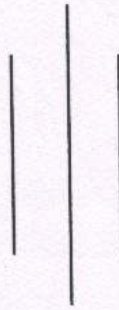


A Study On affecting factors of low birth weight babies among teenage mothers in Koshi Zonal Hospital Morang

Nursing Campus of the Maharajgunj



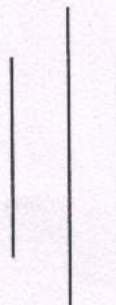
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Master of Nursing

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**Submitted to
Tribhuvan University, Institute of Medicine,
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Kathmandu, Nepal**

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ABSTRACT

In Nepal low birth weight is a national problem of National Health System. Very low birth weight and low birth weight is much more common among the teenage mothers.

The study was conducted to identify the low birth weight and affecting factors among teenage post natal mothers in Koshi Zonal Hospital, Morang district of Nepal.

The research design was adopted cross sectional descriptive research design and purposive sampling technique was used. The total sample was 110 teenaged post-natal mothers and their babies who were delivered in the hospital. The obtained data was analysed by using frequency and percentage and Chi² test was done by using EPI-Info version-6 statistical software.

The study revealed very low birth weight 23.6% and low birth weight 22.7% among teenage. There are several factors found to be associated with the low birth weight babies. The age group 14-15 years of age found to have higher low birth weight. Similarly ethnicity, religion, literacy of mothers, occupation of father, age of menarche, habit of smoking, gravidae found to have more common low birth weight and very low birth weight. Similarly desire of pregnancy, care provider during pregnancy and antenatal visit have been found as the affecting factors of very low and low birth weight. The study had also investigated other factors such as father's education, working hours of mothers, antenatal visit and frequency of antenatal visit, but these factors are not found as affecting factors by significant test. In conclusion, the cause of low birth weight is not only a cause of biological immaturity and reproductive factors. There are socio-demographic cultural factors, way of living, family relationship and personal behaviours are also associated with low birth weight. So the information education and communication must be developed.

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1.1 Background of the Study :

Adolescence is a period of transition from childhood to adulthood where as the "teenage" refers to the period from 13-19 years of age. These are the formative period when the maximum amount of physical, psychological and behavioral change takes place.¹

1.1.1 World wide situation of teenage pregnancy :

Adolescent population comprises 20 percent of total population in the world. Among them 913 million lived in developing countries and 160 million lived in developed countries.²

Globally a total of 585,000 women die of maternal causes annually. That as many as 99% these 585,000 deaths take place in the developing world of which 40% take place in the 10 south Asian member countries³.

The incidence of low birth weight 10% in developed countries and 29% in developing countries. Risk of dying from pregnancy and childbirth related cause is very high for adolescent girls. Maternal mortality rate for women age 15- 19 years are twice as high for women in their age of 20s.³

Adolescent pregnancy is socio consequences and social issue all over the world. According to population report fifteen million women below 20 years give birth accounting for upto one fifth of all birth worldwide. The adolescent fertility at 15 years old 3.2%, at 16 years 11.8%, 17 year 22%, 18 years 36% and 19 years 50.7% (The progress of Nation 1995).

A pregnant adolescent below the age of 18 years is 2-5 times more likely to die than a pregnant women between 18-24 years. Low birth weight is more common among babies born to adolescents than the adult women.⁴ Young married couples often faced strong pressure to began child bearing immediately after marriage.⁵ Lack of knowledge, lack of access to contraception and vulnerability puts adolescent at highest risk of unwanted pregnancy.

Becoming pregnant at too young age can distort a young women's own development, limiting education and life opportunities. For the infant born to teen age mothers, the period of early childhood may be marked by poverty, poor care and instability which help to perpetuate problem from one generation to other⁶.

1.1.2 Situation of Nepal:

Nepal is one of the least developed, landlocked country situated between two large Asian countries China and India, two third of the land covered by mountain and hill. The GNP per capita income is US\$ 180 reflecting the poverty of the Nepalese people. 70% of the population suffer from absolute poverty.⁷ The total population of the country is 21 million and females constituted 10.5 million in 1996. In Nepal, women of reproductive age (15-49 years old) make up 23 percent of the total population and 22 percent occupied the teenaged population, total fertility is 4. 6 per female and the crude birth rate 39. 5 per thousand population with growth rate of 2.1% per year¹³. The status of women and girls is low in Nepal compared to that of the males. The Literacy rate is so low (total 39.5% and 25% for females 1991 census). Low enrollment in school and low completion of formal studies is common among girls and women 24 percent of teenaged girls are either pregnant or mothers by first child⁹. In Nepali society, there is disparity in the right of decision making and right of inheriting the parent's property and right of job opportunity. If women get on job they may face the problem of fulfill the job because of house hold work, and family responsibilities causes low work performers and there may be obstacle in career development among females. Although there is suppose to be equal rights among males and females daughters and sons by law, it is not practiced in real Nepalese Society.¹⁰

According to recent report of safe motherhood 1999 in Nepal general, Nepalese women have less access to health facilities, education, wealth and freedom than men, women and girls are suffering from negligence and less priority of health care service which predisposes them to high maternal mortality 539/1,000,00 live births and morbidity from childhood to old age¹¹.

In Nepal it is estimated that approximately 900,000 women became pregnant in 1997. Out of the total number of pregnancies 40% are high risk pregnancies¹³, and teenage pregnancy is one of the high risk among all pregnancies. The tradition of early marriage and consequent child bearing among

health of young girls at high risk. The high fertility rate of 4.6/1000 live birth and high maternal mortality of 539/1,00,000 live births is a major reproductive health problem of Nepal.¹³ Unequal distribution of food, heavy work loads and lack of resting periods in between the working hours puts the adolescent girls in greater risk of health hazards.

1.2 Statement of Problem

Early marriage is most common in developing countries like Nepal. Research in Nepal shows (22.5% girls are married before 14th birth day (News letter of worldwide activities, issue 17, 1995 Safe motherhood) pregnant adolescent below the age of 18 years is 2-3 times more likely to die than a pregnant woman between 18 and 25 years. Low birth weight is more common among babies born to adolescent than to adult women.¹⁶ The high maternal mortality rate 539/10,0000 live birth which contributed by early child bearing and pregnancy complication.¹² Perinatal growth and birth weight is a major influencing factor of child development and survival. The high infant mortality 79/1000 live birth is a National problem and early pregnancy is one of the contributing factor of low birth weight and infant mortality, which needs to be investigated.

1.3 Rationale/Justification :

The problem of low birth weight is higher in developing countries. Birth weight is an determinant for neonatal and child outcome¹⁴. Nepal is one of the backward country in the world where traditional believe and practice is more common. The status of girls and women are low in the family and less power to decision making.⁹ Early pregnancy is associated with excessive rate of poor pregnancy outcome including low birth weight.¹⁷ Teenage pregnancy have three to four times higher chance of resulting in low birth weight.¹⁸ Evidence of low birth weight is severe problem of Nepal and other developing countries. Till now many studies have been done on teenage pregnancy and pregnancy outcome but not so much studies focussed on affecting factors on low birth weight covering social aspect such as family support which includes of Husband, mother-in-law and sister-in-law. This will be the foundation for future research. The findings will demonstrate a statistical variation of birth weight in teenage group.

clinic and labour room by making awareness of affecting factors and to improve the quality of service to teenage mothers and newborn babies to prevent risk associated low birth weight.

It creates awareness, disseminate the Message about the serious situation of young women in Nepalese society by writing articles about the findings. The Global (1994) strategy to reduce IMR by the year 2000 AD and reduce the lowbirth weight to less then 10% was agreed at the world summit for the children 1994 Nepal is one of the signatories of the Summit, thus the 9th five year plan has set the target to reduce 23% of low birth weight by 2003 and IMR 61.5 which at present 79/1000 live birth (9th Plan 2054, 2059) so it will be helped to meet the target of Government.

1.4 Objective

1.4.1 Overall Objective :

To identify the various affecting factors of low birth weight among the teenage mothers who were delivered in Koshi Zonal Hospital, Morang, Biratnagar during study period.

1.4.2 Specific Objectives :

1. To identify the incidence of low birth weight among teenage.
2. To investigate the factors related to low birth weight.
3. To analyse the various factors associated with low birth weight.
4. To access the impact of family support for low birth weight.

1.4.3 Formulation of hypothesis :

It is essential to understand the relationship between different independent variables which affects the dependent variable.

In this study the hypothesis are as follows :

1. Birth weight will be low in early teenaged 14-16 years mothers.
2. Low birth weight will be higher in mothers of ANC visits less than 4 times.
3. Dieting habits of mother (teenaged) will have low birth weight.
4. The low birth weight will be more common among the mothers who are illiterate.

1.5 Research Questions

1. What are the frequency of low birth weight among teenage mothers ?
2. What are the other factors related to are low birth weight baby among teenage mothers ?
3. Is there any variation in birth weight among different sub-group of teenage mothers?
4. Is there any impact of family support on low birth weight ?

1.6 Operational Definition

- 1.6.1 Teenage pregnancy: The pregnancy which occurs between 13-19 years of age.
- 1.6.2 Birth weight: Weight of new born at the time of delivery.
- 1.6.3 Prenatal growth: The process of growth that occurs during conception to birth.
- 1.6.4 Low birth weight: The weight of baby less than 2500 gm (5 pound, 8 ounce) after completing the 37 weeks of gestational age.
- 1.6.5 Gestation: Pregnancy.
- 1.6.6 Affecting factors: It includes Maternal age, Maternal height, Menarche, parity, intended and non intended pregnancy, ethnicity, education, occupation of respondent's and her spouse, income of her spouse, family care and support during pregnancy, working hours and rest during pregnancy. Nutritional pattern/Feeding habit (dieting). Birth spacing and illness during pregnancy. ANC visit and frequency of visits. Health teaching from health personnel regarding hygienic care and diet.
- 1.6.7 Maternal Age: In this study, the study subject is 13-19 completed years of age.
- 1.6.8 Maternal height: The maternal height considered normal internationally if the height is more than 145 cm.

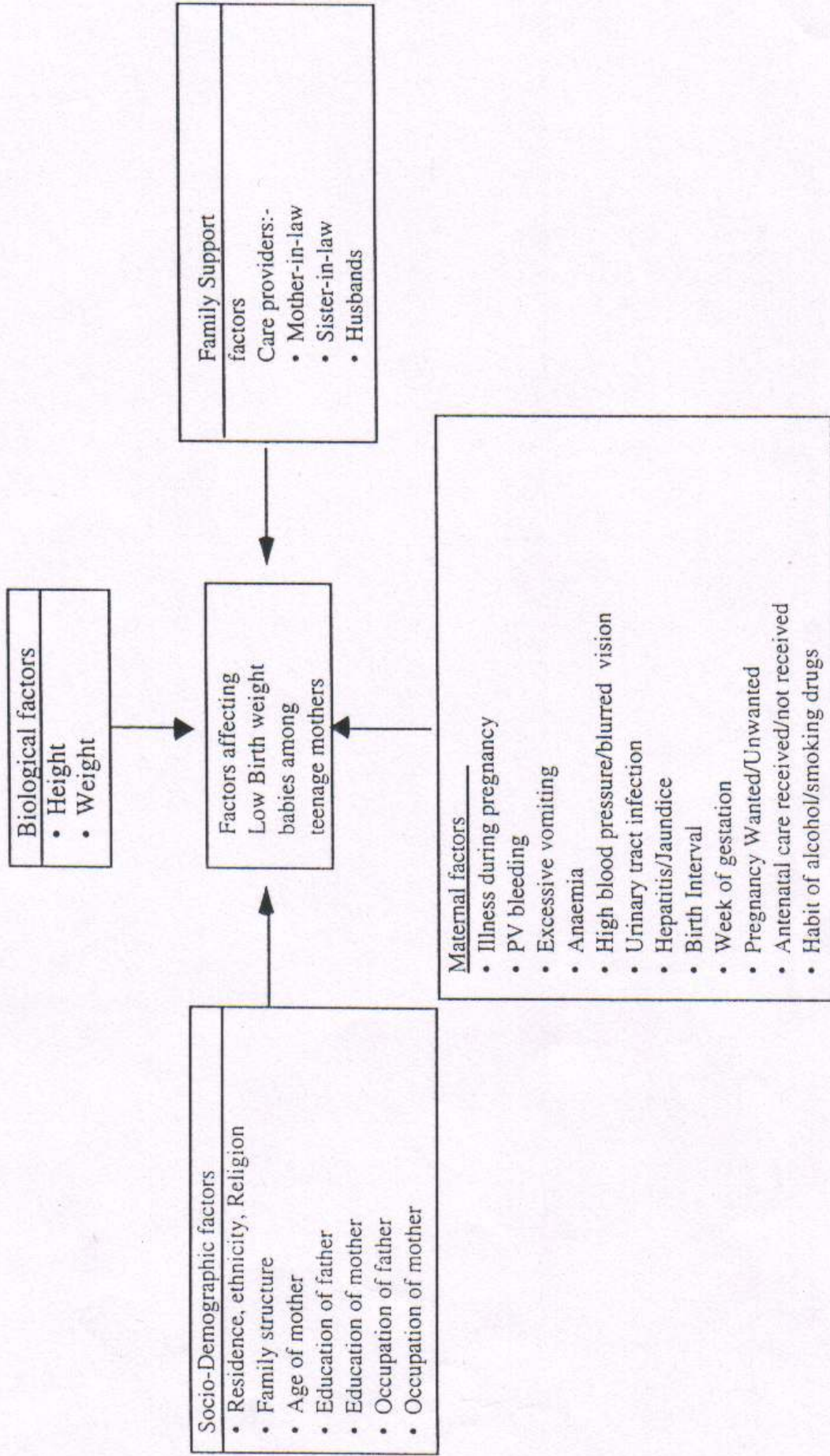
The classification of maternal height according to WHO definition as the height below 145 cm considered high risk.

- 1.6.9 Ethnicity/Caste: It represents the ethnic group of individual teenage mother such as Brahmin, Chhetri, Rajbansi, Mandal, Sattar etc.
- 1.6.10 Education:
- a) Illiterate: The teenage girls and their husband who are unable to read and write.
 - b) Under class 8-10 and under S.L.C.: The teenage mother and her spouse has not completed school education.
 - c) Above 10: The respondents and her spouse who has completed school education and studying in college level.
- 1.6.11 Occupation: It indicates the teenage mother and her spouse occupation such as service, business, labour farmer and housewife for respondents.
- 1.6.12 Family structure: It refers to the family type joint and Nuclear.
- 1.6.13 Income: It refers to the income of teenage and her spouse per month.
- 1.6.14 Birth spacing: The time period between birth of the last child and the birth of the present child.
- 1.6.15 Adolescent mother: According to the definition of WHO 1995 adolescent period between 10 and 19 and it divided in two periods from 10-14 years and from 15-19 years. This study denotes adolescent in the age of 13-19 years.
- 1.6.16 Problem during pregnancy/Medical illness: The study has included the diseases (Problem) severe Nausea/Vomiting, Urinary tract infection, severe headache, p.v. bleeding during pregnancy, giddiness, tiredness, swelling feet, jaundice, hepatitis and hypertension during pregnancy.
- 1.6.17 Smoking habit: It refers to cigarette smoking habit of postnatal teenage mother during pregnancy.

- 1.6.19 Apgar Score: The numerical expression of a new born infant well being and ability to survive, consist of the some points zero to 10, based on five signs ranked in order of importance, with assessment being made at one minute and five minutes after birth.
- 1.6.20 Cereal: A plant such as wheat, maize or rice that produces edible grains, especially one that is grown as food.
- 1.6.21 Pulses: Pulses are seeds from particular plants which can be cooked and eaten for example peas, beans, lentil etc.
- 1.6.22 Care provider: The person who provide hygienic care and advice mental support, provide nutrition and health needs during pregnancy.
- 1.6.23 Menarche: The first menstruation started in the girls.
- 1.6.24 Preferable food: The food which the pregnant mother like and eat.
- 1.6.25 Asphyxia: Suffocation; cessation of breathing.
- 1.6.26 Working hours: It means the pregnant teenage mother how many hours works per day.
- 1.6.27 Frequency of taking food: It refers to the period of taking food/day.
- 1.6.28 Habit of alcohol: It indicates the habit of mother alcohol consumption.
- 1.6.29 Gravidae: A pregnant women. Gravidae designate the first pregnancy, gravidae II the second and so on.
- 1.6.30 Normal delivery: The delivery without using the instrument and vertex presentation.
- 1.6.31 Dysmaturity: Signs and symptoms of growth retardation at birth.
- 1.6.32 Enumerator: The person who collects the data.

- (1) The result of the study does not represent whole district as it was done in a small scale and being Hospital based study and sample was limited to the teenage post-natal mothers admitted in Hospital only.
- (2) The sample size was not determined by statistical calculation.
- (3) The responses of the participants in this study might not be 100% valid because the respondents were from various ethnic groups. There may be some chances of error due to some bias in interpretation of concept between interviewers and interviews.
- (4) There might be inappropriate words in Nepali and local language when the tool was translated in to Nepali and other languages.
- (5) It was not possible to include a large sample due to a limited time and feasibility for the study.

Figure-1
1.8 Conceptual framework



Chapter-II **LITERATURE REVIEW**

2.1 Introduction

Low birth weight baby is whose birth weight is less than 2500 gm (5 pound 8 ounce) after completing the 37 wks. of gestational age.¹⁶ The related literature were collected from different sources such as visited T.U. Central Library, Kirtipur, UNICEF Nepal, T.U. Teaching Hospital Library Maharajgunj, Bir Hospital Library, UNDP Library Pulchok, N.H.R.C. Ramshah Path, Resource centre for Primary Health Care Bagbazar, Journal, Books Medline and Popline etc. were searched and reviewed. These collected literature were classified in five parts for its sequenciality and relevancy.

2.1.1 Low birth weight and associated risk factors with age and strature of mother

2.2.1 Lowbirth Weight associated with illness during pregnancy and other maternal factors

2.1.3 Socio-Economic factors affecting low birth weight

2.1.4 Situation of low birth weight in the world.

2.1.5 Personal behavior associated with low birth weight

Age of marriage

The age of first marriage determines age of 1st birth, early marriages in Sub-Saharan Africa (SSA) affects the reproductive health and adolescent and her offspring by causing high infant, child and maternal mortality. Traditional marriages is most common in Sub Sahara of Africa which may or may not be co habitation, it may take many years for social and financial arrangement. So it is difficult to determine the age of bride at the time of marriage. World Fertility Survey (WFS) data, which does not distinguish between marriage and sexual union, it considers marriage. Women in SSA marriage earlier than their counterparts in other region (with the exception of Afghanistan, Bangladesh, Nepal and Yaman) and enter reproductive life and pregnancy high risk while still very young and physiological immature. Since age of marriage between 13-15 yrs, 9-10% of woman in the WFS were married before 15 and suggesting this data significant sexual intercourse before age of marriage. Because the timing of first marriage and pregnancy determines new born weight is much lower especially if the mother is younger than 15 at time of first pregnancy. In 10 SSA the number

of babies dying within first month of life was 50% higher and postnatal mortality was 25%, where mother was under 20 yrs of age.²⁵

Maternal weight gain:

A study was conducted by (School-To; et al 1990) to access the maternal weight gain, diet and infants birth-weight correlation. Inadequate weight gain during pregnancy is an important risk factor for low birth weight (LBW) but the contribution of diet to weight gain is uncertain. Pregnancy weight gains were examined at 4 week intervals from 12-36 wks gestation as well as total gain for gestation, in a cohort of over 2000 young pregnant women, age less than 18, in for prenatal care (averaging 17 wks gestation). As early as 16 weeks, gains below the lower limit of a clinical standard were associated with a decrement in birth weight at delivery of more than 85 gms and after 24 weeks of approximately 180 gms. After adjusting for potential confounding variables, teenagers who went to develop inadequate total weight gain for gestation had consumed 1878 cal. for teenage with adequate total gain. There were significant deficits in protein and carbohydrate intake associated with inadequate weight gain. This suggests a relationship between nutrient intake during pregnancy and birth weight.²⁷ So it indicates weight is influencing factor of perinatal growth.

Age of Mother and Parity

A study on birth weight of Iraqui children (Rama Kant 1983) was done during a period of 4 months in 1979 from four out of six districts hospitals. The study objectives were to estimate the mean birth weight of Iraqui children to determine the incidence of dysmaturity, gender and environmental factors which influenced on birth weight. The information was collected from 1170 mothers, or from the available hospital records. The findings showed the relationship between birth weight and age of mothers. As the age of mothers increases birth weight also increases up to the age of 36 years. In the cases of parity, there was consistant increases in weight upto the 5th, where after it declined. The birth weight inrelation to height of mother showed a consistant linear trends.³²

Age of Mother

A study in maternity hospital Kathmandu, Nepal (Pokhrel N. 1989). With the objective to identify the age of marriage, the reason for marriage age at first

purposive Sampling technique. The study showed that (65%) were born LBW by the mothers under 17 years of age. The percentage of low birth decreases as the age of women increases.³³

Age less than 17 yrs high incidence of LBW

A study of 184567 Singleton live birth with gestational age of 40 weeks were carried out from 1980-1984 (Lee 1981) using illinois birth certificate date to determine the effect of maternal age on the incidence of LBW at term. The incidence of LBW in mothers who are less than 17 years of age (3.20%) and gradually decrease low birth weight in women aged 25-34 years. The weight increases (1.7%) for those who are more than 35 years of age.³⁵

Heights associated with IUGR

A study was conducted in Bogor West Java, Indonesia from April 1983 - March 1985 (Husaini 1995). The main objective of the study was to identify the indicator maternal risk of delivery and to develop Anthropometry indicators useful for mothers and infant outcomes of pregnancy. The data were obtained from women living in 13 non randomly selected village and communities in rural and urban area of Bogor. A total of 2500 deliveries were studied to ensure at least 250 LBW infants. The result showed the mean age of women first visit was 25 yrs. ranges (14-44 yrs.) overall of the 1647 pregnant women in study 96.5% (n=1589) were live birth, 8.89 (n=141) were low birth and 5.6% were IUGR. Height is associated with IUGR Full term Low birth weight. The women of height <145 cm had risk of delivering low birth 1.50 times greater than the women of height >145 cm.³⁶

Height of Pregnant Women

A retrospective study was conducted in Maternity Ward of TUTH (Dali S.M. 1991). The objective of the study was to find out the co-relation between height of pregnant women and pregnancy outcome and their obstetric information. The data was collected from hospital record 2189 women admitted in Maternity was during 1991 during a period of 5 month. Information was collected from interview schedule. The findings showed that less than 140 cm had 45.45% of LBW babies than steady decrease in the height 140-144 cm so on. The percentage of normal weight babies was high as the mothers height increased, the χ^2 test also showed

more born to short height women. The study showed significant effect of height on the birth weight baby.³⁷

Strature of Mother

A study on obstetric management and the outcome related to maternal characteristics (Dougherty, 1988). The sample was 1115 live birth recorded at London Teaching Hospital. In the sample multiple birth and aged 18 yrs. were eliminated, which a total of 1072 birth for analysis. The result showed that parity and age have the greater effect on birth outcome. Strature was also found to be an important factor for certain ethnicity, occupation.³⁸

Short Maternal Strature and very thin women

A longitudinal study was conducted in rural Kenya during the period of 1984 to 1986 (Newman 1986). The objective of the study was to identify risk of poor Maternal pregnancy and infant outcome. A sample of 290 Embu households was selected from a total of 2059 household through aerial survey and mapping of the 290 households, 138 women were studied during pregnancy and lactation. According to the result, (10%) of the neonates were classified as LBW, of these (77%) were IUGR and (23%) preterm. The risk factors determined as small maternal stature and small midupper arm circumference. The logistic regression Model for IUGR confirms the role of height.³⁹

Urinary tract infection

A retrospective cohort analysis with data from the University of Illinois prenatal, network data base from 1983-1989 in 14 Hospital in the Chicago area (Schieves 1996). The objective of the study was to analyse the effect of antepartum urinary tract infection and adverse maternal and perinatal outcome. In all 25746 women were included in the analysis. In all 25746 women were considered positive for antepartum urinary tract infection and constituted the exposure group, the remainder constituted the non exposed group. The result indicates women who acquire urinary tract infection during pregnancy at increase risk of delivery low birth weight infants. Odds rates of 1:4 for lowbirth weight exposed to Ante partum urinary tract infection were found to be at greater risk of delivering infant preterm and small for gestational age than those who were not exposed ⁴⁶

Teenage pregnancy and anaemia:

Anaemia by region 15-19 years of age: (WHO Regional Health report FHD 1998)

| <u>Teenage Pregnancy</u> | <u>Total Female population</u> | <u>% of all teenage Anaemic pregnant Female</u> |
|--------------------------|--------------------------------|---|
| Africa 63% | 11.3 millions | 44% |
| North America 40% | 3.4 millions | 80% |
| Latin America 30% | 3.0 millions | 17% |
| East Asia 20% | 0.5 million | 18% |
| South Asia 65% | 27.1 millions | 58% |
| Europe 14% | 0.8 millions | 12% |
| Developed countries 14% | 2.0 millions | 11% |
| Developing countries 59% | 41.9 millions | 47% 19 |

Height of Mother

A report of retrospective study conducted in the maternity ward of TUTH (Dr. S.M. Dali 1991) 2189 women were found to have low birth weight babies in short stature women height below 140 cm. So the study shows that mother's height has major impact on birth weight of her newborn.²⁸

Pregnancy outcome and social support

According to the Indian Journal of Public Health 1998, pregnancy outcome and social support describes that pregnancy outcome depends upon social support from the following aspects.

- The pregnant women lives with whom ?
- How is the relationship with others ?
- Do they put the pregnancy at high risk ?
- Who feeds the pregnant women ?
- How is the relationship with her husband ? ²²

2.1.2 Lowbirth weight associated with illness during pregnancy and other maternal factors:

Effect of teenage pregnancy associated with other factors

Illness during pregnancy, premature rupture of membrane and so on:

A study was conducted by (were - EO; Karaja-JK, 1987) The result of a four months descriptive study on low birth weight (LBW) deliveries in Nyanza provincial General Hospital, Kisumu from 15th March to 30th July 1987 are presented. The incidence of LBW was 15.8% premature labour accounted for 55.3% while term small for gestational age contributes 44.77% of the all LBW babies. 4.8% of the mothers of low birth weight babies were teenagers. The mean gravidity of the mothers was 2.5 with 46.8% being primigravidae of the multiparae who delivered LBW babies. 26.6%, 25%, 12.9% and 12.1% gave history of previous abortion, premature delivery, neonatal death and still birth respectively. The most common antepartal complication associated with LBW delivery were pyrexia (20.2%). Premature reupture of membrane beforeterm 16.7% and multiple pregnancy (14.6%). 82.4% LBW deliveres were vertex delivery, 12.5% vaginal delivery and 2.9% caesarian section.³⁰

Anaemia:

A prospective study consisting of 4649 hospital women registered at antenatal clinic St. Mary's Catholic Hospital in Ibadano, Nigeria in 12 month period found that teenage pregnancy was associated substantially with risk of anaemia. (Onadeko Mo; 1996) 704 of these pregnant women were teenage, among whom the frequency of still birth was 1.6% and low birth weight was 20.7%, 34% teenage mothers were anemic still birth and low birth weight was substantially higher than in the older mothers. It is suggested that teenagers have greater nutritional requirements during pregnancy then older women. The study finds the additional requirement competes with the growth needs of the fetus and result in lower birth weight. Given the poor outcome associated with the adolescent pregnancy, these women received careful attention during antenatal period and delivery. In addition, efforts should be made to reduce the rate of teenage pregnancy through programs such as scholarships for female students.²⁶

Nausea and Vomitting

In the study of (Behrman - CA; et al (1990)) The study showed that early pregnancy Nausea and vomiting (NVP) is a favorable risk factor for pregnancy outcome of LWB. A study of 239 randomly selected teens from a geographic based cohort of nearly 2800 pregnant adolescent early (first trimester) NVP was reported by 20.9%, and an additional 17.6% reported that their NVP continue to second or third confounding factors (length of gestation maternal age, ethnicity, pregnant body mass index, weight gain and smoking) the study found that early NVP alone did not affect the B.W. but late (NVP) affects the birth weight and causes LWB.²⁸

Primi mother has high incidence of LBW

A retrospective study was conducted to determine the average birth weight of the babies born at BPKHIS in one year period from 1994-1995 (Singh 1995). The total number of deliveries was 1039 and total number of new born was 150 including twins and triplets. LBW was observed in 150 (14.28%) cases. The study indicates (51.38%) of preterm and (48%) of LBW were born to primimothers at BPKHIS.³⁴

Previous preterm delivery and female sex of fetus etc.

A study was carried out at Cooper Green Hospital in Birmingham, Albama during the year 1983 to 1987 (Shi.Wa.Wen 1990). The study objective was to examine a number of factors on both IUGR and preterm delivery. A total of 17, 149 deliveries were included in the study. The data were collected prospectively but examined retrospectively, came from Medical record, height and pre-pregnancy weight were based on patient report. The study findings indicate IUGR was statistically related to first birth, unmarried mother and age <17 yrs or >30 years, female sex and previous preterm delivery. In the univariate analysis cigarettes smoking significantly related to IUGR. Similarly, in this analysis, women who were short generally increased risk IUGR Marital Status, Maternal education, were not related to IUGR and previous preterm delivery had a moderate effect on IUGR.⁴¹

Gestational age, Parity, Short Strature of Mother

A prospective cohart study of pregnant women in a defined rural area of Pune district of Maharastra during 1987/1989. (Hirve 1989) All pregnant mothers were identified by home visit. The total number of pregnant women was 4382 only 1922 (47.4%) of the 4057 singleton live birth could be weight within the first 24 hrs. The result indicated the incidence of low birth weight based on this group was

(29%) Maternal age and education were not considered to be high risks for Low birth weight. The probability of LBW (<2500 grams) decreases with increasing gestational age, the probability of LBW decreases with increase parity, short stature mothers (height <145 cm have a high risk of LBW (91.3%) greater probability of having a LBW new borns as compared to mothers with normal height (>145 cms) and age at marriage increase the risk of low birth weight new born decreases.⁴²

Urinary tract infection causes high LBW

A retrospective cohort analysis with data from the University of Illinois prenatal network data base from 1983-1989 in 14 Hospital in the Chicago area (Schieves 1996). The objective of the study was to analyse the effect of antepartum urinary tract infection and adverse maternal and perinatal outcome. In all 25746 women were included in the analysis. In all 25746 women were considered positive for antepartum urinary tract infection and constituted the exposure group, the remainder constituted the non exposed group. The result indicates women who acquire urinary tract infection during pregnancy at increase risk of delivery low birth weight infants. Odds rates of 1:4 for lowbirth weight exposed to Ante partum urinary tract infection were found to be at greater risk of delivering infant preterm and small for gestational age than those who were not exposed.⁴⁶

Age and parity

A review of history sheets of obstetric cases recorded in a district hospital (Verma, Das - K.B. 1994) was done to compare the obstetric outcome in 200 teenage first pregnancies (Study group) with that in Control group i.e. 20 years to 29 years. It revealed that incidence of complications of pregnancy like anaemia, pregnancy induced hypertension (PIH) LWB and preterm labour were significantly higher among teenage mothers. The normal mode of delivery was commoner in teenagers (82.5%) in comparison to control group (76.5%), probably because of higher number of low birth weight babies. The fetal outcome was significantly worse in teenage mothers with high incidence of perinatal mortality (8%) and low birth weight babies (35%). There was not a single newborn with birthweight above 3500 gms, in teenage group, whereas, control group had 5 babies (2.5%) in the category.⁴⁷

Effect of teenage pregnancy associated with other factors

A comparative study was conducted to evaluate the effect of teenage pregnancy (Verma-Vi (1997)). A review of history sheets of obstetric cases recorded in a district hospital in 1994 was done to compare the obstetric outcome in 200 teenage first pregnancy (studied group) with that in control group i.e. 20 years to 29 years. It revealed that incidence of complication of pregnancy like anaemia, pregnancy induced hypertension PIH preterm labour were significantly higher among teenage mothers. The normal mode of delivery was commoner in teenagers (82.5%) in comparison to control group (76.5%), probably because of higher number of low birth weight babies. The foetal outcome was significantly worse in teenage mothers with high incidence of perinatal mortality (8%), low birth weight babies (35%). There was not a single newborn with birth weight above 3500 grams in teenage group, whereas, control group had 5 babies (3.5%) in the category.³⁶

2.1.3 Socio-economic factors affecting low birth weight:

The social condition of adolescent girl, pregnancy outcome

92% of Nepalese live in the rural areas. Only 24% of women receive Antenatal care (ANC) due to low accessibility, availability and transportation facility. So the low birth weight outcome is one of these factors.²³

Socio-economic, family structure

A study was conducted in the Department of Obstetric and Gynaecology by (Lausson - PM; et al (1997)) to determine pregnancy outcomes among teenagers in Sweden.

Methods: All single birth during 1990-1991 mothers age less than 25 years recorded in the Swedish Medical birth registry were studied (n=62, 422).

The pregnancy outcome analyzed were late foetal death, Infant mortality, preterm birth, Low birth weight, and low Apgar score. Information on Maternal age, parity, family structure, maternal smoking, maternal height and weight gain during pregnancy was recorded in the Medical birth registry.

Information on socio-economic characteristics was obtained from the

determinants of adverse outcomes among teenagers. Result compared with women aged 20-24 years, girls of 17 yrs or less were at high risk of low birth weight (Odds ratio [or] 1.6) Teenagers also had a grade 50% higher risk of late fetal death and infant mortality due to low birth weight, but this risk was reduced after controlling for the effect of socio-economic characteristics (adjusted or 1.2). The increase in risk of low birth weight and late foetal death associated with low Maternal age.²⁹

Illiterate and short Inter pregnancy interval less than 24 months

A study was carried out in Maternity Ward of the Tribhuvan University Teaching Hospital (Dali S. 1989). The study objectives were to investigate the factors associated with LBW babies. A purposive sampling technique was applied to collect information. The total sample were 1000. The data were collected through interview, physical examination and Laboratory investigations. The study result indicated (24%) of LBW was found in the youngest age group and the proportion progressively decrease with increasing age of mothers. The relationship between educational status and baby weight showed illiterate mothers had high proportion (20.82%) of LBW than the literate mothers (18.69), with regard to effect of the inter pregnancy interval on the birth weight, the proportion of LBW was considerably higher with less than 24 months Interpregnancy interval. The study showed strong association between the height of the mother and birth weight. LBW was found to be highest among mothers of shortest mothers (83.33%).⁴⁰

Ethnicity and antenatal visit

A study was conducted of reproductive health and outcome of pregnancy among mothers delivered in three Hospital of Kathmandu in 1992 (Magnar et al 1992). A total 5356 women who have birth at Tribhuvan University teaching hospital, Prasuti Griha, Thapathali and Patan Hospital between 1992 to 1993. The result indicates low birth weight was more common among the Chhetri, Brahman - mothers and mothers who did not attend antenatal care and were smokers with regard to personal habit very few mothers were smokers (5.9%). The number of cigarette smoking was 3.8 sticks a day.⁴⁵

Teenage adolescent & their growth

There are approximated 1.5 billion adolescent females between the ages of 10 and 24 years, world wide 15-19 years female varies from 4-50%. Teenage is a maximum growth period, More than 20% of total growth is achieved during this period and up to 50% of adult bone mass is gained. 50% of extra diet is needed for their growth. This is the period of playing with friends, going to school and enjoying a happy life with parents. In Nepali society, women and girls tends to do heavy work but does not get extra physical and mental rest, which predisposes to high maternal risk to teenage girls.¹⁴

Regional data showed that incidence of low birth weight is highest in Asia (21%) Oceania (20%), Africa (15%), Latin America (11%), North America (7%) and Europe (6%).¹⁷

In developed countries Iron deficiency Anaemia is only 20% while in developing countries it is as high as 40-80% and in Nepal 78%. So naturally in teenage pregnancy there is a high incidence of iron deficiency due to biological needs so there is high incidence of LBW.¹⁸

Teenage pregnancy and anaemia:

After menarche there should be three to four years gap in conception for good outcome of pregnancy. If the conception is earlier in Low birth weight.²⁰

2.1.5 Personal behaviour associated with low birth weight

Smoking habits

A study carried out over a 18 months period at Hamilton, Ontario Hospital (Anderson 1984). The study objectives was to quantify the effect on the size of birth of Maternal anthropometry and smoking Habit and to derive adjustment factors for predicting size at birth from individual Maternal characteristics. The population was postparten mothers and their babies. The sample size was 2332. Data on maternal characteristics were collected by review Maternal Hospital chart, structured interview during first trimester.

assessment was undertaken at the time of interview, birth weight was recorded within first hour of life. The study indicated maternal variable were positively correlated with birth weight positive correlation with gestational age, Maternal age at delivery, Interval since termination of last pregnancy and maternal height. The finding indicated that infant of women who smoked during pregnancy showed significant for lower birth weight than the infant of women who do not. 43

Smoking, alcohol and social support and psychological factor

A study was conducted at the department of Gynaecology and Obstetrics at Rigshospitalet in Central District of Copenhagen from June 1990 January 1992 (Herete 1996). The objective of the study was to investigate the influence of Psycho-social stress, Maternal smoking, alcohol, maternal schooling, social support and psychological wellbeing the study was designed as a prospective study 2432 pregnant women had completed a questionnaire. The statistical method was used as Chi-square and test for unpaired data for the analysis of association between different risk factors. The study indicate a total of 152 Infants, corresponding to (6.3%) of the infants in the study had birth weight below 10th Percentile. In the Univariate analysis, poor school education smoking habit associated with IUGR. 44

All the reviewed literature gave an insight to the investigator in identifying the problems and establishing the need for the present study. Many studies have been done in other countries regarding the LBW and IUGR and few in Nepal. The research findings indicates maternal education, parity, short stature and smoking habit, illness during pregnancy had a significant effect on birth outcome.

CHAPTER-THREE

3.1 Study Design

A descriptive Cross-Section Study was conducted in maternity ward of Koshi Zonal Hospital, Biratnagar. This study was designed to collect information on incidence and factors affecting teenage mothers who come to deliver in this hospital.

3.2 Study Area

This study was carried out in Koshi Zonal Hospital Morang, Biratnagar. This hospital was purposively selected for the study because it is only one Hospital of Eastern Nepal and highly populated area. The total population of Morang District is 674823. Male 343045 and Female 331778 (District Profile of Morang 2054). In this area having cultural value of early child, marriage in some ethnic group is common. This hospital is a referral hospital having total 150+40 beds and maternity beds 25+15 with the majority of clients coming for treatment from inside and outside the Zone.

3.2.1 Introduction of Morang District

Morang District is one of the highly populated districts in Nepal with its different ethnic composition. In Biratnagar, the ethnic groups are Brahmins, Chhetris, Tharu, Rajbansi, Sattar, Dhimal, Mandal, Rai, Limbu and many others. Early marriage and child bearing is quiet common in Tharu, Sattar, Dhimal and Rajbansi. In this area there are financially well sufficient Madwari and Brahman and poor people difficult to to manage their daily life. So the researcher was interested to conduct the research in Morang district. The total population of Morang district is 674823, among this group male 343045 and female 331778. It consists of 65 Village development Committees and one Metropolitan City. Morang district has covered 1855 Sq. Kilometers of land area. Its boundaries in South Bihar India, North-Dhankuta and Panchthar, East-Jhapa and Ilam, West Sunsari District. Total household is 126775 and population density per sq.km. 363.8.

Literacy : Male: 67.72%
Female: 29.22%

Religion : Hindu, Muslim, Buddhist, Christian, Kirat and other.
(District Profile of Morang 2054)

Language : Nepali, Maithili, Bhojpuri, Rai, Limbu, Newar, Tamang and Hindi.

Health Care System:

| | | |
|----------------------------|---|--------|
| Regional Hospital | - | 1 |
| Zonal Hospital | - | 1 |
| Primary Health Care Centre | - | 3 |
| Healthpost | - | 14 |
| Sub Healthpost | - | 48 |
| Outpatient | - | 204607 |
| Skin disease | - | 43960 |
| Diarrhoeal disease | - | 18779 |
| Worm Infestation | - | 20662 |
| ARI | - | 13091 |

3.2.2 Introduction of Hosital

Koshi Zonal Hospital is a referral hospital having 150 beds + 40 and Maternity beds 25 and + 15 which has not been sanction by the Government.

Service Provided:

Medical, Surgical, Gynae / Obstetrick, Paediatric/Family Planning (temporary and permanent) ANC, Labour and postnatal care including NICU for neonates. Indoor and out patient services.

3.3 Study population:

The study population was teenaged post natal mothers admitted in the maternity unit of the respective Hospital. The total study population was 110 during the study period.

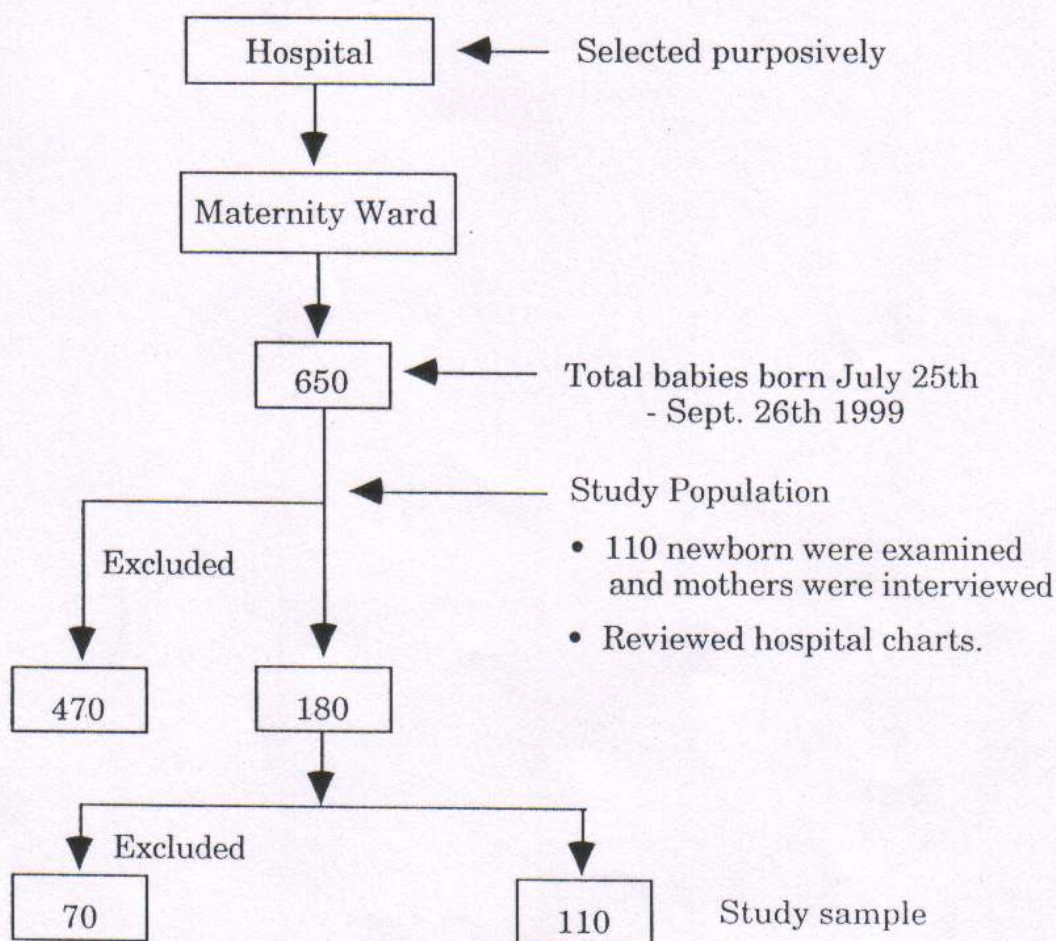
3.3.1 Study Sample

Teenage post-natal mothers attending Koshi Zonal Hospital for the delivery during the study period and meeting the criteria for selection.

3.3.2 Exclusive Criteria:

- The mothers who were unwilling to participate.
- The mother who were uncooperative and try to be secretive.
- The mothers who were mentally retarded.
- The mothers who had not completed 37 weeks of gestational age.
- The mothers who had delivered twin and still birth.

3.4 Sampling Technique



A baseline data was collected by the researcher prior to select the problem. It was covered all the deliveries recorded at the labour room in maternity hospital Thapathali in a six months period from 14th. April to 14th September 1998. The total numbers of deliveries was 5866. Teenage deliveries amounted for 2480 (42.28%). > 2500 gms 1227 (49.48%) and < 2500 gms (50.52% total teenage deliveries). This shows high percentage of low birth weight babies were found; the cause needs to be investigated.

- 3.5 Study Variables**
- Independent
 - Dependent

3.5.1 Independent variables

- a) Teenage Mothers
- b) Socio-Demographic factors:
 - Age of Mother
 - Ethnicity
 - Education: Father's education
Mother's education
 - Occupation: Father's occupation
Mother's occupation
 - Income: Father's income
Mother's income
 - Family structure: Joint
Nuclear
- c) Biological factor:
 - Height of mother
 - Age of Menarche
 - Age of pregnancy
- d) Behavioral Characteristics
 - Drugs
 - Smoking
 - Alcohol
 - Dieting habit
 - Care provider during pregnancy
 - Wanted and unwanted pregnancy
- e) Pregnancy care
 - ANC visit
 - Frequency of visit
 - Health teaching during visit
- f) Nutritional pattern and feeding habit of mother
 - Vegetarian

- Nonvegetarian
 - Frequency of taking food
 - Dieting habit
- g) Reproductive factors
- Birth interval
 - Weight gain during pregnancy
 - Any pregnancy complication
 - APH
 - Anaemia
 - Hyperemesis gravidarum
 - High blood pressure
 - PIH
- h) Medical factors
- Urinary tract infection
 - Jaundice and hepatitis

3.5.2 Dependent variable

- Birth weight

3.6 Sample Size

The sample size was teenaged post-natal mothers 110 who delivered in Koshi Zonal hospital Morang.

3.7 Instrument for Data Collection

- (a) Instruments are developed after the detailed literature reviewed based on the research objectives. A structured and indepth questionnaire was developed and used in local language to interview teenage post natal mothers to get information regarding Demographic information, Socio-economic information, obstetric and Gynaecological information, nutritional pattern and fooding habit, knowledge of F.P. and effect of early pregnancy and Newborn information.
- (b) Other instruments was used such as tepe measure, weighing scale etc.

3.8 Validity/Reliability

- (a) Content validity is checked by different health personnel and Research guide, & literature review & it is used in pilot study. Upon completion of the pilot study necessary correction and modification were made as needed and final copy of questionnaire was developed.
- (b) Continue consultation was maintained with the supervisors.
- (c) The other concerned persons are also requested to read the questionnaire and give suggestions.

3.9 Pre-test the Questionnaire(Pilot Study)

A pilot study was conducted in Prasutigriha Hospital in a period of 1 week on July 17th, 1999 to July 23rd, 1999. The questionnaire were administered to 10 post natal teenage mothers. Among them five had delivered < 2500 grams baby weight and remaining five had delivered (>2500 grams baby weight at birth). The questionnaire was found clear and understandable but a few questions were modified after the pretest with consultation.

3.10 Data Collection Procedure

1. Permission from the hospital authority:

Researcher met the Hospital authority and explained about the study design and study objective. A written permission was obtained.

2. Recruitment of enumerators:

Two interviewers were trained for the study purpose. The trainees were explained the little about study area of the study and objective. The trainees were explained about the inclusive and exclusive criteria and ethical consideration. Gave through training on interview technique, filling the forms and storing the questionnaires. The training session was conducted for two days. The interviewers were selected from the same unit working as Nursing staffs.

During data collection regular follow-up visit and supervision were made, questionnaire were checked and corrected as necessary. After completion of each day data collection feedback was given to the enumerators.

3. Verbal consent was taken from the mothers before including in the study.
4. Interview was taken from teenage postnatal mothers.
5. Measurement of baby weight, height & head circumference was performed.

3.11 Ethical Consideration

The researcher took the convenient time and consulted with Hospital Medical Superintendent, Matron and Ward Incharge of maternity ward to explain the purpose of study and plan the data collection. A written permission was taken from the authority to collect the data.

The postnatal mothers and her family were given a due respect and informed about the objective of the research and took her verbal consent before interview. The subject was provided privacy and right to answer and reject to give interview. The information related to respondents kept confidential. The investigator did not interfere the cultural value of the respondents and hospital daily work during interview.

3.12 Data Compiling, Management and Safety

All the filled up questionnaire were collected from the interviewers and checked throughly for accuracy and completeness. Data were reviewed in the presence of enumerators then the questionnaire were placed in the plastic bag to safe-guard from moisture and placed in a locked box. All the data were coded and entered into to master dummy table. The coded questionnaire was compiled and stored for analysis purpose.

3.13 Data Processing, Analysis and Interpretation.

The data were checked and rechecked before analysis. The completed data were edited in preparation for analysis. The data were manually analysed and interpreted by the researcher herself.

3.14 Statistical Analysis

After compiling the data were analysed by using frequency and percentage calculation of each affecting factor. Table, charts and frequency distributors were prepared to facilitate the interpretation of the collected data. The inferencial statistical analysis Chi² test were used to determine the association between the variable of interest and level of significant.

Chapter – Four

Data analysis and interpretation

4. Introduction

A total of 110 post natal teenage mothers were selected for the study who were admitted for delivery in Koshi zonal hospital Morang district during study period July 25th to September 26th 1999. The study employed descriptive cross sectional study design. The data were collected from primary sources. Among the 110 deliveries 26(23.6%) were very low birth weight and 25 (22.7%) were low birth weight and 59(53.6%) were normal birth weight. Hundred ten teenage mothers of newborn were interviewed and newborn assessment was performed to get newborn information, among these 110 newborns, the Apgar score obtained less than normal value observed 53 (48.2%) out of them 39 (35.5%) having Apgar score 4-6 at one minute and 14 (12.5%) less than 7 at 5 minutes. The history of labour among these prolonged labour >18 hrs; cord roand the neck and cord prolapse (Foetal distress and maternal distress).

Among these 53 (48.2%) 4 (7.4%) dead after few hrs. of delivery and 6 (11.3%) dead after few days.

4.1 Socio – Demographic information

This is first part of questionnaire, consisting of age, education, address, Ethnicity, religion, Age at marriage, and family structure etc.

Table 1. Distribution of the respondents according to districts. (N=110)

| Variables | Number | Percent |
|-------------------|--------|---------|
| Residing district | | |
| Saptari | 25 | 22.7 |
| Morang | 50 | 45.5 |
| Sunsari | 20 | 18.2 |
| Jhapa | 15 | 13.6 |

3.13 Data Processing, Analysis and Interpretation.

The data were checked and rechecked before analysis. The completed data were edited in preparation for analysis. The data were manually analysed and interpreted by the researcher herself.

3.14 Statistical Analysis

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Figure- 2

Distribution of the respondents according to district.

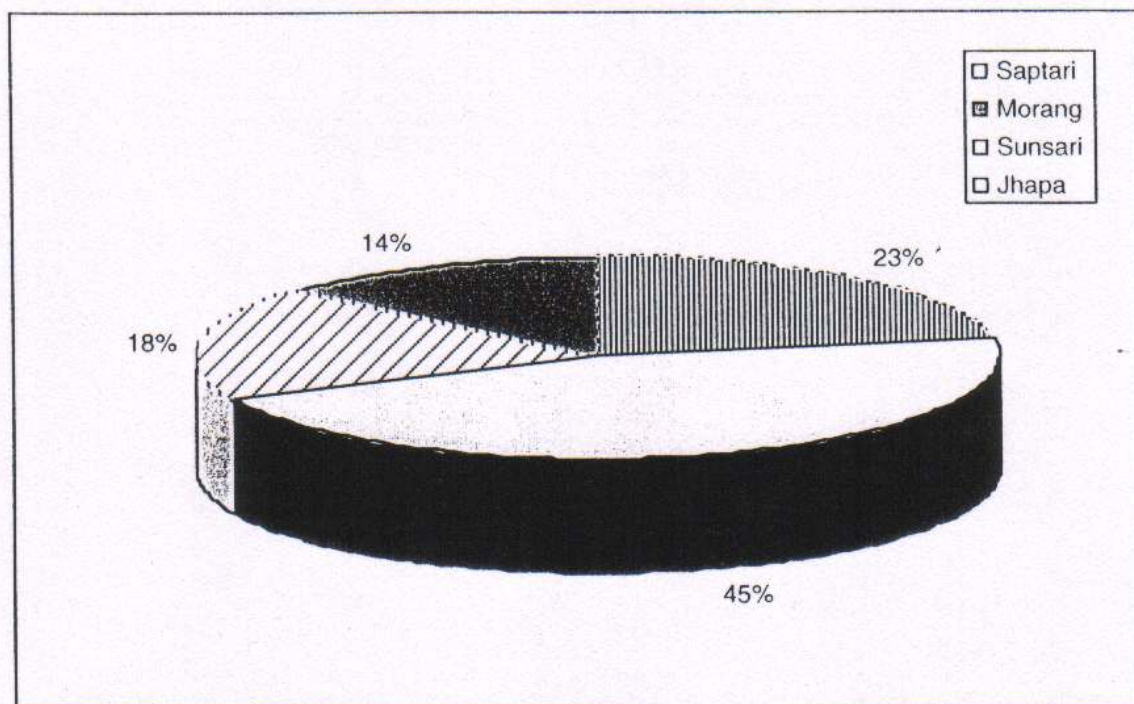


Table 1 shows the distribution of respondents by district Among all the study groups forty five point five percent population were from morang District followed by Jphapa District (13.6%)

Table 2a. Distribution of the mothers according socio-demographic Characteristics. (N=110)

| Variables | Number | Percent |
|------------------------------------|--------|---------|
| Ethnicity/Caste | | |
| Brahmin/Chhetri | 25 | 22.7 |
| Mandal/Karna Dhimal/Rajbansi/Tharu | 45 | 40.9 |
| Musalman | 9 | 8.2 |
| Sattar/Musar | 19 | 17.3 |
| Others | 12 | 10.9 |
| Religion | | |
| Hindu | 70 | 63.6 |
| Buddhist | 25 | 22.7 |
| Muslim | 10 | 9.1 |
| Christian | 5 | 4.5 |
| Family Structure | | |
| Joint | 75 | 68.2 |
| Nuclear | 35 | 31.8 |

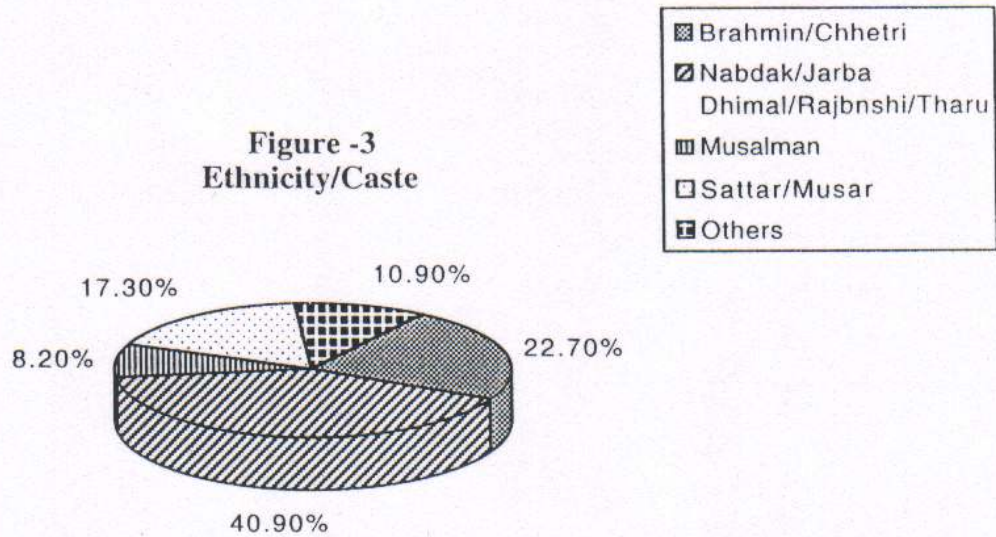
Table 2a. shows the ethnicity of teenage mothers, majority of subjects (40.9%) were from ethnicity of Mandal/Karn /Dhimal/Ralbansi and Tharu and few were from others. In respect to others, the caste were from Newar, Rai and Limbu. Among the sample, most of the pupulation (63.6%) were from Hindu religion. The higher proportion (68.2) teenage post natal mothers were from joint point family.

Others: House service (= 5 and small scale business=4)



Distribution of the mothers according socio-demographic characteristics

**Figure -3
Ethnicity/Caste**



**Figure-4
Religion**

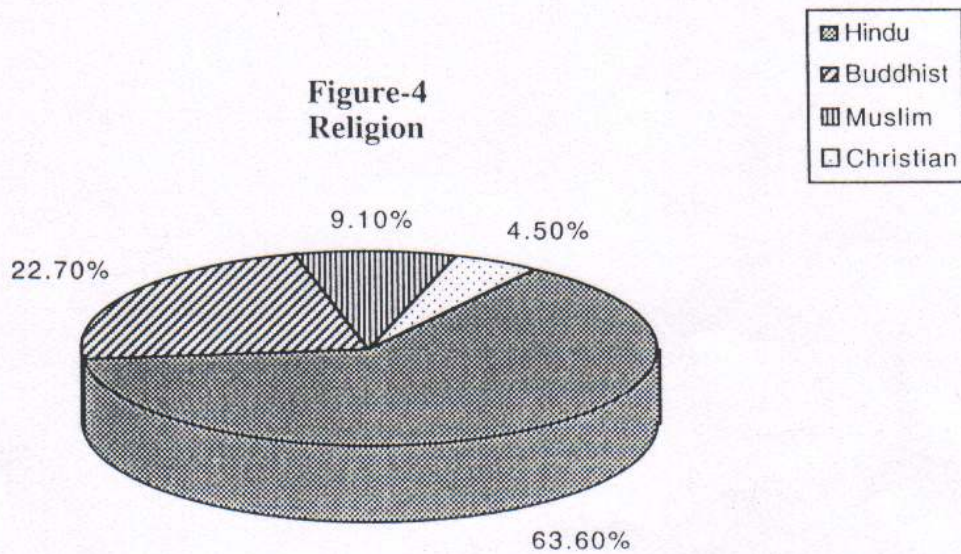


Figure-5
Family Structure

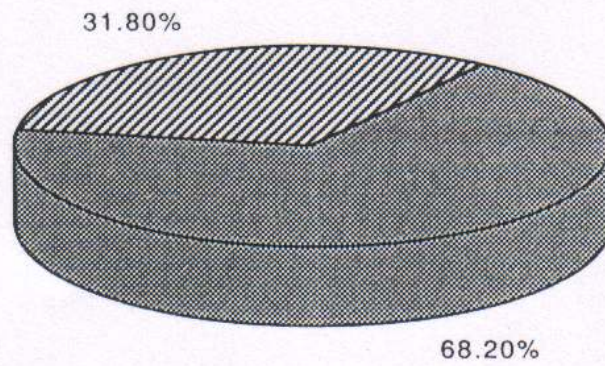
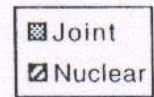


Table 2b. Distribution of the mothers according to socio-demographic characteristics (N = 110)

| Variables | Number | Percent |
|-------------------------|--------|---------|
| Mother's age | | |
| 14-15 yrs | 26 | 23.6 |
| 16-17 | 44 | 40.0 |
| 18-19 | 40 | 36.4 |
| Mother's education | | |
| Illiterate | 70 | 63.6 |
| 1-7 grade | 33 | 30.0 |
| 8-10 grade | 7 | 6.4 |
| Father's education | | |
| Illiterate | 60 | 54.5 |
| 1-7 grade | 38 | 34.5 |
| 8-10 grade | 10 | 9.1 |
| > 10 grade | 2 | 1.8 |
| Mother's occupation | | |
| Housewife | 81 | 73.6 |
| Agriculture | 20 | 18.2 |
| Others | 9 | 8.2 |
| Father's occupation | | |
| Service | 30 | 27.3 |
| Agriculture | 58 | 52.7 |
| Business | 8 | 7.3 |
| Labour | 14 | 12.7 |
| Father's income | | |
| Rs. 6000 and more/month | 30 | 27.3 |
| Rs. 3000-5999/month | 66 | 60.0 |
| Rs. < 3000/month | 14 | 12.7 |

Table 2b shows the age of mothers forty percent of the population were from age group 16-17 years of age. Higher proportion (63.6%) of mothers were found illiterate. Literacy rate was higher in husbands compared to wives. Most of respondents (73.6%) were house wife's majority of the husband's population (52.7%) were from occupation Agriculture. Sixty percent of father's income were Rs.3,000-5999 per month.

Table 3a. Birth weight of Newborn according to residence and socio-demographic characteristics of mother (N=110)

| Variables | Birth weight in grams | | | |
|--|-----------------------|-----------|------------|----------|
| | <2000 | 2000-2499 | 2500 and + | total |
| | N (Row%) | N (Row%) | N (Row%) | N % |
| 1. Residing district | | | | |
| Saptari | 7(28.0) | 6(24.0) | 12(48.0) | 25(22.5) |
| Morang | 10(20.0) | 9(18.0) | 31(62.0) | 50(45.5) |
| Sunsari | 2(10.0) | 4(20.0) | 14(70.0) | 20(18.2) |
| Jhapa | 7(46.7) | 6(40.0) | 2(13.3) | 15(13.6) |
| 2. Ethnicity | | | | |
| Brahmin/Chhetri | 2(8.0) | 4(16.0) | 19(76.0) | 25(22.7) |
| Mandal/Karna/ Dhimal/Tharu/ Rajbansi | 11(24.4) | 13(28.9) | 21(46.7) | 45(40.9) |
| Musalman | 1(11.1) | 2(22.2) | 6(66.6) | 9(8.2) |
| Sattar/Musar | 9(47.4) | 4(21.3) | 6(31.3) | 19(17.3) |
| Others | 3(25.0) | 2(16.7) | 7(58.3) | 12(10.9) |

Others: House service (=5) and small scale business (=4)

Table 3a shows the very low birth weight higher proportion (46.7%) and low birth weight is (40.0%) among the mothers from Jhapa district, and normal birth weight is higher (70.0%) among the mothers from sunsari district. It is said to be due to the health awareness and well status among the militaries who returned from Hong Kong and Singapore. The very low birth weight (47.4%) among the mothers from Sattar/Masar ethnic group had more common and low birth weight commonly (28.9%) having mothers of Mandal/Karna/Dhimal/Rajbansi/Tharu. The normal birth weight relatively higher proportion (76.0%) among the Brahmin/Chhetri ethnicity. The very low birth (27.1%) and low birth weight commonly (30.0%) having the mothers of Hindu Religion and Normal birth weight higher (76.6%) among the mothers of Muslim Religion respectively.

Table 3b. Birth weight of Newborn according to residence and socio-demographic characteristics of mother (N=110)

| Variables | Birth weight in grams | | 2500 | total |
|---------------------|-----------------------|-----------|----------|----------|
| | <2000 | 2000-2499 | and + | N (col%) |
| | N (Row%) | N (Row%) | N (Row%) | |
| 1. Religion | | | | |
| Hindu | 19(27.1) | 21(30.0) | 30(42.9) | 70(63.6) |
| Buddhist | 4(16.0) | 2(8.0) | 19(76.0) | 25(22.7) |
| Muslim | 2(20.0) | 1(10.0) | 7(70.0) | 10 (9.1) |
| Christian | 1(20.0) | 1(20.0) | 3(60.0) | 5(4.5) |
| 2. Family structure | | | | |
| Joint | 11(14.7) | 12(16.0) | 52(69.3) | 75(68.2) |
| Nuclear | 15(42.9) | 13(37.1) | 7(20.0) | 35(31.8) |

The very low birth (27.1%) and low birth weight commonly (30.0%) having the mothers of Hindu Religion and Normal birth weight higher (76.0%) among the mothers of Buddhist Religion respectively.

The family structure related to birth weight shows higher percentage very low birth weight and low birth weight (42.9%), (37.1%) among Nuclear family.

Table 4a. Birth weight of newborn according to Biological characteristics of mothers (N=110)

| Variables | Birthweight in grams | | | |
|-----------------------------|----------------------|-------------|-----------|----------|
| | <2000 | 2000 – 2499 | 2500 and+ | Total |
| | N(RoW%) | N(RoW%) | N(RoW%) | N(Col%) |
| 1. Mother's Age | | | | |
| 14 – 15 yrs | 11(42.3) | 8(30.8) | 7(26.9) | 26(23.6) |
| 16-17 yrs | 14(31.4) | 15(34.5) | 15(34.1) | 44(40.0) |
| 18-19 yrs | 1(2.5) | 2(5.0) | 37(92.5) | 40(36.4) |
| 2. Mother's height in cm | | | | |
| 136-140 | 9(34.6) | 12(46.2) | 5(19.2) | 26(23.6) |
| 141-145 | 9(37.5) | 6(25.0) | 9(37.5) | 24(21.8) |
| 146-150 | 6(30.0) | 4(20.0) | 10(50.0) | 20(18.2) |
| 151 and + | 2(5.0) | 3(7.5) | 35(87.0) | 40(36.4) |

The table 4a shows the distribution of age of post natal mothers and newborn birth weight. The very low birth weight is common (42.3%) with the mothers age 14-15 yrs., low birth weight higher (34.5%) among the mothers age 16-17 yrs. and normal birth weight is common (92.5%) among the mothers age 18-19 yrs.

Mother's height in relation to birth weight shows very low birth weight (37.5%) among the mothers height 141-145 cm. The low birth weight was higher among the mothers height 136-140 cm and normal birth weight was common (87.0%) among the mothers having height 141 and +.

Figure-6

Mother's Age

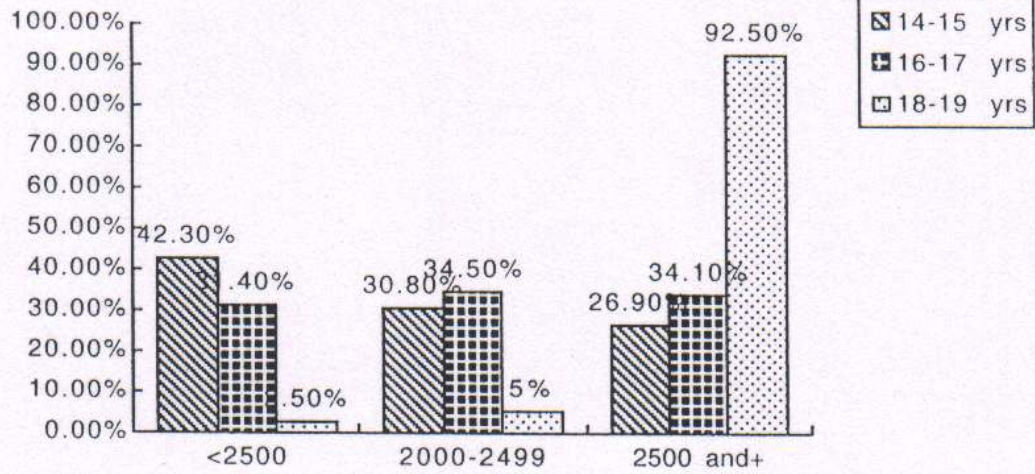


Figure-7

Mother's Height

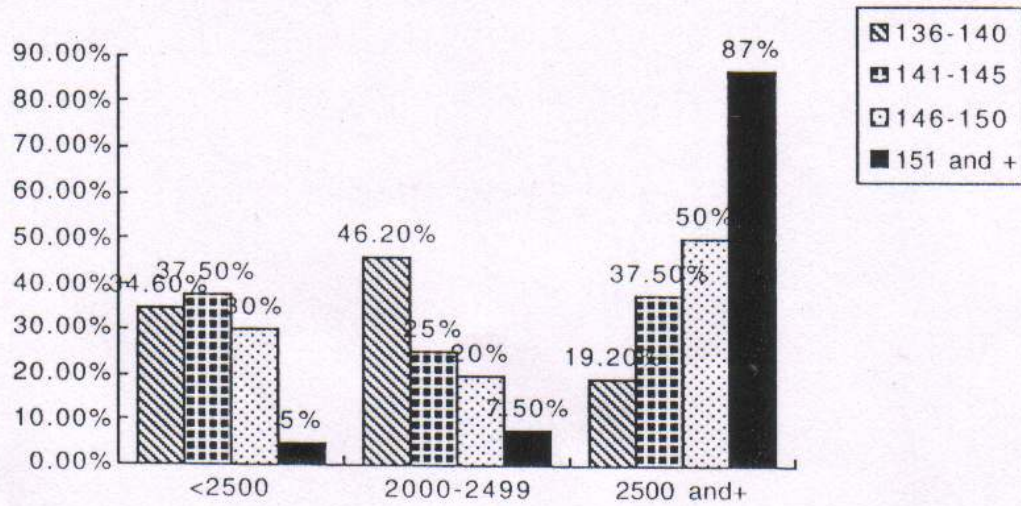


Figure-8
Mother Education

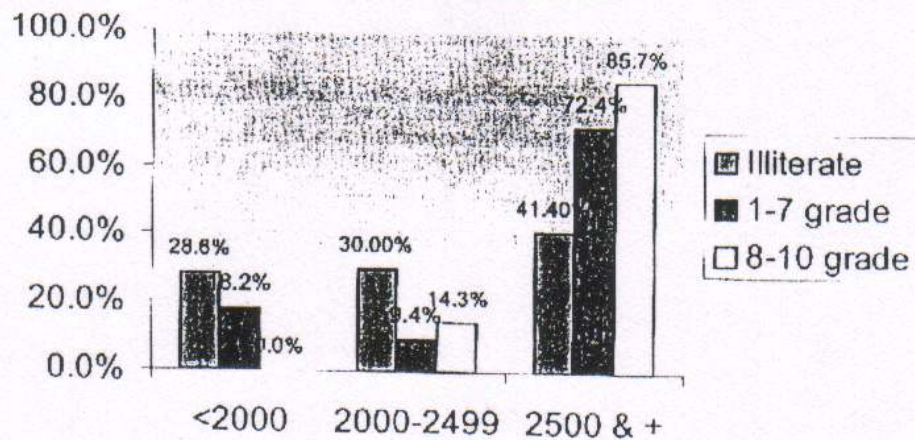


Figure-9
Mother's Occupation

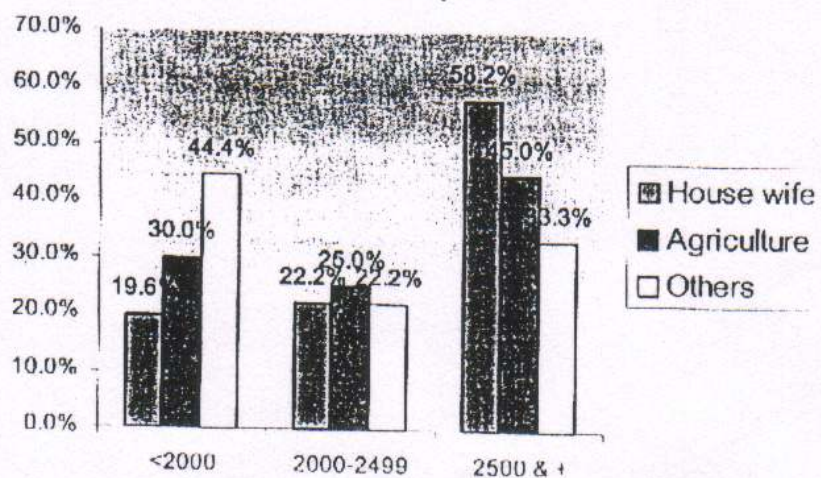


Table 5. Birth weight of newborn by socio-demographic Characteristics of fathers
(N=110)

| Variables | Birthweight in grams | | | |
|-------------------------------|----------------------|-----------------|----------------------|------------------|
| | <2000 N(RoW%) | 2499 N(RoW%) | 2500 and+ N(Row%) | Total N(Col%) |
| 1. Father's education | | | | |
| Illiterate | 11(18.3) | 12(20.0) | 37(61.7) | 60(54.5) |
| 1-7 grade | 10(26.3) | 8(21.3) | 20(52.4) | 38(34.5) |
| 8-10 grade | 3(30.0) | 5(50.0) | 2(20.0) | 10(9.1) |
| > 10 grade | 2 (100.0) | 0(0.0) | 0(0.0) | 2(1.8) |
| 2. Father's Occupation | | | | |
| Service | 7(23.3) | 5(16.7) | 18(60.0) | 30(27.3) |
| Agriculture | 10(17.2) | 13(22.5) | 35(60.3) | 58(52.7) |
| Business | 1(12.5) | 1(12.5) | 6(75.0) | 8(7.3) |
| Labour (daily wage) | 8(57.1) | 6(42.9) | 0(0.0) | 14(12.7) |
| 3. Father's Income | | | | |
| Rs. 6000 and more | 8(26.7) | 10(33.3) | 12(40.0) | 30(27.3) |
| Rs. 3000-5999 | 10(15.2) | 9(13.3) | 47(71.5) | 66(60.0) |
| Rs. <3000 | 8(57.1) | 6(42.9) | 0(0.0) | 14(12.7) |

Table 5 represents education of father and birth weight of newborn. The very low birth weight is more common (100.0%) to the newborn whose fathers were educated more than 10 grade, low birth weight is common (50.0%) among the babies whose fathers were educated 8-10 grade. The normal weight is more (61.7%) among the babies whose fathers were illiterate. The birthweight is related to occupation, very low birth weight (57.1%) and low birth weight (33.3%) is common among the babies whose fathers were working as labourers.

4.2 Mother's Physical activities and personal behaviour

Table 6a. Birth weight of newborn according to physical activities and personal behaviours of the mothers (N=110)

| Variables | Birthweight in grams | | | |
|-----------------------------|----------------------|----------------------|----------------------|------------------|
| | <2000 N(Row%) | 2000-2499 N(Row%) | 2500 and+ N(Row%) | Total N(Col%) |
| 1. Working hours of mothers | | | | |
| 18 hrs./day | 18(26.5) | 15(22.2) | 35(51.5) | 68(61.8) |
| 10-12 hrs./day | 8(21.5) | 9(23.3) | 21(55.2) | 38(34.5) |
| 6-8 hrs./day | 0(0.0) | 1(25.0) | 3(75.0) | 4(3.6) |
| 2. Smoking habit | | | | |
| Yes | 14(35.0) | 16(40.0) | 10(25.0) | 40(36.4) |
| No | 12(17.1) | 9(12.9) | 49(44.5) | 67(63.3) |
| 3. Number of sticks/day | | | | |
| 1-4 sticks | 2(22.2) | 1(11.1) | 6(66.7) | 9(22.5) |
| >4 sticks | 10(32.3) | 8(25.8) | 13(41.9) | 31(77.5) |

>than four sticks gives the history of 8-9 sticks/day.

Table 6a represents the very low birth weight higher (26.5%) among the mothers who were working 18 hrs/day, low birth weight and normal weight is more common (25.0%) (75.10%) among the mothers who were working 6-8 hrs/day. In relation to smoking habit of mothers and birth weight shows very low (35.0%) and low birth weight (46.0%) was higher among the mothers who were cigarette smoker and the normal birth weight was common (44.5%) among the mothers who were non-smokers. The birth weight related to number of sticks shows that when number of sticks increase birth weight decrease respectively.

Table 6b. Birth weight of newborn according to care provider and personal behaviours of the mothers (N=110)

| Variables | Birthweight in grams | | | |
|---------------------|----------------------|----------------------|----------------------|------------------|
| | <2000 N(Row%) | 2000-2499 N(Row%) | 2500 and+ N(Row%) | Total N(Col%) |
| 1. Habit of alcohol | | | | |
| Yes | 16(26.7) | 14(23.3) | 30(50.0) | 60(54.5) |
| No | 10(20.0) | 11(22.0) | 29(58.0) | 50(45.5) |
| 2. Care provider | | | | |
| Mother-in-law | 5(9.4) | 4(7.5) | 44(83.1) | 53(48.2) |
| Sister-in-law | 10(34.2) | 9(31.5) | 10(34.2) | 29(26.4) |
| Husband | 11(39.3) | 12(42.8) | 5(17.9) | 28(25.4) |

Table 6b Shows the birth weight in relation to alcohol consumer, the very low birth weight (26.7%) and low birth weight (23.3%) was higher among the mothers who were alcohol consumers. The normal birth weight was higher (58.0%) among the mothers who were alcohol non consumers.

The birth weight regarding the care provider during pregnancy, the very low birth weight (39.3%) and low birth weight (42.8%) higher among the mothers who gives the history of care provider by husband and normal birth weight (83.1%) care provider by mother-in-law.

4.3 Reproductive history and last pregnancy outcome:

Table 7a. Birth weight of the newborn according to reproductive history, last pregnancy history of mothers and child outcome (N=110)

| Variables | Birthweight in grams | | | |
|---------------------------|----------------------|----------------------|----------------------|------------------|
| | <2000 N(Row%) | 2000-2499 N(Row%) | 2500 and+ N(Row%) | Total N(Col%) |
| 1. Monarche | | | | |
| Below 12 yrs | 3(12.0) | 5(20.0) | 17(68.0) | 25(22.3) |
| 13 yrs | 5(14.2) | 6(17.1) | 24(68.6) | 35(31.8) |
| 14 yrs | 14(32.6) | 12(27.9) | 17(39.5) | 43(39.1) |
| 15 yrs | 4(57.4) | 2(28.6) | 1(14.3) | 7(6.4) |
| 2. Gravidiae | | | | |
| 1 st gravidiae | 24(28.6) | 20(23.8) | 40(47.6) | 84(76.4) |
| 2 nd gravidiae | 2(9.5) | 4(19.4) | 15(71.4) | 21(19.1) |
| 3 rd gravidiae | 0(0.0) | 1(20.0) | 4(80.0) | 5(4.16) |

Table 7a. Shows the related variables with low birth weight. The very birth weight (57.4%) and low birth weight (28.6%) among the mothers who had history of monarche at 15 yrs. of age and the normal birth weight (68.6%) who had history of monarche 13 yrs. of age.

The gravidiae related to birth weight represents the very low birth weight (28.6%) and low birth weight (23.8%) among the mothers who was 1st gravidiae and normal birth weight (80.0%) who had the history of 3rd gravidiae.

Table 7b. Distribution of birth weight according to last pregnancy outcome and birth weight of newborn (N=110).

| Variables | Birthweight in grams | | | |
|----------------------------------|----------------------|-----------|-----------|----------|
| | <2000 | 2000-2499 | 2500 and+ | Total |
| | N(Row%) | N(Row%) | N(Row%) | N(Col%) |
| 3. Last pregnancy outcome (N=26) | | | | |
| Abortion | 0(0.0) | 3(75.0) | 1(25.0) | 4(15.4) |
| Still birth | 4(50.0) | 2(25.0) | 2(25.0) | 8(30.8) |
| Premature delivery | 4(57.1) | 2(28.6) | 1(14.3) | 7(26.9) |
| Normal delivery | 0(0.0) | 2(28.6) | 5(71.4) | 7(26.9) |
| 4. Birth interval | | | | |
| First child | 19(22.4) | 16(19.3) | 49(58.3) | 84(76.4) |
| <13 months | 7(38.1) | 7(38.9) | 4(22.2) | 18(16.4) |
| > 24 months | 0(0.0) | 2(25.0) | 6(75.5) | 8(7.3) |

Table 7b. The table 7b related to last pregnancy outcome shows very low birth weight (57.1%) among the mothers who had premature delivery in last pregnancy and low birth weight (75.0%) among the mothers who had abortion in last pregnancy. The normal birth weight was higher (71.4%) among the mothers who had normal delivery in last pregnancy.

The birth weight related to birth interval shows very low birth weight (38.1%) and low birth weight (38.9%) among the mothers who had birth interval less than 13 months. The normal birth weight was higher (75.6%) among the mothers who had birth interval more than 24 months.

Figure-10

Menarche

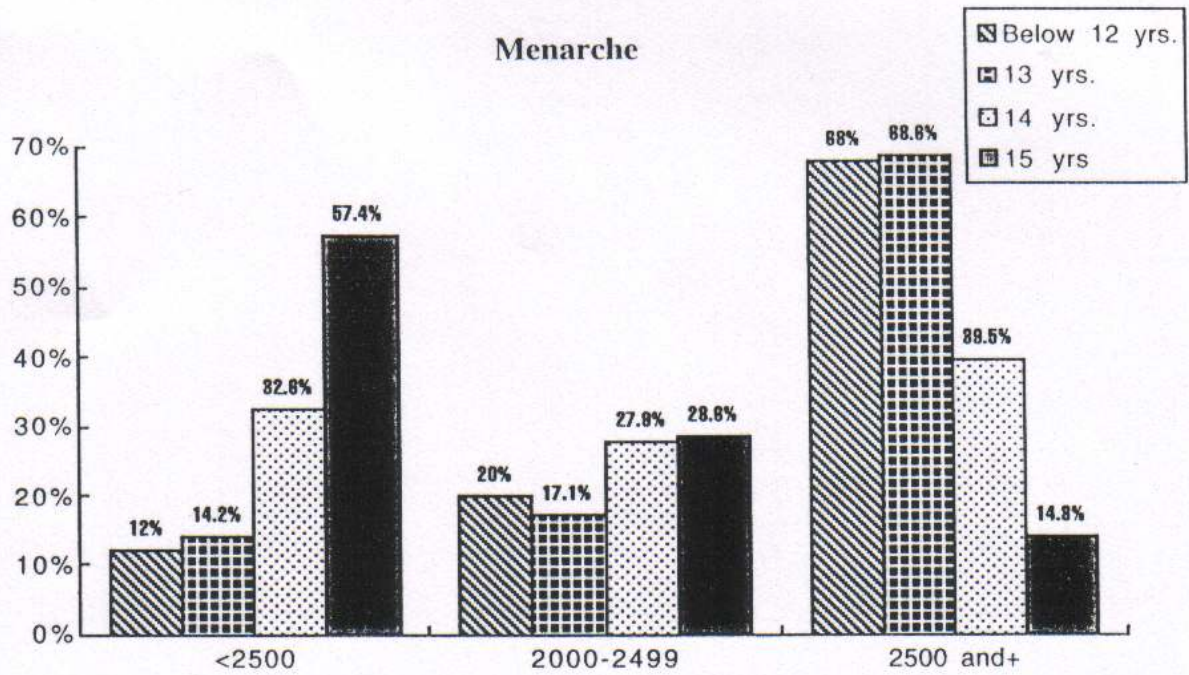


Figure-11

Last Pregnancy Outcome

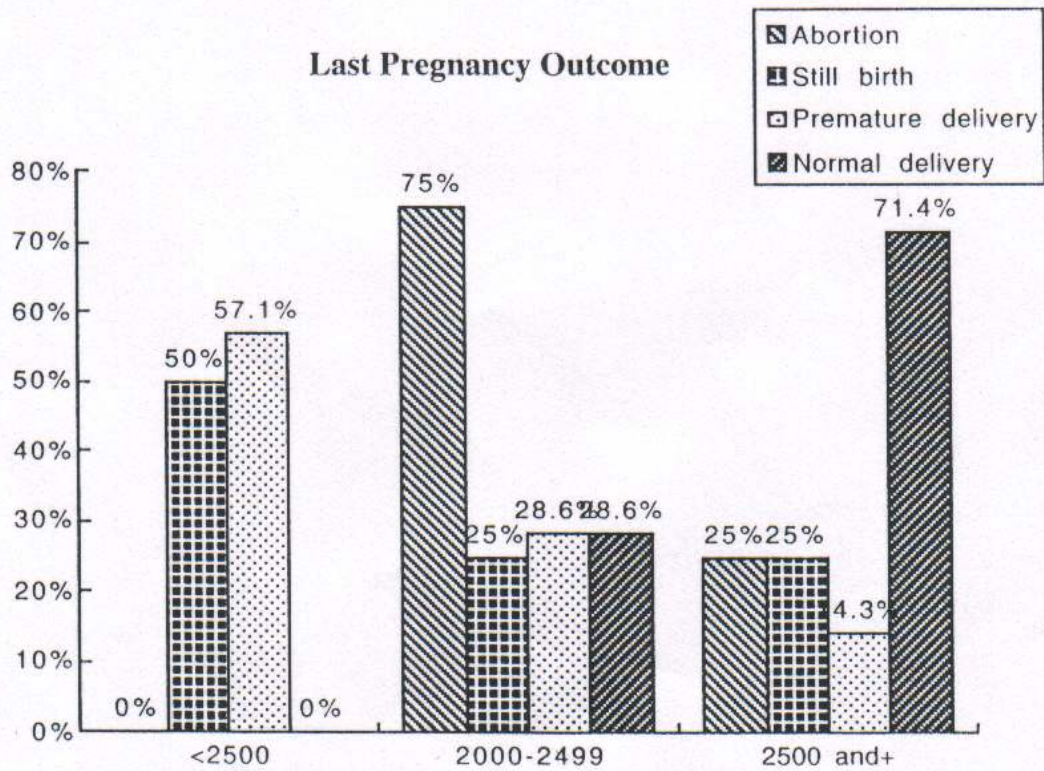
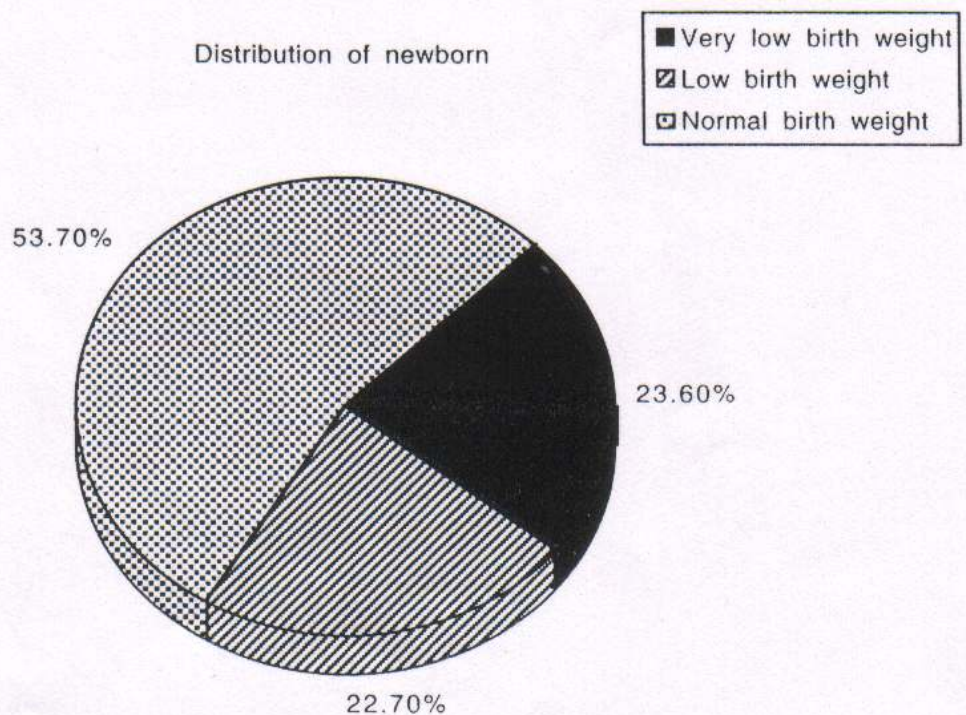


Table 7c: Distribution of newborn according to categories of birth weight during delivery (n=110)

| Variables | Number | Percent |
|-----------------------|--------|---------|
| Very low birth weight | 26 | 23.6 |
| Low birth weight | 25 | 22.7 |
| Normal birth weight | 59 | 53.7 |
| 2. Frequency of visit | | |

Table 7b shows the categories of birth weight among the new borns. The very low birth weight was 26 (23.6%), similarly low birth weight was found 25 (22.7%) and normal weight 59 (53.7%) respectively.

Figure-12



4.4 Illness during pregnancy and health care

Table 8a: Distribution of Birth Weight of newborn according to illness of mothers during pregnancy (N=53)

| Variables | Birth weight in grams | | | |
|--|-----------------------|-----------------------|------------------------|-------------------|
| | < 2000 N (Row%) | 2000-2499 N (Row%) | 2500 and + N (Row%) | Total N (Col%) |
| 1. Illness during pregnancy | | | | |
| P.V. Bleeding | 2 (40.0) | 1 (20.0) | 2 (40.0) | 5 (9.4) |
| Excessive vomiting | 1 (16.4) | 3 (50.0) | 2 (33.3) | 6 (11.3) |
| Anaemia | 10 (55.6) | 6 (33.62) | 2 (11.2) | 18 (33.4) |
| High blood pressure/ blurred vision | 2 (28.5) | 3 (42.7) | 2 (28.8) | 7 (13.3) |
| Urinary Tract Infection | 4 (50.0) | 2 (25.0) | 2 (25.0) | 8 (15.9) |
| Hepatitis/Jaundice | 3 (33.3) | 4 (44.4) | 2 (22.2) | 9 (16.1) |

Table 8a. Shows the birth weight by illness of mothers during pregnancy, and birth weight. The very low birth weight was higher among anaemia (55.6%), low birth weight more common among excessive vomiting (50.0%) and normal weight comparatively high among p.v. bleeding. (40.0%).

Table 8b. Distribution of newborn weight by gestational age (N=110)

| Variables | Birth weight in grams | | | |
|----------------------|-----------------------|-----------------------|------------------------|-------------------|
| | < 2000 N (Row%) | 2000-2499 N (Row%) | 2500 and + N (Row%) | Total N (Col%) |
| 3. Week of gestation | | | | |
| 37 - 38 | 12 (26.7) | 10 (22.2) | 23 (51.1) | 45 (40.9) |
| 39 - 40 | 10 (22.2) | 9 (20.0) | 26 (57.8) | 45 (40.9) |
| 41 - 42 | 14 (20.0) | 6 (30.0) | 10 (50.0) | 20 (18.2) |

The above table represents, newborn weight and week of gestation. The very low birth weight (26.7%) was higher among the mothers who had high (30.0%) history of 37-38 wks of gestational age, and low birth weight was high among the mothers who had 41-42 week of gestation. The normal birth weight was more common (57.8%) among the mothers who had 39-40 week of gestational age.

Table 9: Distribution of mothers by Antenatal care received.

| Variables | Number | Percent |
|--------------------------------|--------|---------|
| 1. Antenatal care received | | |
| Yes | 63 | 57.3 |
| No | 47 | 42.7 |
| 2. Frequency of visit | | |
| 1-2 visit | 35 | 55.6 |
| 3-4 visit | 28 | 44.4 |
| 3. Health teaching provided | | |
| Yes | 23 | 36.5 |
| No | 40 | 63.5 |
| 4. Health teaching provided by | | |
| ANM | 5 | 12.5 |
| FCHV | 15 | 37.5 |
| TBA | 20 | 50.0 |

Table 10 represents the teenage postnatal mothers fifty seven point three percent had received antenatal visit. Majority of subjects 55.6 percent had received 1-2 antenatal visits. Regarding the health teaching during antenatal visit Majority (63.5%) had not received antenatal visit, with respect to person health teaching providers TBA was the maximum health teaching providers during antenatal visit.

Figure-13

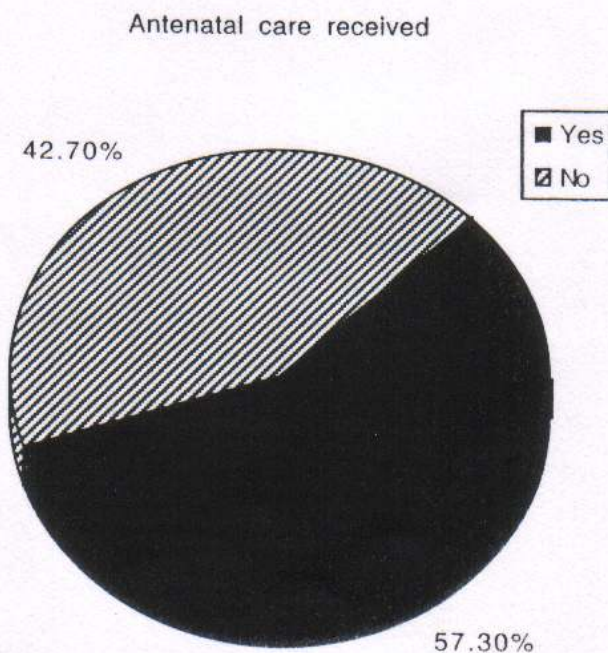


Figure-14

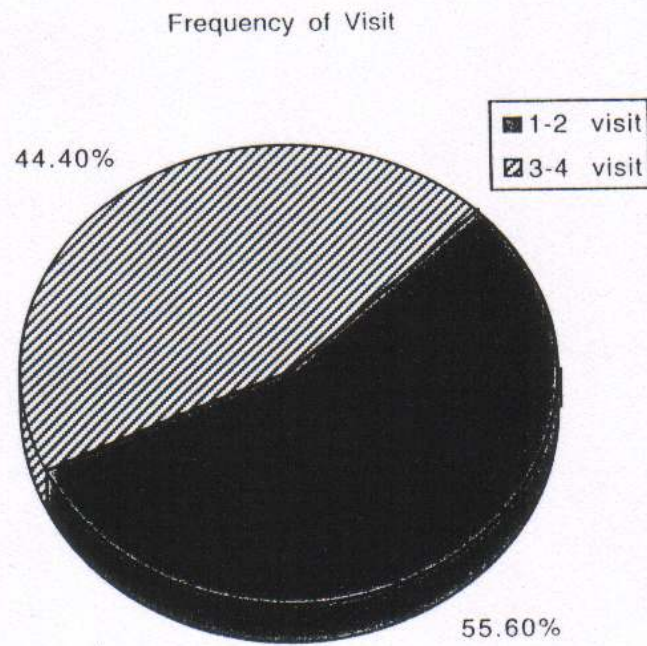
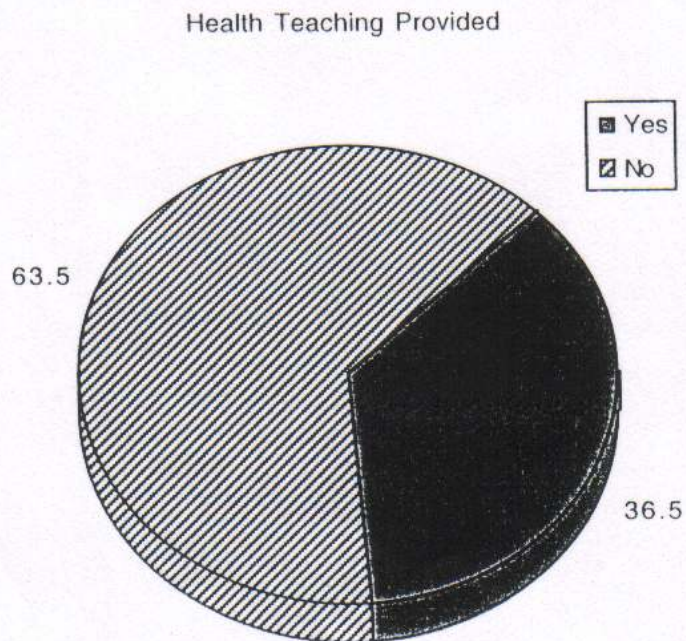


Figure-15



**Table 10: Mode of delivery according to birth weight of newborn.
(N=110)**

| Variables | Birth weight in grams | | | |
|-------------------|-----------------------|-----------|------------|-----------|
| | < 2000 | 2000-2499 | 2500 and + | Total |
| | N (Row%) | N (Row%) | N (Row%) | N (Col%) |
| Normal delivery | 21 (27.7) | 14 (18.4) | 41 (53.1) | 76 (69.1) |
| Forcep delivery | 0 (0.0) | 2 (50.0) | 2 (50.0) | 4 (3.6) |
| Caesarian section | 5 (16.0) | 9 (30.0) | 16 (53.9) | 30 (27.3) |

Table 11 indicates the mode of deliveries and birth weight among the teenage mothers. The very low birth weight was found commonly in Normal deliveries (27.7)% low birth weight was higher (50.0%) in forcep deliveries and normal birth weight was very common (53.9%) among Caesar Section deliveries.

4.5 Knowledge about F.P. Contraception, practice reason for not using and so on (N=110)

Table 11. Distribution of the mother according to knowledge and practices of contraceptive methods (n=110)

| Variables | Number | Percent |
|--|--------|---------|
| Knowledge on contraception | | |
| Yes | 78 | 70.9 |
| No | 32 | 29.1 |
| Practice of contraception | | |
| Yes | 31 | 39.7 |
| No | 47 | 60.3 |
| Reasons for not using contraception | | |
| Felt difficult to buy self | 20 | 42.8 |
| Forget to take daily | 15 | 31.9 |
| Husband refused to use contraception | 12 | 25.5 |
| Mother's views on suitable birth spacing | | |
| 12-18 months | 40 | 36.4 |
| 19-25 months | 30 | 27.3 |
| 26-32 months | 25 | 22.7 |
| 33-39 months | 15 | 13.6 |

Table 11 shows the knowledge on contraception among the teenaged post natal mothers. Majority of subjects (70.9%) had knowledge of contraception but higher proportion (60.3%) had not practiced contraception before pregnancy. Regarding the reason for not practicing contraception, majority of respondents (42.8%) felt difficult to buy self the contraception. The mother's views related to birth spacing (interval) period, thirty six point four percent mothers thoughts 12-18 months for birth spacing (Interval).

Table 12. Distribution of respondents according to methods used contraception (n=31)

| Variables | Number | Percent |
|-------------|--------|---------|
| Method used | | |
| Pills | 26 | 83.9 |
| Condom | 5 | 16.1 |

The table 12 shows the distribution of respondents by contraception using before pregnancy. Majority of mothers were using oral pills (83.9%) respectively.

Table 13. Distribution of newborn according to physical measurement

| Variables | Number | Percent |
|--------------------|--------|---------|
| Birth weight | | |
| 1000 - 1499 gm | 20 | 18.2 |
| 1500 - 1999 gm | 6 | 5.5 |
| 2000 - 2499 gm | 25 | 22.7 |
| 2500 - 2899 gm | 59 | 53.76 |
| Length | | |
| < 45 cm | 40 | 36.4 |
| 45 - 50 cm | 55 | 50.0 |
| 51 - 56 cm | 15 | 13.6 |
| Head circumference | | |
| < 30 cm | 36 | 32.7 |
| 30 - 35 cm | 74 | 67.3 |

Table 13 shows the distribution of birth weight of newborns, majority of newborns (53.76%) having the birth weight 2500-2899 gms. Regarding the length of the baby most of newborns (50%) having length 45-50 cm. Concerning about the head circumference of newborn after delivery, majority of newborns (67.3%) were having 30-35 cm of head circumference respectively.

Table 14: Distribution of newborns according to Sex and birth weight.

| Variables | Birth weight in grams | | | |
|----------------|-----------------------|-----------------------|------------------------|-------------------|
| | < 2000 N (Row%) | 2000-2499 N (Row%) | 2500 and + N (Row%) | Total N (Col%) |
| Sex of newborn | | | | |
| Male | 11 (22.1) | 11 (21.2) | 30 (57.1) | 52 (47.3) |
| Female | 15 (25.9) | 14 (24.0) | 29 (50.0) | 58 (52.7) |

Table 14 shows the distribution of birth weight by sex of the babies. The very low birth weight (25.9%) and low birth weight was common, 24.0% among the female babies and normal birth weight was higher proportion (57.1%) among male babies.

Table 15: Distribution of newborns according to Apgar Score at birth.

| Variables | Number | Percent |
|-------------------|--------|---------|
| Apgar score | | |
| 4-6 at one minute | 39 | 35.5 |
| < 7 at 5 minutes | 14 | 12.5 |

Table 15 shows the newborn status according to Apgar Score in minute. The majority of newborns (35.5%) had Apgar score 4-6 at one minutes.

Table 16: Distribution of newborns according to congenital malformation. (N=110)

| Variables | Number | Percent |
|---------------------------|--------|---------|
| Congenital malformation | | |
| Hare lip | 1 | 20.0 |
| Hare lip and cleft patate | 2 | 40.0 |
| Amputate limbs | 2 | 40.0 |

Table 17 represents the distribution of congenital malformation of newborns. Majority of newborns (40.0%) having congenital malformation amputate limbs and Harelip and cleft palate. These babies were from low birth weight groups.

Table 20

Ch² test for significant effects of different variable on low birth weight of baby.

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|----------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Ethnicity | | | |
| Brahman/ chhetri | 6 | 19 | |
| Mandal/ Rajbansi | | | |
| Dhimal/ Karna /Tharu | 24 | 21 | 10.35 (0.0349) |
| Musalman | 3 | 6 | |
| Sattar/ Musar | 13 | 6 | |
| Other | | | |
| Religion | | | |
| Hindu | 40 | 30 | |
| Budhist | 6 | 19 | |
| Muslim | 3 | 7 | 9.46(0.023) |
| Christian | 2 | 3 | |

The significant test of different variables effect on birth weight shows Ethnicity and Religion shows significant co-relation between birth weight and variables, P. value 0.0349,0.023.

Table 21

Ch² test for significant effects of different variable on low birth weight of baby.

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|-----------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Family Structures | | | |
| Joint | 23 | 52 | 23.14 (0.000) |
| Nuclear | 28 | 7 | |
| Mothers Height in cm. | | | |
| 136-140 | 21 | 5 | 33.44 (0.000) |
| 141-145 | 15 | 9 | |
| 146-150 | 10 | 10 | |
| 151 and + | 5 | 35 | |
| Age of mothers | | | |
| 14-15 years | 19 | 7 | 38.51(0.00) |
| 16-17 years | 29 | 15 | |
| 18-19 years | 3 | 37 | |

The table 21 represents the findings highly significant correlation between birth weight and different variables. Family structure, mother's age and height in highly significant .

Table 22

Ch² test for significant effects of different variable on low birth weight baby .

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|-------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Mother Education | | | |
| Illiterate | 41 | 29 | 11.43 (0.000) |
| Literate | 10 | 30 | |
| Fathers Education | | | |
| Illiterate | 23 | 37 | 3.29 (0.065) |
| Literate | 28 | 22 | |

The table 22 shows significant effect of variables on birth weight . Mothers education and birth weight shows significant correlation . Mother's education and birth weight shows highly significant correlation between birth -weight and

Mother's education P.value (0.000). Father's education shows no significant effect on new born weight . P.value (0.065).

Table 23

Ch² test for significant effects of different variable on low birth weight baby .

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|---------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Mother's Occupation | | | |
| House Wife | 34 | 47 | 2.72 (0.256) |
| Agriculture | 34 | 9 | |
| Others | 6 | 3 | |
| Father's Occupation | | | |
| Service | 12 | 18 | 19.20 (0.000) |
| Agriculture | 23 | 35 | |
| Business | 2 | 6 | |
| Labour | 14 | | |

Regarding the Mother's occupation and effect on birth weight, there is no significant co-relation between birth weight and Mother's Occupation P. value (0.256). The significant effect of father's occupation on birth weight shows significant correlation P. value (0.000).

The income of fathers and birth weight shows highly co-relation P. value (0.000)

Table 24

Ch² test for significant effects of different variable on low birth weight of the baby.

| Variables | Birth weight in Grams | | Chi ² P. Value. |
|--------------------------|-----------------------|------------|----------------------------|
| | <2500, N | >2500 N | |
| Age of Menarche | | | |
| 12-13 years | 19 | 14 | 11.36 (0.000) |
| 14-15 years | 32 | 18 | |
| Gravidae | | | |
| Primi | 44 | 40 | 5.13 (0.023) |
| Multi | 7 | 19 | |
| Desire of being Pregnant | | | |
| Yes | 10 | 24 | 5.63 (0.017) |
| No | 41 | 35 | |

The table 24 shows age of menarche and Co-relation with birth weight . There in strong significant co-relation P. value (0.000) . The gravidae of mother and birth weight shows no significant co-relation. P. value (0.023)

The desire of being pregnant shows significant effect on birth weight P. value (0.017).

Table 25

Ch² test for significant effects of different variable on low birth weight baby.

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|----------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Working hrs/day | | | |
| Less than 18 hrs/day | 18 | 24 | 0.33(0.563) |
| 18 hrs/ day | 33 | 35 | |
| Habit of smoking | | | |
| Yes | 30 | 10 | 20.54 (0.000) |
| No | 21 | 49 | |

Table 25 represents working hours and birth weight has no significant co-relation P.value (0.563) . Habit of smoking has highly significant effect on birth weight P. value (0.000).

Regarding the alcohol consumption and birth weight there in no significant co-relation.

Table 26

Ch² test for significant effects of different variable on low birth weight baby.

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|----------------------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Habit of alcohol | | | |
| Yes | 32 | 30 | 0.70 (0.404) |
| No | 21 | 29 | |
| Care providers during pregnancy. | | | |
| Mother-in-law | 9 | 44 | 37.09 (0.000) |
| Sister-in-law | 19 | 10 | |
| Husband | 23 | 5 | |

The table 26 shows the habit of alcohol and birth weight of new born, there is no significant co-relation between variable and interest P.value (0.404)

The care provider during pregnancy and effect on birth weight shows highly significant co-relation . P. value (0.000) .

Table 27

Ch² text for significant effects of different variable on low birth weight baby.

| Variables | Birth weight in Grams | | Chi ² P.Value. |
|-------------------------|-----------------------|------------|---------------------------|
| | <2500, N | >2500 N | |
| Antenatal care received | | | |
| Yes | 18 | 45 | 18.60 (0.000) |
| No | 33 | 14 | |
| Frequency of Visit | | | |
| 1-2 visit | 20 | 15 | 2.82 (0.093) |
| 304 visit | 10 | 18 | |

Table 27 shows antenatal care received and birth weight of new born. There is highly significant co-relation between antenatal care received and birth weight P. value (0.000). The frequency of visit indicates no significant co-relation. P. value (0.093)

Chapter-V **DISCUSSION**

5.1 Discussion of findings

The present study was conducted in Koshi Zonal Hospital, Morang Nepal. The objective of the study was to identify the affecting factors on low birth weight among teenage mothers. The study design was adopted cross sectional descriptive research design. The study population were teenage post natal mothers who delivered <2500 gm and > 2500 gms babies at birth.

A purposive sampling technique was adopted to select the sample. The exclusive criteria was:

- The mothers who were unwilling to participate.
- The mothers who were uncooperative and try to be secretive.
- The mothers who were mentally ill.
- The mothers who had not completed 37 weeks of gestational age.
- The mothers who were unmarried.
- The mother who delivered still birth.

The pre-test was done in Shree Panch Indra Rajya Laxmi Maternity Hospital, Thapathali during July 19th - 25th, 1999. The tool was found reliable and understood but few questions were needed to be modified.

Findings have been grouped into following headings

5.1 Socio-demographic characteristics of Respondents:

The study population, Majority (45.5%) were from Morang District. Most of the population 40.9% were from Mandal/Karna, Rajbansi/Dhimal/Sattar ethnic groups. Regarding the religion, sixty three point six percent of teenage mothers were from Hindu religion. Most of subjects 68.2% were from joint family. Forty percent of the mothers were from 16-17 age group and majority of teenage mothers (63.6%) were illiterate. The level of literacy was higher among fathers. Majority (52.7%) were from occupation of agricultural group. Regarding the income of father (60.0%) fathers had income Rs.3,000 - 5,999/m. Most of the mother's occupation was House Wife (73.6%)

Residing District

Regarding the residing district and birth weight of the new born, the very low birth weight (46.7%) and low birth weight (40.0%) is common from Jhapa district. Some of the people in Jhapa district were migrated from near India. When people migrate from other country, they will have to face so many problems like health problem, food problem and residing problem which influenced in daily life and health of the pregnant mother, foetal growth and development; which may cause very low and low birth weight commonly will have food problem, poverty which may affect the teenage pregnancy in foetal growth and development. Impart the period of development for teenage girls, they need more nutritious food and health care. In this period if the girls being pregnant, they will be mal nurished which causes low birth weight.

Ethnicity

In relation to ethnicity and birth weight, the study result shows very low birth weight (47.4%) in Sattar/Musahar and low birth weight (28.9%) in Mandal/Karna/Dhimal/Rajbansi and Tharu ethnicity. The Chi² test shows significant different P. value (0.0349). The Sattar/Musahar are underdeveloped caste in the terai region of Nepal who work as a labour or daily wage basis. Most of them are having low socio-economic status. They have practice of early child marriage commonly they will not have own land to cultivate and do farming. The status of women and girls is very low they work in others' houses as a labour. So they will have very low birth weight baby among their community. They will have low education level, less awareness of health needs and least seeking health facility. Mostly they work as a labour and self working to earn money and run daily life. They will have more health problem such as anaemia, malnutrition, worm infestation which are the contributing factors of low birth weight. They do not believe health care system. Antenatal care is not received during pregnancy, this practice predisposes to the low birth weight. The very low birth weight (47.4%) among Sattar and low birth weight 28.9% among the ethnicity of Mandal/Karna/Rajbansi/Dhimal and Tharu. The Mandal/Karna/Rajbansi/Dhimal ethnic groups are more developed and advanced than Sattar/Musahar. They will have higher education level than Sattar/Musahar. They will have better socio-economic status and health condition. They know when to seek health care facility and prevent health problem but they still prevail the practice of early child

bearing is common among these group also. One study was conducted in three hospitals of Kathmandu (Magnar 1992). The result indicates the low birth weight common among Brahman and Chhetri. This study was differ from present study. Because Brahman/Chhetri are said to be well developed and have higher socio-economic status in the Terai Region. But Musahar/Sattar are least developed caste in the Terai region. So, they will develop more health problem and low birth weight. The present study is not consistency with previous study because the previous study was based on the three hospitals of Kathmandu in between 1992 - 1993. The Chi² test shows significant association between variable and interest p.value (0.0349).

Family Structure

The family structure in relation to birth weight shows very low and low birth weight (42.9%) and lowbirth weight (37.1%) among nuclear family. In Nepal most of the families live in Joint family. In joint family; there will be more females who know the needs of pregnant women and provide care but in Nuclear family, there will be husband and wife and some children only. The teenage mother's husband may be also young and immaturred to know the needs of pregnant mother so there is higher chance of low birth weight. There is significant association p. value (0.000).

Age of mother

Age of mother and birth weight shows very low birth weight (42.3%) common among 14-15 yrs. of age and low birth weight higher (34.5%) among the age 16-17 years of age. there is significant corelation p. value (0.000) higher (34.5%) among the age 16-17 yrs. This study is consistent with various national and international studies. Because the young girls below 18 yrs. have high incidence of low birth weight.

Height of mother

Mother's height related to birth weight shows very low birth weight was higher (47.5%) among the mothers who had height 141-45 cm and low birth weight is common (37.5%) among the mothers who had height 136-140 cm. The significant test shows strong corelation p. value (0.000). The reviewed literature supports the findings.

Father's Education

The father's education shows not so much relationship which affects birth weight. The very low birth weight is higher 2 (100%) among the father's who had educated > 10 grade. The low birth weight is common (50.0%) among the fathers who were 8-10 grade. So it indicates there is no relation between birth weight and father's education P. value (0.065). It is due to the fathers are only the economical supporter to the wife and children. The level of education and birth weight not so much related to each other.

Education of Mother

There is strong co-relationship of mother education and birth weight very low birth weight (28.6%) and low birth weight (30.0%) who's mothers were illiterate. In Morang district where the education level is very low 29.22% as compared to male 67.7% (District Profile 2054). Similar one study was conducted in TUTH (Dr. S.M. Dali, 1989). The study result indicates (24%) Low birth weight in youngest mothers and (20.82%) in illiterate mothers. The percentage differs from present study because it was based on Kathmandu setting where the literacy rate of women is higher than other parts of the country. If mother is educated, she will care the pregnancy more consciously so the birth weight of new born will be more normal than low birth weight. The Chi² test shows higher significant different p. value (0.000).

Occupation of Mother

In relation to mother's occupation and birth weight, the very low birth weight was higher among the mothers who works occupation as other (44.4%) in this group, the mothers working as a house servant and small scale business. The low birth weight was common (25.0%) among the mothers who were farmers. It indicates that the mother who works as a farmer may engaged in farming and other work rather than eating. So it may cause low birth weight. The significant test shows no relation between birth weight and mother's occupation. The Chi² test shows no association P. value (0.256).

Occupation of Father

Father's occupation and birth weight shows relationship between occupation and birth weight. The very low birth weight and low birth weight was

birth weight (57.1%) and low birth weight (42.9%) were found among the father's occupation of labour. The significant test was highly associated P. value (0.000) because the fathers will be only the income producer in most of Nepalese society so it may cause the low birth weight of baby.

Father's income

Father's income shows very high relationship between birth weight and father's income. The very low birth weight (57.1%) whos had income Rs. < 3000/m. It is may be due to the insuffient food and care provision during pregnancy. Because it is difficult to maintain the family life with Rs. less than <3000/m. The teenage mothers out of 9, 5 earning as the house servant and 4 working as a tea seller. So they were dependent on husband's income. Naturally to manage the house with the Rs.<3000/m there is shortage of everything in daily life. It affects the health of pregnant women mainly in nutritional status and causes low birth weight baby born. Significant test shows no association p. value (0.256).

5.2 Mother's Physical activities and personal behaviour.

Habit of smoking

The study findings represents the habit of smoking is one of the affecting factors of low birth weight and number of sticks increase the percentage of low birth weight. The teenage mothers who were Cigarette smokers were found to have higher percentage of very low (35.0%) and low (40.0%) birth weight respectively. This study is consistent with other studies which is conducted in other countries (Anderson 1984, Hirv 1989). the studies shows new born's weight who smoke during pregnancy significantly low birth weight than the mothers who does not smoke. There is significant association between birth weight and habit of smoking by the mothers. The Chi² test shows higher association between variables and interest. P. Value (0.000).

Habit of alcohol

Habit of alcohol is also one of the determinant of low birth weight. The mothers who are alocohol consumers have very low birth weight (26.7%) and low birth weight (23.3%). The Chi² test shows there is no significant different p. value

Working hour

One of the affecting factor is working hours. The mothers who work 18 hrs./day have very low birth weight (26.5%) and low birth weight (25.0%) higher among the mothers working 6-8 hrs./day. The significant test shows no association. P. value is (0.063).

Care Provider during pregnancy

The birth weight related to care providers shows very strong association. The very low birth weight (39.3%) and low birth weight (42.8%) among the mothers who had history of care receiving from husband. This findings suggested that husbands are not concerned with the care of wives. It is because Nepal is a male dominating country where the female are more responsible to provide care for other but less receive care from family and vulnerable to health problem and other problems of reproductive health. The husband of teenage girl is immatured to provide care respectively. So the care provider compared to other may have low birth weight. The reviewed literature, Indian Journal of public health (1998) support the findings. The Chi² test shows strong association p. value (0.000)

5.3 Reproductive history and last pregnancy outcome.

Menarche:

The birth weight related to menarche shows highly association . The very low birth weight (57.4%) and low birth weight (28.6%) among the mothers who had menarche at 15 years of age. The reviewed textbook (D.C. Dutta 1997) prescribed that there should be three to four years gap in conception to have good pregnancy outcome. The significant test shows highly different association p. value (0.000).

Last pregnancy outcome

The last pregnancy outcome related to birth weight shows very low birth weight higher percentage (57.1%) in premature delivery and low birth weight higher (75.0%) in abortion. The related literature and textbook supports the findings. (Shi., Wa., wen 1990).

Birth interval

The findings show the relationship between birth weight and birth interval, very low and low birth weight higher (38.9%). Similarly in birth interval less than 13 months. It is due to the post-natal mother has not regained her health, conceived again and lactating to the child so low birth weight is common among these groups. The safe motherhood Family Health Division 1998 supported the findings. For safe motherhood, there should be atleast 24 month interval in 1st and last has supported the findings.

Gravidae

The birth weight related to gravidae the primi mothers will have more low birth weight. The present study findings shows very low birth weight (28.6%) and low birth weight (23.8%) higher among the mothers who were primi gravidae. The teenage girls are at the age of developing and growing. They need more nutritious foods for their growth. If they get pregnant in this age, they need to share their requirement to the foetus and predisposes to low birth weight. Present study is consistent with various studies (Singh 1995 BPKHIS) which was found 48% of low birth weight. The Chi² test shows significant different P. value (0.023).

5.4 Illness during pregnancy and health care

Illness during pregnancy

Among the total 110 teenage mothers 53 had suffered from illness during pregnancy. The newborn weight related to illness during pregnancy indicates the study findings very low birth weight higher (55.6%) among the mother who were anaemic and low birth weight (50.0%) with the history of excessive vomiting. The findings is consistent with other previous studies. Aetal 1990, EO; Kara Ja J.K. (1994) Week of gestation.

Week of gestation

The present findings shows week of gestation and birth weight association between each other that very low birth weight higher (26.7%) among the mother having week of gestation 37-38 weeks and low birth weight 41-42 weeks. The similar previous study (Hirve 1989) is consistent with present study.

Antenatal Care received

The study findings indicates majority of respondents (57.3%) had received antenatal care but the frequency of visit is less (44.4%) among the group 3-4 visit. Majority of respondents had no received Health teaching.

The new born weight and antenatal visit show the significant corelation with birth weight and antenatal care. The very low birth weight higher (34.4%) and low birth weight are common (36.2%) among mothers who had not received antenatal care. There is significant corelation between birth weight and antenatal visit. P.Value (0.000) shows highly association between variable and interest.

Frequency of visit

The frequency of visit and birth weight show very low birth weight (34.3% and low birth weight (22.6%) who had visited antenatal clinic 1-2 visits.

Desire of being pregnant

The newborn weight related to desire of being pregnant of mothers shows very low birth weight (26.3%) and low birth weight (27.4%) who had no desire of being pregnant. If the adolescent is willing to be pregnant, she will care her pregnancy very carefully which affects the birth weight. There are higher proportion of adolescence who were predisposes to unwanted pregnancy (World Health Organization Adolescence, the critical phase 1997). There is higher association between birth weight and desire of pregnancy. The chi² test shows the srong association p. value (0.017).

Catagories of birth weight

The birth weight was catagorised under very low(2000 gm) low (2499 gm) and 2500 and+. The study findings shows very low birth weight (23.6%) low birth weight (22.7%) and normal weight (53.7%). The numbers and percentage of very low birth weight are extremely high compared to other groups survival in very critical because the viability rate of this group is very low in developing countries where the advanced technique of care and technology is very limited to care and make the baby survive.

Knowledge on contraception

Majority of respondents (70.9%) has knowledge of contraception but only (29.9%) had used F.P. Contraception. It indicates, the teenage mother needs to be motivated to use contraceptive from the high school level and home visiting by health sector.

Reason for not using contraception

Most of the respondents felt difficult to buy self and majority of the respondents have view of birth spacing (36.4%) 12-18 months suitable for them. 12-18 months suitable birth spacing (Interval). Majority of study population among F.P. Method users (83.9%) had used oral pills before pregnancy.

Birth weight

Majority of respondents had delivered 2500-2899 gm (53.6%) and among 2899 gm weight group. 1 female baby 2850 gms and 2 male babies 2875 gms. These babies were from the mother's age group 18-19 years of age.

Length of baby

Majority of the babies (50.0%) were 45-50 cm. These babies were from normal age group, and among the low birth weight group, thirty six point six percent were of length less than 45 cm.

Head circumference

Most of the babies having head circumference 30-35 cm, these babies were from normal weight group.

Sex of new born

Sex of newborn related to birth weight shows very low (25.9%) low birth (24.0%) higher proportion compared to male. This findings is supported by the findings of (Shi.Wa.Wen 1990). The newborn related to congenital malformation among 110 babies, 5 were having congenital malformation and forty percent

having harelip and cleft palate. The reviewed textbook D.C. Dutta and literature (Shi.Wa.Wen 1990) has supported the findings.

The study gives the emphasis and development of information-education and communication package regarding adverse effects of teenage pregnancy and especially focussing on child spacing and use of F.P. contraceptive.

5.2 Conclusion

The findings of the study concluded that the incidence of low birth weight among teenage mothers comes to deliver in Koshi Zonal hospital was very high. (Very low birth weight 23.6% and low birth weight 22.7%. There are severe factors several factors found to be associated with the low birth.

The low birth weight as residence district, Age of mothers, height of mothers, ethnicity, religion, family structure, Mother's education, father occupation, habit of alcohol, care provider, Age of Monarche, gravidae, wanted pregnancy etc. Very low birth weight was common among ethnic Sattar and Musahar and low birth weight found to have higher among Mandal/Karna/Dhimal/Rajbansi and Tharu. Very low and low birth was higher among residing group of Jhapa district. The very low birth weight higher among Hindu mothers and low birth weight more common among Buddhist. One of the affecting factor of low birth weight found the study higher probability among nuclear family. Mother's height is one of the most affecting factor of low birth weight. Less than 140 cm found to have the baby low and very low birth weight.

Very low birth weight is more common among the mothers 14-15 years of age and low birth weight is commonly found among the mother's age 16-17yrs. the normal birth weight is higher among the mothers 18-19 yrs. of age. Smoking found to be a affecting factor. The number of sticks increases higher effect. The mothers who were smoked more than 4 sticks found to have more very low birth weight care provider during pregnancy also found to be a affecting factor. More than 4 sticks (gives the history of) 8-9 sticks.

The husband who was care provider found to have a very low and low birth weight newborn and care provider mother in-law higher Antenatal visit one of the affecting factors of very low and low birth weight. The mothers who were not attended antenatal visit found to have very low and low birth weight. The researcher had investigated other variable also such as father's literacy, mother's

occupation working hours of mothers, habit of alcohol and frequency of antenatal visit which represents no affecting factors of birth weight.

The distribution of respondents according to district had participated from Saptari, Morang, Sunsari and Jhapa. The majorities of respondents (45.5%) were from Morang District.

5.4 Implication of Research Study

- (1) The findings of the study will help by making aware of the problem to the Nursing Staffs working in Koshi Zonal Hospital Maternity ward labour room, when delivering the teenage pregnancy.
- (2) This study will be the foundation of future study to investigate the major social factors associated with low birth weight.
- (3) The study will help to develop information, education, communication materials regarding teenage pregnancy and birth weight.

5.4 Recommendation:

The recommendations are recommended as needs felt by the researcher are follows:

- (1) The Hospital authority requested to increase the number of Nursing staffs in antenatal clinic and improve the quality of care by providing minimum basic health teaching to the expected mothers.
- (2) An awareness programme provided by the hospital from ANC clinic to the mother and her families regarding teenage pregnancy, affecting factors of birth weight and consequences of low birth weight, high IMR and MMR.
- (3) Local leaders needs to be sensitized problem the problem of their locality regarding teenage marriage.
- (4) Awareness programme for parents and relatives to change the practice of traditional believes of teenage marriage.
- (5) Emphasis on general education for girls children by parents.
- (6) Awareness programme to population explosion to the teenage girls.
- (7) Similar study in large scale of population
- (8) A study proposed to followup care to access the way of low birth weight baby care by the mothers at home.
- (9) A comparative study between two groups at Sattar/Musar and Mandal/Dhimal/Rajbansi/Tharu. The present study revealed that high incidence in respective group.

5.4 Plan for Dissemination:

The study findings dissiminated according to planned for disseminate.

- (1) One copy of thesis will be submitted to the research committee of Master of Nursing faculty, Nursing Campus Maharjgunj, Kathmandu, Nepal.

- (2) Two copies of the Thesis will be given to the Nursing Campus Library Maharajgunj.
- (3) Three copies of the thesis will be given to the reproductive health programme NUFU Maharajgunj, Nepal.
- (4) One copy of thesis will be given to the National Health Training Centre (NHTC).
- (5) One copy of Thesis will be given to maternity hospital library, Biratnagar.
- (6) The report will be published in Nepali language and english language in various health and Nursing journal.
- (7) The report will be presented in the form of papers in relveant health and professional seminar and conference.

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QUESTIONNAIRE

This questionnaire will be used ONLY for the purpose of research study. The information related to respondents will be kept confidential. The purpose of study is to identify the trends of birth weight and its affecting factors in teenage pregnancy in Koshi Zonal Hospital Morang.

The interviewer will greet the respondents and their family member before collecting data. The investigator will explain the purpose of the study to the respondents.

S/No.

Hospital No.

Bed No.

Date of interview : 2056/4/

Interview started : Hour..... Minutes

Interview ended : Hour Minutes

SECTION - I

SOCIO- DEMOGRAPHIC INFORMATION

1. Name of respondents Name of husband
2. Age of respondent ☐ Age of husband : ☐
3. Education of respondent Education of husband:

| | |
|--|--|
| a. Informal education <input type="checkbox"/> | a. Informal education <input type="checkbox"/> |
| b. Illiterate <input type="checkbox"/> | b. Illiterate <input type="checkbox"/> |
| c. Under class 1-3 <input type="checkbox"/> | c. Under class 1-3 <input type="checkbox"/> |
| d. Under class 4-7 <input type="checkbox"/> | d. Under class 4-7 <input type="checkbox"/> |
| e. Under class 8-10 <input type="checkbox"/> | e. Under class 8-10 <input type="checkbox"/> |
| f. Above SLC <input type="checkbox"/> | f. Above SLC <input type="checkbox"/> |
4. Address

| | |
|--|--|
| a. District : | |
| b. Municipality : <input type="checkbox"/> | |
| c. VDC <input type="checkbox"/> | |
5. Ethnicity :

| | | |
|-------------------------------------|--|---------------------------------------|
| a. Brahman <input type="checkbox"/> | b. Chhetri <input type="checkbox"/> | c. Newar <input type="checkbox"/> |
| d. Dhimal <input type="checkbox"/> | e. Sattar/ Musar <input type="checkbox"/> | f. Rajbanshi <input type="checkbox"/> |
| g. Tharu <input type="checkbox"/> | f. Other specify. <input type="checkbox"/> | |
6. Religion

| | | |
|------------------------------------|--------------------------------------|---------------------------------------|
| a. Hindu <input type="checkbox"/> | b. Buddhist <input type="checkbox"/> | c. Christian <input type="checkbox"/> |
| d. Muslim <input type="checkbox"/> | e. Other specify..... | |
7. Age of marriage : ☐ Husband age at marriage: ☐
8. Type of marriage

| | |
|-------------------------------------|----------------------------------|
| a. arrange <input type="checkbox"/> | b. Love <input type="checkbox"/> |
|-------------------------------------|----------------------------------|
9. Structure of family :

| | |
|-----------------------------------|-------------------------------------|
| a. Joint <input type="checkbox"/> | b. Nuclear <input type="checkbox"/> |
|-----------------------------------|-------------------------------------|
10. Family member

| | |
|----------------------------------|------------------------------------|
| a. Male <input type="checkbox"/> | b. Female <input type="checkbox"/> |
|----------------------------------|------------------------------------|
11. During Pregnancy, Who cares and Loves you in the family

| | | |
|------------------|------------------|------------|
| a. Mother In Law | b. Sister in Law | c. Husband |
|------------------|------------------|------------|
12. Measurement of height in Cm:

| | |
|--|--|
| a. 136 – 140 cm <input type="checkbox"/> | d. 151-155 cm <input type="checkbox"/> |
| b. 141-145 cm <input type="checkbox"/> | e. 156-160 cm <input type="checkbox"/> |
| c. 146-150 cm <input type="checkbox"/> | f. more than 161 cm <input type="checkbox"/> |
13. Mother's Weight in Kg.: ☐

SECTION - 2

SOCIO-ECONOMIC INFORMATION

1. Occupation of respondent:

Occupation of husband:

- a. Service ☐ b. Business ☐ a. Service ☐ b. Business ☐
 c. Agriculture ☐ d. Labour ☐ c. Agriculture ☐ d. Labour ☐
 e. House wife ☐ f. Other, specify..... e. Other, Specify.....
2. Level of income self Level of income husband
 a. 1000-2000 p/month ☐ a. 1000-2000 p/month ☐
 b. 3000./4000 p/month ☐ b. 3000-5000 p/month ☐
 c. 5000 p/month ☐ c. 6000 p/month ☐
 d. more than 5000 p/month ☐ d. more than 6000 p/month ☐
 e. I don't know. ☐
3. How long did you work every day?
 hours
4. Did you rest in between the working hour?
 a. Yes ☐ b. No ☐
 If yes, how long?
 Hours ☐
5. Do you have own land ? a. Yes ☐ b. No ☐
 if yes, what are the products of your land?
- | <u>Vegetable</u> | <u>Food grains</u> |
|---|---|
| a. Green vegetable <input type="checkbox"/> | a. rice <input type="checkbox"/> |
| b. Pumpkin <input type="checkbox"/> | b. Maize <input type="checkbox"/> |
| c. Potato <input type="checkbox"/> | c. Wheat <input type="checkbox"/> |
| d. Brinjal and Cauliflower <input type="checkbox"/> | d. Beans <input type="checkbox"/> |
| e. Other, specify..... | e. Ground nuts <input type="checkbox"/> |

SECTION - 3

NUTRITIONAL PATTERN AND FOODING HABIT

1. How many times did you take food everyday?
 a. Two times per day ☐ b. three times per day ☐
 c. I used to eat frequently ☐ d. I don't like to eat any food but fruits only ☐
2. What type of food you preferred and take during pregnancy?
 Please specify the food.....
3. Do you have habit of dieting before and during pregnancy ?
 a. Yes ☐ b. No ☐
- If yes, what type of food you take daily?
 please specify the food.....
4. How did you take food during pregnancy?
 a. with all family members ☐ b. with mother in law ☐
 c. with sister in law ☐ d. alone ☐ e. With husband ☐
5. Did you smoke during pregnancy?
 a. Yes ☐ b. No ☐
6. Do you have habit of Drinking Alcohol?
 a. Yes ☐ b. No ☐
- If yes, how many sticks did you smoke per day?
 a. 1-2 sticks ☐ b. 3-4 sticks ☐ c. More than 4 sticks ☐
7. Weight gain?
 a. Excessive weight gain ☐ b. Continuous weight ☐
 c. Weight was not gained ☐

SECTION 4

OBSTETRIC AND GYNECOLOGICAL INFORMATION

1. At what age your menstruation started ? year ☐
2. Was the period: a. Regular ☐ b. Irregular ☐
3. What was the duration of blood flow?
 - a. 1-4 days ☐
 - b. 1-5 days ☐
 - c. Over 5 days ☐
4. How many times you became Pregnant ?
Number ☐
5. Did you suffered from the following illness during pregnancy?

| | |
|---|--|
| a. P.V. bleeding <input type="checkbox"/> | b. P. Eclampsia <input type="checkbox"/> |
| c. Eclampsia <input type="checkbox"/> | d. Excessive vomiting <input type="checkbox"/> |
| e. Swelling feet <input type="checkbox"/> | f. Blurred vision <input type="checkbox"/> |
| g. Urinary tract infection <input type="checkbox"/> | h. Server headache <input type="checkbox"/> |
| i. jaundice <input type="checkbox"/> | i. Hepatitis <input type="checkbox"/> |
| k. Anaemia <input type="checkbox"/> | |
6. How old is your last baby? Year ☐
7. What was the date of your last Menstrual period?
.....
8. LMP.....
9. EDD.....
10. Duration of Pregnancy, (Calculate gestational week by date) ☐
11. Foetal Movement
 - a. less foetal movement ☐
 - b. excessive foetal movement ☐
12. Did you visit antenatal clinic for checkup?
 - a. yes ☐
 - b. No ☐
- If yes, how many times did you visited?
 - a. Less than 4 ANC visit ☐
 - b. more than 4 ANC visit ☐
 - c. ONLY one ANC visit ☐
13. Did you get any health teaching from health personnel about nutrition and health care?
 - a. Yes ☐
 - b. No ☐
- If yes, from whom?
 - a. TBA ☐
 - b. FCHV ☐
 - c. VHW ☐
 - d. ANM ☐
14. Did you get anti-tetanus toxoid Injection?
 - a. yes ☐
 - b. No ☐
- If yes, how many times?
 - a. one time ☐
 - b. two time ☐
 - c. three times ☐
 - d. four times ☐
15. Have you been Pregnant with your own desire ?
 - a. yes ☐
 - b. No ☐
16. What was the last of Pregnancy outcome ?
 - a. Abortions ☐
 - b. Still birth ☐
 - c. Premature labour ☐
 - d. Normal delivery ☐
17. Type of delivery:

| | |
|--|---|
| a. Normal Delivery <input type="checkbox"/> | b. normal Episiotomy <input type="checkbox"/> |
| c. Vaccum Delivery <input type="checkbox"/> | d. Forcep delivery <input type="checkbox"/> |
| e. Caesarian Delivery <input type="checkbox"/> | |

SECTION -5

KNOWLEDGE ABOUT FP, EARLY PREGNANCY AND ITS EFFECTS:

1. Do you know the adverse effects of early pregnancy?

a. yes ☐ b. No ☐a. good effect ☐

Specify the good effect.....

b. Bad effect ☐

Specify the bad effect

2. If you know bad effects, why you became pregnant?

Please specify

3. Do you know about family planning?

a. yes ☐ b. No ☐

if yes, had you used any method before pregnancy?

a. Yes ☐ b. No ☐

If yes, what method was used?

a. Condom ☐ b. Pills ☐

If not using reason for not using contraception

a.

b.

c.

4. After 1st baby what is the suitable period for birth interval in your view.

specify the time

5. Why this period is suitable ?

SECTION - 6

NEW BORN INFORMATION :

Recorded this information from the chart observation and measurement of the baby.

1. Measurement of the Baby:

A Birth weight of the baby in grams.

a. Less than 2000 grams ☐c. 2500-3000 gms ☐b. 2000-2499 gms ☐d. More 3000 gms ☐

B Length of the Baby in cm

a Below 45 cm ☐b. 45-50 cm ☐c 51-52 cm ☐

C Head Circumference :

a. Below 30 cm ☐b. 30-35 cm ☐c. Over 35 cm ☐

D. Chest circumference:

a. Below 30 cm ☐b. 30 - 35cm ☐c. Over 35 cm ☐

2. Sex of the baby:

a. Male ☐b. Female ☐

3. Apgar Score

a. At one minute

b. At 5 minute

4. Does the baby has any Malformation?

a. Yes ☐b. No ☐

If yes, type of Malformation

Thanks for Cooperation,