

## Culture, Nutrition and Child Mortality: A Study in a Village of West Bengal, India

D. K. Adak<sup>1</sup>, R. Dhar<sup>2</sup>, S. Mitra<sup>3</sup> and P. Bharati<sup>4</sup>

Citation: Adak DK, Dhar R, Mitra S and Bharati P. 2014. Culture, Nutrition and Child Mortality: A Study in a Village of West Bengal, India. Human Biology Review, 3 (4), 346-363.

<sup>1</sup>D. K. Adak, Anthropological Survey of India, 27, Jawaharlal Nehru Road, Kolkata 700016, India. Email: [adakdipak@gmail.com](mailto:adakdipak@gmail.com)

<sup>2</sup>R. Dhar, Anthropological Survey of India, 27, Jawaharlal Nehru Road, Kolkata 700016, India. Email: [dhar.ratna@gmail.com](mailto:dhar.ratna@gmail.com)

<sup>3</sup>S. Mitra, Anthropological Survey of India, 27, Jawaharlal Nehru Road, Kolkata 700016, India. Email: [sanshinelinm@rediffmail.com](mailto:sanshinelinm@rediffmail.com)

<sup>4</sup>P. Bharati, Biological Anthropology Unit, Indian Statistical Institute, 203 B.T. Road, Kolkata 700108, India. Email: [pbharati@gmail.com](mailto:pbharati@gmail.com)

Corresponding author: D. K. Adak, Anthropological Survey of India, 27, Jawaharlal Nehru Road, Kolkata 700016, India. Email: [adakdipak@gmail.com](mailto:adakdipak@gmail.com)

### ABSTRACT

*This article examined the determinants of child mortality namely; cultural, economic, demographic, community health and nutrition in a multiethnic village of West Bengal. The findings reveal highest level of child mortality among the scheduled tribes (ST) and lowest among the general castes (GC), while other backward castes (OBC) and scheduled castes (SC) show an intermediate position. Large differentials were found in child nutrition. While, 52.94 percent of the GC children fall in the category of normal status of nutrition, only 25.64 percent of the SC children fall in this category. Among the OBC and ST children this frequency is 44.44 and 31.58 respectively. In addition, it is found that more than 28 percent of the GC and OBC mothers fall in the category of underweight, whereas, 35 percent of the SC and ST mothers were underweight. The study inferred, general castes enjoy better nutrition and health care facilities, who are more health conscious than other backward castes, scheduled castes and scheduled tribes. Other backward castes show a similarity with the general castes in this respect. On the other hand among the scheduled castes a reverse trend is perceptible. They show a similar trend with the scheduled tribes in respect of health and nutrition. It is to be mentioned that both the scheduled castes and scheduled tribes occupy the lower segment in society in Sahajapur village.*

**Key words:** Child health. Food habits. Child deaths. West Bengal village.

## **INTRODUCTION**

“Children health, tomorrow’s wealth” is a very well-known slogan. In reality, birth of a child occupies a special place in people’s life, and they are generally loved all over the world. Unfortunately a good number of children die every year in India due to various illness. Such child deaths always bring sorrow to the families. India has largest number of children in the world. Every year 21 million children are born in India, among whom 8 million die due to various infections and diseases (State of child Rights in India 2011).

Study on child mortality did gain its momentum all over the world after the celebration of the International Year of Child in 1979 by the United Nations. Since then quite a good number of studies on mortality in general and infant mortality in particular have been undertaken. India received the award from “Liguris International Technology for Development” in 1991 for its Integrated Child Development Services (ICDS), which is a significant development of 1991 in the field of child welfare in India. In India though a declining trend in infant and child mortality is seen, yet it is much higher in comparison to Western as well as some of its Asian counterparts. The significant growth of India’s population on one hand and increasing infant and child mortality on other hand is a matter of serious concern not only for the demographers, social scientists, economists and policy makers but for each and every serious citizen of this country.

Population of India is divided into a large number of endogamous groups consisting of different castes, tribes, minorities, religions etc. Majority of population live in villages. The state of West Bengal located in eastern part of India presents an interesting picture. It is fourth most populous state in India having 91,276,115 people (2011 Census) among whom about 72 percent live in rural areas.

The determinants of infant and child mortality vary between geographical regions, between cultural groups and also between the countries of various economic statuses. Among the infants and children the risk of death is closely related to the environment in which they grow. The deaths occur because of less medical facilities to deal with infections, inadequate food and lack of elementary hygiene (U.Ko.Ko. 1987). Mosley and Chen (1984) have proposed in their analytical framework that all social and economic determinants of child mortality necessarily operate through a common set of biological mechanism, or proximate variables, to exert an impact on mortality. In this backdrop an attempt has been made in the present study to examine culture, nutrition and child mortality in Sahajapur village of Birbhum district, West Bengal, India.

## **MATERIAL AND METHODS**

Sahajapur (Fig. 1 and 2) is a medium sized village situated in Bolpur-Sriniketan block of Bolpur subdivision in the district of Birbhum in the state of West Bengal, India. The village falls in the western part of the district which is noted for the red soil and topography.

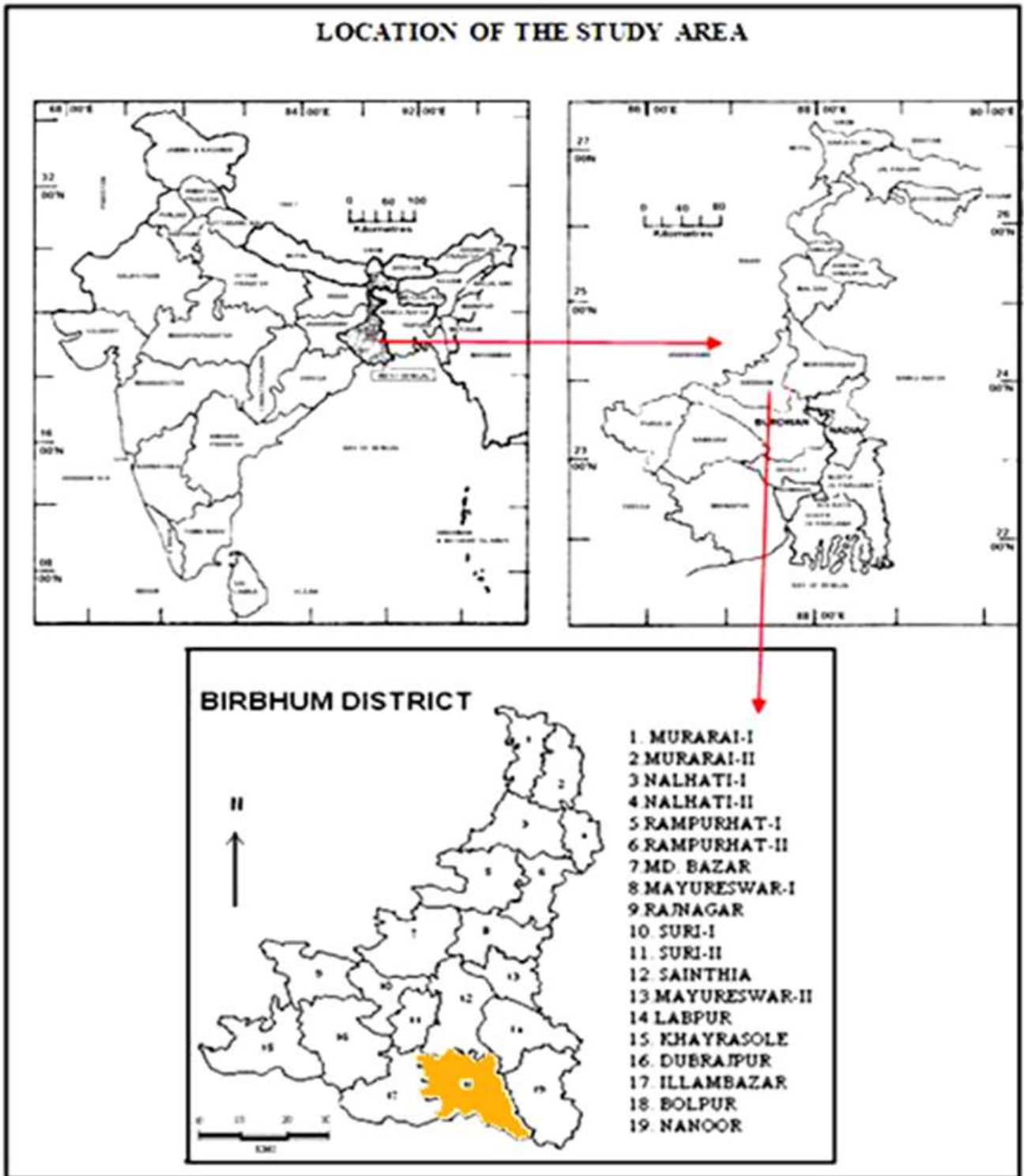


Figure 1: Location of the Study Area

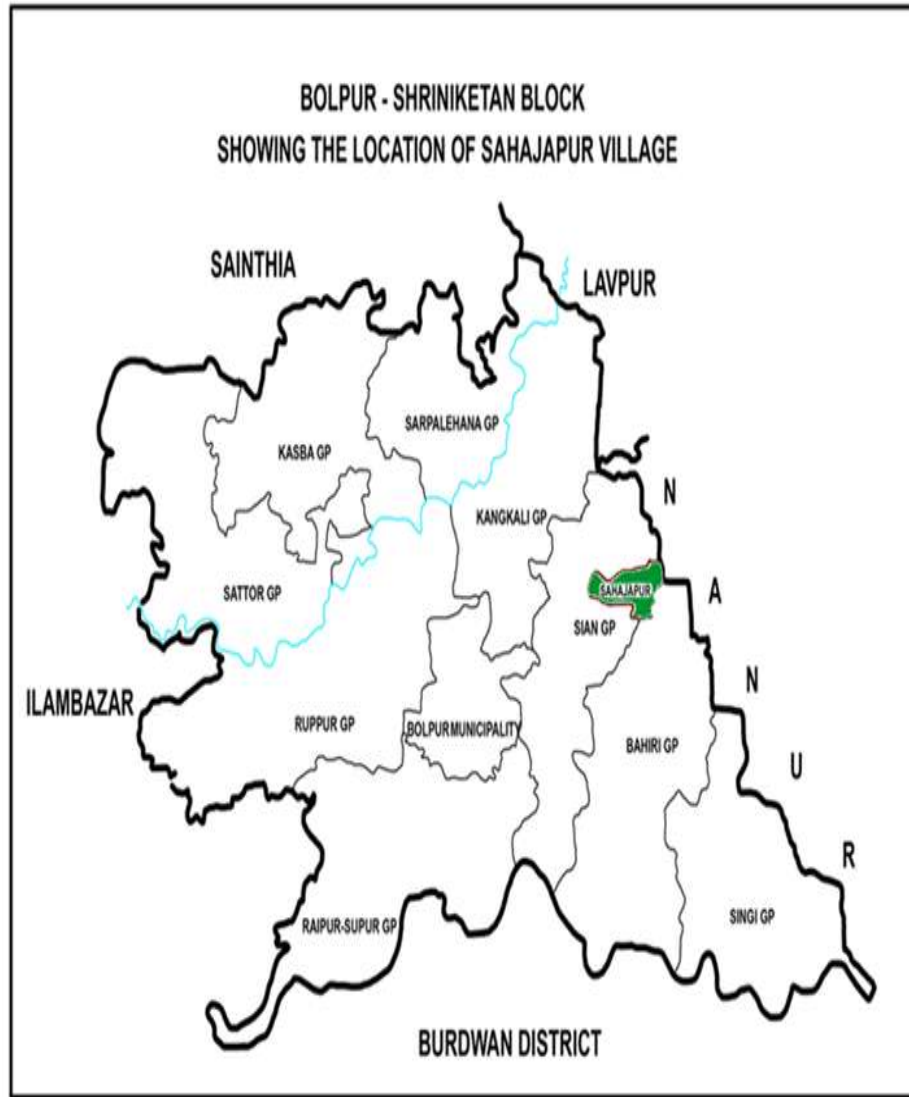


Figure 2: Location of Sahajapur Village

This is a multiethnic village comprising of twenty four ethnic groups including subgroups mainly Hindus by religion. Two tribal groups, Santal and Mahali originally from Chotanagpur area are living in the village. Table 1 gives an idea of the placement of the castes and tribes living in the village as per the constitution. While the upper position of the society is occupied by the general

castes, middle position is occupied by the other backward castes. The scheduled castes and the scheduled tribes occupy the lower position.

Table 1: Placement of Caste/communities as per Constitution of India in Sahajapur

Constitutional Category	Caste Groups
General Castes (GC)	Brahman, Bairagya, Sadgop, Aguri, Ranakarmakar
Other Backward Castes (OBC)	Tantubay, Tili, Sutradhar, Swarnakar, Moyra, Kumbhakar, Goala,
Scheduled Castes (SC)	Dom Ankure, Dom Magheya, Dom Turi, Jele Kaibarta, Namasudra, Lohar, Poundrakhatriya, Ruidas, Sunri,
Scheduled Tribes (ST)	Mahali, Santal, Bedia

In this study 59 general castes (GC), 58 other backward castes (OBC), 150 scheduled castes (SC) and 55 scheduled tribes (ST) mothers, who have completed their fertility, were studied.

The measure of infant mortality used in this study was calculated following the method suggested by Khan (1987). To calculate the index of the infant mortality all births which took place during 12 months prior to interview were excluded from the analysis as they did not have one full year of experience. The index thus obtained is similar to formulate mortality rate (IMR) estimated from a cohort but is different from a period (one year) rate. It averages the period IMRs over the entire reproductive period of women included in the sample. A similar approach has been adopted by Garma (1983) in Mexico with quite useful results.

$$\text{Index of infant mortality} = \frac{\sum I_{di}}{\sum B_i} \times 1000$$

Where  $I_{di}$  = Total number of infant deaths reported by  $i$ th woman of the sample  
 $B_i$  = Total number of live births reported by  $i$ th woman of the sample

Following this, index of toddler mortality, child mortality and index of reproductive wastage were also derived. These are as follows:

$$\text{Index of toddler mortality} = \frac{\sum T_{di}}{\sum B_i} \times 1000$$

Where  $T_{di}$  = Total number of toddler deaths (1-4 years) reported by  $i$ th woman of the sample

$B_i$  = Total number of live births reported by  $i$ th woman of the sample

$$\text{Index of child mortality} = \frac{\sum C_{di}}{\sum B_i} \times 1000$$

Where  $C_{di}$  = Total number of child deaths (0-4 years) reported by  $i$ th woman of the sample

$B_i$  = Total number of live births reported by  $i$ th woman of the sample

$$\text{Index of reproductive wastage} = \frac{\sum R_{wi}}{\sum C_i} \times 1000$$

Where  $R_{wi}$  = Total number of reproductive wastage (abortion and still births) reported by  $i$ th woman of the sample

$C_i$  = Total number of conception reported by  $i$ th woman of the sample

The measurement of child nutrition was assessed using the Gomez's and Indian Academy of Pediatrics (Gomez et al. 1956, I.C.M.R. 1972, 1984). Side by side, for adult nutrition BMI standards for Asia Pacific as per WHO (2000) criteria was followed.

The researchers were well aware of the ethical issues while working in a village. Before collection of the data, the purpose of the present research work was clearly stated to the villagers. The persons who did not wish to provide information were not harassed. All villagers were humbly requested to provide data and they were approached as per their convenient time and places of their choice, like their house, field, farm house etc. The villagers from adjoining villages were also interviewed to understand the network relations and a picture of the area.

## RESULTS

Reproductive performance and indices of mortality have been shown in Table 1, 2 and Figure 3 respectively among four cultural groups in village Sahajapur. Of all these cultural groups the index of infant mortality (i.e. within 0-1 year) was highest among the scheduled tribe (100.72), which was followed by scheduled castes (70.5) and general caste (45.11). Infant mortality was lowest among the other backward castes (41.09). Toddler mortality ranges between 13.05 and 34.25 and reproductive wastage lies between 14.39 and 26.67 among these four cultural groups. When the cases of child mortality were taken into consideration it was seen that the scheduled tribes show the highest value (115.11) and the general castes the lowest (60.15), whereas the other backward castes (75.34) and scheduled castes (83.55) show an intermediate position. In Figure 3 different mortalities were shown among these four cultural groups.

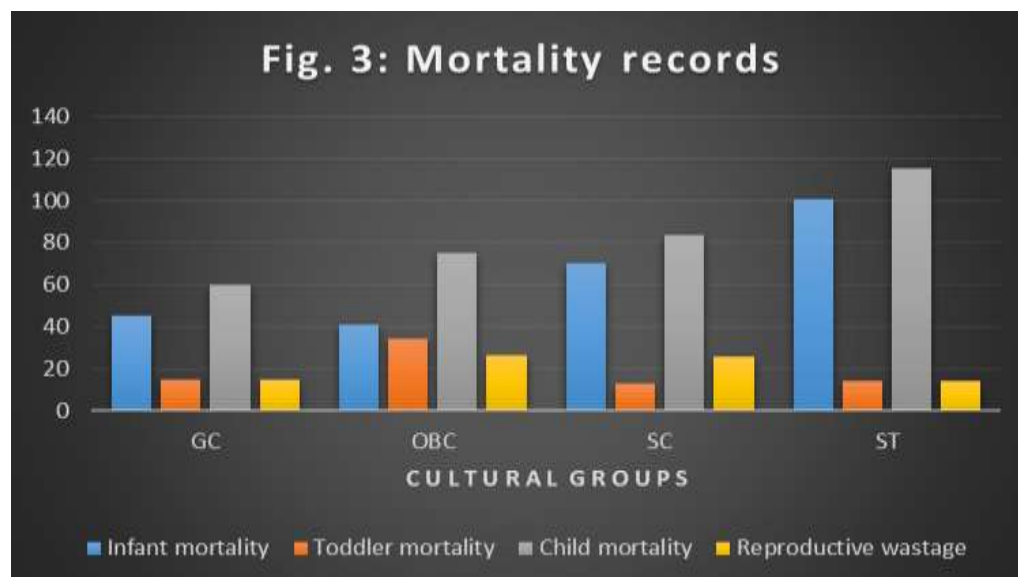
Table 1: Reproductive performance

Reproductive performance	Cultural groups			
	General castes (GC)	Other backward castes (OBC)	Scheduled castes (SC)	Scheduled tribes (ST)
Number of mothers with completed fertility	59	58	150	55
Total number of pregnancies	133	150	392	139
Total number of live births	133*	146	383**	139*
Reproductive wastage	2	4	10	2
Number of infant deaths (0-1 year)	6	6	27	14
Number of toddler deaths (1-4 years)	2	5	5	2
Number of child deaths (0-4 years)	8	11	32	16
Mean of live births	2.25	2.52	2.55	2.53

\*Inclusive of 2 twin births \*\*Inclusive of 1 twin birth

Table 2: Mortality records

Indices of mortalities	Cultural groups			
	GC	OBC	SC	ST
Index of infant mortality (0-1 year)	45.11	41.09	70.50	100.72
Index of toddler mortality (1-4 years)	15.03	34.25	13.05	14.39
Index of child mortality (0-4 years)	60.15	75.34	83.55	115.11
Index of reproductive wastage	15.04	26.67	25.51	14.39



Child nutrition was assessed using the Gomez’s and Indian Academy of Pediatrics (Gomez et al. 1956; ICMR 1972, 1984) standard. Mid-upper-arm circumference as an indicator of lean body mass was used as one of the parameters for measuring nutritional status. The common practice to identify the malnourished children is to adopt the three fold classification that is: normal (greater than 13.5 cm), borderline (13.5-12.5) and malnourished (below 12.5 cm).

Table 3: Child nutrition (1-6 years) according to mid-upper-arm circumference

Grade of nutrition	Cultural groups				Total
	GC	OBC	SC	ST	
Normal (greater than 13.5 cm)	9 (52.94)	8 (44.44)	10 (25.64)	6 (31.58)	33 (35.48)
Border line (13.5-12.5 cm)	6 (35.29)	7 (38.89)	20 (51.28)	8 (42.10)	41 (44.09)
Malnourished (below 12.5 cm)	2 (11.77)	3 (16.67)	9 (23.08)	5 (26.32)	19 (20.43)
Total	17 (100.00)	18 (100.00)	39 (100.00)	19 (100.00)	93 (100.00)

Note: Figures in parenthesis indicate percentage values



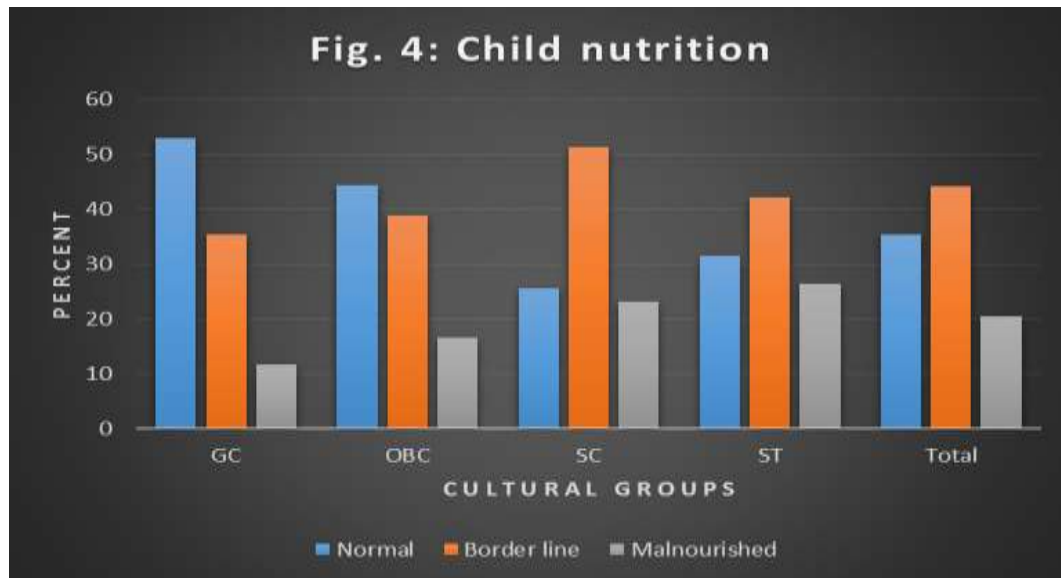


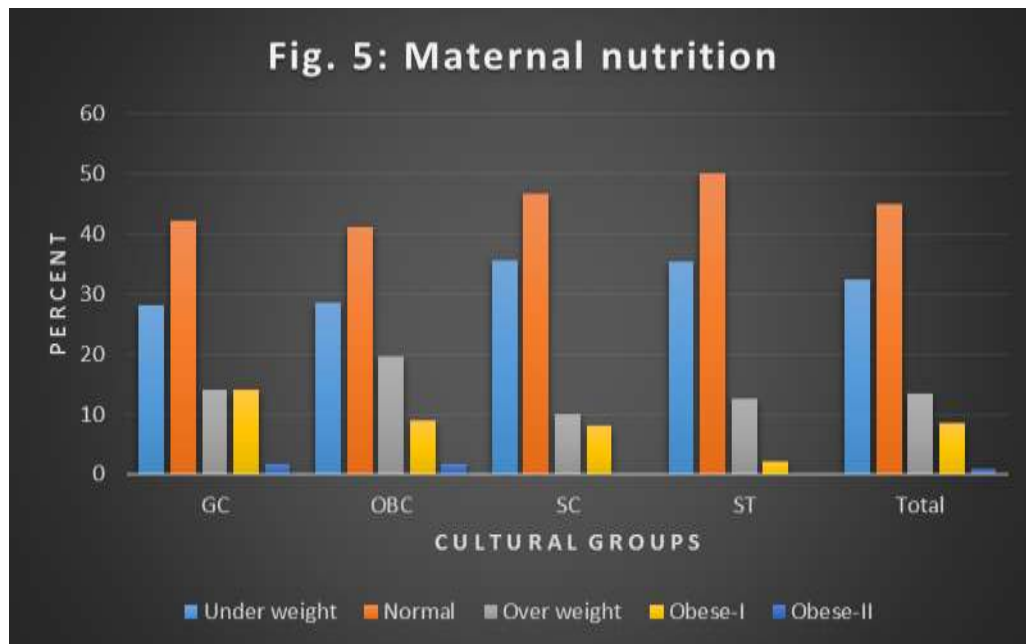
Table 3 and Figure 4 show that while 52.94 percent of the GC children fall in the category of normal status of nutrition, only 25.64 percent of the SC children fall in this category. Among the OBC and ST children this frequency is 44.44 and 31.58 respectively. In the category of border line nutrition lowest frequency is recorded among the GC (35.25) and highest among the SC (51.28). The OBC (38.89) and ST (42.10) show a moderate frequency. Malnutrition occurred in lowest frequency among the GC's (11.77) and highest frequency among the ST (26.32). The SC (23.08) shows more or less similar frequency like the ST. The OBC (16.67), however, show considerably higher frequency than the GC.

It can be seen from Table 4 and Figure 5 that while more than 28 percent of the GC and OBC mothers fall in the category of underweight, 35 percent of the SC and ST mothers were underweight. Frequency of mothers with normal status of nutrition lies between 41.07 percent among the OBC and 50 percent among the ST. The GC (42.10) shows a similar frequency with the OBC and SC (46.47) shows a similarity with the ST in this respect. In case of overweight the lowest frequency is recorded among the SC (10.10) and highest among the OBC (19.64). Frequency of obese-I ranges between 2.08 (ST) and 14.04 (GC). However, the frequency of obese-II is negligible among the GC (1.750 and OBC (1.79). Among the SC and ST no mother falls in this category.

Table 4: Nutritional status of mother according to BMI (for Asia Pacific) as per WHO (2000) criteria

Grade of nutrition	Cultural groups				Total
	GC	OBC	SC	ST	
Underweight ( $\leq 18.5$ )	16 (28.07)	16 (28.57)	35 (35.55)	17 (35.42)	84 (32.31)
Normal (18.5-22.9)	24 (42.10)	23 (41.07)	46 (46.47)	24 (50.00)	117 (45.00)
Overweight (23.0-24.9)	8 (14.04)	11 (19.64)	10 (10.10)	6 (12.50)	35 (13.46)
Obese-I (25.0-29.9)	8 (14.04)	5 (8.93)	8 (8.08)	1 (2.08)	22 (8.46)
Obese-II ( $\geq 30.0$ )	1 (1.75)	1 (1.79)	-	-	2 (0.77)
Total	57 (100.00)	56 (100.00)	99 (100.00)	48 (100.00)	260 (100.00)

Note: Figures in parenthesis indicate percentage values



Data on child deaths in four cultural groups were presented in Table 5 to 10 in respect of maternal nutrition, household income, mother's education, ante-natal care of mother, medical treatment of child and mother's sense of personal hygiene.

Table 5: Child deaths in relation to maternal nutrition

Maternal nutrition	Child deaths			
	GC	OBC	SC	ST
Under weight	3(37.50)	5(45.45)	21(65.63)	9(56.25)
Normal	2(25.00)	3(27.27)	11(34.37)	7(43.75)
Over weight	2(25.00)	2(18.18)	-	-
Obese	1(12.50)	1(9.10)	-	-

Figures in parenthesis indicate percentage values

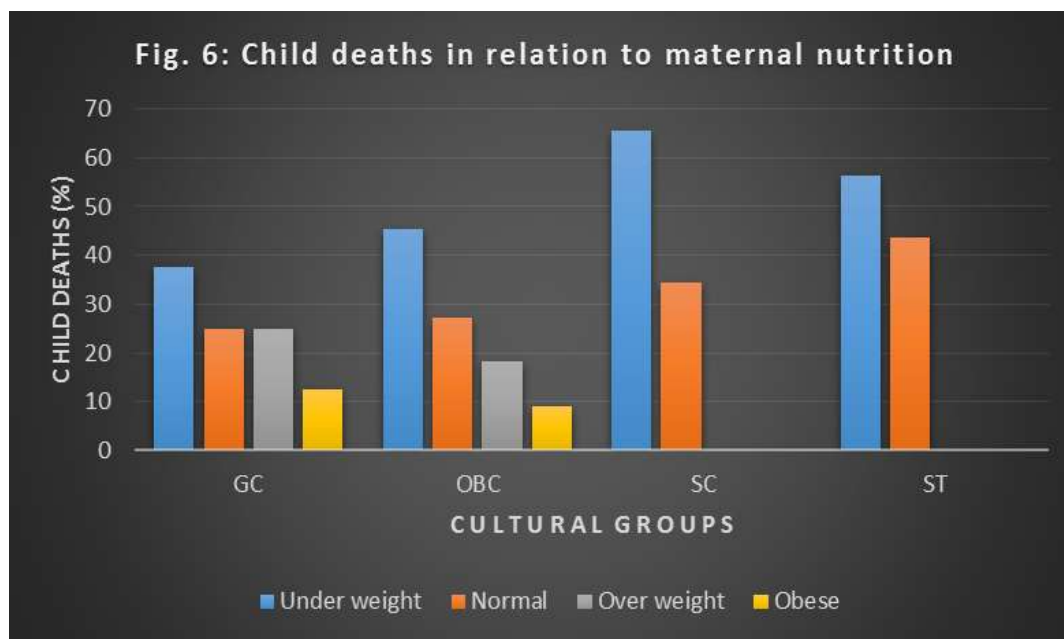


Table 6: Household income and child deaths

Level of income (in Rs.)	Child deaths			
	GC	OBC	SC	ST
Low ( $\leq 2000$ )	4(50.00)	5(45.46)	20(62.50)	12(75.00)
Moderate (2000-5000)	2(25.00)	3(27.27)	10(31.25)	3(18.75)
High ( $\geq 5000$ )	2(25.00)	3(27.27)	2(6.25)	1(6.25)

Figures in parenthesis indicate percentage values

Child deaths occurred in higher frequency among the under-weight mothers in GC (37.50). The same is true for the OBC (45.45), SC (65.63) and ST (56.25). Child deaths also occurred in higher frequency among the SC (34.37) and ST (43.75) mothers with normal status of nutrition. One fourth of the GC mothers experienced child deaths who are overweight (Table 5 and Figure 6). In respect of household income more child deaths occurred among the mothers

who fall in the category of low income household. This is true for all the cultural groups (GC: 50%; OBC: 45.46%, SC: 62.5% and ST: 75%). Child deaths occurred in low frequency among the mothers belong to high income households (Table 6). Non-literate mothers experienced higher child deaths in three cultural groups (OBC: 54.55%; SC: 68.75% and ST: 62.5%). In GC no such case is recorded. Three-fourth of the child deaths occurred among primary level educated mothers in GC. Among the OBC (36.36%), SC (25%) and ST (37.5%) incidences of child deaths is comparatively lower in this category (Table 7).

Table 7: Mother's education and child deaths

Level of education	Child deaths			
	GC	OBC	SC	ST
Non-literate	-	6(54.55)	22(68.75)	10(62.50)
Primary	6(75.00)	4(36.36)	8(25.00)	6(37.50)
High school and above	2(25.00)	1(9.09)	2(6.25)	-

Figures in parenthesis indicate percentage values

It can be seen from Table 8 that more than three fourth of the child deaths occurred among the mothers of four cultural groups, who availed no ante-natal care (ANC). Side by side, child deaths recorded in higher frequency among the children who availed medical treatment at times than regular (Table 9). A high frequency of child deaths was noticed among the mothers who had no sense of personal hygiene. This is true for the mother of all the cultural groups (Table 10).

Table 8: ANC care and child deaths

ANC care	Child deaths			
	GC	OBC	SC	ST
Yes	2(25.00)	3(27.27)	4(12.50)	3(18.75)
No	6(75.00)	8(72.73)	28(87.50)	13(81.25)

Figures in parenthesis indicate percentage values

Table 9: Medical treatment of child and child deaths

Medical treatment	Child deaths			
	GC	OBC	SC	ST
Regular	1(12.50)	2(18.18)	3(9.37)	2(12.50)
At times	7(87.50)	9(81.82)	29(90.63)	14(87.50)

Figures in parenthesis indicate percentage values

Table 10: Mother's sense of personal hygiene and child deaths

Personal hygiene	Child deaths			
	GC	OBC	SC	ST
Yes	3(37.50)	4(36.36)	7(21.88)	7(43.75)
No	5(62.50)	7(63.64)	25(78.12)	9(56.25)

Figures in parenthesis indicate percentage values

Average per day consumption

Average daily consumption of different food groups per consumption unit is furnished in Table 11. There exists a considerable overlap in the ranges of consumption of every variable in four cultural groups. The GC and OBC groups show comparatively better consumption than the SC and ST. It can be mentioned that diet of four cultural groups were principally cereals. In comparison with ICMR reference (1972) it is noticed that diets are deficient in several nutrients, particularly in SC and ST. As this Table is quite self-explanatory it needs no further description.

Table-11: Average per day consumption in four cultural groups

Cultural groups	F O O D G R O U P S (g)								
	Cereals	Pulses	Leafy vegetables	Roots & tubers	Other vegetables	Fish, meat, egg etc.	Fat & oil	Sugar & molasses	Milk & milk products
GC	562.5	33.3	166.7	166.7	185.0	50.0	33.3	33.3	45.0
OBC	578.3	29.4	139.5	112.3	128.3	41.5	25.4	30.8	40.2
SC	525.0	16.7	83.3	83.33	141.7	33.3	16.7	25.0	25.0
ST	555.4	14.8	92.4	92.4	85.2	42.5	15.2	26.4	15.8
ICMR	475.0	65.0	125.0	100.0	75.0	60.0	40.0	40.0	100.0

Status of women and child mortality:

In order to find out the differential influence of women's autonomy on the incidence of child mortality and survival in Sahajapur village altogether seven parameters have been taken into consideration. For this purpose methodology suggested by Guru (1997) was followed. In this connection seven variables were scored accordingly.

Table 12: Distribution of women by Degree of Autonomy

Sl. No.	Variables	Degree of participation with score value		
		Less	Moderate	High
1.	Expected number of children	1	2	3
2.	Pregnancy and delivery care	1	2	3
3.	Child rearing and feeding	1	2	3
4.	Treatment of the sick child	1	2	3
5.	Family expenditure	1	2	3
6.	Family food choice	1	2	3
7.	Women's work participation outside home	1	2	3
		<b>7</b>	<b>14</b>	<b>21</b>

Figures in parenthesis indicate percentage values

By equal distribution of the scores in an ascending order between the minimum seven to maximum twenty one score values for the variables pooled together, the “women’s autonomy” index was calculated as follows:

*Low autonomy (score 7-11)*

*Moderate autonomy (score 12-16), and*

*High autonomy (score 17-21).*

It is observed from Table 13 that incidences of child deaths diminish as the mother’s level of autonomy increases. This is true for all the cultural groups. Among the GC and ST half of the deaths occurred among the mothers who fall in the category of low autonomy. Among the SC and ST frequency of this is 71.87 and 45.46 respectively. In the category of moderate level of autonomy frequency of child deaths varies between 18.75% among the SC and 37.5% among the GC respectively. However in the category of high level of autonomy incidences of child deaths are lowest in all these cultural groups.

Table 13: Mother’s Degree of autonomy and percent of child deaths

Level of autonomy	Child deaths			
	GC	OBC	SC	ST
Low	4 (50.00)	5 (45.46)	23 (71.87)	8 (50.00)
Moderate	3 (37.50)	3 (27.27)	6 (18.75)	5 (31.25)
High	1 (12.50)	3 (27.27)	3 (9.38)	3 (18.75)

Figures in parenthesis indicate percentage values

## DISCUSSION

The last few decades have seen profound transformation in the economy and social life in India including the increasing integration to the world economy. Since independence of the country, there has been significant improvement in Indian economic and social sphere along with vast reform and changes in the public policy. The recent studies in the rural area show few drivers of change in the villages: population expansion, broadening of agricultural sector, education and health care facilities, and diversification of job and work opportunities outside the villages. However, although most of the studies recognize the role of the state in dealing with land reforms, food security and technological advancement, they often fail to note the positive changes in socio- economic and political dynamics that is taking place in the rural agrarian communities. Indian villages have been the subject of discussion for various reasons by the scholars from different disciplines including British administrators and Indian nationalists since the beginning of the nineteenth century. There have been earlier studies on rural life of Bengal time to time in different aspects by the economists, sociologists and anthropologists such as rural dynamics, ethnography of a village, impact of development initiatives and changes, agriculture and related activities, poverty and public policy and many others. Though there has been studies often and then, but to get a perspective through a time period and to understand and measure the impact and changes in the socio-cultural life of the people and their livelihood practices, it is imperative to study the villages which were studied earlier by renowned social scientists, anthropologists, economists and sociologists along with the villages studied as part of

the Census Operations in the 1960s.

In the caste hierarchy of India's population, the general castes are economically advanced in general with a complex culture as compared to the other backward caste, scheduled castes and scheduled tribes. However, all these four groups have a distinct culture of their own. Evidences of demographic differences among different cultural groups have also been reported in the past (Davis 1951, Omran and Stanley 1976, Mahadevan 1979). Mortality studies carried out so far in India were largely based on data generated through census, National Sample Surveys, Sample Registration Scheme and hospital data. Most of these studies had several limitations and could not explain much of the variance in the mortality behavior of Indian populations (Mahadevan et al. 1986). Mahadevan et al. study (1986) covers several cultural and nutritional variables which have great relevance in understanding mortality in traditional societies.

Though there are some studies on mortality considering cultural and nutritional variables in other parts of India (Wyon and Gordon 1971, Mahadevan et al. 1986) there is no such study in Eastern India in general and West Bengal in particular. Thus, the present study focused on four major culturally diverse groups of population which constitute the major segment of population in rural West Bengal. The present study is an outcome of a study on Bio-cultural Diversity, Environment and Sustainable Development conducted by Anthropological Survey of India in Sahajapur village; district Birbhum, West Bengal during 2012. This study attempts to bridge the gap in knowledge in cultural and nutritional aspects of child mortality.

The hierarchical ordering of the castes in Sahajapur depends mainly on the social, ritual and economic aspects of which traditional callings are important one. On the basis of the respective socio-ritual hierarchical arrangement of castes/ communities, the villagers can be classified into four segments. It has also been found that within the same cluster, some of the castes place themselves in a higher position than the others.

Of all these cultural groups the index of infant mortality (i.e. within 0-1 year) was highest among the scheduled tribe and lowest among the other backward castes. But in case of child deaths (0-4 years) lowest frequency is recorded by among the general castes and highest among the scheduled tribes. The other backward castes show a nearer value to the General castes and scheduled castes show a nearer value to the scheduled tribes in this respect. Thus the GC and OBC occupy the lower rank and SC and ST occupy the higher rank when infant and child deaths were taken into consideration. These findings corroborated with the level of illiteracy among the four cultural groups. Level of illiteracy is found to be 2.63, 2.47, 14.62 and 6.73 among the GC, OBC, SC and ST respectively. Malnutrition occurred in lowest frequency among the GC and highest frequency among the ST. The SC shows more or less similar frequency like the ST. The OBC, however, shows considerably higher frequency than the GC. Like child deaths in case of child nutrition also more or less a similar trend is perceptible. Higher frequency of malnutrition among the ST is reflective of recurrent parasitic infestations, diarrheal occurrence and infection among them.

Under-weight mothers experienced higher child deaths. Side by side, non-literate mothers and mothers belong to low income families experienced higher child deaths. This is true for all the cultural groups. More than three fourth of the child deaths occurred among the mothers of four cultural groups, who availed no ante-natal care (ANC). Child deaths also recorded in higher frequency among the children who availed medical treatment at times than regular. A high frequency of child deaths was noticed among the mothers who had no sense of personal hygiene. This is true for the mothers of all the cultural groups. It is interesting to note that in respect of all these determinants the GC and OBC are comparatively in better position than that of the SC and ST. These finding are corroborated with the findings of frequency of child deaths and child nutrition among the four cultural groups in Sahajapur village.

A considerable overlap in the ranges of consumption of every food item in four cultural groups is noticed. The GC and OBC groups show comparatively better consumption than the SC and ST. In comparison with ICMR reference it is noticed that diets are deficient in several nutrients, particularly in SC and ST. It can be mentioned that dietary deficiencies of different nutrients is the reasons behind prevalence of many deficiency diseases like anaemia, protein energy malnutrition, vitamin deficiencies. These are aggravated by infective morbidity due to poor condition of environmental sanitation and personal hygiene. Present study shows that the living conditions of the SC and ST families in Sahajapur are deplorable, characterized with marked poverty, lack of sewage and housing which consists mainly of insufficient dwelling rooms per household. It can be mentioned herewith that altogether there are four TB and one Leprosy patients in Sahajapur and incidentally all live in Mahulipara, a tribal dominated hamlet. Incidences of child deaths diminish as the mother's level of autonomy increases. This is true for all the cultural groups. This diminishing trend is considerably higher among the SC and St than that of the GC and OBC. However in the category of high level of autonomy incidences of child deaths are lowest in all these cultural groups.

Thus it can be inferred that the general castes enjoy better nutrition and health care facilities, who are more health conscious than other backward castes, scheduled castes and scheduled tribes. Incidentally, level of child deaths, an indicator of health status, is lowest among them. The general castes enjoy the upper segment of society and better health status in Sahajapur. The other backward castes show a similar trend with the general castes in this respect. Among the scheduled castes a reverse trend is perceptible. They show a similarity with the scheduled tribes in respect of health and nutrition. It can be mentioned that both the scheduled castes and scheduled tribes occupy the lower segment in society in Sahajapur village.

## **ACKNOLEWDGEMENTS**

This study is based on the findings of the project namely, "Bio-cultural diversity, Environment and Sustainable Development". D.K.A., R.D. and S. M. express sincere gratitude to the Director, Anthropological Survey of India for providing them necessary facilities in conducting field work.

## **Conflict of interest statement**

We declare that we have no conflict of interest.



## REFERENCES

- Davis K. 1951. Population of India and Pakistan. Princeton: Princeton University Press.
- Garma IOGY. 1983. Some factors associated with infant mortality in Mexico. In: Infant and Child Mortality in the Third World. Inter-centre Cooperative Research Programme Project No. I: Final Report. CICRED, Who/OMS, Paris.
- Gomez F, Galvan R, Frenk S, Cravioto J, Chavez R and Vasquiz J. 1956. Mortality in second and third degree malnutrition. *J. Trop. Peiatr.* 2:77-83.
- Guru SS. 1997. Status of Women and Infant Mortality among the Saora of South Orissa. In: G. Pfeffer and D.K. Behera (eds.), *Contemporary Society: Tribal Studies*. Vol. I. Concept Publishing Company, New Delhi.
- Indian Council of Medical Research. 1972. Growth and Physical Development of Indian Infants. Technical Report Series-No. 18: New Delhi.
- Indian Council of Medical Research. 1984. Studies on Preschool Children. Technical Report Series-No. 26: New Delhi.
- Khan ME. 1987. Infant mortality in Uttar Pradesh. *Social Change*, 17(3):52-64.
- Mahadevan K. 1979. *Sociology of fertility*. Sterling Publishers, New Delhi.
- Mahadevan K, Reddy PR, Murthy MSR, Reddy PJ, Gowri V and Raju SS. 1986. Culture, Nutrition and Infant and Childhood Mortality. In: K. Mahadevan (ed.), *Fertility and Mortality: Theory, Methodology and Empirical Issue*. Sage Publication, New Delhi.
- Mosley WH and Chen LC. 1984. An analytical framework for the study of child survival in developing countries. In: W.H. Mosley and L.C. Chen (eds.), *Child Survival: Strategies for Research*. A Supplement to *Population and Development Review*, 10:24-45. The Population Council: New York.
- Omran AR and Stanley. 1976. Family formations patterns and health. World Health Organisation, Geneva.
- State of Child Rights in India  
<http://WWW.pairvi.org/pdf/Research/State%20Child%20Rights%20in%20India.pdf>. Accessed on 7.10.2011.
- U.Ko.Ko. 1987. Children's health: tomorrow's wealth. *Indian Journal of Paediatrics*, 54(1):33-34.

W.H.O. 2000. The Asia Pacific Perspective. Redefining Obesity and its treatment. International Diabetes Institute, Health Communications, Australia.

Wyon JB. and Gordon JE. 1971. The Khanna study: population problems in the rural Punjab. Cambridge: Harvard University Press.