Introduction

Tribal communities are defined as those communities which have primitive traits, distinctive culture, geographical isolation, shyness of contact with the community at large, and backwardness.

India has the second-largest tribal population in the world, representing 8.6% of India's population.

Undernutrition continues to be a main cause of ill health and mortality among children in developing countries. In general, data are scanty on anthropometric and nutritional status of various tribal populations of India. With this backdrop, the present study has been carried out to assess undernutrition among under 5 tribal children.

Materials and Methods

In West Bengal, tribal population is mainly concentrated in the District of Medinipur, Purulia, Jalpaiguri, and Bardhaman districts. Among those villages randomly Burda village in Purulia was selected. Agriculture is the sole activity of these tribes, even today and also depends on fishing, hunting, and forest products.

A community-based cross-sectional study was conducted among under 5 tribal children permanently in Burda village from September 2019 to November 2019, after obtaining ethical clearance from Institutional Ethics Committee of Calcutta National Medical College. Permission was also taken from the community

\[\text{Assessment of under nutrition among under 5 tribal children in a rural area in West Bengal}\

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Abstract

Tribal population is socio-economically disadvantaged group. Knowledge about nutritional status of various tribal populations is important because it impels to identify undernutrition which is a leading cause of morbidity and mortality. This study is conducted to assess undernutrition among under 5 tribal children. In this cross-sectional study with a sample of 68 under 5 tribal children selected through complete enumeration fulfilling the inclusion criteria after obtaining ethical clearance from Institutional Ethics Committee. Anthropometric measurements were recorded to determine types of undernutrition prevailing among them using World Health Organization Anthro software. 24 h recall of dietary history of children was taken for 7 days to assess mean energy, protein, and fat intake per day and compared with recommended daily allowances. A total of 30.8% children were stunted, 30.8% were wasted, and 14.7% were both stunted and wasted. The consumption of energy, protein, and fat was much low. Chi square test showed a significant association of undernutrition with gender, education of father, type of family, socio-economic status, and birth order but binary logistic regression showed significant association only with socioeconomic status. Undernutrition in form of stunting and wasting and low dietary intake of energy, protein, fat was found among these children. Multi sectoral approach is suggested.

Keywords: Tribal, under 5, undernutrition, rural

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Results

Majority (83.8%) of mothers were illiterate and 69.1% belonged to joint family. A total of 97.1% fathers were farmers, whereas 86.8% mothers were home makers. Majority (75%) of the families belonged to socioeconomic status Class V according to Modified B. G. Prasad Scale 2019. It was good to note that prevalence of institutional deliveries was 88.2% [Table 1].

A total of 30.8% were stunted among which 11.7% were boys and 19.1% were girls. Again 30.8% were wasted among which 11.7% were boys and 19.1% were girls. Whereas 14.7% among study subjects were under weight. It was also noted that 69.1% of children had normal nutritional status [Table 2].

A significant association between under nutrition and sex of child (P = 0.032), education of father (P = 0.045), type of family (P = 0.046), socioeconomic status (P = 0.049), and birth order (P = 0.030) was observed using Chi-square test [Table 3]. But binary logistic regression showed a significant association between socioeconomic status and under nutrition among study subjects [Table 4].

Energy consumption for boys of 2-3 years (16.1%) and 4-5 years (11.9%) and girls of 2-3 years (19.2%) and 4-5 years (24.2%) low as compared to Recommended Dietary Allowance (RDA) [Figure 2]. Protein consumption for boys of 2-3 years (25.2%) and 4-5 years (20.2%) and girls of 2-3 years (28.1%) and 4-5 years (20.1%) low as compared to RDA [Figure 2]. Fat consumption for boys of 2-3 years (54.7%) and 4-5 years (43.6%) and girls of 2-3 years (53.9%) and 4-5 years (44%) low as compared to RDA [Figure 3].

Though majority of mothers (94.1%) initiated breast feeding on the first day of delivery, others (5.9%) had a prelacteal feeding with cow milk, jaggery water. 16.2% did not start complementary feeding at the age of completed 6 months.

Discussion

The present study reflects that under nutrition in form of stunting and wasting were widely prevalent among under 5 tribal children. A total of 30.8% were stunted, 30.8% were wasted, and 14.7% were underweight similar to a study in Birbhum district of West Bengal among Santal tribe by Caroline Katharina Stiller, et al9 where 51.9% were stunted, 19% wasted and 49.2% were under weight. In Assam Das et al10 conducted on under 5 tribal children where 41.33%, 27.56%, 30.22% were stunted, wasted, and underweight respectively. Whereas in a study in Maharashtra by Ghosh and Varekar on tribal children of Palghar observed that 59%, 20%, and 53% were stunted.
wasted, and underweight, respectively. This variation may be due to well-functioning Integrated Child Development Services (ICDS) centers and awareness among mothers about food fed to under-fives. Apart from these it is also reflected that girls suffered more under nutrition in various forms than boys.

In this study, the consumption of energy was low, for boys of 2-3 years (16.1%) and 4-5 years (11.9%), and girls of 2-3 years (19.2%) and 4-5 years (24.2%) as compared to RDA, similar to a study on Lodha tribe by Sabud et al. which also shows low energy consumption where RDA for girls (1062 ± 85.4 Kcal) and boys (1055 ± 79.2 Kcal).

In our study, consumption of protein was low for boys of 2-3 years (25.2%) and 4-5 years (20.2%) and girls of 2-3 years (28.1%) and 4-5 years (20.1%) as compared to RDA in accordance with a study on Lodha tribe by Sabud et al. had a low consumption of protein (17.92 ± 3.5%) in girls, (18.08 ± 3.1%) in boys as compared to RDA. Also our study shows, low fat consumption for both boys and girls, similar picture is revealed by other studies.

So, it could be stated that under nutrition among under 5 tribal children was not only due to dietary inadequacy but also various sociodemographic factors similar to the study by Das in Udalguri district of Assam.

In accordance to our study, a systematic review by Dey and Bisai also revealed that among sociodemographic factors, socioeconomic status plays an important role in undernutrition among under 5 tribal children.
Conclusion

This study highlights that 30.8% of under 5 tribal children suffered from Under nutrition in form of stunting and wasting. This is not only due to dietary inadequacy but also due to various sociodemographic variables like sex, education of father, type of family, and birth order but particularly due to socioeconomic status. Knowledge of undernutrition will guide primary care physicians to plan adequate nutritional interventions and preventive strategies, and hence reduce risks added by undernutrition. This study could not be done in larger frame, which could have fetched more significant factors related to undernutrition of under 5 tribal children due to resource and time constraints.

Multisectoral approach is strongly recommended in these tribal areas to improve the nutritional status of these children. Awareness and behavioral change interventions for mothers shall be planned on nutrition, safe cooking practices, and balanced diet.

This study reveals that still a proportion of under 5 tribal children is suffering from undernutrition, and need immediate interventions to be taken to reduce its ill effects; physically, mentally, and socially. A spectacular observation was made during this study that percentage of undernourished under 5 tribal children was less compared to studies done in the past; and a major cause for prevailing undernutrition was socioeconomic status of family.

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Conflicts of interest

There are no conflicts of interest.

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