traverse the birth canal, during intranatal period from genital tract or contaminated blood and secretion or after birth from sources such as career's hands, contaminated objects and droplet infection. (Patricia Percival, 2004)

The direct causes for neonatal infections include lack of education and knowledge, inadequate maternal and newborn practices and care seeking, insufficient access to nutritious food, essential micronutrients, poor environment health facilities and inadequate basic health care services. There are also some basic factors such as poverty, social exclusion and gender discrimination is indirect causes for neonatal infection, mortality and morbidity rate. (Ann M. Veneman, 2009)

About 30 to 50% of the total neonatal deaths in developing country and it are estimated that up to 20% of neonates develop sepsis and approximately 1% dies sepsis related causes. Early neonatal sepsis 85% present within 24 hours, 5% present within 24 -48 hours and less percentage present within 48 to 72 hours. (Rajiv Aggarwal 2009)

Neonatal meningitis is different from other types of meningitis because its causes are different, and it is fatal more often than meningitis in older children. In the United States, there are as many as 300 to 400

cases of neonatal meningitis for every 100,000 live births. (Jean Rothman, 2010)

Neonatal conjunctivitis is commonly caused by bacteria or virus. The bacterial infections that can cause serious eye damage and it commonly caused by gonorrhea and Chlamydia organisms, which can be passed from mother to child during birth of the baby. (Medical encyclopedia, 2009)

Neonatal tetanus is affects the skeletal muscle and nervous system of the newborn. It is acquired through exposure to the spores of the bacterium Clostridium tetani. In 2007 the neonatal tetanus morbidity rate was 937 and mortality rate was 93.Neonatal tetanus is particularly most common in remote rural areas where most of deliveries are at home without adequate sterile procedures. Unhealed umbilical cord is the commonest port of entry for the tetanus spores. Most 90% of cases of neonatal tetanus develop symptoms during the first 3–14 days of life with the majority presenting at 6–8 day. (Dr.Joy Lawn, 2011)

Omphalitis is an infection of the umbilical stump or inflammation of the umbilical cord. Omphalitis is not common in industrialized countries, but it is a common cause of neonatal mortality in less developed countries. In United States the current mortality rate range is 0.5% but in the developing countries it range from 0.5% to 2%. (Patrick G Gallagher, 2010)

Hepatitis B virus infection in a pregnant women poses a serious risk for neonate at birth without post exposure immunoprophylaxis, 40% of neonate born hepatitis B virus infected mothers will develop chronic Hepatitis B virus infection. Acute infection appears to be higher incidence of low birth weight and prematurity. (Chatterjee.S, 2009)

In the United States 11 to 33 cases of neonatal herpes infection per 100,000 live births.25% to 65% of pregnant women affected with herpes simplex. Herpes simplex virus is transmitted 85% during delivery through infected genital secretions in the birth canal 5% may occur in utero and 10% occur in postnatal period. About 45% neonates develop skin, mouth and eyes herpes lesions and 30% of neonates will develop central nervous system and 25% of neonatal herpes develop disseminated disease. (Nicole Evans, 2011)

The most important factors for preventing cross infection is through hand washing of all individuals involved in the newborn's care. Several other procedures to prevent infection include eye care, cord care, bathing and care of the circumcision. Artificial and long fingernails are discouraged in neonatal care. (Donna L.Wong, 2003)

NEED FOR THE STUDY:

"Thought is an infection. In the case of certain thoughts, it becomes an epidemic."

- Wallace Stevens

Pregnancy and child birth are generally times of joy for parents and families. Pregnancy, birth and motherhood, in an environment that respects women, can powerfully affirm women's rights and social status without jeopardizing their health.

India is the world largest population and largest country in south Asia. Nearly in each year 27 million babies are born in India. 25% of the total birth 3.9 million neonatal deaths occurring in each year. Neonatal mortality rate 39 per 1000 live births in India. Newborn death has recorded a 33% drop in India between 1990 and 2009.Now a days, despite the sharp drop, over 9lakh neonates died in 2009, the highest in the world. In India neonatal mortality rate was 34 per 1000 live births in 2009. (Kounteya sinha, 2011)

Newborn deaths 99% occur in the developing countries because of their large populations. Now more than half of newborn deaths occur in just five countries – India, Pakistan, Nigeria, China and Democratic Republic of the Congo.28% of global death occur in India alone and nearly more than 900,000 newborn deaths occurring per year.(Dr.Flavia Bustreo, 2011)

The newborn period starts from birth and continues through the first 28 days of life. The newborns mortality rate stands at 39 per 1000 live births in India. Infections, asphyxia, and prematurity are the leading causes of neonatal death globally. A large proportion of neonatal mortality rate is contributed by infections, largely preventable causes. (Kiransharma, 2010)

Tamilnadu has recorded impressive achievements in the last several decades in reducing neonatal mortality rate. For every 1000 children 37 did not survive to their first birthday in 2005 and 2006.In 2005, 26 neonates died in the first month of life. (Dr. Samlee Plianbangchang, 2009)

Improving newborn care in the first month of life is essential for reducing neonatal mortality rate in developing countries. Globally, about 40% of deaths occur in the first month of life, most of which occur in the first week of life (Ann M. Veneman, 2009)

Newborn mortality rate decreased to 3.3million in 2009 because more investment into health care especially for women and children implemented by united nations millennium development goals, contributed to more rapid progress for the survival of mother 2.3% per year and for newborns 1.7% and children under five age 2.1%.Eventhough many steps are taken to reduce the neonatal mortality,

but still the neonatal infections is the main causes for neonatal death in the world. (Dr. Flavia Bustero, 2011)

Sepsis is the commonest cause of neonatal mortality and is probably responsible for 30-50% of the total neonatal deaths each year in developing countries. The incidence of neonatal sepsis is recorded 38 per 1000 intramural live births in tertiary care institutions in India. Septicemia was the commonest complications of neonatal sepsis, the incidence at 24 per 1000 live births. (Rajiv Aggarwal et al, 2009)

Premature neonates have an increased chance for sepsis. The incidence of sepsis is significantly higher in neonate with very low birth weight at 26 per 1000 live births. The risk of death or from sepsis is higher in newborns with low birth weight than in full-term babies.(Ann L Anderson, 2011)

The incidence of neonatal meningitis is 0.48 per 1000 live births in Hong Kong and 2.4 per 1000 live births in Kuwait. A recent study an incidence of neonatal meningitis ranging from 0.8 to 6.1 per 1000 live births because of lack of access to health care facilities in underdeveloped countries. (David C Dredge, 2010)

Neonatal mortality rate was 59,000 in 2008 and in 2010 due to neonatal tetanus. Around 40 countries have yet to eliminate neonate's tetanus. Introduction of maternal tetanus toxoid vaccine eliminated

neonate tetanus in developed countries and its burden also reduced in many developing countries.

Neonatal tetanus was estimated to be responsible for over half a million neonatal deaths globally. But these deaths have been reduced, but that still more 130, 000 babies died in 2004. Most recently in 2005, to a rate of neonatal tetanus less than 1 case per 1000 live births in every district of every country. In India and Nigeria most of neonatal deaths occur due to tetanus because of low coverage of facility births and tetanus toxoid immunization. (Hannah Blencowe et al, 2010)

The incidence rate of omphalitis as high as 55 to 197 per 1000 live births and 2 to 77 per 1000 live birth in hospital settings. Omphalitis is not common in industrialized countries, but most common in the less developed countries.

The incidence of ophthalmia neonatrum decreased after use of silver nitrate solution in the United States. But in developing countries the incidence rate is high. The incidence of chlamydial and gonococcal conjunctivitis was 40 per 1000 and 80 per 1000 live birth. More than 50% of newborns had gonococcal conjunctivitis because of prophylaxis was not administered at birth for neonates. (Kalpana K Jatla, 2011)

Neonatal herpes simplex virus infection has significant morbidity and high mortality. Incidence estimates range from 1/3,000 to 1/20,000 live births per year. Herpes simplex virus type 2 is more common in

neonates than herpes simplex virus type 1.Symptoms of neonatal herpes may occasionally present at birth, but occur in 60% later than 5 days after birth and sometimes present after 4-6 weeks of life. If neonatal herpes not treat the mortality rate may exceed 80% (Gail J.Demmeler, 2011)

New strategies came to improve the maternal and newborn health in the very communities and families with highest burden of mortality and least access to quality health care. The challenge is to integrate effective strategies and interventions across the continuum of maternal and newborn care in both health care settings and community settings. Provision of preventive and curative interventions for mothers and newborn in primary health care settings can be reduce the maternal and newborn death by 20-40 %.(Zulfiqar A.Bhutta, 2008)

We need to focus more care on the newborn. Many conditions especially infections is a major cause for newborn death can easily preventable or treatable. We requires a combined approach to the mother and her baby throughout her pregnancy, to have someone with knowledge and skills for effective care of mother and baby after birth.(Gro Harlern Brund Hand, WHO 2003)

When the investigator posted in clinical area many early neonates affected with infections especially neonatal sepsis. The investigator felt that antenatal mothers need to understand about neonatal infections and preventive measures.

Use of simple cost –effective technologies that are potentially available and feasible for use in the community and at first level of health facilities could have a major impact in reducing morbidity and mortality related to neonatal infections and prevents most of the complications due to neonatal infections. By using simple health education package will improve mother knowledge regarding prevention of early neonatal infection. So the investigator interested to assess the knowledge of antenatal mothers regarding some of the selected early neonatal infection.

" A healthy mother may bring a healthy baby"

STATEMENT OF THE PROBLEM:

"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE".

OBJECTIVES:

1. To assess the knowledge of antenatal women regarding selected early neonatal infections
2. To determine the relationship between knowledge and demographic variables such as age, religion, educational status, occupation, family income, type of family, place of residence, trimester, immunization status and source of information.

3. To prepare the health education package on prevention of early neonatal infections based in identified needs of the antenatal mothers.

OPERATIONAL DEFINITIONS:

Knowledge:

It refers to the understanding of the antenatal mothers on selected early neonatal infection.

Early neonate:

Neonate birth to 7 days of life

Infections:

An infection of the neonate caused by bacteria, virus, parasites and fungi.

Antenatal mothers:

Mothers from conception to until delivery

ASSUMPTIONS:

1. The antenatal mothers may have inadequate knowledge about selected early neonatal infections.
2. The health education package will improve the knowledge of the antenatal mothers regarding selected early neonatal infections.

LIMITATION

The study was limited only 80 antenatal mothers. So the findings cannot be generalized.

CONCEPTUAL FRAMEWORK

Conceptual framework is the conceptual under spinning of a study. It refers an understanding of the phenomenon of interest and reflects the assumptions and philosophical view of the investigator. (Denise Polit 2006)

According to Polit and Hungler (2003) a conceptual framework is interrelated concepts on an instruction that are assembled together in some rational scheme by virtue of their relevance to a common theme. It is the device that helps to stimulate research and the extension of knowledge by providing both direction and impetus.

A conceptual framework is a group of concepts and set a proposition that spells out the relations between them. Their overall purpose is to make the scientific findings meaningful and generalized,

Pender's health promotion model 1996 was used as a conceptual framework of this study. According to this model health promotion is defined as activities directed towards the development of resources that maintain and enhance and individuals well being.

The determinants of the Pender's health promotion model are:

1. Cognitive perceptual factors
2. Modifying factors
3. Participation in health promoting behaviours

1. Cognitive perceptual factors:

Cognitive perceptual factors are the primary motivational mechanism for acquisition and maintenance of health promoting behavior exerts direct influence on health promoting behavior.(Frank 1990)

In the present study, the cognitive perceptual factors are knowledge of antenatal mothers on selected early neonatal infections.

2. Modifying factors

Modifying factors consist of demographic factors such as age, religion, education, income, biological characteristics, family pattern of healthcare and interaction with health professions. Situational factors and, biological factors such as cognitive and psychomotor will make the individual to develop proper skill necessary to carry out health behavior.

Pender states that to the health promotion model, modifying factors exert their influence through cognitive perceptual mechanisms that directly affect the perception of an individual cognitive perceptual factor constitute the exclusive source of all the connection between modifying factors and healthy behavior.

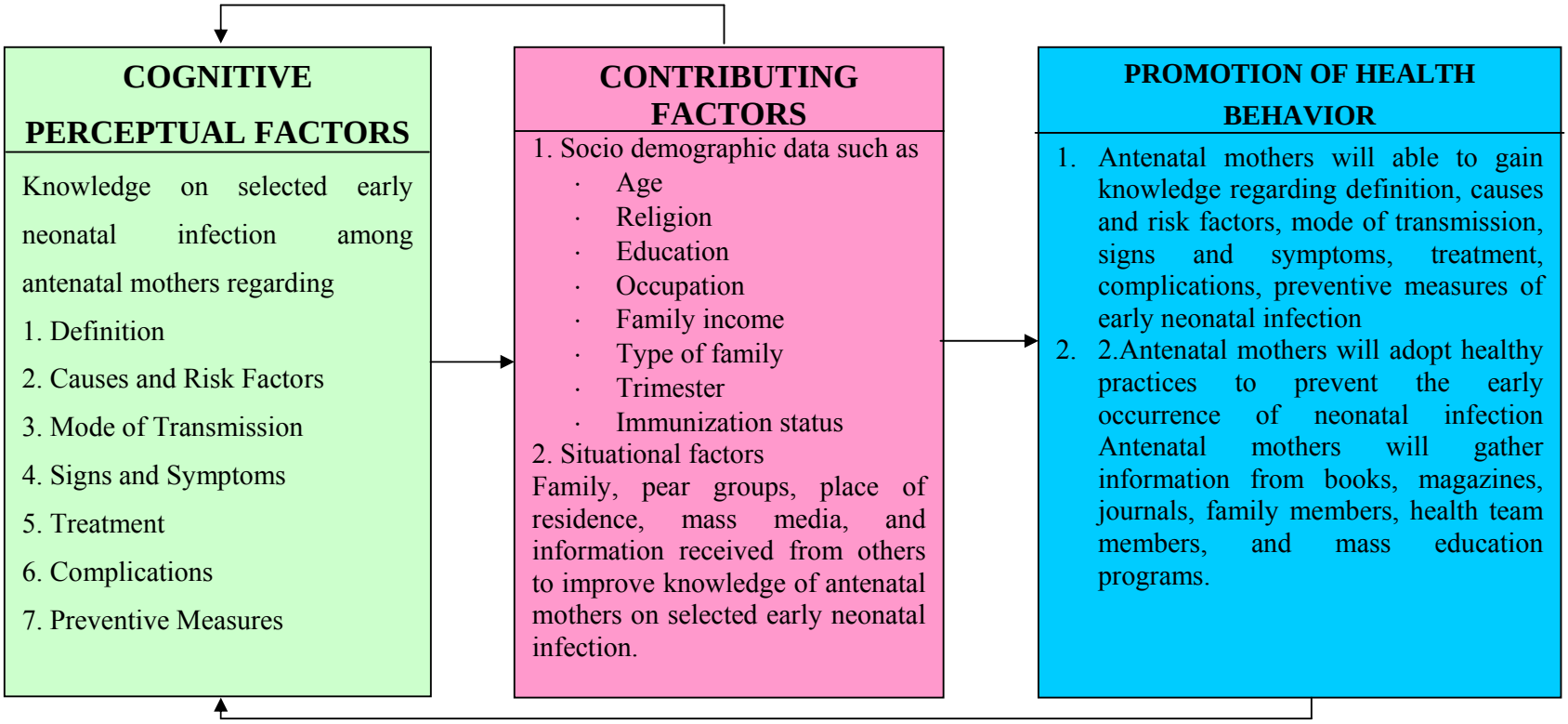
The modifying factors include in this study age, religion, educational status, occupation, family income, type of family and place of residence, trimester, immunization status and source of information.

3. Participation in health promoting behaviours

Cognitive perceptual factors constitute the exclusive sources of all the connection between the modifying factors and participation in health promoting behaviour.

The perception of antenatal mothers about early neonatal infections may be influenced by the socio-demographic variables. This will allow the mothers to gain adequate knowledge regarding early neonatal infections.

1.1. CONCEPTUAL FRAMEWORK



PENDER'S HEALTH PROMOTION MODEL 1996

SUMMARY

This chapter viewed about the research problem, objectives, operational definition, assumptions, limitations, and conceptual framework for the study.

CHAPTER-II

REVIEW OF LITERATURE

''Manuscripts containing innumerable references are more likely a sign of insecurity than a mark of scholarship''

- William Roberts

"A literature review involves the systemic identification, location, scrutiny and summary of written and that contains information on research problem" (Polit and Hungler, 2006)

Review of literature is an essential component of the research process. Review of literature is a critical examination of publication related to a topic of interest. Review of literature helps a plan and conducts the study in a systematic and scientific means.

Review of literature refers to the activities involved in searching for information and developing a comprehensive picture of knowledge on the topic. The written literature review provide the background for the reader understanding what has been already learned and illuminate significant of the new study.(Polit,2006)

The investigator was reviewed and organized the relevant literature for the present study in the following headings.

- Literature related to early neonatal infection
- Studies related to early neonatal infection

Literature related to early neonatal infections

The neonatal period is defined as the first 28 days of life. About 4 million children die during the neonatal period each year with most deaths occurring in developing countries. In 2004 the developing countries the infections are the most important causes of neonatal mortality. It is estimated annually 4, 60,000 neonates die from a severe bacterial infection and 500,000 neonates die from neonatal tetanus **(**Susan Scott Ricci, 2007)

The relationship of maternal inflammation with preterm birth cause adverse neonatal outcomes, including infection and central nervous system dysfunction. Early onset infection has a mortality rate between 5% to 50% and late onset neonatal mortality is approximately 2% to 6 %.The neonatal infection rates are much higher in developing countries than in the united states, however as many as 20% of, or 30 million, newborns in developing countries contract infection in the neonatal period and more than 1.5million of them die. (Stoll, 2005)

The lower birth weight and consequent lower gestational age is the higher the risk for infection. Infection case fatality rates range from less than 10% to greater than 50% with the highest mortality rate for preterm infants with early onset infection. The maternal factors associated with newborn infection are low socioeconomic status, malnutrition, and inadequate prenatal care, and substance abuse, premature rupture of

membrane, urinary tract infection, peripartum infection, and amnionitis. (Judy Wright Lott, 2007)

The intrauterine infection can probably occur; the major risk of the infant is from passing through an infected cervix during delivery. Up to 70% of babies born to mothers with Chlamydia infection will become infected, with 30%-40%developing conjunctivitis. (Schachter et al., 1998)

The breast feed neonates receive specific antibodies and cell mediated immunologic factors that help to decrease the incidence and severity of bacteremia , urinary tract infection and bacterial meningitis. Breast milk is the important source for prevent the most of infections. (Oddy, 2004)

Neonatal sepsis is a blood infection that occurs in neonates. Early-onset sepsis occurs within 72 hours of birth. Late-onset sepsis occurs more than 72 hours of birth. The common risk factors of neonatal sepsis are preterm babies and low birth weight babies, prolonged rupture of membrane, maternal fever in labour and chorioamnionitis. The common clinical features of early neonatal sepsis are apnea and bradycardia, vomiting, slow feeding, abdominal distension, temperature instability, jaundice, irritability, and seizures. (Tom Lissauer, 2006)

The neonatal sepsis can be treating with antibiotics and supportive care such as maintaining airway, breathing and circulation. In the United States and Canada, the current approach to the treatment of early-onset neonatal sepsis syndrome includes combined intravenous amino glycoside and expanded-spectrum penicillin antibiotic therapy. This provides coverage for gram-negative bacteria, such as Escherichia coli and gram-positive organisms, especially group B Streptococcus. (Ann L Anderson, 2011)

The complications of early neonatal sepsis are septic shock, hypoxemia, persistent pulmonary hypertension and central nervous system involvement. Neonatal sepsis can be prevent by antibiotic prophylaxis for the pregnant women with chorioamnionitis, group B streptococcus, providing clean birth environment, and deliver the baby within 24 hours of rupture of membrane. (Kimberly G Lee, 2011)

The mortality rate in neonatal sepsis may be above 50% for neonates who are not treated. Infection is a major cause of fatality of neonate during the first month of life, contributing to 13-15% of all neonatal deaths. Neonatal meningitis, a serious morbidity of neonatal sepsis, occurs in 2-4 cases per 10,000 live births and significantly contributes to the mortality rate in neonatal sepsis. (Ann L Anderson, 2011)

Neonatal meningitis is defined as the inflammation of the protective covering of the brain of the neonate. It is commonly caused by some bacteria such as β-haemolytic streptococci, E.coli and Listeria monocytogenes. The most common signs and symptoms are lethargy, feeding problems, altered body temperature, respiratory distress, diarrhoea, abdominal distension, seizures, vomiting, bulging anterior fontanelle, neck stiffness, opisthotonus.(R.Arvind,2006)

Neonatal meningitis can be treating with antimicrobial therapy such as Ampicillin, gentamycin or Ampicillin and cefotaxime. Supportive therapy and acute observation and monitoring vital signs and activity level are very essential for the newborn with meningitis. (Judy Wright Lott, 2007)

The complications of neonatal meningitis include seizure disorders, hydrocephalus, hearing loss, blindness, mental and motor problems and abnormal speech patterns. The neonatal meningitis can be prevent by use of intrapartum prophylactic antibiotics ,screening, risk factor assessment, cesarean delivery with mother with infections and suppressive antiviral therapy for viral infection during third trimester.(Jean Rothman,2011)

Neonatal tetanus is a medical condition affects the skeletal muscle and central nervous system caused by clostridium tetani in the newborn. It occurs as a result of contamination and infection of the umbilical stump

during delivery or cutting the cord and infection of the unhealed umbilical stump and unsterile delivery. (Encyclopedia, 2011)

Clinical features of Neonatal tetanus include mouth slightly opened due to spasm of the neck and muscles, excessive unexplained cry, refusal of food and apathy, dysphagia and chocking during feeds. Trismus and locked jaw may occur due to spasm of limbs. Neonatal tetanus can be treating with antibiotic such as penicillin and metronidazole for decrease the number of bacteria. Passive immunization with tetanus immunoglobulin can be given intramuscularly. The common complications of neonatal tetanus are fracture, difficulty in breathing, fits pulmonary embolism and death and surgical care of cord or wound. (Encyclopedia, 2011)

The neonatal tetanus can be prevented by tetanus toxiod immunization of the mother during pregnancy. If babies born in unhygienic condition without previous tetanus toxiod vaccine of the mother, administer 1500 I.U. of anti tetanus serum intramuscularly soon after birth. (D.C.Dutta, 2009)

Omphalitis is an infection of the umbilical stump and presents as a superficial cellulitis that may spread entire abdominal wall caused by staphylococcus, E.coli, streptococcus. It mainly transmitted through poor maternal immunity and poor aseptic technique during delivery. The signs and symptoms are erythema and induration with purulent discharge from

the umbilical cord. Omphalitis can be treating with antimicrobial therapy such as penicillin, amino glycoside, metronidazole or clindamycin. The complications are damage to the umbilical site is more risk of systemic spread of infections such as abdominal wall cellulitis, peritonitis, umbilical arteritis or phlebitis, hepatic vein thrombosis or hepatic abscess. The omphalitis can be prevented by application of antimicrobial agents to the umbilicus to decrease bacterial colonization. (John P.Cloherty, 1998)

Ophthalmia neonatrum is an infection of the conjunctiva during first three weeks of life caused by Chlamydia trachomatis, Neisseria gonorrhea, and staphylococcus aureus. The mode of infection occurs during delivery by contaminated vaginal discharge. The clinical manifestations are watery or mucopurulent discharge in one or both eyes and eyelids may be sticky and swollen. (D.C.Dutta, 2004)

The treatment of ophthalmia neonatrum may be based on the causes of infection. Gonococcal infection treating with topical gentamycin eye drops and parentaral ceftriaxone. The Chlamydia infection can be treating with erythromycin ophthalmic ointment and herpes simplex treating with parenteral acyclovir or 1% Idoxuridine ointment. The complications are blindness, inflammation of iris, pneumonia, perforation of cornea, and corneal scarring. It can be prevented by prophylactic eye drops instilled into each eye such as tetracycline or1% silver nitrate drops. If mother infected with herpes

simplex, a cesarean section should be done to prevent serious illness in the baby. (D.C.Dutta, 2004)

Hepatitis B Virus infection occurs to neonate during delivery from an infected mother. Maternal acute hepatitis B occurring within 2 to 3 months of delivery has about a 70% risk of transmission, only 5% risk disease occurring during the first and second trimester. Mother–newborn Hepatitis B Virus transmission results primarily from maternofetal micro transfusions during labor or contact with infectious secretions in the birth canal. Transplacental transmission is uncommon. Postpartum transmission occurs rarely through exposure to infectious maternal blood, stool, urine, and saliva or breast milk. (Mary T.Caserta, 2009)

The neonate usually has yellow eyes and skin, enlarged spleen and liver. Bile duct become inflamed and enlarged and blocks the flow of bile. The babies with neonatal hepatitis could lead to cerebral palsy cirrhosis of liver, mental retardation. There is no specific treatment for neonatal hepatitis. Phenobarbital to stimulate the liver to excrete excess bile and corticosteroid and hepatitis B immune globulin can be given to treat neonatal hepatitis. (T.Caserta, 2009)

Hepatitis B virus is a blood–borne virus that is very infectious especially for babies. It may be transmitted through exposure to infected blood and body fluids and vertical transmission. The hepatitis B vaccinations for mother and newborn babies are 95% effective to prevent

hepatitis B virus infection if vaccination is completed. (Martin & Knox 2006)

Neonatal herpes simplex infection is a serious condition and it usually caused by herpes simplex virus. It is transmitted to the baby to exposure with infected genital secretions in the birth canal during delivery and in utero or postnatally. The risk factors are maternal age (<25), first pregnancy, discordant partner, and primary infection in third trimester. Manifestations are skin vesicles, irritability, seizures, respiratory distress, jaundice and shock. (Encyclopedia, 2011)

Neonatal herpes simplex virus infection treats with parenteral acyclovir therapy, appropriate intravenous fluids, respiratory support and control of seizures. The complications of neonatal herpes simplex are disseminated intravascular coagulation, neurodevelopment abnormalities such as developmental delay, hemiparesis, microcephaly, blindness, and hepatitis. It can be preventing by universal screening and cesarean delivery for women to decrease transmission of virus and fetal scalp monitors should not be used during labour. (T.Caserta, 2009)

The strategies recommended for prevention of intrauterine and perinatally acquired Herpes simplex infection, including identification of high-risk pregnant women, maternal antiviral therapy, cesarean delivery, and anticipatory guidance for pregnant women and partners. Postnatal transmission of Herpes simplex virus can be prevented by counseling

family members with Herpes simplex lesions to avoid close contact with and kissing the newborn babies. Mother with herpetic breast lesions should not breastfeed from the affected breast. Mothers should use careful hand hygiene and cover any lesions with which the babies might come into contact. (Gail J.Demmeler, 2011)

Studies related to early neonatal infections

Anne Schuchat et.al., (2009) conducted a case-control study on risk factors and opportunities for prevention of early-onset Neonatal Sepsis in Multicenter surveillance. Early-onset sepsis in an aggregate of 52406 births; of risk factors for Group B Streptococcus and other sepsis in early-onset disease occurred in 188 infants (3.5 cases per 1000 live births). Escherichia coli (0.6 cases per 1000 births) and Group B Streptococcus (1.4 cases per 1000 births) caused most neonatal infections. Obstetric risk factors are intrapartum fever, preterm delivery, or membrane rupture ≥18 hours were found in 49% of Group B Streptococcus cases and 79% of other sepsis. Intrapartum Antibiotic Prophylaxis had an adjusted efficacy of 68.2% against any early-onset sepsis. The study was concluded that either prenatal Group B Streptococcus screening or a risk-based strategy could potentially prevent Group B Streptococcus. Recommendations of intrapartum antibiotic prophylaxis seemed efficacious against early-onset sepsis.

Wu JH et.al., (2009) conducted a prospective observational study on Neonatal sepsis in neonatal intensive care unit at National Taiwan University Hospital. A total of 109 episodes of sepsis were identified in 100 neonates. Most neonates with early-onset sepsis were term infants. In early-onset sepsis, the most common pathogens responsible included group B streptococci (36%) and Escherichia coli (26%). The sepsis-related mortality rates were higher in early-onset sepsis (10%).The study was concluded that a group B streptococcus was found to be the leading pathogen in early-onset of neonatal sepsis. Group B streptococci screening and intrapartum antibiotic prophylaxis guidelines should be used to prevent early neonatal sepsis. Recommendation of group B streptococci is a leading cause of early onset neonatal sepsis.

Cutland CL et.al., (2009) conducted a randomized control trail on Chlorhexidine maternal-vaginal and neonate body wipes in sepsis and vertical transmission of pathogenic bacteria in South Africa, 8011 women (aged 12-51 years) were randomly assigned in a 1:1 ratio to chlorhexidine vaginal wipes or external genitalia water wipes during active labour, and their 8129 newborn babies were assigned to full-body (intervention group) or foot (control group) washes with chlorhexidine at birth. Primary outcomes were neonatal sepsis in the first 3 days of life and vertical transmission of group B streptococcus. The study was concluded that rates of neonatal sepsis did not differ between the groups. Because

chlorhexidine intravaginal and neonatal wipes did not prevent neonatal sepsis. The study recommended that need other interventions to reduce neonatal mortality rate.

Puopolo KM, **et.al., (2011)** conducted a case control study to estimate the probability of neonatal early-onset bacterial infection on the basis of maternal intrapartum risk factors among neonates born at ≥34 weeks' gestation California and Massachusetts hospitals. The study identified 350 case-subjects from a cohort of 608014 live births. Highest intrapartum maternal temperature and duration of rupture of membrane revealed a linear relationship with risk of neonatal infection. Intrapartum antibiotic given more than 4 hours before delivery was associated with decreased risk of neonatal infection. The study concluded that the model establishes a prior probability for newborn sepsis, which could be combined with neonatal physical examination and laboratory values to establish a posterior probability to guide treatment decisions. Recommendation of intrapartum antibiotic prophylaxis prevents early onset neonatal bacterial infections.

Haussen DC et.al., (2005) conducted a case control study to identify features related to neonatal meningitis in all newborns with meningitis from 2002 to 2003 in the neonatal Intensive Care Unit in Brazil. Healthy newborns were selected as a Control Group.42 newborns with meningitis were compared to 42 controls group. The most common

abnormalities detected in both groups were drug addiction, preeclampsia, eclampsia, congenital infections, urinary tract infections and gestational diabetes mellitus. Fetal respiratory distress and the use of respiratory support were related to the occurrence of meningitis. The average weight and the APGAR scores were lower in the meningitis group. The neurological examination detected abnormalities in 35.7% of the meningitis cases. The study concluded that the association of risk factors related to pregnancy, labor and the newborn with outcome of neonatal meningitis. Recommendations of premature babies and small for the gestational age are high risk for neonatal meningitis.

Rohini Ghosh, et.al., (2010) conducted a cross-sectional study on neonatal mortality rate due to tetanus and sepsis and to identify the risk factors for tetanus and sepsis in peri-urban area of India in 2008. Result of the study was 894 married women (<50 years of age), 84 cases of tetanus and sepsis and 109 reported their last pregnancy outcome as neonatal death were noted. The risk factors of tetanus and sepsis identified among socio demographic variables. The study concluded that independent of social class there is high prevalence of neonatal mortality. There is a close association between utilization of health care services and neonatal deaths due to tetanus and sepsis. Recommendation of utilization of health care services will be reduce the neonatal tetanus and sepsis.

Raza SA, **et.al, (2004)** conducted a case-control study on risk factors for neonatal tetanus in urban setting, Pakistan. Patients of Neonatal Tetanus (n = 125) diagnosed through a surveillance system of Expanded Programme on Immunization. Two neighbourhood controls (n = 250) were matched for each case for gender and date of birth. The multivariable model identified subsequent application of substances on the umbilical cord, illiterate mother and home delivery as risk factors for Neonatal tetanus. Population attributable risk per cent for subsequent cord application was 69% and home delivery was 31%. The study concluded that promote health awareness regarding appropriate post-delivery practices and counseling to prevent neonatal tetanus. Recommendation of application of substances on the umbilical cord, home delivery and illiterate mother are high risk factors of neonatal tetanus.

Hannah Blencowe, **et.al., (2010)** conducted Meta-analysis on review the evidence for and estimate the effect on neonatal tetanus mortality of immunization with tetanus toxoid of pregnant women, or women of childbearing age in London. Using GRADE approach individual study quality and the overall quality of evidence were assessed. Immunization of pregnant women or women of childbearing age with at least two doses of tetanus toxoid is estimated to reduce mortality rate from neonatal tetanus by 94%. The study concluded

that review uses a standard approach to provide a transparent estimate of the high impact of tetanus toxoid immunization on neonatal tetanus. Recommendation the tetanus toxoid vaccine to the mother will be reduce the neonatal tetanus.

Bennett J et.al., (1999) conducted case control study on Neonatal tetanus associated with topical umbilical ghee in Pakistan. Detailed information on ghee usage, including fuels used to heat it, was obtained from cases of neonatal tetanus (n = 229) and their matched controls (n = 687) from a population-based study of neonatal tetanus. Nearly one-third of all infants had ghee applied, and it always heated before application to umbilical wounds. The ghee only heated with dried cow dung fuel was significantly associated with neonatal tetanus. Ghee and Topical antimicrobials were never applied together. The study concluded that Ghee applications to umbilical wounds, when heated with 'clean' fuels no increased risk of neonatal tetanus, but handling practices undoubtedly result in hazardous microbial contamination. Recommendation of the study is promotion of topical antimicrobials might help reduce ghee use to enhance healing of umbilical wounds.

S J Isenberg. et.al., (2003) conducted a prospective controlled trial on investigate if a second drop of 2.5% povidone-iodine ophthalmic solution placed within the first postnatal day would achieve better prophylaxis against ophthalmia neonatrum than a single drop applied at

birth in a Kenyan hospital. All 719 neonates received one drop of the povidone-iodine solution to both eyes at birth, while 317 received a second drop at hospital discharge or 24 hours after delivery. Of those neonate returning with an inflamed eye, there were no cases of Neisseria gonorrhea, 4.2% in the single dose group and 3.9% in the double dose group were positive for Chlamydia trachomatis, and 5.4% and 6.5% for Staphylococcus aureus. The study concluded that there is no advantage to administering povidone-iodine prophylaxis against ophthalmia neonatrum twice in the first postnatal day over a single application at birth. Recommendation of there is no use of comparing single and double eye drops application of povidone –iodine prophylaxis against ophthalmia neonatrum.

M. Ghahramani1, et.al., (2007) conducted a randomized clinical trial on Prevention of ophthalmia neonatrum in the delivery room if the mother is affected by Sexually transmitted diseases in Iran, 130 full-term neonates born vaginally were selected. 0.5% erythromycin ointment was used for ophthalmia neonatrum prophylaxis. All the newborns were then examined during the third and the tenth day of life. The results showed that totally 8 newborns were affected with conjunctivitis. The study was concluded that significant effect of drugs used in ophthalmia neonatrum prophylaxis such as silver nitrate, erythromycin, tetracycline and

povidone-iodine. The study highly recommended that neonatal wards of hospitals should carry out prophylaxis of ophthalmia neonatrum.

Sawardekar KP, **(2004)** conducted a Prospective observational study on Risk factors and clinical and bacteriologic profile of neonates with omphalitis Special Care Baby Unit of a regional referral hospital in Oman .Total 207 cases of omphalitis among 260 births were studied. Proportional risk factors, clinical and bacteriologic profiles and outcomes were studied. Based on the severity omphalitis was classified into four categories. The result of the study was the incidence of omphalitis was higher in home births ($P < 0.001$), in low birth weight (weight <2500 grams) neonates ($P < 0.05$) and in neonates with an intrapartum setup for sepsis ($P < 0.05$). Staphylococcus aureus was the most common pathogen isolated from umbilical swabs. The study concluded that the incidence and severity of omphalitis decline with reduction of home births and septic deliveries. Recommendation of the study was home delivery is most leading cause for omphalitis.

Dr Luke C Mullany, et.al, (2006) conducted a cluster-randomized trial study on prevention of omphalitis by applications of topical of chlorhexidine to the umbilical cord and reduce the neonatal mortality in 413 communities in Nepal. Neonates 5082 were assigned to dry cord care, 4934 to 4.0% chlorhexidine, and 5107 to cleansing with soap and water. In intervention clusters the newborn umbilical cord was cleansed

in the home on days 1 to 4, 6, 8, and 10 during home visit and the cord was diagnosed for signs of infection. Severe omphalitis was reduced by 75% in chlorhexidine clusters compared with dry cord-care clusters. The study was concluded that 24% of neonatal mortality was lower in the chlorhexidine group than in the dry umbilical cord care group. Soap and water not reduced the omphalitis. Recommendations that early antisepsis with chlorhexidine of the umbilical cord reduces overall neonatal mortality and local umbilical cord infections.

Patricia A. Janssen, et.al., (2006) conducted a randomized clinical trial of a Triple Dye/Alcohol Regime Versus Dry umbilical Cord Care in British Columbia and selected 766 newborns to either two triple dye applications on umbilical cord stump on the day of birth with alcohol swabbing twice daily until the cord fell off (n = 384) or dry care (n = 382). Dry care consisted of spot cleaning soiled skin in the periumbilical area with soap and water, with a dry cotton swab or cloth wiping it, and allowing the area dry in air. After hospital discharge the community health nurses visiting at 2 or 3 days and observed the stump for signs of infection. One neonate in the dry care group was diagnosed with omphalitis and the umbilical stump was colonized with coagulase-negative staphylococcus and α-hemolytic streptococcus. The study was concluded that the omphalitis remains a clinical issue. Cessation of

bacteriocidal care of the umbilical stump must be accompanied by vigilant attention to the signs and symptoms of omphalitis.

Chen LZ, et.al., (2011) conducted a case-control study on maternal-neonatal transmission of hepatitis B virus in Changsha, Hunan, People's Republic of China. Umbilical vein blood collected from newborns immediately after birth and before initial hepatitis B vaccination to detect the hepatitis B virus infection status of the newborn. For each Hepatitis B s-Antigen-positive infant, one HBsAg-negative infant born to an HBsAg-positive mother was matched by hospital at birth (same), gender (same), and date of birth (within 1 month). The study was concluded that Hepatitis B s-Antigen positive mothers, hepatitis B virus immunoglobulin administration, systematic treatment and controlling intrahepatic cholestasis and pregnancy complications may reduce the incidence of perinatal transmission of hepatitis B virus.

Lewis E, et.al., (2001) conducted a prospective clinical study to determine whether hepatitis B vaccination of newborns increases the incidence of fever and/or suspected sepsis in Kaiser Permanente San Francisco Medical Center involving normal full term newborns. During this period 3302 neonate were vaccinated with hepatitis B vaccine within 21 days of birth, and 2353 were not. There were no significant differences between unvaccinated and vaccinated newborns in the proportion of neonates who received care for fever, seizures, allergic reactions, or other

neurologic events in the first 21 days of life. The study was concluded that no evidence that newborn hepatitis B vaccination is associated with an increase in the number of febrile episodes, allergic, sepsis and neurologic events.

Lin CC, **et.al., (2008)** conducted a comparative study pregnant woman with Hepatitis B virus infection in Taiwan and other southeast countries. Data was collected from 10,327 women born in Taiwan and 1,418 women born in other Southeast Asian countries, both groups receiving prenatal examinations. The demographic data and serum hepatitis B s-Antigen and hepatitis B e-Antigen tests were obtained by medical chart review. Taiwan pregnant women had a higher Hepatitis B s-Antigen positive rate (15.5%) but lower hepatitis B e-Antigen ratio (32.1%) than the women from other countries (8.9% and 52.4%). Before July 1984, no national vaccination program, so Taiwanese women had a higher HBsAg positive rate than other Southeast Asian mothers, but the Hepatitis B s-Antigen positive rates slightly lower after 1984 in Taiwanese women than other Southeast Asian women (11.4% vs. 12.3%) after June 1986, the period of vaccination for all newborns. The study was concluded that the vaccination program reduced hepatitis B infection among pregnant women, and it is indirectly prevent neonatal hepatitis B infection. The study recommended that maternal hepatitis B virus vaccine will be preventing neonatal hepatitis B virus infection.

Westerberg BD, et.al., (2008) conducted a cohort study to review the incidence of sensorineural hearing loss exposed to Herpes simplex virus in neonates. The objective of the study was to develop evidence-based guidelines for appropriate audiological monitoring of newborn born following exposure to herpes simplex virus for development of immediate or delayed-onset of sensorineural hearing loss. The study was conducted in Canada and manual search was conducted of references of identified papers and book chapters. Three papers reported five children with sensorineural hearing loss following apparent disseminated Herpes simplex virus -2 infections. The study was concluded that there was no report of delayed-onset of sensorineural hearing loss following perinatal or asymptomatic Herpes simplex virus infection. Data was insufficient to define the incidence and natural history of sensorineural hearing loss in neonates with Herpes simplex virus infections. The study recommended that the development of sensorineural hearing loss in children with exposure to Herpes simplex virus rarely occur.

Hollier LM, et.al, (2008) conducted a randomized control trials on assess the effectiveness of antenatal antiviral prophylaxis for recurrent genital herpes on neonatal herpes and maternal recurrences at delivery. The study was conducted in USA to assess the effectiveness of antiviral compared to placebo or no therapy on neonatal herpes and maternal disease endpoints among pregnant women with genital herpes. Seven

randomized controlled trials (1249 participants) compared acyclovir to placebo or no treatment (five trials) and valacyclovir to placebo (two trials). The effect of ante partum antiviral prophylaxis on neonatal herpes could not be estimated. Pregnant women who received antiviral prophylaxis were significantly less recurrence of genital herpes at delivery and cesarean section. The study was concluded that antenatal antiviral prophylaxis reduces viral shedding and recurrences at delivery and reduces the need for cesarean delivery for genital herpes and low neonatal risk. Recommendation of antenatal antiviral prophylaxis reduces neonatal herpes simplex virus infection.

Konrad G, **et.al., (2007)** conducted a retrospective study to determine the difference in outcomes between and risk-based assessment for prenatal group B streptococcus infection and universal screening in Winnipeg based on the epidemiology of early-onset group B streptococcus infection. Pregnant women 330 receiving hospital care during intrapartum period and all neonates with early-onset neonatal group B streptococcus infections over 2 years were audited for history of group B streptococcus status, prenatal group B streptococcus screening, risk factors for neonatal group B streptococcus transmission, and to prevent neonatal group B streptococcus infection by using intrapartum antibiotics to the mother. Screening revealed a 26% group B streptococcus carrier rate. Among these carriers, 70% had no other risk

factors for neonatal group B streptococcus transmission. The transmission rate for untreated group B streptococcus positive women was 1.74 per 1000 pregnant women. The study concluded that the differences in neonatal group B streptococcus transmission rates resulting from universal versus risk-based screening. Antibiotic prophylaxis and Universal screening of all group B streptococcus carriers result in increased antibiotic exposure

SUMMARY:

The literature review helped the investigator to become aware of the various methodologies used in studies pertaining to the selected early neonatal infections. It helped to establish the need for the study, state the problem, clearly develop conceptual framework, develop tool plan for analysis of data in order to achieve the objectives of the study.

CHAPTER –III

METHODOLOGY

"***Discovery consists of seeing what everybody has seen and thinking what nobody has thought"***

Albert Szent- Gyorgy

Methodology is a general term and has many meaning .It includes the steps procedures and strategies for gathering and analyzing data in a research investigation. (Denise F.Polit et al., 2004)

Methodology is the development and evaluation of data collection instruments, scales, or technique. The role of the methodology consists of procedures and techniques for conducting a study. (Judith Haber, 2006)

This chapter deals with the methodological approach adopted for this study. The purpose of this study is to assess the knowledge regarding selected early neonatal infections among antenatal mothers.

Research Methodology is a way to solve the research problem, systematically. Before stepping into real research various Methodological approach to be adopted in the study were planned.

This chapter includes

- Research approach
- Research design
- Target population
- Study setting
- Sample

- Sample technique
- Development and description of tool
- Validity
- Reliability
- Pilot study
- Data collection procedure
- Plan for data

RESEARCH APPROACH:

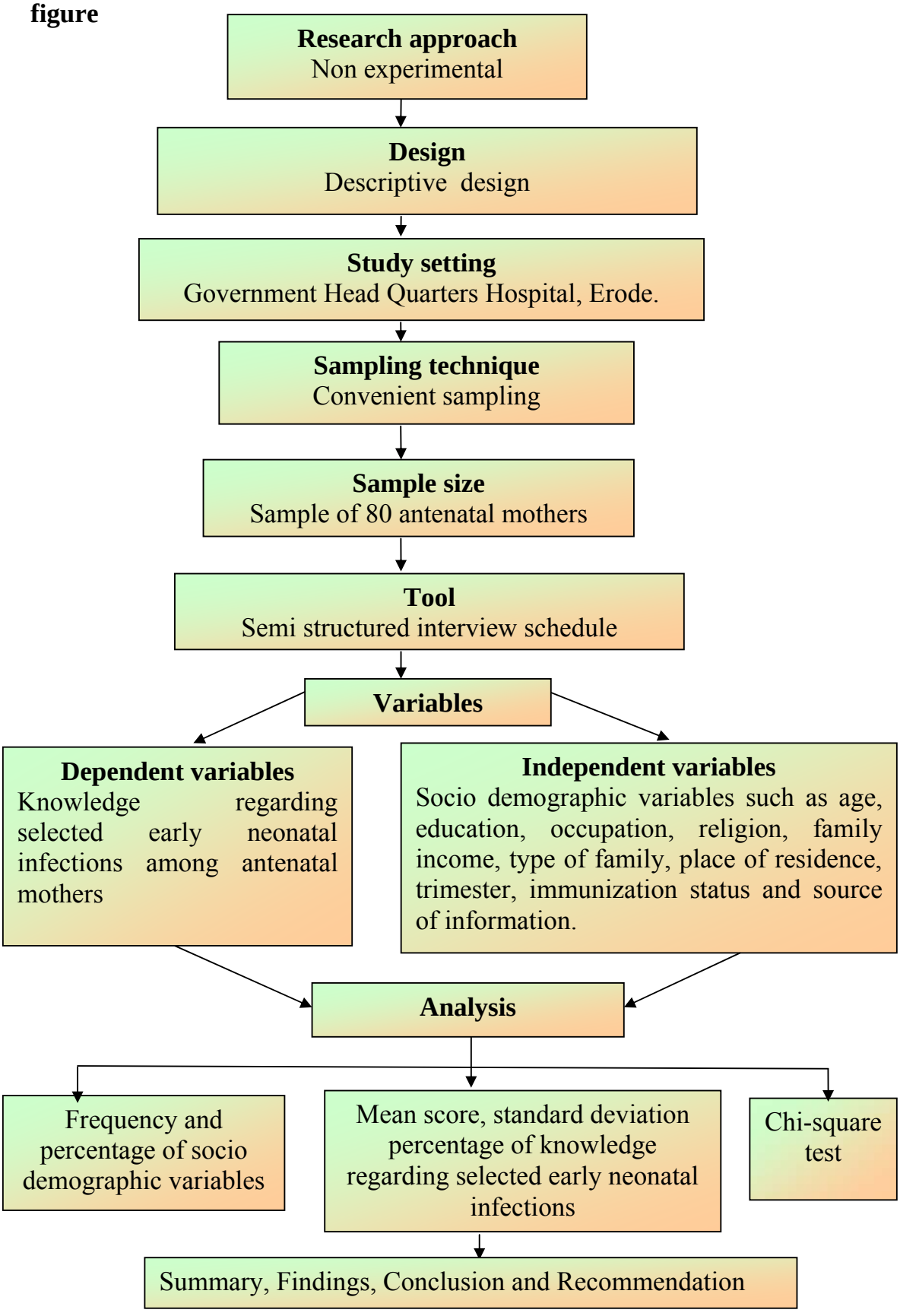
A research approach tells the researcher from whom the data is to be collected, how to collect, how to analyze the data. It also suggests the possible conclusion and help the researcher in answering specific research questions in the most accurate and efficient way possible. The research approach adopted for this study was non-experimental approach.

RESEARCH DESIGN:

The research design is the overall plan for obtaining answer to the questions behind studies. The plan for systematic collection of information in a manner that answer found will be as a meaningful and accurate as possible.

This selection of the design depends upon the purpose of the study, research approach and variables to be studied.The research design used to achieve the objectives of this study was descriptive design.

3.1. The schematic representation of research design is shown in figure



STUDY SETTING

Setting is the physical location and condition in which data collection take place in a study. (Polit & Beck, 2004)

The present study was conducted in the Government Head Quarters Hospital Erode. It is an 840 bedded hospital run by Government of Tamil Nadu. The hospital has got a separate maternity wing with 62 beds including antenatal, postnatal and labour wards for both normal abnormal deliveries and separate antenatal OPD.

This selection of the study setting has been done on the basis of Geographical proximity, Feasibility of conducted the study, Availability of the sample subject.

Target Population:

The population is defined as the entire aggregations of cases that meet a designated set of criteria. (Polit & Hungler, 2004)

The target population for presence study was antenatal women who attended antenatal OPD of Government Head Quarters Hospital, Erode.

SAMPLE AND SAMPLE TECHNIQUES:

Sampling technique is the process of selecting a portion of the population to represent the entire population. (Polit and Beck, 2004)

The sample is a sub set of the population selected to participate in the research study. (Nancy Burns, 2004)

The sample sizes of the study comprised of 80 antenatal mothers who are attending antenatal OPD and who met the inclusive criteria were selected through the convenient sampling.

CRITERIA FOR SELECTION OF SAMPLES:

Inclusive criteria:

- Antenatal mothers who were attending antenatal OPD of Government Head Quarters Hospital, Erode.
- Mother who are willing to participate in the study.

SELECTION AND DEVELOPMENT OF THE TOOL:

Selection of the tool:

Semi structured interview schedule was prepared to assess the knowledge regarding selected early neonatal infections among antenatal mothers semi structured interview schedule was considered to be the most appropriate instruments to elicit response from the subject.

Development of the tool:

In the process of developing the tool, the investigator reviewed related literature research and non-research literature and discussed with subject expert in the field of nursing and maternity. They helped in the selection of the content for the development of the tool.

Description of the tool:

In the semi structured questionnaire was organized into two sections as follows:

Section A:

Section –A consist of 11 items regarding socio demographic variables of antenatal mothers including age, religion, educational status, occupation, family income, type of family, place of residence, trimester, immunization status and source of information.

Section B:

Section –B consist of 45 questions dealing with knowledge on selected early neonatal infections such as general knowledge on infection and neonate, neonatal sepsis, neonatal meningitis, neonatal tetanus, neonatal omphalitis, ophthalmia neonatrum, neonatal hepatitis and congenital herpes simplex virus infection.

VALIDATION OF THE TOOL:

Validity is the most important simple methodological criteria for evaluating any measuring tool .Validity reflect how accurately we measure field information about the true or real variable being studied.

Validity refers to whether an instrument measure accurately what it is suppose to measure. The content validity of the tool was obtained from

seven experts in obstetrician obstetrical nursing, pediatrician and pediatric nursing. Based on the expert's opinion, the tool was modified.

RELIABILITY OF THE INSTRUMENTS:

The semi structured interview schedule was administered to 10 antenatal mothers who are attending antenatal OPD in Government Hospital at Thiruchengodu. The test retest method used to obtain the reliability of the tool. The co-efficient co-relation was found to be r= 0.94.Therefore, the tool was considered to be highly reliable to conduct the study.

PILOT STUDY:

Polit and Hungler (2002) states that pilot study is a small scale version or trail run for the major study. The function of this pilot study is to obtain information for improving the project or for assessing its feasibility. The primary objectives of the pilot study are to test as many elements of the research proposal as possible in order to correct any part of that does not work well.

After obtaining permission from concerned authority, a pilot study was conducted in the month of September 2011 .The investigator visited the antenatal OPD and 10 antenatal mothers were interviewed. The antenatal mother respondened well, for the questions and they were able to understand because the interview schedule was translated into Tamil.

The investigator took an average time about 25 to 30 minutes for each interview schedule.

PROCEDURE OF DATA COLLECTION:

Permission was obtained from concerned hospital authority for the study. The data was collected during the month of October-2011.

The purpose of the interview was explained to the sample with self introduction. Consent was obtained from those who are willing to participate in the study. Then the semi structured interview schedule was administered to antenatal mothers. The collected data was kept confidential and participants were allowed to clarify their doubts. The subjects took average time of 25 to 30 minutes to fill the answer for the questions and 9 to 10 mothers were interviewed daily. The investigator has taken totally 15 to 20 days to collect the data. The antenatal mothers were co-operative during data collection procedure. Health education pamphlet regarding knowledge on selected early neonatal infections among antenatal mothers was given in order to improve the knowledge.

PLAN FOR DATA ANALYSIS:

The data is analyzed in terms of objectives of the study using descriptive statistics and inferential statistics.

The plan for data analysis is follows.

- Data were organized in a master sheet

- The frequencies and percentage of the analysis of socio-demographic variables
- Range, mean, standard deviation and mean score percentage for knowledge on selected early neonatal infections.
- Inferential statistics especially chi-square test is used to assess the relationship between knowledge of selected early neonatal infections with selected demographic variables.

SUMMARY:

This chapter dealt with the research methodology of the study. It includes Research approach, Research design, Study setting, Target population, Sample size, Sampling technique. The data were planned to be analyzed by descriptive and inferential statistics.

CHAPTER-IV

DATA ANALYSIS, INTERPRETATION, AND DISCUSSION

"Observations are always correct; Interpretation not is"

BK Anand

Analysis is the process of organizing and synthesizing data so as to answer research questions and test hypotheses. Interpretation is the process of making the sense of results of a study and examining their implications. (Denise F.Polit, 2007)

This chapter deals with analysis and interpretation of the data collected from a sample of 80 antenatal mothers regarding the selected early neonatal infections. The data which are necessary to provide the adequacy of the study were collected through semi structured interview schedule and analyzed using relevant descriptive and inferential statistics. The substantive summary of the findings are arranged in line with objectives of this study.

OBJECTIVES OF THE STUDY:

1. To assess the knowledge of antenatal women regarding selected early neonatal infections.
2. To determine the relationship between knowledge and demographic variables such as age, religion, educational status,

occupation, family income, type of family, place of residence, trimester, immunization status and source of information.

3. To prepare a health education package of selected early neonatal infections based on the identified needs of antenatal mothers.

PRESENTATION OF DATA:

The data are organized and presented in three sections;

Section-I:

Description of socio demographic variables

Section-II:

Assessment of knowledge on selected early neonatal infections among antenatal mothers.

Section-III:

Association between knowledge on selected early neonatal infections and socio demographic characteristics of antenatal mothers.

SECTION-I

DESCRIPTION OF SOCIO-DEMOGRAPHIC VARIABLES OF ANTENATAL MOTHERS

Table-4.1.1: Distribution of antenatal mothers according to their age.

S.NO	AGE(YEARS)	NUMBER (80)	PERCENTAGE (%)
1.	≥20 years	6	7.5
2.	21-25years	36	45
3.	25-30years	24	30
4.	Above 31years	14	17.5
	TOTAL	80	100

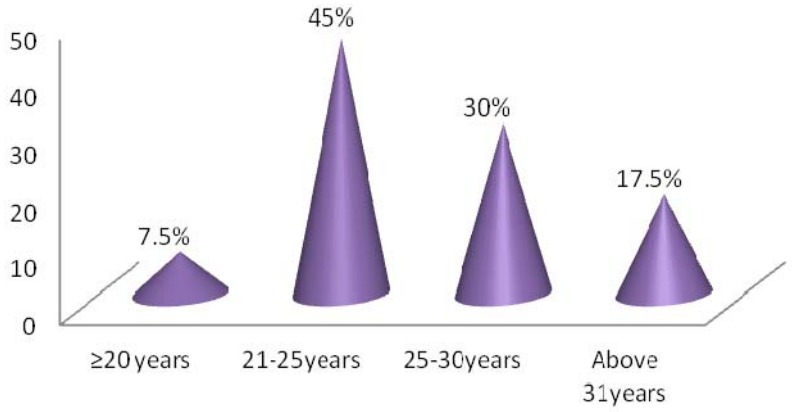


Figure 4.1.1.Distribution of antenatal mothers according to their age.

The data presented in the above table 4.1.1. figure shows that the 36(45%) mothers were in the age group of 21-25 years, 24(30%)mothers were in the age group of 25 to 30 years,14(17.5%)mothers were in the age group of above 31 years and only 6(7.5%) were in the age group of ≥ 21 years.

Table-4.1.2: Distribution of antenatal mothers according to their religion

N=80

S.NO	RELIGION	NUMBER (80)	PERCENTAGE (%)
1	Hindu	65	81.25
2.	Christian	9	11.25
3	Muslim	6	7.5
	TOTAL	80	100

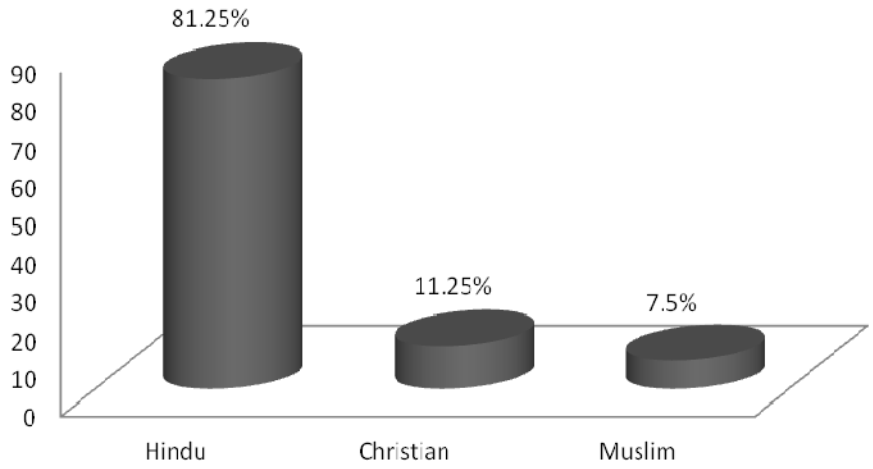


Figure-4.1.2: Distribution of antenatal mothers according to their religion

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their religion. Majority of antenatal mothers 65(81.25%) were Hindus, 9(11.25%) were Christians and only 6(7.5%) belongs to Muslim religion.

Table-4.1.3: Distribution of antenatal mothers according to their education:

N=80

S.NO	EDUCATION	NUMBER (80)	PERCENTAGE (%)
1.	Illiterate	26	32.5
2.	Primary school	28	35
3.	Higher secondary	24	30
4.	Graduate	2	2.5
	TOTAL	80	100

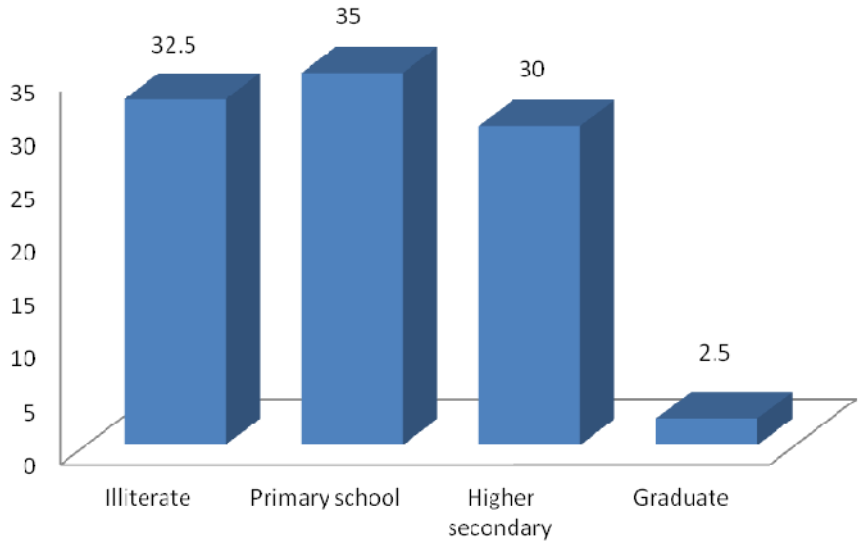


Figure-4.1.3: Distribution of antenatal mothers according to their education:

Table 4.1.3 and figure 4.1.3 presents the distribution of antenatal mothers according to their education. The maximum number of antenatal mothers 28(35%) were studied primary school, 24(30%) were studied Higher secondary school, 26(32.5%) were Illiterate and only 2(2.5%) were completed their graduate.

Table-4.1.4: Distribution of antenatal mothers according to their occupation:

N=80

S.NO	OCCUPATION	NUMBER (80)	PERCENTAGE %
1.	Housewife	42	52.5
2.	Coolie	11	13.75
3.	Private employee	26	32.5
4.	Government employee	1	1.25
	TOTAL	80	100

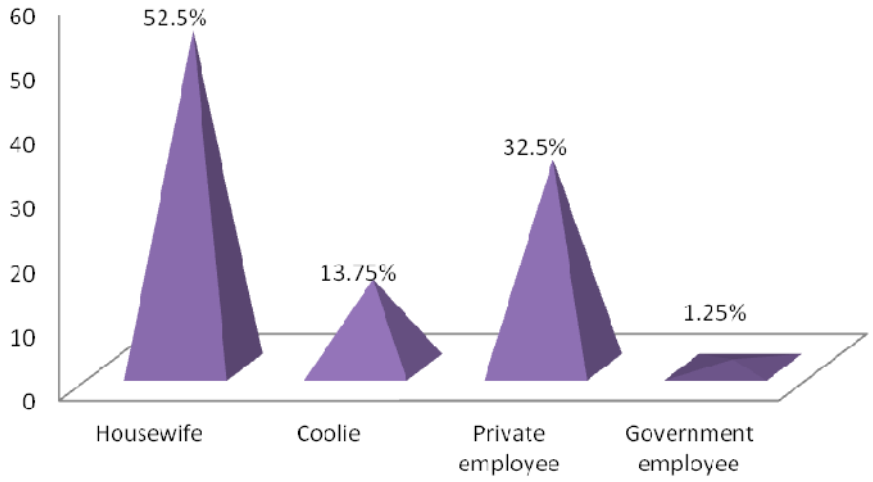


Figure-4.1.4: Distribution of antenatal mothers according to their occupation:

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their occupation. The maximum number of antenatal mothers 42(52.5%) were housewife, 26(32.5%)) were private employee, 11(13.75%) were coolie and only 1(1.25%) were government employee.

Table-4.1.5: Distribution of antenatal mothers according to their family monthly income:

N=80

S.NO	FAMILY INCOME	NUMBER (80)	PERCENTAGE %
1.	Rs≤2000	27	33.75
2.	Rs.2001-3000	25	31.25
3.	Rs.3001-4000	13	16.25
4.	Rs. Above 4001	15	18.75
	TOTAL	80	100

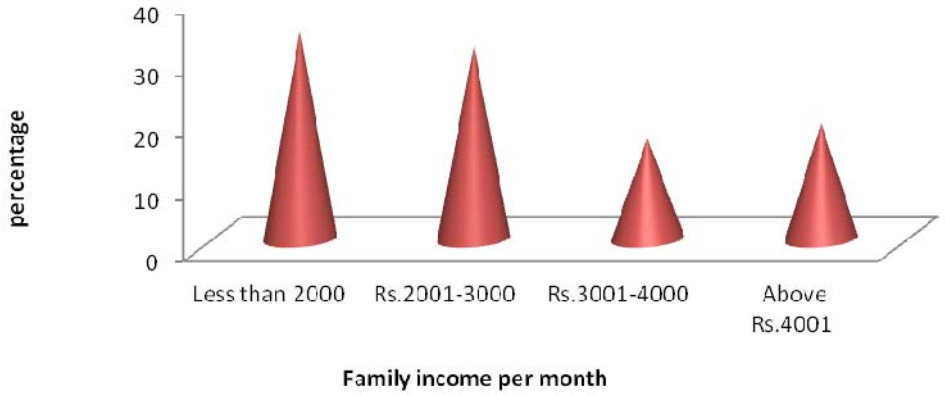


Figure-4.1.5: Distribution of antenatal mothers according to their family monthly income:

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their monthly family income. The maximum number of antenatal mothers 27(33.75%) were in the income of Rs.≤2000/-, 25(31.25%) were in the income of Rs.2001-3000/-, 15(18.75%) were in the income of above Rs.4001/- and 13(16.25%) were in the income of Rs.3001-4000/-.

Table-4.1.6: Distribution of antenatal mothers according to their type of family:

N=80

S.NO	TYPE OF FAMILY	NUMBER (80)	PERCENTAGE %
1.	Nuclear	61	76
2.	Joint	19	24
	Total	80	100

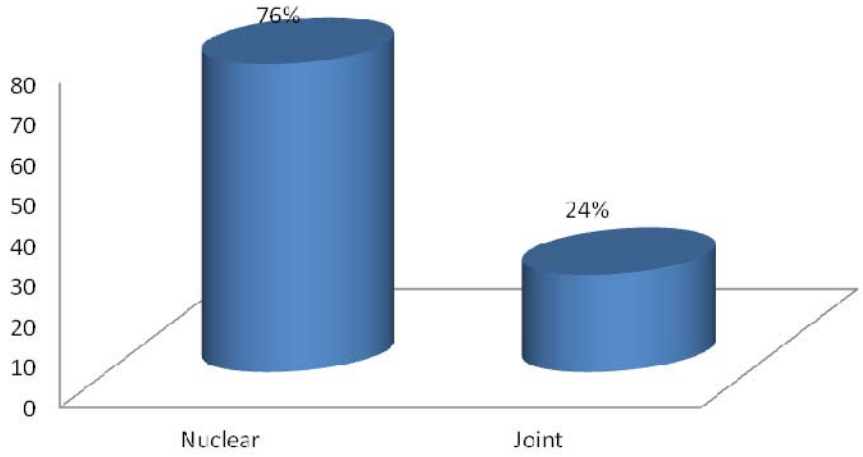


Figure- 4.1.6: Distribution of antenatal mothers according to their type of family:

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their type of family. The majority of antenatal mothers 61(76%) were belongs to nuclear family and 19(24%) were belongs to joint family.

Table-4.1.7: Distribution of antenatal mothers according to their place of residence:

N=80

S.NO	PLACE OF RESIDENCE	NUMBER (80)	PERCENTAGE %
1.	Urban	34	42.5
2.	Rural	46	57.5
	Total	80	100

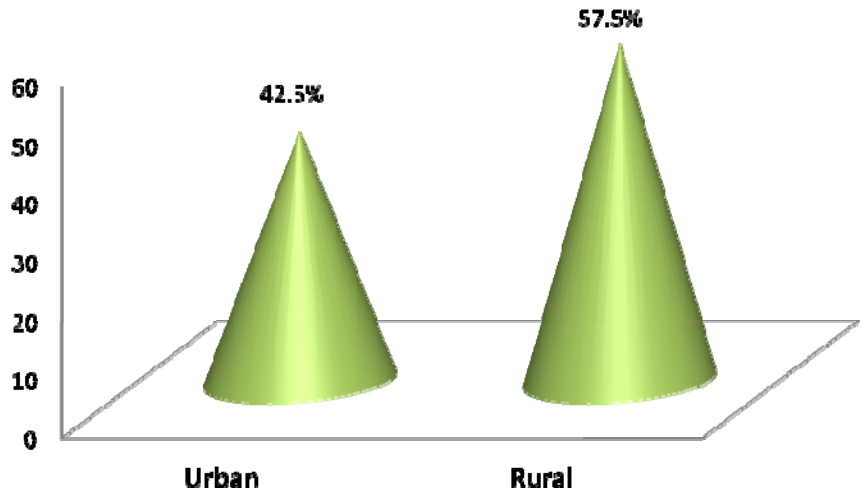


Figure-4.1.7: Distribution of antenatal mothers according to their place of residence:

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their place of residence. The majority of antenatal mothers 34(42.5%) were resident of urban area and 46(57.5%) were from rural area.

Table-4.1.8: Distribution of antenatal mothers according to their trimester of pregnancy:

N=80

S.NO	Trimester of Pregnancy	NUMBER (80)	PERCENTAGE %
1.	First trimester	22	27.5
2.	Second trimester	28	35
3.	Third trimester	30	37.5
	Total	80	100

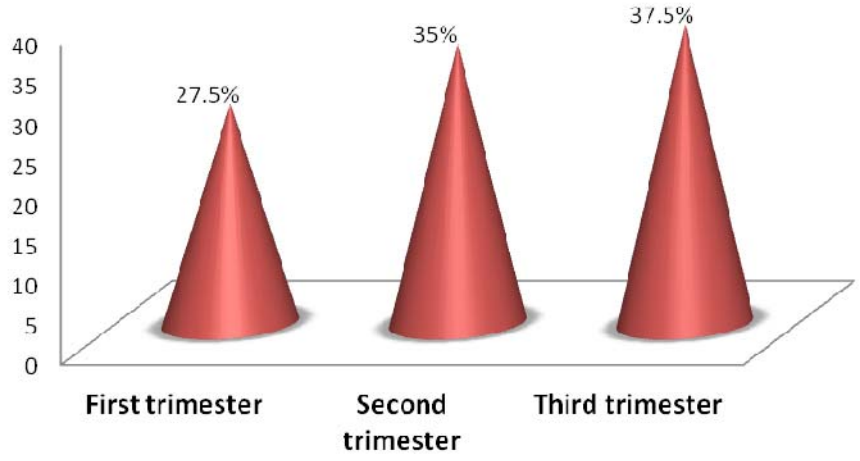


Figure-4.1.8: Distribution of antenatal mothers according to their trimester of pregnancy:

Table-4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their trimester of pregnancy. The maximum number of antenatal mothers 30(37.5%) were in third trimester, 28(35%) were belongs to second trimester and 22(27.5%) were in first trimester.

Table-4.1.9: Distribution of antenatal mothers according to their Tetanus toxiod immunization status:

N=80

S.NO	TETANUS TOXIOD IMMUNIZATION STATUS	NUMBER (80)	PERCENTAGE %
1.	Yes	70	87.5
2.	No	10	12.5
	Total	80	100

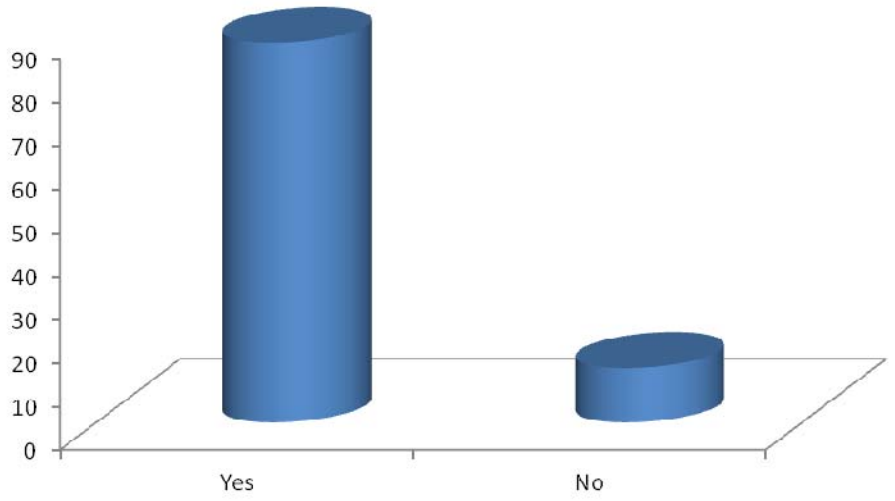


Figure-4.1.9: Distribution of antenatal mothers according to their Tetanus toxiod immunization status:

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their tetanus toxoid immunization status. The majority of antenatal mothers 70(87.5%) were received tetanus toxoid immunization and only 10(12.5%) were not received tetanus toxoid immunization.

Table-4.1.10: Distribution of antenatal mothers according to their source of information:

N=80

S.NO	SOURCE OF INFORMATION	NUMBER (80)	PERCENTAGE %
1.	Health care worker	27	33.75
2.	Family members	53	66.25
3.	Newspaper	-	-
4.	Television	-	-
	Total	80	100

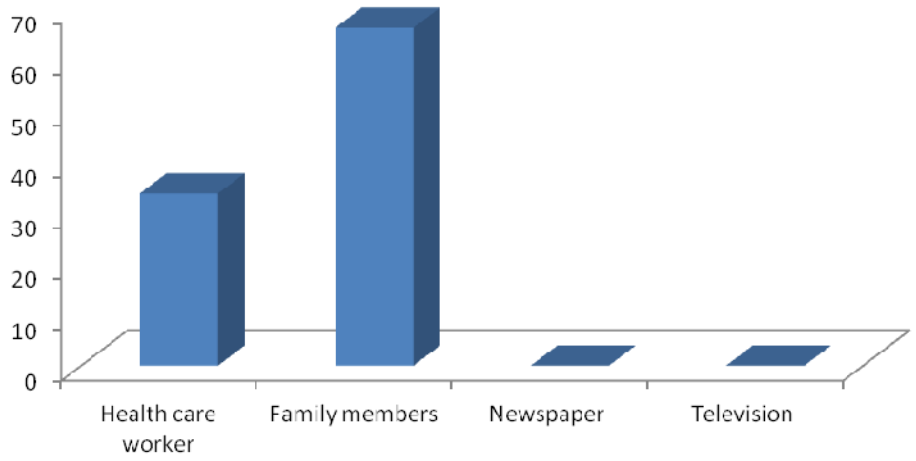


Figure-4.1.10: Distribution of antenatal mothers according to their source of information:

Table 4.1.2 and figure 4.1.2 presents the distribution of antenatal mothers according to their source of information. The majority of antenatal mothers 27(33.75%) have received information regarding neonatal infection from health care workers, 53(66.25%) have received from family members; none of them have received information from newspaper and television.

SECTION-II

ASSESSMENT OF KNOWLEDGE ON SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS

Table-4.2.1: Level of knowledge of antenatal mothers on selected early neonatal infections

Knowledge level	Respondent	
	Number	percentage
Inadequate (<50%)	74	92.5
Moderate (50%-75%)	6	7.5
Adequate (>75%)	0	0
Total	80	100

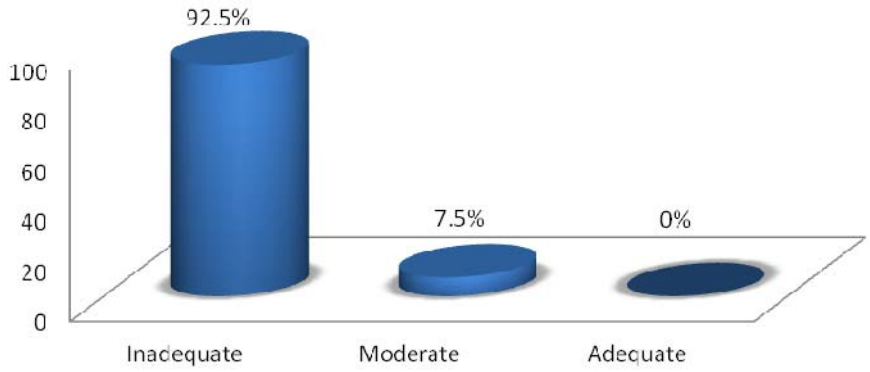


Figure-4.2.1: Level of knowledge of antenatal mothers on selected early neonatal infections

Table 4.2.1 and figure reveal the knowledge level of antenatal mothers regarding selected early neonatal infections. The investigator classified the level of knowledge into three. Among 80 antenatal mothers 74(92.5%) were belongs to inadequate knowledge, 6(7.5%) of them had moderate knowledge and none of them had adequate knowledge.

Table-4.2.2: Knowledge Score Of Selected Early Neonatal Infections Among Antenatal Mothers:

N=80

Aspect	Max. Score	Range Score	Respondent Knowledge		
			Mean	Mean %	SD%
Overall knowledge	76	11-41	24.125	31.7	7.65

Table.4.2.2. shows the overall knowledge score of antenatal mothers regarding selected early neonatal infections. The overall knowledge score of antenatal mothers on selected early neonatal infections was rated for the maximum possible score of 76.It ranged 11-41 with mean score of 24.125% and standard deviation percentage of 7.65%.The mean score percentage of overall knowledge was 31.7%.

Table-4.2.3: Aspect wise knowledge level of selected early neonatal infections among antenatal mother

N=80

S. No	Aspect of Knowledge Level	Knowledge level					
		Inadequate (<50%)		Moderate (50%-75%)		Adequate (>75%)	
		No	%	No	%	No	%
A1	General knowledge on Infection and Newborn	71	88.75	9	11.25	-	-
A2	Neonatal sepsis	74	92.5	6	7.5	-	-
A3	Neonatal meningitis	76	95	4	5	-	-
A4	Neonatal tetanus	61	76.25	19	23.75	-	-
A5	omphalitis	70	87.5	10	12.5	-	-
A6	Ophthalmia neonatrum	61	76.25	19	23.75	-	-
A7	Neonatal hepatitis	43	53.75	37	46.25	-	-
A8	Congenital herpes simplex virus infection	76	95	4	5	-	-
A9	Overall knowledge	74	92.5	6	7.5	-	-

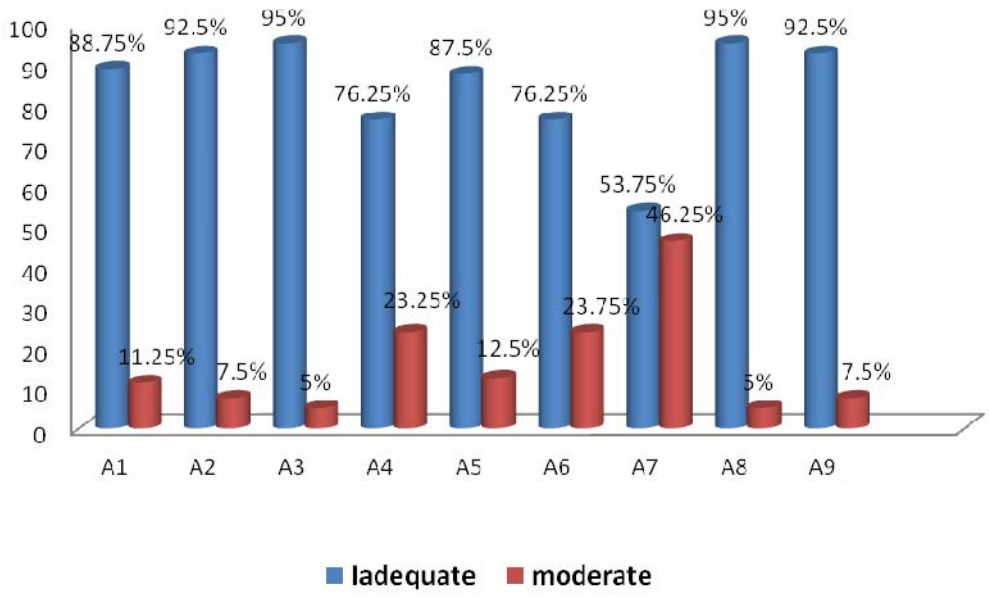


Figure-4.2.3: Aspect wise knowledge level of selected early neonatal infections among antenatal mothers:

A1 - General knowledge on Infection and Newborn

A2 - Neonatal sepsis

A3 - Neonatal meningitis

A4 - Neonatal tetanus

A5 - Neonatal omphalitis

A6 -Ophthalmia Neonatrum

A7 - Neonatal hepatitis

A8 - Congenital herpes simplex virus infection

A9 -Overall knowledge

Table 4.2.3 and figure 4.2.3 depicts that aspect wise knowledge level of antenatal mothers regarding selected early neonatal infections.

The overall knowledge level of antenatal mothers 74(92.5%) were having inadequate knowledge and 6 (7.5%) were having moderate knowledge.

General knowledge about selected early neonatal infections 71(88.75%) number of antenatal mothers had inadequate knowledge and 9(11.25%) had moderate knowledge. Similarly in other areas, 74(92.5%) numbers of antenatal mothers had inadequate knowledge about neonatal sepsis and 6(7.5%) of them had moderate knowledge. The 76(95%) number of antenatal mothers had inadequate knowledge about neonatal meningitis and 4(5%) of them had moderate knowledge. The mother knowledge about neonatal tetanus 61(76.25%) number of antenatal mothers had inadequate knowledge and 19(23.75%) of them had moderate knowledge. The mother knowledge about neonatal omphalitis 70(87.5%) number of antenatal mothers had inadequate knowledge and 10(12.5%) of them had moderate knowledge. The 61(76.25%) number of antenatal mothers had inadequate knowledge about ophthalmia neonatrum and 19(23.75%) of them had moderate knowledge. The 43(53.75%) number of antenatal mothers had inadequate knowledge about neonatal hepatitis and 37(46.25%) of them had moderate knowledge and the 76(95%) number of antenatal mothers had inadequate knowledge about congenital herpes simplex virus infection and 4(5%) of them had moderate knowledge. Most of them had inadequate knowledge about selected early neonatal infections.

Table-4.2.4: Aspect wise knowledge score of selected early neonatal infections among antenatal mothers

N=80

S. No	Aspects Of knowledge	Max. score	Range score	Respondent knowledge		
				Mean	Mean %	SD%
A1	General knowledge on Infection and Newborn	9	1-6	2.6	28.8	1.39
A2	Neonatal sepsis	12	1-7	3.77	31.4	1.03
A3	Neonatal meningitis	12	2-7	3.55	29.58	1.14
A4	Neonatal tetanus	7	0-6	2.22	31.78	1.61
A5	omphalitis	9	0-5	2.725	30.2	1.34
A6	Ophthalmia neonatrum	8	0-6	2.41	30.15	1.71
A7	Neonatal hepatitis	8	0-6	3.16	39.5	1.51
A8	Congenital herpes simplex virus infection	11	1-7	3.67	33.4	1.08
A9	Overall knowledge	76	11-41	24.125	31.7	7.65

The above table 4.2.4. and figure 4.2.4. Shows the outcome of descriptive measures such as mean, standard deviation, range and mean score percentage of overall knowledge on selected early neonatal infections among antenatal mothers. The knowledge was assessed in different areas about selected early neonatal infections.

General knowledge on infection and newborn, represents the mean score percentage of knowledge was 28.8%, mean of 2.6 and standard deviation 1.39 as variations in their knowledge. The mean score percentage of knowledge regarding neonatal sepsis was 31.4%, mean was 3.77 and standard deviation was 1.03. The mean score percentage of knowledge regarding neonatal meningitis was 29.58%, mean was 3.55 and standard deviation was 1.14. The mean score percentage of knowledge regarding neonatal tetanus was 31.78%, mean was 2.22 and standard deviation was 1.61. The mean score percentage of knowledge regarding neonatal omphalitis was 30.2%, mean was 2.725 and standard deviation was 1.34.

The mean score percentage of knowledge regarding ophthalmia neonatrum was 30.15%, mean was 2.41 and standard deviation was 1.71. The mean score percentage of knowledge regarding neonatal hepatitis was 39.5%, mean was 3.16 and standard deviation was 1.51. The mean score percentage of knowledge regarding congenital herpes simplex virus infection was 33.4%, mean was 3.67 and standard deviation was 1.08.

SECTION-III

ASSOCIATION OF KNOWLEDGE ON SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS

Table-4.3.1: Association of knowledge on selected early neonatal infections with demographic variables

N=80

S. No	Variables	Category	Knowledge				Chi-square value
			Inadequate		Moderate		
			No (74)	%	No (6)	%	
1	Age	≤25	39	52.70	3	50	0.016^{NS}
		>25	35	47.30	3	50	
2.	Religion	Hindu	62	83.78	3	50	4.158*
		others	12	16.21	3	50	
3.	Education	Illiterate and primary school	53	71.66	1	16.66	7.6403*
		Higher secondary and graduate	21	28.3	5	83.3	
4	Occupation	House wife	38	51.35	4	66.66	0.521^{NS}
		Others	36	48.65	2	33.34	
5.	Monthly family income	≤3000	46	62.16	5	83.33	1.075^{NS}
		>3000	28	37.84	1	16.67	
6.	Type of family	Nuclear	59	79.72	2	33.3	6.59*
		Joint	15	20.27	4	66.7	
7.	Place of residence	Urban	30	40.5	4	66.66	1.550^{NS}
		Rural	44	59.5	2	33.34	
8.	Trimester of pregnancy	≤28 weeks	25	33.78	5	83.33	1.201^{NS}
		>28 weeks	29	66.22	1	16.67	

9.	Tetanus toxiod immunization status	Yes	65	52.8	5	83.3	0.1028^{NS}
		No	9	12.16	1	16.6	
10	Source of information	Health care workers	22	29.7	5	83.33	7.131*
		Others	52	70.2	1	16.67	

***significant at 5% level, (P<0.05), 1df =3.84. NS= Not significant**

In view of answering the objectives of identifying the association between the knowledge and socio demographic variables of antenatal mothers chi-square test was carried out and the result shown in the above table 4.3.1.the result shows that religion, education, type of family and source of information were significantly associated with the knowledge of antenatal mothers regarding selected early neonatal infections significant at 5% level. Age, occupation, monthly family income, place of residence, trimester of pregnancy, tetanus toxoid immunization status and source of information were not significantly associated with the knowledge on selected early neonatal infections among antenatal mothers.

DISCUSSION

The study is focused an assessing the knowledge on selected early neonatal infections among antenatal mothers. The discussion is described under the following headings.

- Socio demographic variables of antenatal mothers
- Knowledge level on selected early neonatal infections among antenatal mothers
- Knowledge score of selected early neonatal infections among antenatal mothers
- Aspect wise knowledge level on selected early neonatal infections among antenatal mothers
- Aspect wise knowledge score of selected early neonatal infections among antenatal mothers
- Association between knowledge on selected early neonatal infections among antenatal mothers with selected demographic variables

Socio demographic variables of antenatal mothers:

- In the present study the maximum number of subjects 36(45%) were in the age group of 21-25 years, 24(30%)mothers were in the age group of 25 to 30 years,14(17.5%)mothers were in the age

group of above 31 years and only 6(7.5%) were in the age group of below 20 years.

- ❖ Out of 80 antenatal mothers, majority 65(81.25%) were Hindus, 9(11.25%) were Christians and only 6(7.5%) belongs to Muslim religion.
- ❖ The maximum number of antenatal mothers 28(35%) were studied primary school, 24(30%) were studied Higher secondary school, 26(32.25%) were Illiterate and only 2(2.5%) were completed their graduate.
- ❖ The maximum number of antenatal mothers 42(52.5%) were housewife, 26(32.5%)) were private employee, 11(13.75%) were coolie and only 1(1.25%) were government employee.
- ❖ The maximum number of antenatal mothers 27(33.75%) were in the income of Rs.≤2000/-, 25(31.25%) were in the income of Rs.2001-3000/-, 15(18.75%) were in the income of above Rs.4001/- and 13(16.25%) were in the income of Rs.3001-4000/-.
- ❖ The majority of antenatal mothers 61(76%) were belongs to nuclear family and 19(24%) were belongs to joint family.
- ❖ The majority of antenatal mothers 34(42.4%) were residing of urban area and 46(57.5%) were from rural area.

- The maximum number of antenatal mothers 30(37.5%) were in third trimester, 28(35%) were belongs to second trimester and 22(27.5%) were in first trimester.
- The majority of antenatal mothers 70(87.5%) have received tetanus toxoid immunization and only 10(12.5%) mothers not received tetanus toxoid immunization.
- The majority of antenatal mothers 27(33.75%) have received information regarding neonatal infection from health care workers, 53(66.25%) have received from family members; none of them have received information from newspaper and television.

Knowledge level of antenatal mothers on selected early neonatal infections:

Level of knowledge on antenatal mothers regarding selected early neonatal infections are divided into three categories

Inadequate - Below 50% score

Moderate - 50-75% score

Adequate - >75%score

Result indicates that 74(92.5%) were belongs to inadequate knowledge, 6(7.5%) were moderate knowledge and none of them had adequate knowledge regarding selected early neonatal infections.

Knowledge score of antenatal mothers on selected early neonatal infections

Result revealed that, overall knowledge score of Antenatal mothers on selected early neonatal infections was rated for the maximum possible score of 76.It ranged 11-41 with mean score of 24.125% and standard deviation Percentage of 7.65%.The means score percentage of overall knowledge was 31.7%.

Aspect wise knowledge level on selected early neonatal infections among antenatal mothers

General knowledge about selected early neonatal infections 71(88.75%) number of antenatal mothers had inadequate knowledge and 9(11.25%) had moderate knowledge. Similarly in other areas, 74(92.5%) numbers of antenatal mothers had inadequate knowledge about neonatal sepsis and 6(7.5%) of them had moderate knowledge. The 76(95%) number of antenatal mothers had inadequate knowledge about neonatal meningitis and 4(5%) of them had moderate knowledge. The mother knowledge about neonatal tetanus 61(76.25%) mothers had inadequate knowledge and 19(23.75%) of them had moderate knowledge. The mother knowledge about neonatal omphalitis 70(87.5%) mothers had inadequate knowledge and 10(12.5%) of them had moderate knowledge. The 61(76.25%) number of antenatal mothers had inadequate knowledge

about ophthalmia neonatrum and 19(23.75%) of them had moderate knowledge. The 43(53.75%) number of antenatal mothers had inadequate knowledge about neonatal hepatitis and 37(46.25%) of them had moderate knowledge and the 76(95%) number of antenatal mothers had inadequate knowledge about congenital herpes simplex virus infection and 4(5%) of them had moderate knowledge. Most of them had inadequate knowledge about selected early neonatal infections

Aspect wise knowledge score on selected early neonatal infections among antenatal mothers

General knowledge on infection and newborn, represents the mean score percentage of knowledge was 28.8%, mean of 2.6 and standard deviation 1.39 as variations in their knowledge. The mean score percentage of knowledge regarding neonatal sepsis was 31.4%, mean was 3.77 and standard deviation was 1.03. The mean score percentage of knowledge regarding neonatal meningitis was 29.58%, mean was 3.55 and standard deviation was 1.14.

The mean score percentage of knowledge regarding neonatal tetanus was 31.78%, mean was 2.22 and standard deviation was 1.61. The mean score percentage of knowledge regarding neonatal omphalitis was 30.2%, mean was 2.725 and standard deviation was 1.34.

The mean score percentage of knowledge regarding ophthalmia neonatrum was 30.15%, mean was 2.41 and standard deviation was 1.71. The mean score percentage of knowledge regarding neonatal hepatitis was 39.5%, mean was 3.16 and standard deviation was 1.51. The mean score percentage of knowledge regarding congenital herpes simplex virus infection was 33.4%, mean was 3.67 and standard deviation was 1.08.

Association between knowledge on selected early neonatal infections among antenatal mothers with selected demographic variables:

The present study reveals that knowledge on selected early neonatal infections was influenced by the socio demographic variables of the antenatal mothers such as religion, education, type of family and source of information. Age, occupation, monthly family income, place of residence, trimester of pregnancy and tetanus toxoid immunization status were not significantly associated with the knowledge on selected early neonatal infections among antenatal mothers.

SUMMARY:

The chapter deals with analysis and interpretation of data collected from 80 antenatal mothers in Government Head Quarters Hospital, Erode regarding selected early neonatal infections.

CHAPTER-V

SUMMARY, FINDINGS, CONCLUSION, IMPLICATION AND RECOMMENDATION

SUMMARY:

The primary aim of this study is to assess the knowledge on selected early neonatal infections among antenatal mothers in Government Head Quarters Hospital, Erode.

OBJECTIVES OF THE STUDY:

- To assess the knowledge of antenatal women regarding selected early neonatal infections.
- To determine the relationship between knowledge and demographic variables such as age, religion, educational status, occupation, family income, type of family, place of residence, trimester, immunization status and source of information.
- To prepare a health education package on selected early neonatal infections based in identified needs of the antenatal mothers.

Based on the literature reviewed and with the guidance from various subjects experts, the investigator developed the conceptual framework methodology for the study and a data analysis plan with most

effective and efficient way. The conceptual framework adopted for this present study was based on health promotion model.

The research approach adopted was descriptive in nature. The sample consists of 80 antenatal mothers in government head quarters hospital, erode. Samples were selected by convenient sampling method. The instrument used for data collection was a semi structured interview schedule. In the month of October- 2011, the data was collected.

- The knowledge regarding selected early neonatal infections among antenatal mothers were assessed and compared with socio demographic variables such as age, religion, educational status, occupation, family income, type of family, place of residence trimester, immunization status and source of information by using descriptive as well as inferential statistics.

MAJOR FINDINGS OF THE STUDY:

Finding related to selected socio demographic variables:

- In the present study the maximum number of subjects 36(45%) were in the age group of 21-25 years, 24(30%)mothers were in the age group of 25 to 30 years,14(17.5%)mothers were in the age group of above 31 years and only 6(7.5%) were in the age group of below 20 years.

- Out of 80 antenatal mothers, majority 65(81.25%) were Hindus, 9(11.25%) were Christians and only 6(7.5%) belongs to Muslim religion.
- The maximum number of antenatal mothers 28(35%) were studied primary school, 24(30%) were studied Higher secondary school, 26(32.25%) were Illiterate and only 2(2.5%) were completed their graduate.
- The maximum number of antenatal mothers 42(52.5%) were housewife, 26(32.5%)) were private employee, 11(13.75%) were coolie and only 1(1.25%) were government employee.
- The maximum number of antenatal mothers 27(33.75%) were in the income of Rs.≤2000/-, 25(31.25%) were in the income of Rs.2001-3000/-, 15(18.75%) were in the income of above Rs.4001/- and 13(16.25%) were in the income of Rs.3001-4000/-.
- The majority of antenatal mothers 61(76%) were belongs to nuclear family and 19(24%) were belongs to joint family.
- The majority of antenatal mothers 34(42.4%) were residing of urban area and 46(57.5%) were from rural area.
- The maximum number of antenatal mothers 30(37.5%) were in third trimester, 28(35%) were belongs to second trimester and 22(27.5%) were in first trimester.

- ❖ The majority of antenatal mothers 70(87.5%) have received tetanus toxoid immunization and only 10(12.5%) mothers not received tetanus toxoid immunization.
- ❖ The majority of antenatal mothers 27(33.75%) have received information regarding neonatal infection from health care workers, 53(66.25%) have received from family members, none of them have received information from newspaper and television.

Findings related to knowledge level of antenatal mothers on selected early neonatal infections

Result indicates that 74(92.5%) antenatal mothers had inadequate knowledge, 6(7.5%) of them had moderate knowledge and none of them had adequate knowledge regarding selected early neonatal infections.

Findings related to knowledge score of antenatal mothers on selected early neonatal infections

Result revealed that, overall knowledge score of antenatal mothers on selected early neonatal infections was rated for the maximum possible score of 76.It ranged 11-41 with mean score of 24.125% and standard deviation percentage of 7.65%.The mean score percentage of overall knowledge was 31.7%.

Findings related to aspect wise knowledge level on selected early neonatal infections among antenatal mothers:

In the present study reveals that general knowledge about selected early neonatal infections 71(88.75%) number of antenatal mothers had inadequate knowledge and 9(11.25%) had moderate knowledge. Similarly in other areas, 74(92.5%) numbers of antenatal mothers had inadequate knowledge about neonatal sepsis and 6(7.5%) of them had moderate knowledge. The 76(95%) number of antenatal mothers had inadequate knowledge about neonatal meningitis and 4(5%) of them had moderate knowledge. The mother knowledge about neonatal tetanus 61(76.25%) mothers had inadequate knowledge and 19(23.75%) of them had moderate knowledge. The mother knowledge about neonatal omphalitis 70(87.5%) mothers had inadequate knowledge and 10(12.5%) of them had moderate knowledge. The 61(76.25%) number of antenatal mothers had inadequate knowledge about ophthalmia neonatrum and 19(23.75%) of them had moderate knowledge. The 43(53.75%) number of antenatal mothers had inadequate knowledge about neonatal hepatitis and 37(46.25%) of them had moderate knowledge and the 76(95%) number of antenatal mothers had inadequate knowledge about congenital herpes simplex virus infection and 4(5%) of them had moderate knowledge. Most of them had inadequate knowledge about selected early neonatal infections

Findings related to aspect wise knowledge score on selected early neonatal infections among antenatal mothers:

General knowledge on infection and newborn, represents the mean score percentage of knowledge was 28.8%, mean of 2.6 and standard deviation 1.39 as variations in their knowledge. The mean score percentage of knowledge regarding neonatal sepsis was 31.4%, mean was 3.77 and standard deviation was 1.03. The mean score percentage of knowledge regarding neonatal meningitis was 29.58%, mean was 3.55 and standard deviation was 1.14.

The mean score percentage of knowledge regarding neonatal tetanus was 31.78%, mean was 2.22 and standard deviation was 1.61. The mean score percentage of knowledge regarding neonatal omphalitis was 30.2%, mean was 2.725 and standard deviation was 1.34.

The mean score percentage of knowledge regarding ophthalmia neonatrum was 30.15%, mean was 2.41 and standard deviation was 1.71. The mean score percentage of knowledge regarding neonatal hepatitis was 39.5%, mean was 3.16 and standard deviation was 1.51. The mean score percentage of knowledge regarding congenital herpes simplex virus infection was 33.4%, mean was 3.67 and standard deviation was 1.08.

Findings related to association between knowledge on selected early neonatal infections among antenatal mothers with selected demographic variables:

The present study reveals that knowledge on selected early neonatal infections was influenced by the socio demographic variables of the antenatal mothers such as religion, education, type of family and source of information. Age, occupation, monthly family income, place of residence, trimester of pregnancy and tetanus toxoid immunization status were not significantly associated with the knowledge on selected early neonatal infections among antenatal mothers.

CONCLUSION:

Overall knowledge of antenatal mothers regarding selected early neonatal infections was inadequate. Since the present study revealed that such religion, education, type of family and source of information had influenced on knowledge of antenatal mothers. Other variables such as Age, occupation, monthly family income, place of residence, trimester and tetanus toxoid immunization status had not influenced on the knowledge of antenatal mothers.

So the health care personnel should take the responsibility to improve the knowledge of mothers regarding selected early neonatal infections.

IMPLICATION:

The findings of the study have implication in different branches of nursing profession (i.e.) nursing service, nursing education, nursing administration and nursing research. By assessing the knowledge of antenatal mothers on early neonatal infections, we get a clear picture regarding steps to taken in all these fields to improve the knowledge of antenatal mothers about the early neonatal infections.

Nursing Education:

Early neonatal infections are considered major health problem among neonate. The nursing students must be able to identify the needs of early neonatal infections. They must be given special instruction to teach the antenatal mothers about selected early neonatal infections. Mass health education programs may be conducted related to selected early neonatal infections at frequent intervals in the hospital, outpatient department and community.

Nursing education is a means in which nurses are present for practice in various settings. Thus the study result can be used as an informative illustration for student, who can effectively able to identify the neonatal infections. It will help the student to provide proper management with minimum resources in hospital and community settings.

The institute of nursing education should pay an active role in conducting in-service education programmes, workshops and continuing programmes to educate nursing personnel of the hospital on selected early neonatal infections. Nurses are equipped with up to date knowledge on selected early neonatal infections and also it should be included in the curriculum.

Nursing Service:

Nursing and other health team members have the responsibility to promote health information among the public. A midwifery and community health nurse must take initiative steps to educate the antenatal mothers on early neonatal infections. Health education session may be organized to improve antenatal mother's knowledge regarding early neonatal infections.

Nursing Research:

The study revealed that there is a lack of knowledge regarding early neonatal infections. It emphasis a great need for research in awareness and effectiveness of teaching programme on early neonatal infections among antenatal mothers.

Nursing Administration:

Health personnel are playing vital role in improving the nursing practices. Nursing personnel should be prepared to take leadership in educating the nurses. Creating the knowledge regarding early neonatal

infections can be brought without any additional budget or other resources and with existing number of personnel. Through multiple roles as care givers, educators and case managers, nurse can identify the level of knowledge regarding early neonatal infections among antenatal mothers and set priorities to achieve the realistic goals. Staff development programme on prevention of neonatal infections can be conducted for all staff nurses.

The study shows that antenatal mothers need more education on prevention of neonatal infections. This can be achieved by proper health education with help of the health care personnel.

RECOMMENDATIONS:

- A comparative study can be conducted to assess knowledge regarding prevention of neonatal infections among antenatal mothers residing in selected urban and rural area.
- A quasi experimental study can be conducted with a structure teaching programme on prevention of neonatal infections among antenatal mothers.
- A study can be conducted to assess the knowledge of postnatal mothers regarding prevention of neonatal infection.
- A study can be conducted to assess the knowledge of selected early neonatal infections among infected mothers

- A comparative study can be conducted to assess knowledge regarding prevention of neonatal infections among selected literate and illiterate antenatal mothers.
- A study can be conducted to assess the knowledge and attitude of selected early neonatal infections among postnatal mothers
- A study can be conducted to assess the knowledge of selected early neonatal infections among staff nurses.

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APPENDIX - A

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From

Ms.REVATHI.K

II Year M.Sc nursing, (Speciality-maternity health nursing)

Vivekanandha College Of Nursing,

Elayampalayam,

Tiruchengode.

To

The Medical Superintendent

Government Head Quarters Hospital, Erode,

Erode.

Sub: letter seeking permission to conduct the study.

I am Ms.REVATHI.K II year M.Sc., Nursing student (Maternity health nursing), Vivekanandha College of Nursing, Elayampalayam. I have undertaken a thesis on the topic **"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE."**

OBJECTIVES OF THE STUDY

- To assess the knowledge of antenatal women regarding selected early neonatal infections
- To determine the relationship between knowledge and demographic variables such as age, religion, educational status, occupation, family income, type of family, place of residence, trimester, immunization status and source of information..
- To prepare the health education package on selected early neonatal infections based in identified needs of the antenatal mother

I would request you to kindly grant me permission to conduct the study in your hospital.

Thanking you

Place: Yours faithfully,

Date:

REVATHI.K

APPENDIX - B

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

From

The Medical Superintendent
Government Head Quarters Hospital, Erode,
Erode.

To

Ms.REVATHI.K
II Year M.Sc nursing, (Speciality-Maternity health nursing)
Vivekanandha College Of Nursing,
Elayampalayam, Tiruchengode

Sub: Letter granting permission to conduct the study.

With reference to the above letter, it has been formed that Ms.REVATHI.K, II year M.Sc., nursing student (Maternity health nursing) Vivekanandha College of Nursing, Elayampalayam is allowed to conduct the study on the above stated topic in our hospital. Also she has been informed that she will not disturb the regular and routine works of the hospital and OPD.

With Thanks,

Place: Yours Sincerely,

Date: The Medical Superintendent
Government Head Quarters Hospital,
Erode.

APPENDIX – C

LETTER SEEKING CONSENT FROM THE PARTICIPANTS

Dear participants,

I, Ms.REVATHI.K, II year M.Sc. Nursing student, Vivekanandha College of Nursing, Elayampalayam, am interested to know more about knowledge of mothers regarding selected early neonatal infections. The information which you are giving will be kept confidential and will be used only for this study. Please participate in this programme by answering my questions honestly and states your willingness to participate in this study.

Thanking you,

Yours faithfully

(REVATHI.K)

CONSENT FROM THE PARTICIPANTS

I understand the purpose of this study and I am willing to participate in this study.

Signature:

APPENDIX – D

LETTER FOR VALIDATION OF THE TOOL

FROM

Ms.REVATHI.K

II Year M.Sc nursing, (Speciality-maternity health nursing)

Vivekanandha College Of Nursing,

Elayampalayam, Tiruchengode.

TO

THROUGH:

PRINCIPAL,

VIVEKANANADHA COLLEGE OF NURSING,

ELAYAPALAYAM, AND NAMAKKAL DISTRICT.

Subject: **Request for the content validation of the tool.**

Respected Sir/ madam,

I am REVATHI.K, II year M.Sc., Nursing student, Vivekanandha College of Nursing, Elayampalayam, would have taken a project on "**"A study to assess the knowledge regarding selected early neonatal infections among antenatal mothers attending the antenatal OPD in Government Head Quarters Hospital, Erode" to be submitted to the Tamilnadu Dr.M.G.R.Medical University as a partial requirement for master degree of Nursing.**

OBJECTIVES OF THE STUDY

- To assess the knowledge of antenatal women regarding selected early neonatal infections
- To determine the relationship between knowledge and demographic variables such as age, religion, educational status, occupation, family income, type of family, place of residence, trimester, immunization status and source of information.
- To prepare the health education package on selected early neonatal infections based in identified needs of the antenatal mother

To achieve the above mentioned objectives, I have prepared a semi structured interview schedule. I request you to kindly give your valuable opinion and suggestions. Kindly validate and certify the tool.

Thanking you

Place: Yours faithfully,

Date:

REVATHI.K

SECTION-A

SOCIO –DEMOGRAPHIC VARIABLES

1. Code no [ ]

2. Age of mother

    2.1. ≤ 20 years [ ]

    2.2. 21-25year [ ]

    2.3. 26-30years [ ]

    2.4. More than 31 years [ ]

3. Religion

    3.1. Hindu [ ]

    3.2. Christian [ ]

    3.3 Muslim [ ]

4. Educational status

    4.1. Illiterate [ ]

    4.2. Primary school [ ]

    4.3. Higher secondary [ ]

    4.4. Graduate [ ]

5. Occupation

    5.1. House wife [ ]

    5.2. Coolie [ ]

    5.3. Private employee [ ]

    5.4. Government employee [ ]

6. Family income

6.1. Less than rs.2000/month [ ]

6.2. Rs.2001-3000/month [ ]

6.3. Rs.3001-4000/month [ ]

6.4. Above rs.4001/month [ ]

7. Type of family

7.1. Nuclear [ ]

7.2. Joint [ ]

8. Place of residence

8.1. Urban [ ]

8.2. Rural [ ]

9. Trimester of pregnancy

9.1. First trimester [ ]

9.2. Second trimester [ ]

9.3. Third trimester [ ]

10. Have you got tetanus toxoid immunization?

10.1. Yes [ ]

10.2. No [ ]

11. Source of information on neonatal infection

11.1. Health care worker [ ]

11.2. Neighbour [ ]

11.3. Newspaper [ ]

11.4. Television [ ]

SECTION-B

A. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING INFECTION AND NEWBORN

1. What is meant by infection?

   1.1. Inflammation of organ [ ]

   1.2. Invasion and multiplication of microorganism [ ]

   1.3. Inflammation of tissue [ ]

   1.4. Produce of antigen in the body [ ]

2. What is early neonatal period?

   2.1. Birth to 7 days [ ]

   2.2. After 28 days of birth to 6 months [ ]

   2.3. 6months to 1year of age [ ]

   2.4. Above 1year child [ ]

3. What are the common early neonatal infections?

   3.1. Neonatal sepsis [ ]

   3.2. Neonatal meningitis [ ]

   3.3. Neonatal tetanus [ ]

   3.4. Omphalitis [ ]

   3.5. Ophthalmia neonatrum [ ]

   3.6. Neonatal hepatitis B virus infection [ ]

   3.7. Herpes simplex virus infection [ ]

B. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING NEONATAL SEPSIS

4. What is neonatal sepsis?

4.1. Infection of whole body of the newborn [ ]

4.2. Infection of lymphnode of the newborn [ ]

4.3. Infection of muscles of the newborn [ ]

4.3. Infection of nerves of the newborn [ ]

5. What are the causes and risk factors of early neonatal sepsis?

5.1. Low birth weight [ ]

5.2. Invasive procedures [ ]

5.3. Intravenous infusion [ ]

5.4. Bottle feeding [ ]

6. What are the signs and symptoms of neonatal sepsis?

6.1. Respiratory distress like apnoea [ ]

6.2. Fever [ ]

6.3. Vomiting [ ]

6.4. Loss of weight [ ]

7. What are the measures available to treat the neonatal sepsis?

7.1. Maintaining airway, breathing and circulation [ ]

7.2. Antimicrobial therapy [ ]

7.3. Proper neonatal care [ ]

7.4. Blood transfusion [ ]

8. What are the complications of neonatal sepsis?

8.1. Hypoxemia [ ]

8.2. Pulmonary hypotension [ ]

8.3. Cardiomegaly [ ]

8.4. Respiratory collapse [ ]

9. What are the preventive measures of early neonatal sepsis?

9.1. Reduce the maternal urinary tract infection [ ]

9.2. Early breast feeding [ ]

9.3. Immunization [ ]

9.4. Antibiotic prophylaxis for the pregnant women with infection [ ]

C. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING NEONATAL MENINGITIS

10. What is meant by neonatal meningitis?

10.1. Inflammation of the protective covering of the brain [ ]

10.2. Inflammation of the skull of the newborn [ ]

10.3. Inflammation of the spinal cord of the newborn [ ]

10.4. Inflammation of the brain of the newborn [ ]

11. What are the causes of neonatal meningitis?

11.1. Clostridium tetani [ ]

11.2. Group b beta –haemolytic streptococcus [ ]

11.3. Salmonella [ ]

11.4. Chlamydia [ ]

12. What are the signs and symptoms of neonatal meningitis?

12.1. Depressed fontanelle [ ]

12.2. Vomiting [ ]

12.3. Poor feeding [ ]

12.4. Fever [ ]

13. What are the measures available to treat the neonatal meningitis?

13.1. Antibiotic therapy to treat infection [ ]

13.2. Anticonvulsant drug to treat seizures [ ]

13.3. Exclusive breast feeding [ ]

13.4. Immunization [ ]

14. What are the complications of neonatal meningitis?

14.1. Cerebral hemorrhage [ ]

14.2. Hydrocephalus [ ]

14.3. Respiratory collapse [ ]

14.4. Cerebral hematoma [ ]

15. What are the preventive measures of neonatal meningitis?

15.1. Intrapartum prophylactic antibiotics in pregnant women [ ]

15.2. Neonatal screening [ ]

15.3. Antiviral therapy for viral infection during third trimester [ ]

15.4. Cesarean delivery with maternal infection [ ]

D. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING NEONATAL TETANUS

16. What is meant by neonatal tetanus?

16.1. Acute infectious disease, affecting nervous system [ ]

16.2. Chronic infectious disease, affecting nervous system [ ]

16.3. Congenital infection, affecting respiratory system [ ]

16.4. Local infectious disease of the newborn [ ]

17. What are the causes and risk factors of neonatal tetanus?

17.1. Unsterile delivery [ ]

17.2. Low birth weight [ ]

17.3. Unimmunized babies [ ]

17.4. Pre term babies [ ]

18. What are the signs and symptoms of neonatal tetanus?

18.1. Spasm of neck and muscles [ ]

18.2. Abdominal distension [ ]

18.3. Edema [ ]

18.4. Diarrhea [ ]

19. What are the measures available to treat the neonatal tetanus?

20.1. Administration of antitoxin [ ]

19.2. Exclusive breast feeding [ ]

19.3. Antiviral therapy [ ]

19.4. Oxygen administration [ ]

20. What are the complications of neonatal tetanus?

20.1. Respiratory distress [ ]

20.2. Blindness [ ]

20.3. Umbilical sepsis [ ]

20.4. Hemorrhage [ ]

21. What are the preventive measures of neonatal tetanus?

21.1. Tetanus toxoid vaccine to mother during pregnancy [ ]

21.2. Tetanus toxiod vaccine to baby soon after birth [ ]

21.3. Proper neonatal care [ ]

21.4. Exclusive breast feeding [ ]

E. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING OMPHALITIS

22. What is meant by omphalitis?

22.1. Infection of umbilical vein [ ]

22.2. Infection of stomach [ ]

22.3. Infection of umbilical stump [ ]

22.4. Infection of skin [ ]

23. What are the causes of omphalitis?

23.1. Microorganism [ ]

23.2. Maternal infection [ ]

23.3. Improper antenatal care [ ]

23.4. External environment [ ]

24. What are the signs and symptoms of omphalitis?

24.1. Tenderness [ ]

24.2. Bleeding from umbilical vein [ ]

24.3. Purulent discharge from the umbilical stump [ ]

24.4. Poor feeding [ ]

25. What are the measures available to treat the omphalitis?

25.1. Umbilical cord dressing [ ]

25.2. Administration of anti-tetanus serum [ ]

25.3. Apply antibiotic ointment on umbilical cord [ ]

25.4. Don't know [ ]

26. What are the complications of omphalitis?

26.1. Jaundice [ ]

26.2. Peritonitis [ ]

26.3. Shock [ ]

26.4. Edema [ ]

27. What are the preventive measures of omphalitis?

27.1. Application of antimicrobial agents to the umbilicus [ ]

27.2. Aseptic precautions during cutting of cord [ ]

27.3. Aseptic delivery [ ]

27.4. Proper baby bath [ ]

F. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING OPHTHALMIA NEONATRUM

28. What is meant by ophthalmia neonatrum?

28.1. Inflammation of eyelids of the newborn [ ]

28.2. Inflammation of sclera of the newborn [ ]

28.3. Inflammation of conjunctiva of the newborn [ ]

28.4. Inflammation of cornea of the newborn [ ]

29. What are the causes of ophthalmia neonatrum?

29.1. E.coli [ ]

29.2. Chlamydia trachomatis [ ]

29.3. Herpes simplex virus [ ]

29.4. Salmonella [ ]

30. What are the signs and symptoms of ophthalmia neonatrum?

30.1. Watery, mucopurulent discharge in eyes [ ]

30.2. Pale conjunctiva [ ]

30.3. Falling of eye lashes [ ]

30.4. Blindness [ ]

31. What are the measures available to treat the ophthalmia neonatrum?

31.1. Antibiotic therapy [ ]

31.2. Closing the eyes with eye pad [ ]

31.3. Baby bath [ ]

31.4. Early breast feeding [ ]

32. What are the complications of ophthalmia neonatrum?

32.1. Retinal damage [ ]

32.2. Blindness [ ]

32.3. Conjunctivitis [ ]

32.4. Night blindness [ ]

33. What are the preventive measures of ophthalmia neonatrum?

33.1. Immunization [ ]

33.2. Aseptic technique [ ]

33.3. Prophylactic eye drops to the newborn [ ]

33.4. Acyclovir treatment [ ]

G. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING NEONATAL HEPATITIS B VIRUS INFECTION

34. What is neonatal hepatitis B virus infection B virus infection?

34.1. Inflammation of gall bladder of the newborn [ ]

34.2. Inflammation of liver of the newborn [ ]

34.3. Inflammation of hepatic vein of the newborn [ ]

34.4. Inflammation of stomach of the newborn [ ]

35. What is the cause of neonatal hepatitis B virus infection?

35.1. Virus [ ]

35.2. Bacteria [ ]

35.3. Protozoa [ ]

35.4. Fungi [ ]

36. What are the signs and symptoms of neonatal hepatitis B virus infection?

36.1. Increased heart rate [ ]

36.2. Weight gain [ ]

36.3. Vomiting [ ]

36.4. Yellow eyes and skin [ ]

37. What are the measures available to treat neonatal hepatitis B virus infection?

37.1. Administration of Phenobarbital [ ]

37.2. Administration of oxygen [ ]

37.3. Administration of amoxicillin [ ]

37.4. Administration of intravenous infusion [ ]

38. What are the complications of neonatal hepatitis B virus infection?

38.1. Pancreatitis [ ]

38.2. Cirrhosis of liver [ ]

38.3. Portal hypertension [ ]

38.4. Liver stone [ ]

39. What are the preventive measures of neonatal hepatitis B virus infection?

39.1. Vaccination of hepatitis B to the baby at birth [ ]

39.2. Avoid contact with contaminated blood and secretions by mother [ ]

39.3. Vaccination of hepatitis B to the pregnant mother [ ]

39.4. Don't know [ ]

H. KNOWLEDGE OF ANTENATAL MOTHERS REGARDING HERPES SIMPLEX VIRUS INFECTION

40. What is congenital herpes simplex virus infection?

40.1. Infection due to herpes virus [ ]

40.2. Infection due to Rota virus [ ]

40.3. Infection due to HIV virus [ ]

40.4. Infection due to cytomegalo virus [ ]

41. What is the mode of transmission of congenital herpes simplex virus infection?

41.1. Acquired from hospital [ ]

41.2. Acquired during delivery through genital tract [ ]

41.3. Through placenta [ ]

41.4. Through breast milk [ ]

42. What are the signs and symptoms of congenital herpes simplex virus infection?

42.1. Vesicles formation [ ]

42.2. Fever [ ]

42.3. Bluish discoloration of the skin [ ]

42.4. Edema [ ]

43. What are the measures available to treat congenital herpes simplex virus infection?

43.1. Vidarabine drug [ ]

43.2. Trimethoprim drug [ ]

43.3. Erythromycin drug [ ]

43.4. Fluconazole drug [ ]

44. What are the complications of congenital herpes simplex virus infection?

44.1. Jaundice [ ]

44.2. Seizures [ ]

44.3. Developmental delay [ ]

44.4. Nerve damage [ ]

45. What are the preventive measures of congenital herpes simplex virus infection?

45.1. Immunization of herpes simplex to mother during pregnancy [ ]

45.2. Prophylactic acyclovir in last week of pregnancy [ ]

45.3. Caesarean delivery [ ]

45.4. Don’t know [ ]

SCORE KEY

QN.NO.	ANSWER	SCORE
	GENERAL KNOWLEDGE OF INFECTION AND NEWBORN	
1	1.2	1
2	2.1	1
3	4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7	7
	TOTOAL	**9**
	NEONATAL SEPSIS	
4	4.1	1
5	5.1	1
6	6.1, 6.2, 6.3	3
7	7.1, 7.2, 7.3	3
8	8.1	1
9	9.1, 9.2, 9.4	3
	TOTOAL	**12**
	NEONATAL MENINGITIS	
10	10.1.	1
11	11.2.	1
12	12.1, 12.2, 12.3, 12.4	4
13	13.1, 13.2	2
14	14.2	1
15	15.1, 15.3, 15.4	3
	TOTOAL	**12**
	NEONATAL TETANUS	
16	16.1	1
17	17.1	1
18	18.1	1

19	19.1	1
20	20.3	1
21	21.1, 21.2	2
	TOTOAL	**7**
	NEONATAL OMPHALITIS	
22	22.1	1
23	23.1	1
24	24.3	1
25	25.2, 25.3	2
26	26.2	1
27	27.1, 27.2, 27.3	3
	TOTOAL	**9**
	OPHTHALMIA NEONATRUM	
28	28.1	1
29	29.1,29.3	2
30	31.1	1
31	32.1	1
32	33.1	1
33	34.2,34.3	2
	TOTOAL	**8**
	NEONATAL HEPATITIS	
34	34.1	1
35	35.1	1
36	36.4	1
37	37.1	1
38	38.2	1
39	39.1, 39.2,39.3	3
	TOTOAL	**8**

	CONGENITAL HERPES SIMPLEX VIRUS INFECTION	
40	40.1	1
41	41.2, 41,3, 41.4	3
42	42.1	1
43	43.1	1
44	44.2, 44.3	2
45	45.1, 45.2, 45.3	3
	TOTOAL	**11**

APPENDIX-F

EVALUATION CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL

Instructions

The expert is required to go through the content and give her opinion in the column given in the criteria table. If the tool is not meeting the criteria please give your valuable suggestions in the remarks column.

S.NO	CRITERIA	YES	NO	REMARKS
1	**Baseline data** The items on the base line data cover all aspects necessary for the study			
2	**Semi structured interview schedule on knowledge of early neonatal infections** a. relevant to the topic of the study b. content organization c. language is simple and easy to understand d. clarity of items used e. any other suggestions			

APPENDIX-G

CERTIFICATION OF VALIDATION

This is to certify that tool: semi structured interview schedule consists of two sections which includes

Section- A: Socio-Demographic variables

Section- B: Knowledge items regarding early neonatal infections

Prepared by Ms.REVATHI.K II year M.Sc. Nursing student (Maternity Health Nursing), Vivekanandha College of Nursing, Elayampalayam TO USED in her study titled of **"A STUDY TO ASSESS THE KNOWLEDGE REGARDING SELECTED EARLY NEONATAL INFECTIONS AMONG ANTENATAL MOTHERS ATTENDING THE ANTENATAL OPD IN GOVERNMENT HEAD QUARTERS HOSPITAL, ERODE"** has been validated by me.

Signature :

Name :

Designation :

Date :

§¿÷ ¸¡½ø ÀðÊÂø

À¢Ã¢×-«

ºÓ¾¡Â ÌÎõÀì ¸¡Ã½¢¸û

1.ÅÃ¢¨º ±ñ [ ]

2.ÅÂÐ

2.1. 20ÅÕ¼í¸ÙìÌ ¸£¢ú [ ]

2.2. 21Ä¢ÕóÐ 25 ÅÕ¼í¸û Å¨Ã [ ]

2.3. 26Ä¢ÕóÐ 30 ÅÕ¼í¸û Å¨Ã [ ]

2.4. 31 ÅÕ¼í¸ÙìÌ §Áø [ ]

3.Á¾õ

3.1.þóÐ [ ]

3.2.¸¢È¢Š¾Å÷ [ ]

3.3.ÓŠÄ¢õ [ ]

4.¸øÅ¢ò¾Ì¾¢

4.1.ÀÊôÀ¢ø¨Ä [ ]

4.2.¿Î¿¢¨Äì¸øÅ¢ [ ]

4.3.¯Â÷ì¸øÅ¢ [ ]

4.4.Àð¼¾¡Ã¢ [ ]

5.¦¾¡Æ¢ø

5.1.ÌÎõÀò¾¨ÄÅ¢ [ ]

5.2.ÜÄ¢ [ ]

5.3.¾É¢Â¡÷ §Å¨Ä [ ]

5.4.«ÃÍ §Å¨Ä [ ]

6.ÌÎõÀ ÅÕÁ¡Éõ

6.1. Á¡¾õ å.2000ìÌõ Ì¨È× [ ]

6.2. Á¡¾õ å.2001Ä¢ÕóÐ 3000 Å¨Ã [ ]

6.3. Á¡¾õ å.3001Ä¢ÕóÐ 4000 Å¨Ã [ ]

6.4. Á¡¾õ å.4000ìÌõ §Áø [ ]

7. ÌÎõÀò¾¢ý «¨ÁôÒ

7.1. ¾É¢ÌÎõÀõ [ ]

7.2. ÜðÎìÌÎõÀõ [ ]

8.Åº¢ìÌõ þ¼õ

8.1.¸¢Ã¡ÁôÀÌ¾¢ [ ]

8.2.¿¸ÃôÀÌ¾¢ [ ]

9.¸÷ôÀ¸¡Äõ

9.1.Ó¾ø ãýÚ Á¡¾í¸û [ ]

9.2.þÃñ¼¡õ ãýÚ Á¡¾í¸û [ ]

9.3. ¸¨¼º¢ ãýÚ Á¡¾í¸û [ ]

10.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¡¾¡üÚ§¿¡ö¸¨Ç ÀüÈ¢Â ¾¸Åø ¸¢¨¼ò¾ ÅÆ¢¸û

10.1.Í¸¡¾¡Ã À½¢Â¡Ç÷ [ ]

10.2.ÌÎõÀ ¿À÷¸û [ ]

10.3.¦ºö¾¢¸û [ ]

10.4.¦¾¡¨Äì¸¡ðº¢ [ ]

11.þÃ½ƒýÉ¢ ¾Îôâº¢ §À¡ð¼Ðñ¼¡?

11.1. ¬õ [ ]

11.2. þø¨Ä. [ ]

À¢Ã¢×-¬

A.¸÷ôÀ¢½¢¸Ç¢¼õ ¦¾¡üÚ§¿¡ö ÁüÚõ Àîº¢ÇíÌÆó¨¾¨Â ÀüÈ¢Â «È¢×ò¾¢Èý

12.¦¾¡üÚ§¿¡ö ±ýÈ¡ø ±ýÉ?

12.1.¯¼ø ¯ÚôÒ¸Ç¢ø ²üÀÎõ §Åì¸¡Î [ ]

12.2.Ññ¸¢ÕÁ¢¸û ¯¼Ä¢Ûû Ñ¨ÆóÐ ¦ÀÕì¸Á¨¼¾ø

[ ]

12.3.¾¢ÍÅ¢ø ²üÀÎõ §Åì¸¡Î [ ]

12.4.±¾¢÷ôÒ º¡¾¢ ¯ñ¼¡¾ø [ ]

13.Àîº¢ÇíÌÆó¨¾Â¢ý ¸¡Ä «Ç× ±ýÉ?

13.1.À¢È ó¾¾¢Ä¢ÕóÐ ²Ø ¿¡ð¸û Å¨Ã [ ]

13.2.À¢È ó¾¾¢Ä¢ÕóÐ þÕÀòÐ ±ðÎ ¿¡ð¸û Å¨Ã [ ]

13.3.À¢È ó¾¾¢Ä¢ÕóÐ ¬Ú Á¡¾í¸û Å¨Ã [ ]

13.4.À¢È ó¾¾¢Ä¢ÕóÐ ´Õ ÅÕ¼õ Å¨Ã [ ]

14. Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦À¡ÐÅ¡É ¦¾¡üÚ§¿¡ö¸û Â¡¨Å?

14.1. º£úò¦¾¡üÚ§¿¡ö [ ]

14.2. ã¨Ç¸¡öîºø [ ]

14.3. þÃ½ƒñ½¢ [ ]

14.4. ¦¾¡ôÒû ¦¸¡Ê §¿¡ö [ ]

14.5. ¸£úÀ¼Ä ¸ñ §¿¡ö [ ]

14.6. ¸øÄ£Ãø Å£ì¸õ [ ]

14.7. À¢ÈÅ¢ ¦†÷ÀŠ º¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡ö[ ]

B.¸÷ôÀ¢½¢¸Ç¢¼õ ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ º£úò¦¾¡üÚ§¿¡¨Â ÀüÈ¢Â «È¢×ò¾¢Èý

15.º£úò¦¾¡üÚ§¿¡ö ±ýÈ¡ø ±ýÉ?

15.1.¯¼ø ÓØÅÐõ ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

15.2.¿¢½¿£÷ ÍÃôÀ¢Â¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

15.3.¾¨ºÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

15.4.¿ÃõÒ¸Ç¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

16.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ º£úò¦¾¡üÚ §¿¡öì¸¡É ¸¡Ã½¢¸û Â¡¨Å?

16.1.±¨¼ Ì¨ÈÅ¡¸ À¢ÈìÌõ ÌÆó¨¾ [ ]

16.2.ÌÆó¨¾Â¢ý ¯¼ÖìÌû °º¢ ¦ºÖò¾¢ ÀÃ¢§º¡¾¨É

¦ºö¾ø [ ]

16.3. º¢¨Ã ÅÆ¢Â¡¸ ÁÕóÐ ¦ºØòÐ¾ø [ ]

16.4.ÒðÊÀ¡ø °ðÎ¾ø [ ]

17.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ º£úò¦¾¡üÚ§¿¡öì¸¡É «È¢ÌÈ¢¸û Â¡¨Å?

17.1.ãîÍ ¾¢½ÈØ [ ]

17.2.¸¡öîºø [ ]

17.3.Å¡ó¾¢ [ ]

17.4.±¨¼ Ì¨È¾ø [ ]

18.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ º£úò¦¾¡üÚ§¿¡¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

18.1.ãîÍ ÌÆ¡ö ÁüÚõ þÃò¾ ÍÆüº¢¨Â ºÃ¢Â¡¸ ¨Åò¾ø

[ ]

18.2.ÑñïÂ¢÷ ¸¢ÕÁ¢ì¸¡É ±¾¢÷ôÒ ÁÕóÐ [ ]

18.3. ºÃ¢Â¡É ÌÆó¨¾ ÀÃ¡ÁÃ¢Ôò [ ]

18.4. þÃò¾õ ¦ºØòÐ¾ø [ ]

19.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ º£úò¦¾¡üÚ§¿¡Â¢ý À¢ýÅ¢¨Ç×¸û Â¡¨Å?

19.1. þÃò¾ò¾¢ø ¬ìƒ¢…ý Ì¨È¾ø [ ]

19.2.Ñ¨ÃÂ£ÃÄ¢ø þÃò¾ «Øò¾õ Ì¨È¾ø [ ]

19.3.þ¾Â Å£ì¸õ [ ]

19.4.ÍÅ¡º §¸¡Ç¡Ú [ ]

20.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ º£úò¦¾¡üÚ§¿¡¨Â ¾ÎìÎõ Ó¨È¸û Â¡¨Å?

20.1.¸÷ôÀ¢½¢¸û º¢Ú¿£Ã¸ ÌÆ¡Â¢ø ²üÀÎõ ¦¾¡üÚ§¿¡¨Â

Ì¨Èò¾ø [ ]

20.2.ÌÆó¨¾ À¢Èó¾ ¯¼§É ¾¡öôÀ¡ø °ðÎ¾ø [ ]

20.3. ÌÆó¨¾ìÌ ¾Îôâº¢ §À¡Î¾ø [ ]

20.4. ¸÷ôÀ¢½¢¸ÙìÌ ÑñÏÂ¢÷ì¸¡É ÁÕóÐ ¦¸¡Îò¾ø

[ ]

C. ¸÷ôÀ¢½¢¸Ç¢¼õ ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ã¨Ç¸¡öîº¨Ä ÀüÈ¢Â «È¢×ò¾¢Èý

21.ã¨Ç¸¡öîºø ±ýÈ¡ø ±ýÉ?

21.1.ã¨ÇÂ¢ý À¡Ð¸¡ôÒ ¯¨ÈÂ¢ø ²üÀÎõ §Åì¸¡Î [ ]

21.2. ã¨ÇÂ¢ý ±ÖõÒ¸Ç¢ø ²üÀÎõ §Åì¸¡Î [ ]

21.3. ¾ñÎÅ¼ò¾¢ø ²üÀÎõ §Åì¸¡Î [ ]

21.4. ã¨ÇÂ¢ø ²üÀÎõ §Åì¸¡Î [ ]

22.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ã¨Ç¸¡öîºÄ¢ý ¸¡Ã½¢¸û Â¡¨Å?

22.1.ìÇ¡ŠüÈ¢ÊÂõ Å¨¸ ÑñÏÂ¢Ã¢ [ ]

22.2.À£ð¼¡-†¢§Á¡¨ÄðÊì Šüô§¼¡¸¡ì¸Š [ ]

22.3.º¡ø§Á¡¦ÉøÄ¡ Å¨¸ [ ]

22.4.ìÇ¡¨ÁÊÂ¡ Å¨¸ [ ]

23.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ã¨Ç¸¡öîºÄ¢ý «È¢ÌÈ¢¸û Â¡¨Å?

23.1.¾¨ÄÂ¢ø Å£ì¸õ [ ]

23.2.Å¡ó¾¢ [ ]

23.3.ÌÆó¨¾ ºÃ¢Â¡¸ ¾¡öôÀ¡ø ÌÊì¸¡Ð [ ]

23.4.¸¡öîºø [ ]

24.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ã¨Ç¸¡öîº¨Ä Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

24.1. ÑñïÂ¢÷ ¸¢ÕÁ¢ì¸¡É ±¾¢÷ôÒ ÁÕóÐ [ ]

24.2.ÅÄ¢ôÒ §¿¡öì¸¡É ±¾¢÷ôÒ ÁÕóÐ [ ]

24.3. ¾¡öôÀ¡ø Áðîõ °ðÎ¾ø [ ]

24.4. ÌÆó¨¾ìÌ ¾Îôâº¢ §À¡Î¾ø [ ]

25.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ã¨Ç¸¡öîºÄ¢ý À¢ýÅ¢¨Ç×¸û Â¡¨Å?

25.1.ã¨ÇÂ¢ø þÃò¾ ¸º¢× [ ]

25.2.¾¨Ä Å£ì¸õ [ ]

25.3.ãîÍ §¸¡Ç¡Ú [ ]

25.4.ã¨ÇÂ¢ø þÃò¾õ ¸ðÎ¾ø [ ]

26.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ã¨Ç¸¡öîº¨Ä ¾ÎìÌõ Ó¨È¸û Â¡¨Å?

26.1.À¢ÃºÅò¾¢ý§À¡Ð ÑñïÂ¢÷ ¸¢ÕÁ¢ì¸¡É ±¾¢÷ôÒ ÁÕóÐ ¦¸¡Îò¾ø [ ]

26.2.ÌÆó¨¾ ¦¾¡üÚ §¿¡¨Â ¬ö× ¦ºö¾ø [ ]

26.3.À¢ÃºÅ ¸¡Ä þÚ¾¢Â¢ø ¨ÅÃŠ ¦¾¡üÚ§¿¡öìÌ ±¾¢÷ôÒ ÁÕóÐ ¦¸¡Îò¾ø [ ]

26.4.¾¡öôÀ¡ø Áðîõ °ðÎ¾ø [ ]

D.¸÷ôÀ¢½¢¸Ç¢¼õ Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ þÃ½ƒñ½¢ §¿¡¨Â ÀüÈ¢Â «È¢×ò¾¢Èý

27.þÃ½ƒñ½¢ ±ýÈ¡ø ±ýÉ?

27.1.ÌÈ¢ôÀ¢ð¼¸¡Ä ¦¾¡üÚ§¿¡ö ,¿ÃõÒ Áñ¼Äò¨¾ À¡¾¢ì¸ ÜÊÂÐ [ ]

27.2. Á¢¸¿¡ûÀð¼ ¦¾¡üÚ§¿¡ö ,¿ÃõÒ Áñ¼Äò¨¾ À¡¾¢ì¸ ÜÊÂÐ [ ]

27.3.À¢ÈÅ¢ ¦¾¡üÚ§¿¡ö ,ÍÅ¡º Áñ¼Äò¨¾ À¡¾¢ì¸ ÜÊÂÐ [ ]

27.4.º¡¾¡Ã½ ¦¾¡üÚ§¿¡ö [ ]

28.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ þÃ½ƒñ½¢ §¿¡Â¢ý ¸¡Ã½¢¸û Â¡¨Å?

28.1.«Íò¾Á¡É À¢ÃºÅ ÀÌ¾¢ [ ]

28.2.±¨¼ Ì¨ÈÅ¡¸ À¢ÈìÌõ ÌÆó¨¾ [ ]

28.3.¾Îôâº¢ §À¡¼¡¾ ÌÆó¨¾ìÌ [ ]

28.4.Ì¨È À¢ÃºÅò¾¢ø À¢Èó¾ ÌÆó¨¾ìÌ [ ]

29.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ þÃ½ƒñ½¢ §¿¡Â¢ý «È¢ÌÈ¢¸û Â¡¨Å?

29.1.¾¨ºÀ¢ÊôÒ [ ]

29.2.ÅÂ¢Ú Å£ì¸õ [ ]

29.3.¯¼õÒ Å£ì¸õ [ ]

29.4.ÅÂ¢üÚ §À¡ìÌ [ ]

30.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ þÃ½ƒñ½¢ §¿¡¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

30.1.§¿¡ö ¿ïÍì¸¡É ±¾¢÷ôÒ ÁÕóÐ ¦¸¡Îò¾ø [ ]

30.2.¾¡öôÀ¡ø ÁðÎõ ¦¸¡Îò¾ø [ ]

30.3.¨ÅÃŠ ±¾¢÷ôÒ ÁÕóÐ [ ]

30.4.¬ì…¢ƒý ¦¸¡Îò¾ø [ ]

31.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ þÃ½ƒñ½¢ §¿¡Â¢ý À¢ýÅ¢¨Ç×¸û Â¡¨Å?

31.1.ÍÅ¡ºì§¸¡Ç¡Ú [ ]

31.2.¸ñ À¡÷¨Å þÆò¾ø [ ]

31.3.¦¾¡ôÒû ¦¸¡ÊÂ¢ø º£ú ¨Åò¾ø [ ]

31.4.þÃò¾ô§À¡ìÌ [ ]

32.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ þÃ½ƒñ½¢ §¿¡¨Â ¾ÎìÌõ Ó¨È¸û Â¡¨Å?

32.1.¸÷ôÀ¢½¢¸¡Äò¾¢ø þÃ½ƒñ½¢ ¾Îôâº¢ §À¡Î¾ø [ ]

32.2.ÌÆò¨¾¸ìÌ þÃ½ƒñ½¢ ¾Îôâº¢ §À¡Î¾ø [ ]

32.3.Í¸¡¾¡ÃÁ¡É Ó¨ÈÂ¢ø Àîº¢Çõ ÌÆò¨¾¨Â
ÀÃ¡ÁÃ¢ò¾ø [ ]

32.4.¾¡öôÀ¡ø ÁðÎõ ¦¸¡Îò¾ø [ ]

E.¸÷ôÀ¢½¢¸Ç¢¼õ Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦¾¡ôÒû¦¸¡Ê §¿¡¨Â ÀüÈ¢Â «È¢×ò¾¢Èý

33.¦¾¡ôÒû¦¸¡Ê §¿¡ö ±ýÈ¡ø ±ýÉ?

33.1.¦¾¡ôÒû ¦¸¡Ê º¢¨ÃÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

33.2.þ¨Ãô¨ÀÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

33.3.¦¾¡ôÒû ¦¸¡ÊÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

33.4.§¾¡Ä¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

34.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦¾¡ôÒû¦¸¡Ê §¿¡Â¢ý ¸¡Ã½¢¸û Â¡¨Å?

34.1.Ññ¸¢ÕÁ¢¸û [ ]

34.2.¸÷ôÀ¢½¢¸¡Äò¾¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

34.3.Í¸¡¾¡ÃÁ¢øÄ¡¾ ¸÷ôÀ¢½¢¸¡Ä ÀÃ¡ÁÃ¢ôÒ [ ]

34.4.ÍüÚôÒÈò¾¡ø [ ]

35.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦¾¡ôÒû¦¸¡Ê §¿¡Â¢ý «È¢ÌÈ¢¸û Â¡¨Å?

35.1.¦¾¡ð¼¡ø ÅÄ¢ [ ]

35.2¦¾¡ôÒû ¦¸¡ÊÂ¢Ä¢ÕóÐ þÃò¾õ ÅÊ¾ø [ ]

35.3.¦¾¡ôÒû ¦¸¡ÊÂ¢Ä¢ÕóÐ º£ú ÅÊ¾ø [ ]

35.4.ÌÆó¨¾ «ØÐ¦¸¡ñ§¼ þÕôÀÐ [ ]

36.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦¾¡ôÒû ¦¸¡Ê §¿¡¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

36.1. ¦¾¡ôÒû ¦¸¡Ê¨Â Ð½¢Â¡ø ¸ðÎ¾ø [ ]

36.2.þÃ½ƒñ½¢ÌÌ ±¾¢Ã¡É ÁÕóÐ ¦¸¡Îò¾ø [ ]

36.3.¦¾¡ôÒû ¦¸¡ÊìÌ ÑñïÂ¢÷ ¸¢ÕÁ¢ÌÌ ±¾¢Ã¡É ¸Ç¢õÒ
þÎ¾ø [ ]

36.4.±ÉìÌ ¦¾Ã¢Â¡Ð [ ]

37.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦¾¡ôÒû¦¸¡Ê §¿¡Â¢ý À¢ýÅ¢¨Ç×¸û Â¡¨Å?

37.1.Áïºû ¸¡Á¡¨Ä [ ]

37.2.ÅÂ¢üÚ §Åì¸¡Î [ ]

37.3.ÁÂì¸Á¨¼¾ø [ ]

37.4.Å£ì¸õ [ ]

38.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦¾¡ôÒû ¦¸¡Ê §¿¡¨Â ¾ÎìÌõ Ó¨È¸û Â¡¨Å?

38.1. ¦¾¡ôÒû ¦¸¡ÊìÌ ÑñÏÂ¢÷ ¸¢ÕÁ¢Ìì ±¾¢Ã¡É
¸Ç¢õÒ þÎ¾ø [ ]

38.2.Íò¾Á¡É Ó¨ÈÂ¢ø ¦¾¡ôÒû ¦¸¡Ê¨Â «Úò¾ø[ ]

38.3. Íò¾Á¡É Ó¨ÈÂ¢ø À¢ÃºÅõ À¡÷ò¾ø [ ]

38.4.ÌÆó¨¾¨Â ÌÇ¢ì¸ ¨Åò¾ø [ ]

F. ¸÷ôÀ¢½¢¸Ç¢¼õ ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸£úÀ¼Ä ¸ñ §¿¡¨Â ÀüÈ¢Â «È¢×ò¾¢Èý

39.¸£úÀ¼Ä ¸ñ §¿¡ö ±ýÈ¡ø ±ýÉ?

39.1.¸ñ þ¨ÁÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

39.2.Å¢Æ¦Åû¢À¼Äò¾¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

39.3.¸ñ¸£ú À¼Äò¾¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

39.4.Å¢Æ¢¦ÅñÀ¼Äò¾¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

40.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸£úÀ¼Ä ¸ñ §¿¡Â¢ý ¸¡Ã½¢¸û Â¡¨Å?

40.1.þ.§¸¡¨Ä ¸¢ÕÁ¢ [ ]

40.2.¸¢Ç¡¨ÁÊÂ¡ ð§Ã¡§¸¡§Á¡ÊŠ [ ]

40.3. ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ [ ]

40.4.º¡ø§Á¡¦ÉøÄ¡ [ ]

41.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸£úÀ¼Ä ¸ñ §¿¡Â¢ý «È¢ÌÈ¢¸û Â¡¨Å?

41.1.¸ñ½£Ã¢Ä¢ÕóÐ ¿¢£÷ ÅÊ¾ø [ ]

41.2.¦ÅÇ¢÷ó¾ ¸ñ¸û [ ]

41.3.¸ñ þ¨Á ¯¾¢÷¾ø [ ]

41.4.¸ñÀ÷¨Å þÆò¾ø [ ]

42.ÀÎº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸£úÀ¼Ä ¸ñ §¿¡¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

42.1.ÑñÏÂ¢÷ ¸¢ÕÁ¢ì¸¡É ±¾¢÷ôÒ ÁÕóÐ [ ]

42.2.¸ñ ãÊÂ¡ø ¸ñ¨½ ãÎ¾ø [ ]

42.3.ÌÆó¨¾¨Â Ó¨ÈÂ¡¸ ÌÇ¢ì¸ ¨Åò¾ø [ ]

42.4.ÌÆó¨¾ À¢Èó¾ ¯¼§É ¾¡öôÀ¡ø °ðÎ¾ø [ ]

43. ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸£úÀ¼Ä ¸ñ §¿¡¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

43.1.Å¢Æ¢À¼Ä §¿¡ö [ ]

43.2..¸ñÀ¡÷¨Å þÆò¾ø [ ]

43.3.¸£úÀ¼Ä ¸ñ ¦¾¡üÚ§¿¡ö [ ]

43.4. Á¡¨Äì¸ñ §¿¡ö [ ]

44.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸£úÀ¼Ä ¸ñ §¿¡¨Â ¾ÎìÌõ Ó¨È¸û Â¡¨Å?

44.1.¾Îôâº¢ [ ]

44.2.Íò¾Á¡É Ó¨ÈÂ¢ø À¢ÃºÅõ À¡÷ò¾ø [ ]

44.3.¸ñ½£÷ìÌ ¦º¡ðÎ ÁÕóÐ ¦¸¡Îò¾ø [ ]

44.4.¨ÅÃŠ ±¾¢÷ôÒ ÁÕóÐ [ ]

G.¸÷ôÀ¢½¢¸Ç¢¼õ ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦†ôÀ¨¼ðËŠ À¢ ¦¾¡üÚ §¿¡¨Â ÀüÈ¢Â «È¢×ò¾¢Èý

45.¦†ôÀ¨¼ðËŠ À¢ ¦¾¡üÚ§¿¡ö ±ýÈ¡ø ±ýÉ?

45.1.À¢ò¾¨ÀÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

45.2.¸øÄ£ÃÄ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

45.3.¸øÄ£Ãø º¢¨ÃÂ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

45.4.ÅÂ¢üÈ¢ø²üÀÎõ ¦¾¡üÚ§¿¡ö [ ]

46.ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦†ôÀ¨¼ðËŠ À¢ ¦¾¡üÚ§¿¡Â¢ý ¸¡Ã½¢¸û Â¡¨Å?

46.1.¨ÅÃŠ [ ]

46.2.À¡ìÊÃ¢Â¡ [ ]

46.3.Ò§Ã¡ð¼¡§„¡Å¡ [ ]

46.4.âï¨º [ ]

47.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦†ôÀ¨¼ðËŠ À¢ ¦¾¡üÚ§¿¡Â¢ý «È¢ÌÈ¢¸û Â¡¨Å?

47.1. þ¾ÂÐÊôÒ «¾¢¸Ã¢ò¾ø [ ]

47.2.¯¼ø ÀÕÁý ÜÎ¾ø [ ]

47.3.Å¡ó¾¢ [ ]

47.4. §¾¡ø ÁüÚõ ¸ñ½¢ý ¿¢Èõ ÁïºÇ¡¸ Á¡Ú¾ø [ ]

48.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦†ôÀ¨¼ðËŠ À¢ ¦¾¡üÚ§¿¡¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

48.1.À¢¦É¡À¡÷À¢ð§¼¡ø ÁÕóÐ ¦¸¡Îò¾ø [ ]

48.2.¬ì…¢ƒý ¦¸¡Îò¾ø [ ]

48.3.«Á¡ì…¢Ä¢ý ÁÕóÐ ¦¸¡Îò¾ø [ ]

48.4.º¢¨Ã ÅÆ¢Â¡¸ ÁÕóÐ ¦ºÖòÐ¾ø [ ]

49.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ Áïºû ¸¡Á¡¨Ä §¿¡Â¢ý À¢ýÅ¢¨Ç×¸û Â¡¨Å?

49.1.¸½Âò¾¢ø ²üÀÎõ §Åì¸¡Î [ ]

49.2.¸øÄ£Ãø À¡¾¢ôôÒ [ ]

49.3. §À¡÷¼ø º¢¨ÃÂ¢ø þÃò¾õ «¾¢¸Ã¢ò¾ø [ ]

49.4.¸øÄ£ÃÄ¢ø ¸ø ¯ÕÅ¡¾ø [ ]

50.Àîº¢ÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¦†ôÀ¨¼ðËŠ À¢ ¦¾¡üÚ §¿¡¨Â ¾ÎìÌõ Ó¨È¸û Â¡¨Å?

50.1.ÌÆó¨¾ À¢Èó¾ ¯¼§É ¦†ôÀ¨¼ðËŠ À¢ ¾Îôâº¢ §À¡Î¾ø [ ]

50.2.ÌÆó¨¾¨Â «õÁ¡Å¢ý «Íò¾Á¡É þÃò¾òÐ¼ý ¦¾¡¼÷Ò ²üÀÎÅ¨¾ ¾Îò¾ø [ ]

50.3.¸÷ôÀ¢½¢¸ÙìÌ ¦†ôÀ¨¼ðËŠ À¢ ¾Îôâº¢ §À¡Î¾ø [ ]

50.4.±ÉìÌ ¦¾Ã¢Â¡Ð [ ]

H.¸÷ôÀ¢½¢¸Ç¢¼õ À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡¨Â ÀüÈ¢Â «È¢×¾¢Èý

51.À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡ö ±ýÈ¡ø ±ýÉ?

51.1.¦¾¡üÚ§¿¡ö ¦†÷ÀŠ ¨ÅÃŠ ãÄÁ¡¸ ²üÀÎõ [ ]

51.2.¦¾¡üÚ§¿¡ö ¦Ã¡ð¼¡ ¨ÅÃŠ ãÄÁ¡¸ ²üÀÎõ [ ]

51.3.¦¾¡üÚ§¿¡ö ±î.³.Å¢. ¨ÅÃŠ ãÄÁ¡¸ ²üÀÎõ [ ]

51.4.¦¾¡üÚ§¿¡ö ¨ºð¦¼¡¦Á¸¦Ä¡ ¨ÅÃŠ
ãÄÁ¡¸ ²üÀÎõ [ ]

52.À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡ö ÀÃ×õ Ó¨È¸û Â¡¨Å?

52.1.ÁÕòÐÅÁ¨É ãÄÁ¡¸ [ ]

52.2.À¢ÃºÅò¾¢ý §À¡Ð À¢ÈôÒ ÅÆ¢Â¡¸ [ ]

52.3.¿ïÍ ¦¸¡Ê ãÄÁ¡¸ [ ]

52.4.¾¡öôÀ¡ø ãÄÁ¡¸ [ ]

53 À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡Â¢ý «È¢ÌÈ¢¸û Â¡¨Å?

53.1.¦¸¡ôÀÇí¸û ¯ÕÅ¡¾ø [ ]

53.2.¸¡öîºø [ ]

53.3.ÌÆó¨¾ À¢Èó¾ ¯¼§É «È¢ÌÈ¢¸û ¦¾Ã¢Â¡Ð [ ]

53.4.Å£Ì¸õ [ ]

54.À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¨Â Ì½ÀÎòÐõ Ó¨È¸û Â¡¨Å?

54.1.Å¢¼Ã¨Àý ÁÕóÐ [ ]

54.2.ð¨Ã¦Áò§¾¡À¢Ã¢õ ÁÕóÐ [ ]

54.3.±Ã¢ò§Ã¡¨Áº¢ý ÁÕóÐ [ ]

54.4.ÒÙÌ¸§É¡§„¡ø ÁÕóÐ [ ]

55.À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡Â¢ý À¢ýÅ¢¨Ç×¸û Â¡¨Å?

55.1.Áïºû¸¡Á¡¨Ä [ ]

55.2.ÅÄ¢ôÒ §¿¡ö [ ]

55.3.ã¨Ç ÅÇ÷î º¢ ÌýÚ¾ø [ ]

55.4.¿ÃõÒ À¡¾¢ôÒ [ ]

56.À¢ÈÅ¢ ¦†÷ÀŠº¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡¨Â ¾ÎìÌõ Ó¨È¸û Â¡¨Å?

56.1.¸÷ôÀ¢½¢¸ÙìÌ ¦†÷ÀŠº¢õÄìŠ ¾Îôâº¢

§À¡Î¾ø [ ]

56.2.¸¨¼º¢ Å¡Ã ¸÷ôÀ¢½¢¸¡Äò¾¢ø ¸÷ôÀ¢½¢¸ÙìÌ ¨ÅÃŠ ±¾¢÷ôÒ ÁÕóÐ ¦¸¡Îò¾ø [ ]

56.3.«Ú¨Å º¢¸¢î¨º Ó¨ÈÂ¢ø À¢ÃºÅõ À¡÷ò¾ø [ ]

56.4.±ÉìÌ ¦¾Ã¢Â¡Ð [ ]

APPENDIX-H

HEALTH EDUCATION PAMPHLET

INTRODUCTION

Neonatal health involves newborn’s physical, emotional, social, cultural and spiritual being and is determined by the social, political and

economic context of neonatal life as well as biology. Every mother should care the fetus and neonate; it helps to reduce the morbidity and mortality rate of the newborn.

DEFINITION

Neonatal infection is defined as any microorganisms invade and multiply in the neonate and cause systemic illness that is transmitted during antenatal, intranatal and postnatal period.

OBJECTIVES

After going through the health education module, the antenatal mother is able to

- Acquire the knowledge on selected of early neonatal infections

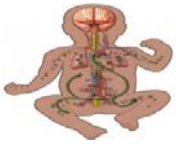
  The selected common early neonatal infections are

  - Neonatal sepsis
  - Neonatal meningitis
  - Neonatal tetanus
  - Neonatal Omphalitis
  - Ophthalmia neonatrum
  - Hepatitis B virus infection
  - Neonatal herpes simplex infection

NEONATAL SEPSIS

Definition:

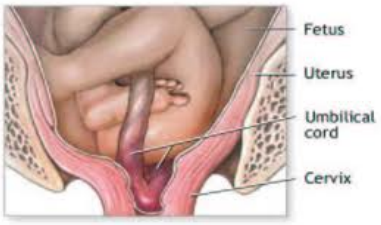
Neonatal sepsis is a clinical syndrome of bacteremia characterized signs and symptoms of infection in the first month of life.



Causes:

Low birth weight

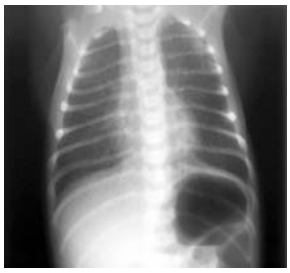
Prolonged rupture of membranes



Signs and symptoms:

Fever

Respiratory distress, apnea



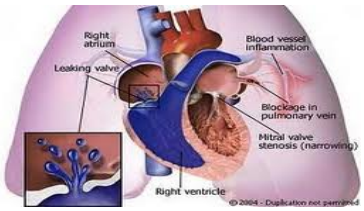
vomiting

Treatment:

Antimicrobial therapy

Complications:

- Pulmonary hypertension

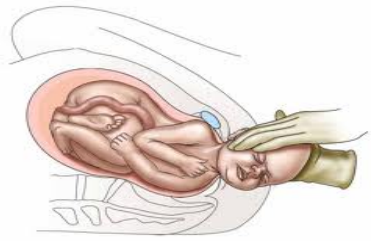


- Hypoxemia

Prevention:

1. Providing a clean birth environment,

2. Delivering the baby within 24 hours of rupture of membrane



NEONATAL MENINGITIS

Definition:

It is an inflammation of the protective covering of the brain.

Causes:

- B beta-hemolytic streptococcus, or group B streptococcus
- Escherichia coli, or E. coli

Signs and symptoms:

- Feeding poorly or refusing to feed
- Bulging fontanelle, the soft spot at the top of the head

- Vomiting

Treatment:

- Antimicrobial agents, Anticonvulsant medicine

Complications:

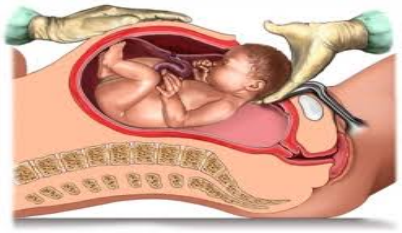
Hydrocephalus,

Brain abscess

Prevention:

- A pregnant woman is given antibiotics during labor

- Caesarean delivery decreases infection from the mother's genital tract.



NEONATAL TETANUS

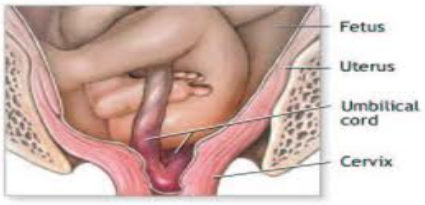
Definition:

An acute disease induced by an exotoxin of the tetanus

Causes: Infectious Agent: Clostridium tetani

Mode of Transmission:

Introduction of tetanus spores into the umbilical cord during and after delivery



Unsterile delivery

Signs and symptoms:

Locked jaw

Unexplained cry

Treatment:

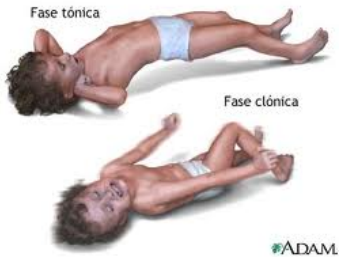
Tetanus immunoglobulin

Antibiotic therapy

Complications:

Fits

Umbilical cord sepsis



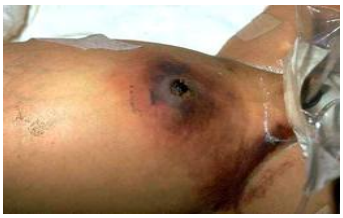
Prevention:

Immunization of tetanus toxoid (TT) to the mother.

OMPHALITIS

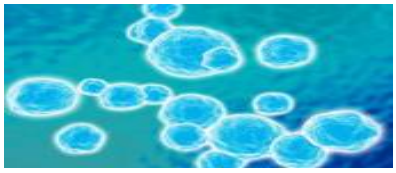
Definition:

Omphalitis is an infection of the umbilical stump



Causes:

Staphylococcus aureus, Group a Streptococcus



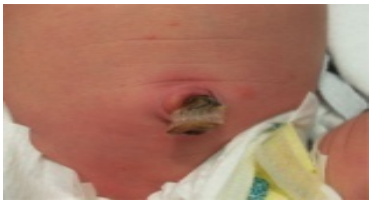
Mode of transmission

Poor aseptic technique during delivery

Signs and symptoms:

Discharge from the umbilical stump,

Periumbilical erythema

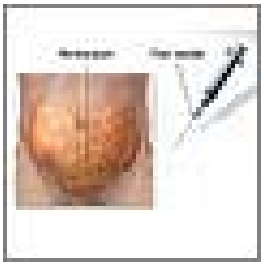


Treatment:

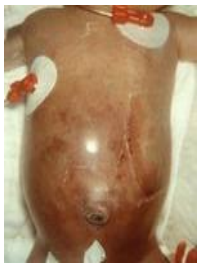
Antimicrobial therapy

Complications:

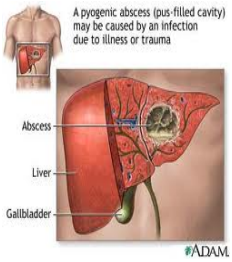
Peritonitis



Abdominal wall cellulitis



Hepatic abscess



Prevention:

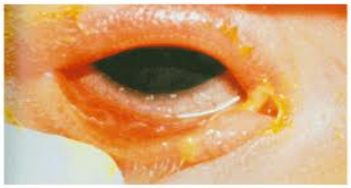
- Apply of antimicrobial agents on the umbilicus.

- Aseptic technique during delivery

OPHTHALMIA NEONATRUM

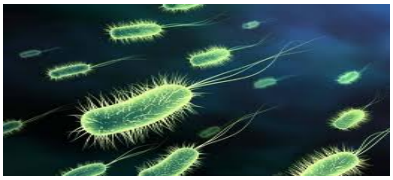
Definition:

Neonatal conjunctivitis is the inflammation of conjunctiva.



Causes:

Infection by bacteria or viruses



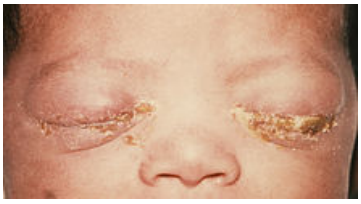
Mode of transmission

The baby delivered with contaminated vaginal discharge

Signs and symptoms:

Drainage from the eyes

The eyelids become puffy, red, and tender



Treatment:

Antibiotics eye drops, Special antiviral eye drops or ointments

Complications:

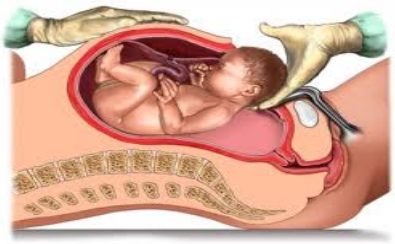
Blindness

Corneal scarring

Prevention:

- Eye drops put into the infant's eyes immediately after birth

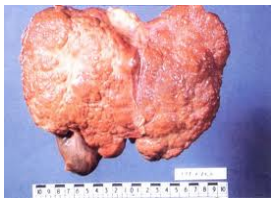
- Conduct caesarean delivery



NEONATAL HEPATITIS

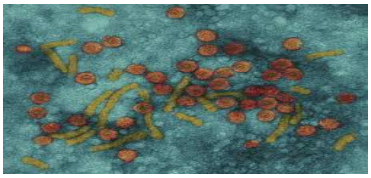
Definition

Neonatal hepatitis is inflammation of the liver that can occur in early newborn.



Causes:

Hepatitis B virus

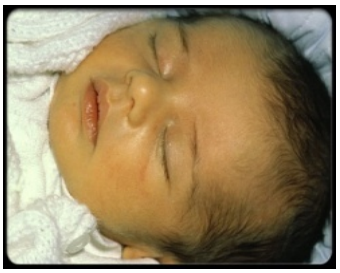


Mode of transmission:

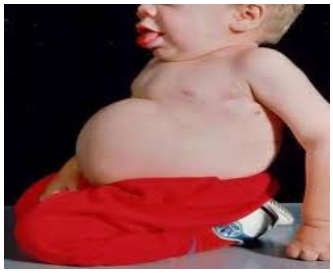
The baby exposure to infected mother blood during delivery

Signs and symptoms:

Yellow eyes and skin,



Enlarged liver and spleen



Treatment:

- Administration of Phenobarbital drug.

Complications:

Cirrhosis of liver,

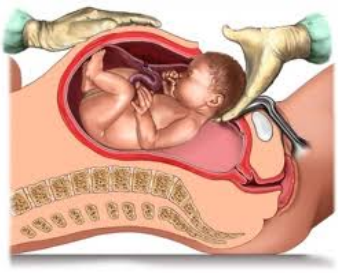
Mental retardation

cerebral palsy

Prevention:

Hepatitis B virus vaccine,

Conduct cesarean delivery



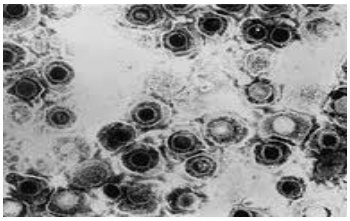
CONGENITAL HERPES SIMPLEX VIRUS INFECTION

Definition

Neonatal herpes simplex virus infection is usually transmitted during delivery caused by herpes virus.

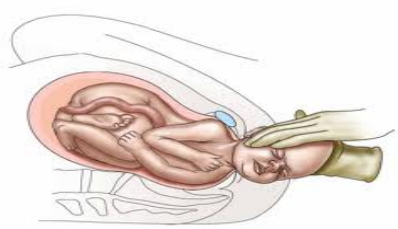
Causes

Herpes simplex virus

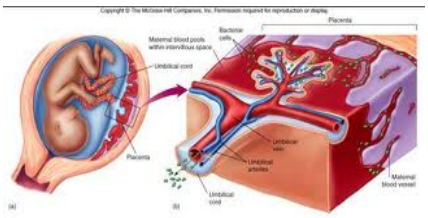


Mode of transmission

An infected maternal genital tract

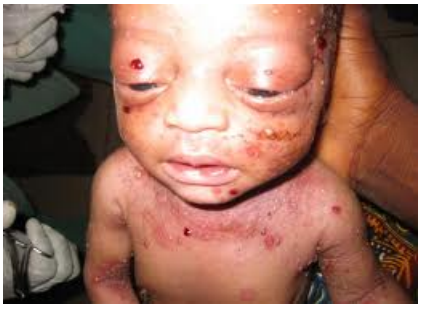


Transplacental route



Signs and symptoms:

Skin vesicles



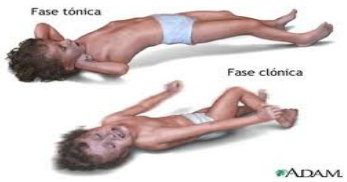
Treatment:

Administration of Vidarabine drug

Oxygen administration

Complications:

Seizures



Microcephaly

Blindness

Hemiparesis

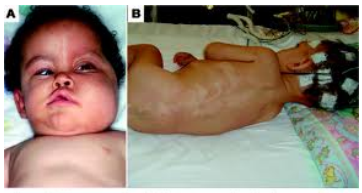
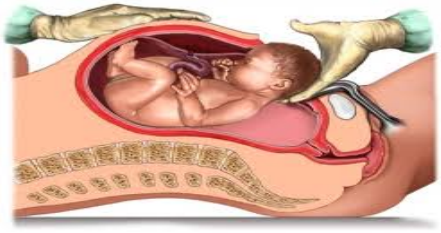


Figure 1. Syndromes associated with HME. A. A patient with epidermal nevus syndrome. B. A patient with hypomelanosis of Ito.

Prevention:

Conduct Caesarean delivery



CONCLUSION

The health education was prepared in the aspects of common neonatal infections and its prevention like neonatal sepsis, neonatal meningitis, neonatal tetanus, neonatal omphalitis, ophthalmia neonatrum, neonatal hepatitis B infection and herpes simplex virus infection. The knowledge regarding neonatal infection will make the antenatal mother to be aware of the infections. It will help the mother to take care of her and their newborn.

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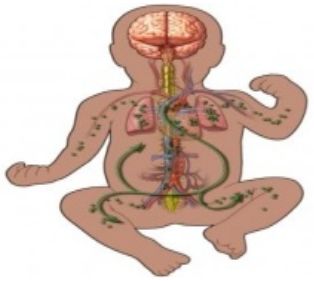

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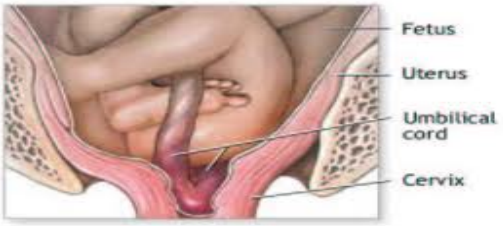

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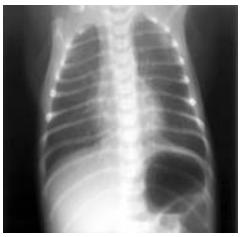

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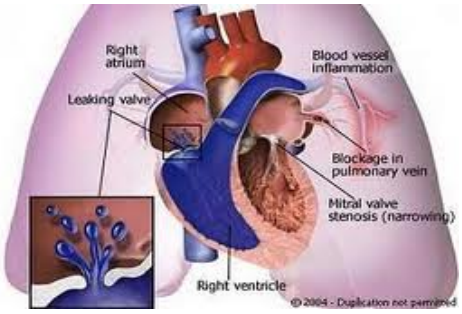

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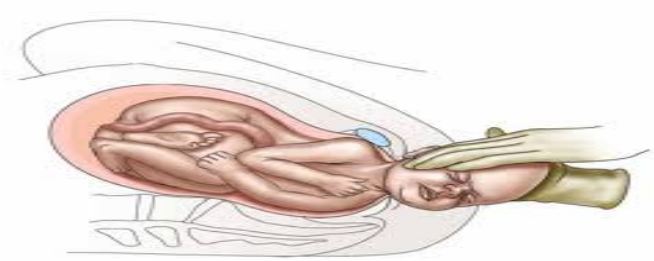

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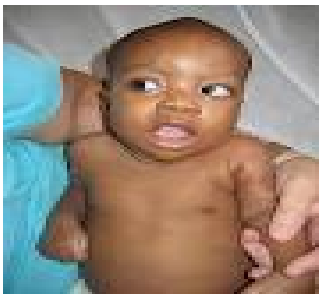

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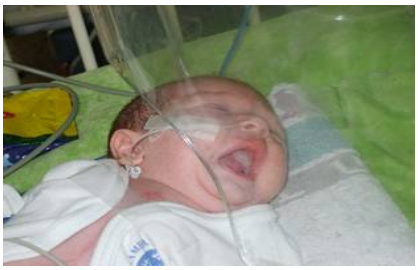

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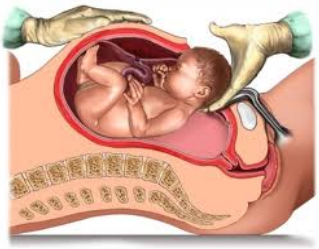

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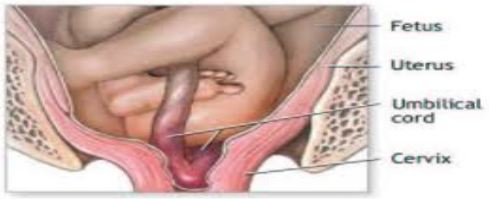

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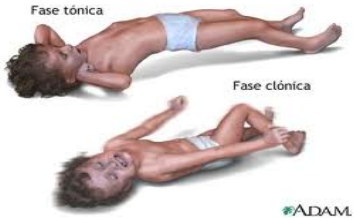

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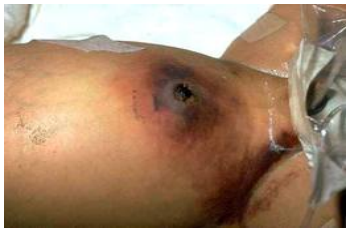

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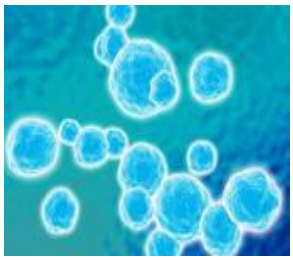

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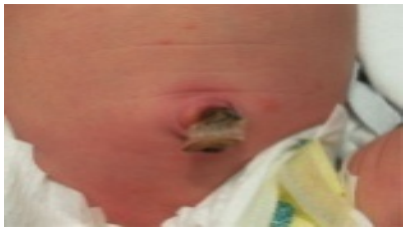

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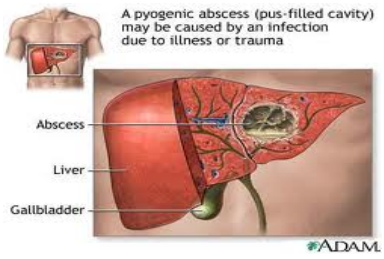

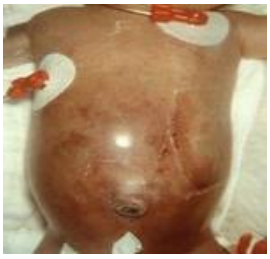

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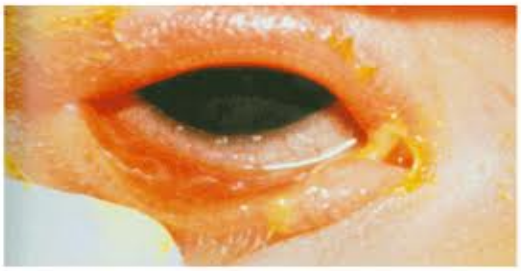
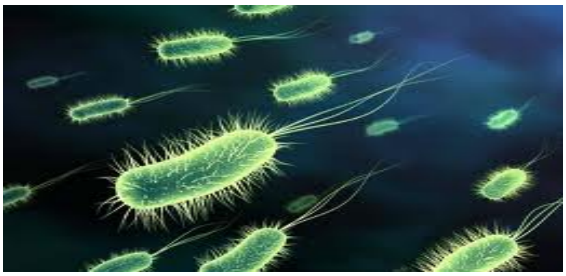


¸¡Ã½¢¸û:

À¡ìËÃ¢Â¡ ÁüÚõ ¨ÅÃŠ



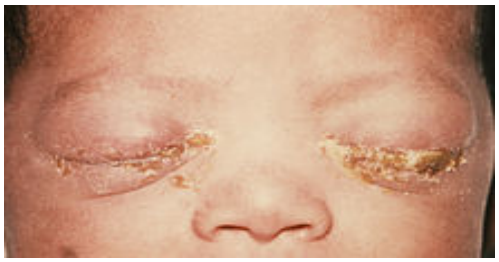
ÀÃ×õ Ó¨È¸û:

À¢ÃºÅò¾¢ý§À¡Ð ÌÆó¨¾ «Íò¾Á¡É §Â¡É¢ ¿£Õ¼ý ¦¾¡¼÷Ò ¦¸¡ûÙ¾ø

«È¢ÌÈ¢¸û:

¸ñ½£Ã¢Ä¢ÕóÐ ¿¢£÷ ÅÊ¾ø

¸ñ º¢Åó¾ ¿¢ÈÁ¡¸×õ, Å£Ì¸Á¡¸×õ þÕò¾ø



º¢¸¢î¨º Ó¨È¸û:

ÑñÏÂ¢÷ ¸¢ÕÁ¢Ì¸¡É ±¾¢÷ôÒ ¸ñ ¦º¡ðÎ ÁÕóÐ

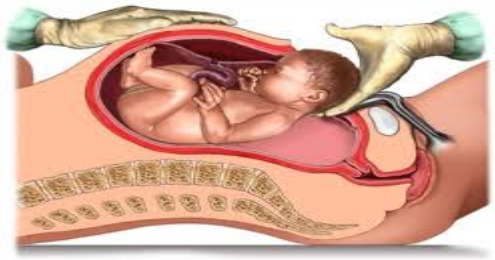
À¢ýÅ¢¨Ç×¸û:

¸ñ À¡÷¨Å þÆò¾ø ¸ñ½¢ø ¾ØõÒ

¾ÎôÒÓ¨È¸û:

À¢Èó¾×¼ý ¸ñ ¦º¡ðÎ ÁÕóÐ þÎ¾ø

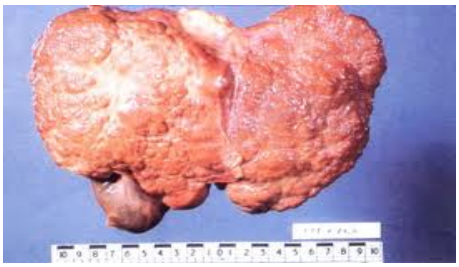
«Ú¨Å º¢¸¢î¨º À¢ÃºÅõ



ÀîºÇíÌÆó¨¾¸ÙìÌ ²üÀÎõ ¸øÄ£ÃØ Å£ì¸õ

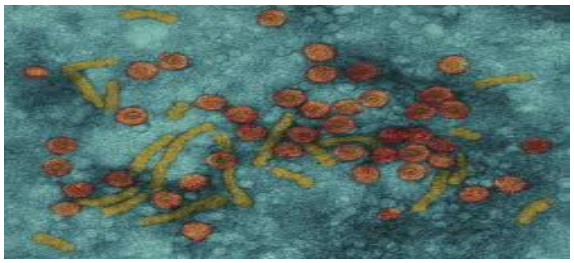
Å¨ÃÂ¨È:

ÀîºÇíÌÆó¨¾¸ÙìÌ ¸øÄ£ÃÄ¢ø ²üÀÎõ ¦¾¡üÚ§¿¡ö



¸¡Ã½¢¸û:

¦†ôÀ¨¼ÊŠ À¢ ¨ÅÃŠ



ÀÃ×õ Ó¨È¸û:

À¢ÃºÅò¾¢ý§À¡Ð ÌÆó¨¾ «Íò¾Á¡É þÃò¾Ð¼ý ¦¾¡¼÷Ò ¦¸¡ûÙ¾ø

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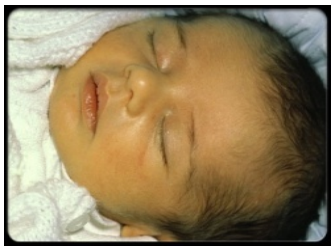
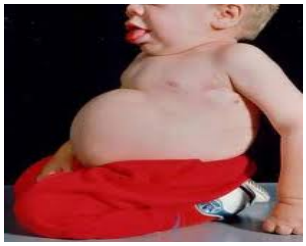
Áï°û¿¢È ¸ñ ÁüÚõ §¾¡ø ¸øÄ£Ãø Å£ì¸õ





°¢¸¢î¨° Ó¨È¸û:

À¢¦É¡À¡÷À¢ð§¼¡ø ÁÕóÐ

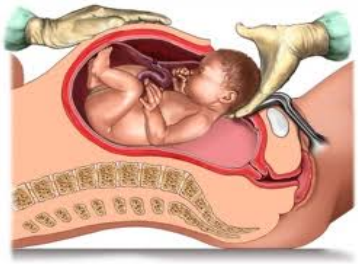
À¢ýÅ¢¨Ç×¸û:

¸øÄ£Ãø À¡¾¢ôÒ ÁÉÅÇ÷î°¢ ÌýÚ¾ø

¾ÎôÒÓ¨È¸û:

- ¦†ôÀ¨¼ÊŠ À¢ ¾Îôâº¢

- «Ú¨Å º¢¸¢î¨º À¢ÃºÅõ



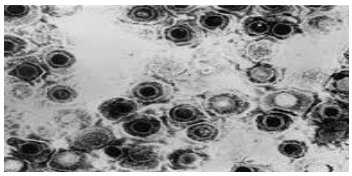
À¢ÈÅ¢ ¦†÷ÀŠ º¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡ö

Å¨ÃÂ¨È:

À¢ÈÅ¢ ¦†÷ÀŠ º¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡ö ¸÷ôÀ¢½¢¸Ç¢¼Á¢ÕóÐ ¦†÷ÀŠ ¨ÅÃŠ ãÄÁ¡¸ ²üÀÎõ

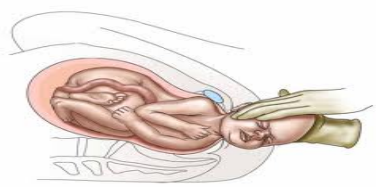
¸¡Ã½¢¸û:

¦†÷ÀŠ º¢õÄìŠ ¨ÅÃŠ

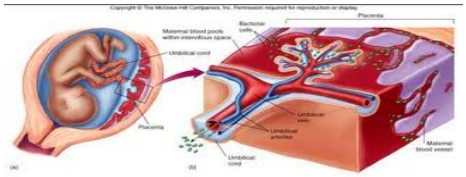


ÀÃ×õ Ó¨È¸û:

À¢ÃºÅò¾¢ý §À¡Ð ¸÷ôÀ¢½¢¸Ç¢ý À¢ÈôÒ ÅÆ¢Â¡¸ ÀÃ×õ



¿ïÍì¦¸¡Ê ãÄÁ¡¸ ÀÃ×õ



«È¢ÌÈ¢¸û:

§¾¡ø¦¸¡ôÀÇí¸û

º¢¸¢î¨º Ó¨È¸û:

Å¢¼Ã¨Àý ÁÕóÐ, ÁüÚõ ¨ÅÃŠ ±¾¢÷ôÒ ÁÕóÐ

¬ì…¢ƒý ¦¸¡Îò¾ø

À¢ýÅ¢¨Ç×¸û:

Àì¸Å¡¾õ ÅÄ¢ôÒ §¿¡ö

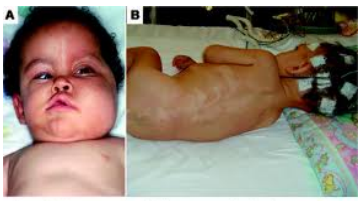
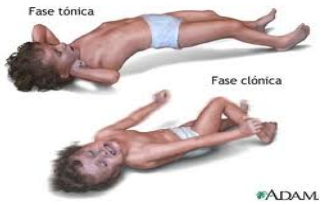


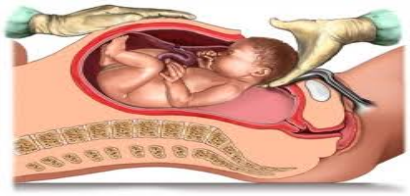
Figure 1. Syndromes associated with HME. A. A patient with epidermal nevus syndrome. B. A patient with hypomelanosis of Ito.



À¡÷¨Å þÆò¾ø

¾ÎôÒÓ¨È¸û:

«Ú¨Å º¢¸¢î¨º À¢ÃºÅõ



ÓÊ×¨Ã:

Àîº¢ÇíÌÆó¨¾¸Ç¢ý §¾÷ó¦¾Îì¸ôÀð¼ ¦¾¡üÚ §¿¡ö¸Ç¡É º£úò¦¾¡üÚ§¿¡ö, ã¨Çì¸¡öîºø, þÃ½ƒñ½¢, ¦¾¡ôÒû ¦¸¡Ê §¿¡ö,

¸£úÀ¼Ä ¸ñ §¿¡ö, ¸øÄ£Ãø Å£Ì¸õ, À¢ÈÅ¢ ¦†÷ÀŠ º¢õÄìŠ ¨ÅÃŠ ¦¾¡üÚ§¿¡ö¸¨Ç ÀüÈ¢ ¿ÄÌ¸øÅ¢ ¨¸§ÂÎ ¾Â¡Ã¢ì¸ôÀðÎûÇÐ.þó¾ Å¢¾Á¡É À¢ÃîºÉ¸¨Çô ÀüÈ¢ ¾¡öÁ¡÷¸Ùì¸¢¨¼§Â ´Õ Å¢Æ¢ôÒ½÷¨Å þó¾ ¿Ä¸øÅ¢ ¨¸§ÂÎ ¯ÕÅ¡ì¸¢ ÀîºÇíÌÆó¨¾¸Ç¢ý ¦¾¡üÚ§¿¡¨Â Ì¨Èì¸ ´Õ ÅÆ¢ì¸¡ðÊÂ¡¸ þÕìÌõ.