

# Socio-economic Factors and Child Morbidity in a Fishing Community of District South 24 Parganas, West Bengal

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## Introduction

Child health is a key indicator of the quality of life in the developing countries. It is also a global concern under the United Nations' 2030 Sustainable Development Agenda (United Nations, 2015) which emphasises that “no one is left behind.” Implementing the Agenda requires policies and programme that focus on reaching the vulnerable population. For example, population in fragile states and areas affected by conflict and disaster needs special attention to make sure that children's well-being needs, particularly, in the context of universal access to health care; food security; and education for all, are effectively met.

Healthy children contribute to the security, economic growth and civic stability of nations. The developing countries of the world are experiencing wide disparities in different dimensions of income, education and standard of living. Child health status is considered to be a highly sensitive indicator of human development. According to World Health Organization report, of all deaths in the developing countries, 31 per cent occur in children below five years of age (WHO, 1995). Although, improvement in global health in the second half of the twentieth century has been enormous, yet, it remains incomplete. In 1998, almost a third of deaths in the low and middle-income countries were due to communicable diseases, maternal factors and nutritional deficiencies. Millions of children suffer from short and long-term adverse consequences of illnesses, malnutrition and injuries that impact their well-being and options in life, including fewer educational opportunities and diminished future economic prospects (Grantham et al, 2007). Children below five years of age face multiple obstacles, including birth injuries, infectious diseases, under nutrition, home environment that lacks intellectual stimulation, and environment with polluted water and air. According to United Nations Children's Fund, 9.2 million children born alive worldwide die before their fifth birthday (Unicef, 2007). Most of these children live in the developing countries.

The relationship between the socioeconomic status and child health is well documented in the international epidemiological, economic and sociological literature and from a range of perspectives (Morris and Castairs, 1991; Cortinovis et al, 1993; Durkin et al, 1994; Krieger et al, 1997; Robert, 1999; Lynch and Kaplan, 2000; Kawachi et al, 2002; Oakes and Rossi, 2003). There is consistent evidence to suggest that children from socioeconomically better living environment have better health and nutritional status relative to children from relatively poor living environment. An analysis of the relationship between socioeconomic status and child health is important for policy makers in the developing countries, where limited resources make it crucial to use existing health care resources to the best advantage (Kuate-Defo, 1997). There has, however, been few attempts to construct a socioeconomic index for use in social and health research which is based on housing quality indicators (Fiadzo et al, 2001); household wealth, education and occupation (Durkin et al, 1994) and on a broader sequence of familial living conditions (Cortinovis et al., 1993). The quality of housing has considerable effect upon health. Poor housing is often accompanied by the lack of sunlight and fresh water while poor food storage and preparation facilities may result in under nutrition and gastrointestinal disorders. Inadequate facilities for bathing and laundering may lead to a general deterioration in personal hygiene.

Fishing is one of the oldest means of subsistence for the mankind and, therefore, survival of the human race demands adequate attention to it. Communities engaged in fishing are scattered throughout India. The fishing community is a backward and poor community by the very definition of poverty (National Institute of Rural Development, 1998). Hunter (1875) has described in detail the economic conditions of the fishing community in Bengal. Children of the fishing community suffer mainly from diarrhoea, and under nutrition among them is rampant.

The present study is directed towards assessing the knowledge and attitude of fisher women about child care practices, knowledge about child morbidity and nutritional status of children and health seeking behaviour, particularly, related to child morbidity, in the fishing community of district South 24 Parganas of West Bengal, India. The study attempts to portray the association between socioeconomic and demographic conditions in the fishing community with the health status of children. The study provides a demographic appraisal that has policy perspective regarding fishing communities in the state of West Bengal.

More specifically, the study attempts to understand the socioeconomic status and hygiene and sanitation practices in the fishing community, measures the level of child morbidity and explores the association of child morbidity with the socioeconomic status of the household and hygiene and sanitation practices followed by the fishing community.

## Literature Review

There is a substantial body of research that shows child health is strongly related to their living environment including the knowledge of the mother. Historically, socioeconomic status has been found to be inversely related to morbidity prevalence. According to Chojhacker and Adegbola (1984), although, both medical and non medical factors contribute to the change in the morbidity pattern, the role of

socioeconomic factors is significant. Child morbidity is negatively correlated with the socioeconomic status (Gour, 1961; Saran, 1979; Garden et al, 1984; Singh, 1985).

*Household Socioeconomic and Environmental Factors.* Seyanabou (1999) in a study of the fishing community in Joal, Senegal had observed that 33 per cent of the households did not have latrines. Salagram and Mahapatro (1998; 1999) found that in Puri (Chilka area) and Ganjam districts of Odisha, most of the fishing villages lacked employment opportunities. Salagrama and King (1997) suggest that hard work coupled with irregular and inadequate food intake appears to be the leading cause of malnutrition. The incidence of poverty is found to be much higher in the fishing community than the national average in Bangladesh (BBS, 2002). Another study has found that fisheries remain an important source of livelihood and food for the rural poor. About 80 per cent of the rural households caught fish for food or for sale (Thompson and Hossain, 1998). Dhanlakshmi and Sudhakara (1999) observed that only 9 per cent of the fishing community in Sultanpur, West Bengal used ORS during diarrhoea to recover from diarrhoea associated dehydration. There are studies that suggest that weaning and bathing practices in the fishing community are different from other communities (Winikoff, 1981; Kasim et al, 2000). Poor sanitation facilities and lack of safe drinking water availability in the fishing community have also been highlighted in many studies (Bateman and Smith, 1991; Gaminirante, 1991; Sommerfelt, 1991).

Studies related to the health status of the fishing community are rare. However, there is evidence to suggest that the disease profile of the fishing community reflects the health problems that are peculiar to lower socioeconomic section of the society. There is also evidence to suggest that low literacy, lack of nutritional awareness of the mother and lack of time for the mother to attend the child make children of the fishing community vulnerable to morbid conditions (Patil, 2002).

## Data and Methodology

The study is based on a survey carried out in Basanti block under Canning Sub-division of district South 24 Parganas in West Bengal. Basanti block has a heavy concentration of the fishing community. It is located in the southern-most part of the South 24 Parganas district. The Block is bounded by Gosaba and Sandeshkhali II blocks in the east and Canning-I and Canning-II blocks in the north. Basanti block is one of the main deltaic islands in the Sundarban region bounded by the Matala and Vidyadhari rivers/creeks. Basanti is located at latitudinal extend of 22°33'45"N to 22°29'0"N and longitudinal extend of 89°4'50"E to 88°3'45"E. According to the District Statistical Handbook of district South 24 Parganas, Basanti has a population of 278592 out of which population aged 0-6 years is 34,164. The entire population is classified as rural. The occupation of the people is mainly fishing. The block suffers from an acute drinking water shortage so that diarrhoea, especially, in children is widely prevalent in the block. There are 87 villages in the block according to the Registrar General and Census Commissioner of India, out of which five villages - Ramchandrakhali, Purandar, Napithkhali, Kathalberia, Kumirmari - were selected for the present study on the basis of the proportion of population engaged in the fishing activity.

The sample size for the study was determined on the basis of the prevalence of diarrhoea among children in South 24 Parganas district. According to the District Level Household Survey 2007-08, the prevalence of diarrhoea in children below five years of age was around 5 per cent. However, prevalence of diarrhoea in the study was assumed to be 9 per cent because of the typical situation of the block. In addition, assuming the relative precision of 30 per cent, the proportion of population below 5 years of age 15 per cent of the total population and a confidence interval at 95 per cent, the sample size for the study was worked out to be 508 households.

The data required for the study were collected through the survey of the sample households. Both qualitative and quantitative methods of data collection were employed. Household and individual questionnaires were developed and pre-tested for the purpose. In addition, key informant interviews were carried out to collect the qualitative information required for the study.

## Results and Discussion

Table 1 presents characteristics of the households surveyed. More than two-third of the households surveyed were Muslims while nearly three fourth were Scheduled Tribes. More than half of the households surveyed were poor while less than 10 per cent were rich as reflected through the household wealth index. Waldron (2013) has also observed that the fishing community of the state belongs to the low-income group and live below the poverty line. Jasim and Paramasivan (2017) have observed that fishermen of West Bengal use traditional methods and equipment and have low earnings even after working continuously for 12 hours. The poor to very poor living conditions of the surveyed households is also reflected from table 1. For example, clean fuel is rarely used for cooking; mud, clay or other earth is use as material for the floor of the house while matki or talli is mostly used to construct the roof of the house.

Animal keeping was quite common in the surveyed households (Table 2) and in majority of the households, animals were kept inside the house which has implications for morbidity, especially, child morbidity. There was only a small proportion of households which kept the animals outside the house, away from household members.

Majority of the households surveyed were totally dependent upon fishing activity to earn their livelihood (Table 3), although, around one fifth of the households were engaged in fish selling and in net fishing. Moreover, women were actively engaged in these activities. A similar observation has also been made by Waldron (2013). However, in more than 80 per cent of the households surveyed, the respondent reported that the wife of the respondent took care of their children in the household. There was only a small proportion of the respondents who reported that other members of the household took care of their children.

During the survey, it was also enquired whether there was any cooperative society or community service in the village. Most of them replied in affirmative. However, almost all the household surveyed reported they did not receive any assistance from the cooperative society that existed in the village. The survey also revealed that nearly all the households surveyed did not receive any benefit from any government or private welfare scheme or programme. They lived in near

isolation without any support from any welfare organisation or agency either public or private.

Table 4 present the information related to the availability of safe drinking water and sanitation facilities. The most common source of drinking water in the surveyed households was tube-well followed by dug well. In most of the households surveyed, the source of drinking water was outside the household and it was the responsibility of the adult women in the household to fetch the water from the water source. Children, particularly, female children of the household were, in general, not involved in fetching the water. The fetched water is most commonly stored in covered big pots which are regularly cleaned, although in some of the households, the storage pots are cleaned once in a week only.

The main source of water in the surveyed household was different in summers and in rainy and winter seasons. During rainy and winter seasons, the common water sources were bore well, dug well, canal and river and ponds but during summers, the most common source of water was tube well. The households surveyed, however, reported that there was adequacy of drinking water even in the summer season.

Open defecation appeared to be the norm in the surveyed population as nearly three fourth of the households reported that their members were defecating in the open (Table 5). The survey also revealed that improved sanitation facilities were largely absent in the village. A small proportion of the households surveyed were having hanging toilets and pit latrine without a slab. Children of the surveyed households, almost universally, defecated in the open.

On the other hand, an insignificant proportion of households surveyed reported that the members of the household were using tap for bathing purposes. The most common place of bathing was the pond followed by river or stream. The use of pond water was also foud common for the purpose of washing clothes, crockery and utensils.

There was no system of disposal of solid waste and drainage of the waste water. In all households surveyed, the solid waste was disposed indiscriminately while there was no drainage system. In some households, there are temporary drainage connected to nearby water body, canal or river.

In the surveyed households, fishes were usually kept in big pots, although, some of the households stored fishes in the small water bodies at separate places which promotes mosquito breeding leading to suffering from mosquito bites. The use of smoke was common in the surveyed households to prevent mosquito bits. However, the meathd is dangerous and can create a number of other health hazards. There are a few households which use bed nets, coil or cow dung for repelling mosquitos.

The morbidity pattern in children below five years of age in the surveyed households is presented in table 6 which suggests that the childhood morbidity is quite persaive in the study population. Nearly all the children below five years of age in the surveyed households had diarrhoea during the six month prior to the survey and so was the common cough and cold. Even the one month child morbidity was also very high in the surveyed households. It is evident from the table that water born diseases were quite common among children below five years of age in the surveyed households. The poor hygiene and sanitation practice in the

surveyed households also appear to be responsible for high prevalence of skin infections in children below five years of age in the surveyed households. This is also evident from the variation in morbidity in children below five years of age by different household level social, economic and other characteristics as may be seen from table 7.

Table 8 presents odds ratio of a child below five years of age suffering from acute respiratory infections (ARI) and skin infections against a set of household level characteristics. For example, the chance of having skin infection is lower when the cooking is done outside the house or in open place compared to when cooking is done inside the house. Similarly, cleaning of the water storage pots at least once in a week appears to reduce the prevalence of both acute respiratory infections and skin infections compared to when the water storage pots are cleaned occasionally. It is clear from the table that household level hygiene and sanitation practices have a telling impact on the morbidity in children below five years of age in the surveyed households. Obviously, improving living conditions and adopting safe hygiene and sanitation practices in the surveyed households can go a long way in reducing the morbidity in children below five years of age in the fishing community in the Basanti block of South 24 Parganas district of West Bengal.

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Table 1  
Household characteristics of the study population.

Characteristics	Per cent	N
Religion		
Hindu	32.3	164
Muslim	67.1	341
Others	41.5	3
Caste of the head of the household		
Caste	73.8	375
Tribe	22.8	116
No caste/tribe	3.0	15
Caste Group		
Scheduled Castes	64.6	328
Schedule tribe	21.5	109
OBC	10.2	52
Others	3.6	18
Wealth Index		
Rich	9.8	50
Middle	35.8	182
Poor	54.4	276
Main fuel used for cooking		
Wood	67.1	341
Dung cakes	6.2	32
Straw/Shrubs/Grass	13.2	67
Agriculturer crop waste	13.4	68
Material of floor		
Mud/Clay/Earth	100.0	508
Material of roof		
Thatch/Palm leaf/Reed/ Grass	8.5	43
Bamboo/Palm	3.5	18
Rustic mat	21.9	111
Plastic/polythin sheeting	21.1	107
Tin/asbestos sheets	13.2	67
Tally/matki	31.9	162
Materials of wall		
Mud/Earth	82.9	421
Bamboo with mud	11.6	59
Bamboo sheets	1.6	8
Brick/ cement	3.9	20

Source: Author's calculations

Table 2  
Household by livestock and its characteristics

Characteristics	Per cent	N
Any livestock		
Yes	59.8	304
No	40.2	204
Household animals		
Cow	12.2	62
Bull/Buffalo	0.8	4
Goats	26.8	136
Sheep	15.6	79
Chicken	2.8	14
Ducks	3.3	17
Others	1.7	9
Animal keeping		
In open place	16.7	85
Inside the house premises	60.0	305
House made by Kraal	45.9	233

Source: Author's calculations

Table 3  
Household by occupational activity

Characteristics	Per cent	N
Occupational activity		
Fishing	61.0	310
Net Fishing	16.9	86
Fish Selling	22.0	112
Take care of child during outside		
Parents	3.0	15
Wife	84.3	428
Other family members	9.8	50
Neighbours	0.2	50
Any fishing co-operative society		
Yes	94.5	480
No	2.8	14
Received any assistance from the fishing cooperative society		
Yes	0.4	2
No	99.6	506
Any assistance for needy fisherman		
Yes	5.7	29
No	94.3	479

Source: Author's calculations

Table 4  
Households by hygiene and sanitation practices.

Practices	Per cent	N
The main source of drinking water for household		
Tube well	69.9	355
Bore well/Dug well	30.1	153
Water used for cooking and hand washing		
Tube well	9.4	48
Bore well/Dug well	52.2	265
River/Canal/Stream	29.3	149
Pond/Surface water	9.1	46
Water sources		
Yes inside	1.2	6
No outside	98.8	502
Source to fetch the water		
Adult women	98.0	498
Female child	2.0	10
Drinking water stored		
Big pot	63.0	320
Bottle	17.7	90
Buckets	19.3	98
Water is covered/open		
Covered	60.4	307
Open	39.6	201
Water storing place are cleaned		
Daily	0.8	4
One day gap	5.3	27
Once in a week	9.8	50
Some times	84.1	427
Water treatment		
Yes	1.4	7
No	96.1	488
Don't know	3.9	20
Main water source is same in summer/rainy season		
Yes	86.8	441
No	13.2	67

Practices	Per cent	N
Main source of drinking water		
Tube well	61.8	314
Bore well/Dug well	27.6	140
River/Canal/Stream	10.2	52
Ponds/Surface water	0.4	2
Type of toilet		
Pit latrine without slab/ open pit	0.8	4
Hanging toilet	27.4	139
No facility/ use open place or field	71.9	365
Toilet facility with other households		
Yes	24.4	124
No	69.5	353
Toilet is near, far or too far		
Near	48.0	244
Far	51.8	263
Open defecation practices		
Yes	83.1	422
No	16.9	86
Wash hands after defecation		
Yes	100.0	508
Use to clean/wash their hands		
Detergent	4.5	23
Mud/ash/sand	95.5	485
Member of household bath		
Pond	53.3	271
River/Canal/Stream	46.5	236
Water used for washing household amenities		
Pond/Surface water	91.3	464
Dug well/Bore well	8.5	43
Household members wash their hands		
Open place/Plot/Yard	90.6	460
Pond/Canal	9.4	48

Source: Author's calculations

Table 5  
Households by surrounding environment and waste management

Particulars	Per cent	N
Defecation practices among children(0-59 months)		
Inside the household	98.2	499
Outside the household	1.8	9
Area contaminated with any water bodies		
Yes	81.9	416
No	13.0	66
Don't know	5.1	26
Practice of solid waste disposal		
Inside the dwelling	6.3	32
Anywhere/Outside the dwelling	93.7	476
Drainage system in household		
Yes	11.4	58
No	88.8	451
Drainage system connected to		
In pond/Water bodies	7.9	40
Canal/River	19.1	97
Under the soil	73.0	371
Fishes are usually stored		
Small water bodies inside the dwelling	21.9	111
Big pot/ container	61.0	310
Separate place	0.8	4
Children are in contact with domestic animals		
Yes	98.2	499
No	1.2	6
Flies/mosquito in household surroundings		
Too much	99.4	505
Less	0.6	3
Use anything to avoid mosquito bites		
Yes	73.0	371
No	27.0	137
Method used to avoid mosquitoes		
Mosquito nets	1.4	7
Smoke/Cow dung	21.9	111
Coil	0.6	3
Smoke of another thing	49.2	250

Particulars	Per cent	N
Water logging for long time		
Yes	96.9	492
No	3.1	16
Any dumping area in the household		
Yes	97.2	494
No	2.4	12

Source: Author's calculations

Table 6

Morbidity in children during the last six months and during the last one month

Ailment	Proportion (per cent) of children suffered from the disease during	
	Last six months	Last one month
Diarrhoea	92.9	2.7
ARI	66.0	9.0
Malaria/Fever	69.3	2.5
Cold and cough	93.3	30.2
Skin diseases	83.8	20.2
Chicken pox	59.9	0.0
<u>Abdominal pain</u>	<u>91.0</u>	<u>54.2</u>

Source: Author's calculations

Table 7  
Cooking practices and selected child morbidity.

Particulars	ARI	Diarrhea	Skin infection	Chicken Pox
Cooking place				
Inside the house	2 (N)	2 (N)	2 (N)	1 (N)
Outside the house	64.8	94.5	94.1	51.7
Open place	70.5	97.0	94.0	70.8
Food cooked on				
Chulha	66.0	94.9	92.6	54.9
Open fire	72.8	98.1	96.8	77.2
Type of fuel used				
Wood/dung cakes	70.5	96.2	95.7	63.3
Crop waste	61.5	94.8	88.9	57.8
Stored water covered or not				
Covered	64.5	95.8	91.2	55.7
Open	73.6	96.0	98.0	71.7
Water storing place cleaning				
Once in a week	23.0	92.6	86.4	40.7
Sometimes	75.6	96.5	95.3	65.8
Toilet facility shared				
Yes	72.6	98.4	90.3	66.9
No	65.2	95.2	95.8	58.6
Use to clean hand after defecation				
Soap/detergent	4.0	23.0	19.0	12.0
Mud/sand/other	70.5	95.7	94.4	62.3

Source: Author's calculations

Table 8  
Odds ratios of the prevalence of ARI and skin infections with selected household characteristics

Characteristics	Odds ratio	
	ARI	Skin infection
Cooking Place		
Inside the House <sup>(R)</sup>		
Outside the House	0.68	0.48
Open place	0.89	0.87
Type of Fuel		
Wood/dung cakes <sup>(R)</sup>		
Agriculture crop waste	0.77	0.15***
Water Used for Cooking		
Tube well/Dug well <sup>(R)</sup>		
Pond/River/Canal	1.23	0.64
Water storing place cleaning		
Once in a week		
Sometimes	7.42***	3.84**
Toilet Facility shared		
Yes <sup>(R)</sup>		
No	1.11	2.34
Use to clean hand after defecation		
Soap/Detergent <sup>(R)</sup>		
Mud/sand/other	3.61*	1.82
Defecation practices among children		
Use toilet <sup>(R)</sup>		
Open place in household premises	0.34	0.93
Use to avoid mosquito bites		
Mosquito nets <sup>(R)</sup>		
Smoke of dung cakes	11.05**	0.99
Other smoke	6.26**	0.67

Source: Author's calculations

Remarks: \*\*\* p<0.001

\*\* p<0.05