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Research Article

Prevalence of low birth weight and its associated factors: a community based cross sectional study in a rural area of Rohtak, Haryana, India

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ABSTRACT

Background: Low birth weight (LBW) is a major public health issue in developing countries like India. LBW leads to an impaired growth of the infant resulting in a higher mortality rate and increased morbidity. LBW is also an important indicator of maternal and child health. Objective is to find the prevalence of low birth weight in a rural area and to study maternal factors associated with occurrence of low birth weight.
Methods: This community based cross sectional study was undertaken in block Chiri, a rural field practice area attached to PGIMS, Rohtak. All the births which had occurred during the period from 1st January to 31st December, 2012 under one Primary health care center were included in the study. The list of deliveries during the study period was prepared with the help of ANMs, anganwadi workers and ASHAs. Details regarding antenatal, intranatal and post natal events were collected from the mothers using a pre-tested semistructured questionnaire after obtaining written informed consent. The data obtained were analysed using appropriate statistical tests.
Results: The prevalence of low birth weight was found to be 18% in the study area. In the present study nearly 70% of the mothers with low birth weight babies were less than 19 years of age at the time of delivery, 80% of them were educated up to class 12, 78% were house wife's, 40% of them belonged to class 3 socio economic status, only 40% of them had got 3 or more antenatal checkup.
Conclusion: The prevalence of low birth weight was 18% in the present study. Majority of them were aged <19years, educated up to 12th class, majority of them were house wives belonging to class 3 SES and had less than two antenatal checkup.

Keywords: Low birth weight, Prevalence, Maternal factors, Rural area

INTRODUCTION

Low birth weight has been defined by the World Health Organization (WHO) as weight at birth of less than 2,500 grams (5.5 pounds). This practical cut-off for international comparison is based on epidemiological observations that infants weighing less than 2,500 g are approximately 20 times more likely to die than heavier babies. More common in developing than developed countries, a birth weight below 2,500 g contributes to a range of poor health outcomes.[1]

India accounts more than 40% of the global burden of low birth weight babies with 7.5 million babies (or 30% of the country's total annual live births) being born with a birth weight less than 2500 grams. Of these 7.5 million babies, 60% are born at term after fetal growth restriction, while the remaining 40% are born preterm,

constituting a quarter of the global burden of preterm births.[2]

Objective of the study is to find the prevalence of low birth weight in a rural area and to study maternal factors associated with occurrence of low birth weight.

METHODS

This community based cross sectional study was undertaken in block Chiri, a rural field practice area attached to Post Graduate Institute of Medical Sciences, Rohtak, Haryana. The study was carried out for a period of 3 months from February to April 2013. All the births which had occurred during the period from 1st January to 31st December, 2012 under one Primary health care center (Lakhanmajra) were included in the study. The PHC was serving a population of 28,000. The list of deliveries during the study period was prepared with the help of ANMs, anganwadi workers and ASHAs.

There were a total of 564 births in the study period, out of which 102 babies had birth weight less than 2.5 kg. Details regarding antenatal, intranatal and post natal events were collected from the mothers of low birth weight babies using a pre-tested semi structured interview schedule after obtaining written informed consent. A total of 86 mothers could be contacted as the remaining had gone to their in laws house in different districts and did not return to the study area in the study period mentioned. The mothers who could not be contacted on three consecutive visits and those who did not give consent were excluded from the study. The data obtained were analysed using appropriate statistical tests.

RESULTS

The prevalence of low birth weight was found to be 18% in the study area. (Figure 1) The mean age of the mothers (n = 86) with low birth weight babies was 23±8.6 years. Nearly 70% of the mothers with low birth weight babies were less than 19 years of age at the time of delivery.

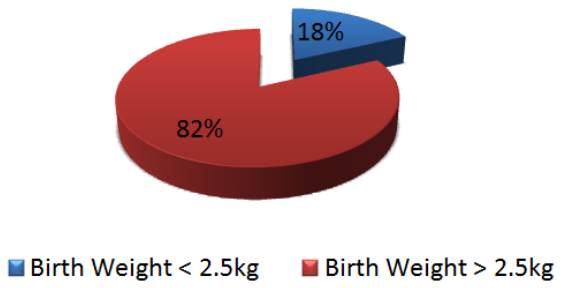

Figure 1: Prevalence of low birth weight.

Only 30% of the mothers with low birth weight babies were aged 20 years and above, the rest 70% aged below 20 years. Only 40% of them had got 3 or more antenatal visits from a sub centre or nearby health centre. The occurrence of Low birth weight was also found to have some relation to the number of antenatal visits as nearly 60% of them have had only ≤ 2 ANC visits. Only 20% of the mothers with low birth weight babies were educated till class 12.Only 12 percent of the mothers were having a height below 140 cm (Table 1 and 2).

Table 1: Distribution of mothers by their education, occupation, socioeconomic status and consanguinity. (n = 86).

Characteristics		Percentage
Education	Class 12 and above	20
	Less than class 12	80
Occupation	Employed	22
	Not employed	78
Consanguinity	Present	26
	Absent	74
Socioeconomic status	Upper class	20
	Upper middle class	38
	Middle class	40
	Lower middle class	2
	Lower class	0

Table 2: Distribution of mothers by their ANC visits, height and medical illness (n = 86).

Characteristics		Percentage
ANC visits	3 or more	40
	2 or less than that	60
Height	140 cm and above	88
	Below 140 cm	12
Any illness during pregnancy	Yes	56
	No	44

DISCUSSION

Birth weight of a child is an important indicator for reproductive health and general status of the population. Low birth weight (LBW) is considered to be the single most predictor of infant mortality, especially of deaths within first month of life.[3] LBW babies are more likely to die in infancy, and many also have irreversible cognitive impairments and increased risk of developing non-communicable diseases later in adulthood. According to the fetal origin of disease hypothesis, also known as Barker's hypothesis, under nutrition at critical stages in fetal growth can cause an increased risk of adult degenerative diseases of hypertension, diabetes mellitus, hyperlipidemia, and syndrome X.[4,5] The mortality due to LBW can be reduced if the risk factors are detected and managed early. Hence, this study was carried out to determine the prevalence and factors associated with LBW so that appropriate strategies can be formulated to tackle the problem.[6]

In the present study the prevalence of low birth weight was found to be 18% in the study area. Similar results were found in various other studies conducted in rural area where the prevalence was around 20%.[7-11] However in various hospital based studies the proportion of LBW was above 30% .The reason might be that most of the high-risk pregnancies are delivered in tertiary healthcare centers.[12]

In the present study the mean age of the mothers (n = 86) with low birth weight babies was 23±8.6 years. Nearly 70% of the mothers with low birth weight babies were less than 19 years of age at the time of delivery. The results were consistent with various other studies who also observed that the prevalence of LBW was more among mothers with age <20 years.[12-15] Regarding the educational status, 80% of them were educated up to class 12 in the present study, similar findings were found in various other studies.[16,17] Majority of the study subjects were house wife's in the present study, similar results were obtained in study conducted by Kandhasamy et al.[6] Majority of them belonged to class 3 SES in the present study, similar results were obtained in study conducted by Kandhasamy et al and Rajashree et al.[6,12] This study found that around 60% of the study subjects had <2 ante natal visits which was similar to the findings of study conducted by Kandhasamy et al and Malik et al, where in those mothers who had received less than four ANC visits had a significant risk of having LBW.[6,18]

CONCLUSION

The prevalence of low birth weight was 18% in the present study. Majority of them were aged <19 years, educated up to 12th class, majority of them were house wife's belonging to class 3 SES and had less than two antenatal checkup.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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