A study on infant and child mortality rate

PRAVATI MISHRA **AND** PUNAM AGARWAL

See end of the article for authors' affiliations

Correspondence to:
PRAVATI MISHRA
College of Home Science,
Orrisa University of
Agriculture and
Technology,
BHUBANESWAR
(ORISSA) INDIA

ABSTRACT

As per the reference made in Orissa Summary Report, 1993, Orissa had the highest infant mortality rate than any state of India (112 infants death per 1000 live births), the present study analysed the rate and cause of mortality of children below 5 years of age of the Bauries, a major scheduled caste community of Puri District, Orissa. It was found that the mortality rate was 10.43% and the causes of this high mortality rate were low level of maternal education, discontinuation of allopathic treatment to superstition and homeopathic or Ayurvedic treatment, low level of nutritional status and lack of proper knowledge for food sanitation and hygiene.

Key words : Proximate principles, Mortality rate, Superstition, Nutritional status.

Children are the future of the nation. Prompt care and deep attention should be taken for their all round development. Vidyarthi (1977) while enquiring about the health and sanitatary conditions of SC -peoples in Kunti police station of Bihar found that, poverty coupled with malnutrition make these people valnerable and victims of various diseases and the consequential out come was heavy mortality. Parvathamma (1984) in a similar study in Karnataka observed that, non-availability of modern medical facilities in rural areas was not only the principal reason for poor health of SC adults but also aggravated infant mortality. In this context, a study was undertaken as regards to the mortality rate of children of Bauris - a major SC community of Puri district of Orissa, as they constitute 28.51 % of the total SC population of Puri district Anonymous (1993). The factors like level of education and income, marriage customs, belief in superstition, level of treatment and nutritional status were analysed to draw the proper conclusion.

METHODOLOGY

Following multistage, stratified random sampling technique, Pipli, Balianta and Daspallah blocks were selected from high, medium and low irrigated zones of the district. Then 20% of households were chosen from 5 villages of each block, making the total sample to 117. Then they were classified into three income groups. Children below 5 years of age were classified into two groups, *i.e.* below 2 years and 2-5 years. All the data collected were coded and analysed using SPSS (Statistical package for social sciences). The study was conducted during the year 2004-2005, basing on the reports of the past 10 years.

RESULTS AND DISCUSSION

The mortality rate for infants (Fig. 1) below 2 years and children between 2-5 years of age group was 20%, 7.14%, 10% and 4.82%, 11.54%, 9.09% for low, middle and high income groups, respectively. So, the mortality rate decreases with the advancement of age and does not have any relation with the level of income.
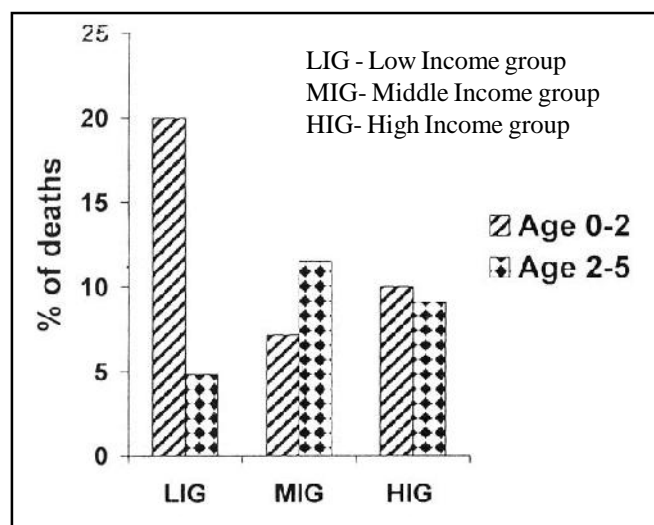

LIG - Low Income group
MIG- Middle Income group
HIG- High Income group

Age 0-2
Age 2-5

Fig. 1 : Mortality rate

A deep analysis into the reasons for mortality, Table 1, showed that 100% of infants below 2 years of age group died of epileptic fits, for all the three income groups. For children between 2-5 years of age in low income groups, 50% of them expired due to epileptic fits and 25% each expired due to high fever and bronchitis. In case of MIG, 33.33% of each expired due to epileptic fits, diarrhea and bronchitis. But, in case of HIG, 100% of children

Table 1 : Reasons for mortality in percentage						
Reasons	Age group					
	0-2			2-5		
	LlG	MIG	HIG	LlG	MIG	HIG
Epileptic fits	100	100	100	50	33.33	-
High fever	-	-	-	25	-	-
Diarrhoea	-	-	-	-	33.33	100
Jundice	-	-	-	-	-	-
Bronchitis	-	-	-	25	33.33	-

Fig. 2 : Percentage of female litercy

expired due to diarrhoea.

According to a survey report (National family health survey) March, 1995, the infant mortality declined sharply with mother's education, so, an analysis for the same was done. It was found that the percentage of female literacy in total was 7.63, 3.8 and 9.76 for low, middle and high income groups, respectively (Fig. 2). Again, taking all the income groups together into consideration, none of them had the qualification above HSC and only 1.92%,4.88%, 5.42% and 8.97% of them were matriculate, upto M.E. standard, upper primary and low primary, respectively.

An analysis into the age of marriage, showed that the average age of marriage for bride was 16.19, 14.88 and 15.40 years for low, middle and high income groups, respectively. Due to early marriage, they became the mother of 2-3 children even before attending the age of 18 which might be the cause for high rate of mortality.

Again an analysis into the per capita annual income showed that 29.69% of them were below poverty line (as per 8th plan norm), which resulted in poor nutritional status and also death due to improper treatment.
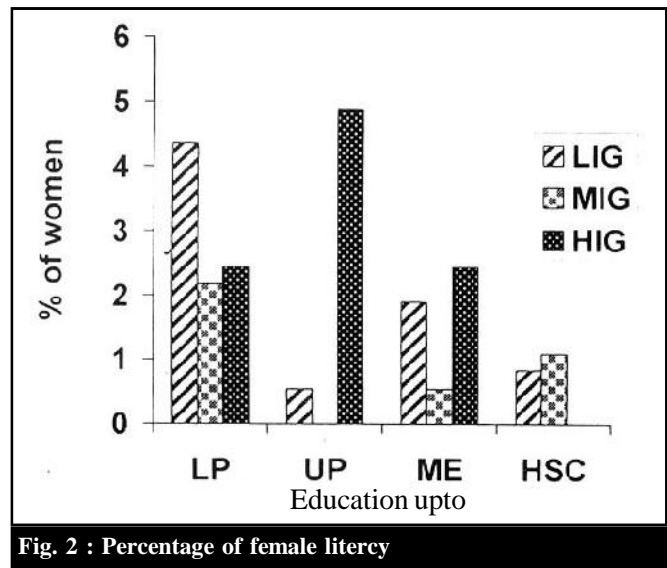
An analysis (Table 2) into their mode of treatment showed that on an average 4.39, 4.16 and 4.58 numbers of family members per household from low, middle and high income groups, respectively adopted allopathic treatment, till the medicines were available free of cost from the Government dispensaries but when they had to buy medicines, generally they switched over to other types of treatments like Homeopathic or Ayurvedic or animal sacrifices as these were available at cheap rate and in turn affected the rate of mortality.

Again it was found that they used to spend only Rs. 225.73, Rs. 219.02 and Rs. 330.58 (low, middle and high income groups) per household per year, for allopathic treatment. And nearly the same amount has also been

Table 2 : Mode of treatment of the sample households of different income groups and average rate of expenditure (in Rs.) per household per (bracketed figures)					
Income Group	No. of members per household depending on				
	Allopathic	Homoeopathic	Ayuredic	Mantras/ Worship	Sacrifices
LIG	4.39 (225.73)	3.54 (117.73)	2.96(114.78)	1.98	3.71 (219.92)
MIG	4.16 (219.02)	3.00 (110.50)	2.30(116.41)	2.52	3.75(218.89)
HIG	4.58 (330.58)	3.82 (118.52)	3.23 (125.00)	3.29	3.58 (329.71)

Table 3 : Percentage of surplus *I* deficiency of various food stuffs, taken daily by different categories of children of three income groups										
Categories children	Income Groups	Cereals	Pulses	Green leafy vegetables	Other vegetables	Roots and Tubers	Fruits	Milk and Milk products	Fats Oils	Sugar	Non-Vegetarian Food
Below 2 years	LIG	-73.62	-96.60	-92.68	-76.46	-69.46	-96.68	-70.83	.95.85	-75.00	85.86
	MIG	-64.44	93.75	-73.84	-41.66	3.33	-96.68	-100	-87.50	-63.90	-80.56
	HIG	-	-	-	-	-	-	-	-	-	-
2-5 years	LIG	-31.55	-93.28	-71.46	-58.28	-45.28	-95.20	-89.02	-91.20	-83. 35	-74.56
	MIG	-33.62	-89.00	-67.73	0.46	-47.20	-98.28	-80.00	-88.56	-78.00	-77.56
	HIG	-29.17	-90.00	-84.62	-25.60	-57.34	-93.34	-93.90	-91.20	-80.60	-69.33

Category/ Income group	Proximate principles			Vitamins					Minerals		
	Carbohydate	Protein	Fat	Carotene	Thiamine	Riboflabin	Niacin	Vitamin C	Iron	Calcium	Phosphorous
Below 2 yrs											
UG	-79.32	-65.55	-60.95	-75.46	-78.33	-91.42	-80.12	-83.47	-77.71	-62.73	-58.18
MIG	-72.32	-63.94	-83.15	-62.81	-78.33	-90.00	-72.62	-64.87	-66.51	-73.96	-59.72
HIG	-	-	-	-	-	-	-	-	-	-	-
2-5 yrs UG	-45.19	-28.95	-78.57	-35.49	-54.28	-74.66	-41.55	-41.35	-22.34	-44.27	-9.42
MIG	-44.34	-24.20	-72.40	-26.79	-51.42	-76.00	-41.22	-32.97	-30.15	-35.75	-3.89
HIG	-43.27	-41.91	-61.15	-41.57	-1000	-56.00	16.11	502	22.55	4.25	76.08

Table 4 : Magnitude of surplus / deficiency of nutrients present in the daily food take by different categories of children

spent for sacrifices (Rs. 219.92, Rs. 218.89 and Rs. 329.71) the amount spent on Homeopathic and Ayurvedic treatment was still less and varied between Rs. 110.508to Rs. 125.00.

Then, the nutritional status was compared as to the intake of food stuffs with the recommended amounts. It was found that for both the categories of children there was aremarkable deficit of all categories of food stuffs (Table 3). Deficit intake of cereals, for children below 2 years was between 64.44% and 73.62% and for children between 2-5 years, if was 29.17% to 33.55%. Deficit intake of pulses, green leafy vegetables, fruits, milk and milk products, fats and oils, sugar and non-vegetarian food items was around 70% to 100%. Again deficit intake of roots and tubers and other vegetables was between 3.33% and 76.46%. So, it was noted that deficit intake was more pronounced among children below 2 years of age group, than children between 2-5 years.

Further analysis of calorie requirement and intake gap showed that, for the children 2 years of age, the deficit was between 72.09% to 78.27% and for children 2-5 years it was 46.6% to 50.21 %.

Further analysis of nutrient contents of food stuffs, consumed showed a deficit intake of carbohydrate for infants below 2 years was between 72.32% and 79.32% and for children 2-5 was between 43.27% and 45.19%. Deficit intake of protein was between 24.00% and 41.91% (below 2 years) and 63.94% and 65.55%, between 2-5 years of age groups. Similarly deficit intake of fat was between 61.15% and 83.15% (Table 4). So, children below 2 years were the worse sufferers, which might be one of the reasons for high rate of mortality. At the same time, surprisingly surplus intake of few vitamins and minerals were found for children between 2-5 years of high income group.

Again it was observed that due to very poor sanitary habits' and lack of knowledge for good food hygiene, all of them were affected by some type of parasites or worms. So children with poor nutritional status when attacked by external infections, could not resist the condition, which in turn results in premature deaths.

Conclusion :

From the aforesaid discussion it could be concluded that the SCs due to poor educational status, low level of income, poor quality of treatment and nutritional status were the victims of several ailments and consequent deaths. By taking children of all categories together into consideration, it was found that the mortality rate was 10.43% which was much high as compared to the data based on Sample Registration System (SRS) Vital Statistics Division, Office of the Registration General, New Delhi (Anonymous, 2007). The mortality rate in Orissa both in rural and urban areas was 76 and 53 (per thousand), respectively as estimated in the year, 2006.

Authors' affiliations:
POONAM AGARWAL, College of Home Science, Orrisa University of Agriculture and Technology, BHUBANESWAR (ORISSA) INDIA

REFERENCES

Annonymous (2007). *Sample Registration System,* Vital Statistics Division, New Delhi-110066, Vo1.42, Tab. NO.1.

Orissa Summary Report (1993). On *scheduled castes, Orissa.*

Parvathamma, C. (1984). *New Horizons and Scheduled Castes.* Ashish Publishing House, 8/81, Punjabi Bagh, New Delhi-110026.

Vidyarthi, L.P. (1977). *Harijan Today, sociological economic, political, religious and cultural analysis,* - classical publication, C *4A130-C,* Janak Puri, New Delhi 110058.

****
******