



## International Journal of Home Science

ISSN: 2395-7476  
IJHS 2016; 2(1): 318-321  
© 2016 IJHS  
www.homesciencejournal.com  
Received: 15-11-2015  
Accepted: 16-12-2015

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### Birth weight of tribal infants born to adolescent mothers

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#### Abstract

World Health Organization (WHO) has defined adolescent as the age between 10 to 19 years. Health scenario of the population would remain incomplete if adolescent group is excluded. About 80% of the tribal in India live in remote forest areas and hilly regions, without an access to the modern socio economic inputs. Current status of tribal population as reported 2011 census is 8.6% of the nation total population, whereas the tribal population of Maharashtra is 8.6 million. Tribal population of Buldana District is 115,000(Revenue division TRTI, Pune) Buldana District falls under Amravati division. Several studies have reported low birth weight of infants from the various tribal area. Birth weight is considered to be one of the important and reliable parameters in the evaluation of foetal and neonatal wellbeing. Birth weight below 2.5 kg has been found to be closely associated with poor growth (George K.A. *et al.* 2003). Present study aims in studying the birth weight of babies from the tribal area of Buldhana district. Height and weight of babies were recorded. It was found that low birth weight prevailed among infants. Education and nutrition education can help in reducing the incidence of low birth weight.

**Keywords:** Low Birth Weight, Nutrition education, Birth Height and Weight

#### 1. Introduction

India is considered to be anthropological laboratory because of its religious ethnic, social and linguistic diversities. It has always attracted the attention of the world as being one of the oldest civilizations with kaleidoscopic variety of rich cultural heritage.

Next to Africa, India has the largest concentration of tribals in the world. There are over 314 tribal communities in India, known by different names such as 'Adivasis' – the original inhabitants, 'vanyajantis'- inhabitants of forest, 'Pahari'- the hill dwellers. 'Anusuchit'- the scheduled tribe, Adim jati – the primitive people, 'jana jati' the folk people, wild flowers etc. (Tribhuvan Sherry, 2004), Current status of tribal population as reported 2001 census is 84.3 million, whereas the tribal population of Maharashtra is 8.6 million. About 80% of tribals in India live in remote forest areas and hilly regions, without an access to the modern socio-economic inputs. Further, the infrastructures and communication systems are so poorly developed that they still remain isolated from the outside world and modern technological developments. Although there are some differences among various tribal groups in India, they share certain common characteristics like nature of reality especially illiteracy, economic backwardness and social deprivation. Health status of tribals in India is same with certain minor differences. Karen Sherry (2004) rightly emphasizes that the health status of tribal group is integrally linked with the health of the mother. Tribal women health status is lower than the average Indian women because of her lack of access to education and other facilities. The tribal women's well-being has been adversely affected their health and ability to care for their children. Deforestation has meant that they have been cut off from their traditional source of sustenance and medicine. Health scenario of population would remain incomplete if adolescent group is excluded. Adolescents account for one fifth of the world's population. In India they account for 22.8 per cent of the population, there indicating that 230 million Indians are adolescents in the age group of 10 to 19 years (Planning Commission Report, 2001). The female adolescents constitute 12 per cent of the total population in India and as such quality of health of this group is of considerable importance in the context of National Development. It has been realized that by addressing the needs of the adolescent's one would not only be contributing to the socio-economic development of the country but also to the special concerns like social harmony, gender justice, population stabilization and distinct needs which can no

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longer be overlooked. It is also very essential to invest in adolescents, as they are the future of the country. However, unfortunately studies on nutritional status of adolescents reveal need for improvement regarding health and diet for all strata of population like rural, urban, tribal, low income group, high income group etc. Tribhuvan and Jain (1995) [6] while exploring the factors responsible for death of tribal children in Dharni and Chilkadara area opine that child bearing at early age leads to number of complications of mother, such as low birth weight babies, anemic babies etc, since the mother herself is not fully grown up, especially the pelvic bones, it is likely that the delivery may not be safe. The nutrients which she anemia and malnourishment among mothers and children. In addition, poverty, lack of nutrition education prevents them from eating good food during pregnancy. Dietary practices during pregnancy affect birth weight of infant. It is a common practice to reduce food intake during pregnancy, lest the baby may grow big and the delivery will not be smoother, a smaller baby is better for smooth delivery. The cycle continues, a small weight baby grows up to be a malnourished mother and in turn gives birth to a small weight baby. These observations show cause and practices regarding early marriages resulting in low birth weight infants. Neeru Gupta (2007) [2] pointed out that the adolescent pregnancy accounts for 18.8 percent of fertility in our country. These young girls face considerable health risks during pregnancy and child birth. Further, poor nutrition intake makes the pregnancy very unsafe. In fact, India has the dubious distinction of largest proportion of malnutrition at birth (low birth weight at over 30 percent). Such observations sentise the researcher for survey and interventions.

## 2. Review of Literature

### Birth Weight

Birth weight is considered to be one of the important and reliable parameters in the evaluation of foetal and neonatal wellbeing. Birth weight below 2.5 kg has been found to be closely associated with poor growth (George K.A. *et al.* 2003). Parvati and Khyrunissa (2007) [10], report maternal factor such as income maternal height abdominal girth and fundal height bear significant co-relation to birth weight of neonates.

Muthaiya and V Kurpad (2007) [8], studied issues in the prevalence of low birth weight in south India. Maternal physical activity had a direct association with birth weight. Few studies have shown association of work in the third trimester and preterm births and low birth weights. In one study 150-400 g. decrease in birth weight occurred in women who continued to work outside the home during the third trimester compared with those who remained at home during pregnancy.

Habeeb and Shrivastava (2005) [3], observed maternal and biosocial factors influencing pregnancy outcome. The anthropometric variable of the mother especially body weight during pregnancy correlated significantly with the anthropometric variables of the new born. Hemoglobin and serum iron appeared to be positively associated with the weight of the new born.

Iyer (2004) [4] report in India 30-40% babies are LBW as apposed to 57% in the developed countries. In India the high incidents is accounted (2/3<sup>rd</sup>) by intra uterine growth restriction rather than preterm (1/3<sup>rd</sup>). Further Shiela report that birth weight alone is a poor indicator of nutritional status of new born.

Ramchandran (2003) [12], report that studies in India from the upper income group consume 1800 to 2300 kcal per day

during pregnancy reduction in work activity was observed mean pregnancy weight gain was 11 kg and mean birth weight was found to be 3.1 kg. This is the picture of well nourished mothers whose dietary intake is same throughout pregnancy further results revile that dietary intake among urban low income women ranges from 1200 to 1600 kcal per day with no extra dietary intake during pregnancy. Physical activity is continued throughout pregnancy these women weigh an average of 43 kg. Prior to pre pregnancy and gain 6 kg. During pregnancy the mean weight of infants was 2.7 kg.

Paul & Vijayalakshmi (2002) [11], report zinc, vitamin A and iron are necessary for positive effect on pregnancy outcome that i.e. to improve birth weight of new born.

Jondhale (2001) [7] report over 1/3<sup>rd</sup> babies born in India are low birth weight babies (<2.500gms)

Annual report NIN (2000-2001), a study was conducted in government hospital to evaluate pregnancy outcome in primigravidae adolescent it was interesting to note that 50 percent of mother with less than 145 cm. height had low birth weight babies. Similarly mothers with weight less than 42 kg. Deliver more low birth weight babies.

Eagle Patrice *et al* (2000) work log during pregnancy has a significant effect on birth weight.

Dhawane *et al* (2000) [1], report women with iron deficiency anaemia gave birth to low birth weight baby (70 %) anaemia was found to be direct as well as contributing factor in outcome of pregnancy.

### 3. Aim of Study

Looking at above reviews it was aimed to study the birth weight of babies of adolescent mothers from the tribal area of Buldhana district.

### 4. Methodology

The details of methodology are presented in following paragraph.

**1. Selection of Area:** The objective of present study was to cover adolescent girls. It was therefore planned to reach the same Tribal infested area the tehsils of Buldhana district namely of Sangrampur and Jalgaon-Jamod were selected for study. While selecting area it is important to know tribal population of region and district. Tribal population of Amravati division 1,116 thousand and that of Buldhana district being 115 thousand (Revenue division, TRTI, Pune.) Buldhana district comes under Amravati region.

**2. Duration of Survey:** Duration of survey continued for two year. Several small visits as when required were observed. Hilly areas were not accessed during rainy season.

**3. Subjects:** Subjects included adolescent girls and new born babies.

### 4. Description Of Tools And Techniques Used In Survey.

**1) Sampling Technique:** Purposive sampling method was used to collect data. Since only adolescent group was assessed purposive method of sampling was adopted.

**2) Statistical Survey:** Collection of data from tribal household on the basis of questionnaire and interview method. Responses tabulated and subjected to statistical analysis.

**3) Interview:** Illiteracy a major hurdle with respect to recording responses from questionnaire, hence tribals were

interrogated and responses were filled in. Selected informants like anganwadi seweka, local inhabitants, school teachers, doctors were interrogated for relevant information.

**4) Questionnaire:** A well structured pretested questionnaire was framed to collect relevant information mentioned in the following paragraph.

Information pertained to receive information about infants with respect to sex, height cms, weight kg, mid arm circumference cms, prematurely and awareness for vaccination. Values expressed with means, percentages in tabular form and pie diagram.

**5) Birth related information of infants:** Anganwadi sevika recorded the birth related information of the infants. Researcher followed the same for the data.

### 5. Calculations

For interpretation of data suitable calculations like means, percentage, standard deviations, were used to express values for interpretation of data.

### 6. Result and Discussion

It is estimated that 35 % of rural girls of 17 years age have weights below 38 kg. And 23% have heights below 145 cm, these levels generally considered to be indicative of not only poor obstetric risk as per WHO criteria but also of greater chances of low birth weight of the offspring. (George 2003) Further it is observed that Indian girls have high rates of fertility with 19% of total fertility rates accounted for by women in the 15-19 years age group. (WHO, 2007c). Adolescent mother's receive less prenatal, antenatal and post-partum care with only 41.6% of births by adolescent girl being attended by trained personnel (WHO, 2007c). Here is a considerable high incidence of low birth weight of new borns to adolescent.

In view of above observations it is of great interest to observe the birth weight of infants born to adolescent mothers particularly because adolescent girls from present study area had weights and height less than NCHS standards, the birth related information of infants is given in table 4.2

**Table 4.2:** Birth Related Information of Infants

Sr. No.	Subjects	Sex of Infants (%)		Premature Birth (%)		Vaccination (%)		Height [cm]	Weight [kg]	MUAC [cm]
		Male	Female	Yes	No	Yes	No			
1	Infants [n=48]	52.08 (25)	47.92 (23)	97.92 (47)	2.08 (1)	0 (48)	100 (48)	46.33±2.01 (R 42-50)	2.12±0.25 (R 1.7-2.6)	11.26±0.82 (R 9.5-13)

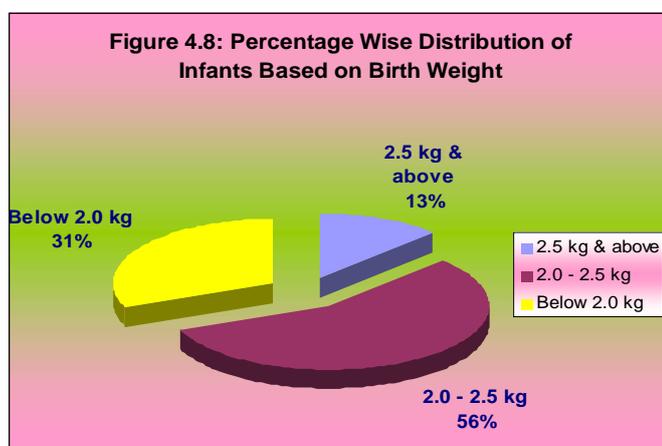
Values in parentheses indicate number.

MUAC – Mid Upper Arm Circumference

The sex wise distribution of infants showed almost similar number of males 25 percent males and females 23 percent. It was astonishing to note that almost 97 % reported premature birth.

The minimum to maximum height ranged between 42 to 50 cms. The mean birth weight was found to be 2.12 kg which indicated that infant born were falling under the category of low birth weight babies. The minimum range was found to be only 1.7 kg. Whereas maximum was 2.6 kg which was significantly higher than the standard criteria of 2.5 kg.

The distribution of infants based on birth weights has been shown in form of pie diagram in fig 4.6.



It is observed that 31 % were below 2 kg, 56 % between 2 to 2.5 kg and 13 % above 2.5 k.g.

### 7. Conclusion

From the above result it can be concluded that low birth

weight prevailed among the infants. With education, there are chances of reduction in certain practices followed by them, like the custom of marriage by eloping with partner in early adolescent stage which results in early pregnancy and consequent birth of low weight babies. Education can certainly help to get rid of these undesirable practices. At the same time nutrition education should be imparted to the tribals. The researcher herself plans to work in the study area by promoting knowledge regarding nutrition and social factors responsible for lowering health and nutritional status.

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