Factors Affecting Child Mortality and Schooling of Rural Chakma in CHT, Bangladesh

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Abstract: The main purpose of the study is to explore the factors affecting child mortality and schooling of Chakma tribal in rural Chittagong Hill Tract (CHT) of Bangladesh. To do so it has been collected data from 200 households in rural CHT especially from Panchari and Dighinala thanas of Khagrachari district. The study results reveal that the literacy rate of rural Chakma is much higher but per head monthly income is much lower compared to the national level of Bangladesh. Although the family size in average is consistent to the average family size at the national level, the dependency rate is lower. The child mortality is more frequent in those families where household head is engaged in agricultural sector with lower level of family income and involved in drug addiction. It is observed that 48% of rural Chakma families have at least one drop-out child from school, which depends on the occupation of the family head and the economic conditions but does not depend on the distance of the nearest educational institution from home.

Key words: CHT, tribal community, child mortality, drop-out from school, chakma community, logistic regression

INTRODUCTION

Chittagong Hill Tracts (CHT) of Bangladesh is a region with very difficult communication system. Maximum of Chakma are residing in this area. So, the study related to Chakma community is very little, especially in the rural area. A study on minorities was conducted by ADB (1998) in the CHT areas and the data were collected especially on education. ADB (1998) reported that only 65.5% of Chakma are literate. However, 71% Chakma are educated as mentioned by Chakma (2002). Further, BBS (2001) conducted a survey and reported that only 11% Chakam are illiterate. Besides these several authors studied on minorities in the CHT (Chakma, 2002; Beseine, 1977; Mahinud, 2002; UNFPA, 2003). But their focus lied on education, some social problems. Although, many tribal communities like Oraon and Munda were under investigation for elaborate study in India some health related factors were emphasised. Tyagi *et al.* (1983) studied the age at menarche among Oraon and Munda girls (Dash *et al.*, 1994) studied blood pressure and nutritional profile of Oraons in India. However, study on tribal communities like Chakma is really too little. To best of our knowledge, no study has yet been done in this rural area to view the factors

influencing child mortality and schooling of rural Chakma in CHT. This study is an attempt to perform a rigorous study on child mortality and educational attainment through schooling of children leading to an appropriate model to find out the most influential factors.

MATERIALS AND METHODS

There are 8 thanas and 43 unions under Khagrachari district, the study area includes randomly Panchari and Dighinala thanas. From the 2 selected thanas, it has been we collect data over 200 households by simple random sampling technique. From the Panchari union we have collected information on 100 households and the remaining 100 households were taken from Babuchara union of Dighinala thana. The selected two unions are very old and far from urban amenities. Electricity is not available in the 90% areas of both the unions. Thus, the study area will be a representative part of rural CHT in Bangladesh. There are 1500 Chakma households in both the thanas. Out of 1500 households we collected data over 200 Chakma households by the direct interview method by structured questionnaire from the head of those households.

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RESULTS AND DISCUSSION

Dwelling is the most influential factor that indirectly yells many other socio-economic factors. In this study area most of the houses were made of mud, teen, and wood. Sanitation system is really shaky with more than two-fifth of the population use unhygienic and mud made latrine (Table 1). Again more than two-third of rural Chakma have access to addiction. The most perilous deed is that more than one-fourth of the rural Chakma is addicted with each of biri, cigerate, tobacco and wine (Table 1).

We observe that around 93% of rural Chakma have access to safe drinking water and around 90% of them drink tube well water. Distance of source of drinking water less than 25 m and required time less than 1 h indicate that the house owning a tube well. Average distance of source of drinking water is 144.94 m from dwelling place and in an average every family spends 1.66 h to collect drinking water (Table 2).

Although the family size is declining world-wide, the Chakma community has large families. We find that around 58% Chakma families consist of 5-6 members and the average household size is 5.34. The average household size at the national level is 5.5 (BBS, 2003). Thus, the family size of this rural minor community is quite consistent to the family size at the national level.

Income is the most important factor of human wellbeing as the living status, health, social and political power are determined by their income. From Table 3, it is quite clear that 64% family's monthly income is less than 4000 taka and more than 80% families earn less than 5000 taka per month (Table 3). The computed per head monthly income of rural Chakma is obtained as only 709 taka, the ratio of total monthly income by all the 200 households and total members in 200 families. On the contrary, per head monthly income in Bangladesh is Tk.1949.53. Thus, the monthly income of a rural Chakma is 2.75 times less than a Bangladeshi.

Present and past occupations of a person are very important characteristics to know about the economic security and the demand of living status. From the percentage distribution (Table 3), we see that 77.5% and 10.5% of rural Chakma depend on agriculture and business respectively. But, in Bangladesh 63.5% people are engaged in agriculture and 11.2% are doing business. The occupation of respondent as agriculture decreases from 85-77.5% whereas business increases from 4-10.5%. Thus, we are observing an alarming change of occupation from agriculture to business, that is, rural Chakma are feeling business as an economic safety.

Maximum and minimum earning persons in a family are 3 and 1, respectively (Table 4). Again, 38.5% household has only one earnest member, 47% household consist of 2 and 14.5% household posses three earnest members. The ratio of earning person to total member can be computed as:

$$REP = \frac{\text{Total earning persons in 200 household}}{\text{Total members in 200 household}}$$

$$= \frac{352}{1068} = 0.3296$$

Also, the income-sharing ratio is

$$ISR = \frac{\text{Total dependents in 200 household}}{\text{Total members in 200 household}} = 0.6704$$

Table 1: Distribution of house structure, sanitation systems and addiction

Structure of home		Sanitation system		Addiction	
Made of	Frequency	Type of latrine	Frequency	Type of addiction	Frequency
Mud	90 (45.0)	Sanitary	67 (34.5)	None	65 (32.5)
Teen and wood	95 (47.5)	Well	48 (24.0)	Biri/ Cigarette/Tobacco	81 (40.5)
Bricks and stones	15 (7.5)	Mud made	85 (42.5)	Wine and drinks	54 (27.0)
Total	200 (100)	Total	200 (100)	Total	200(100)

Note: The values in parentheses indicate percentage of total

Table 2: Distribution of drinking water, collection time, and distance from home

Source of drinking water		Time to collect water		Distance of source of water	
Source	Frequency	Time spent (h day^{-1})	Frequency	Distance (m)	Frequency
Tube well	181 (90.5)	<1	29 (14.5)	<25	29 (14.5)
Waterfall (boiling)	5 (2.5)	1-2	113 (56.5)	25-125	60 (30.0)
Waterfall (direct)	14 (7.0)	2-3	54 (27.0)	125-225	71 (35.5)
		3-4	4 (2.0)	225-325	33 (16.5)
				325-425	7 (3.5)
Average		1.66		144.94	
Total	200 (100)		200 (100)		200 (100)

Note: The values in parentheses indicate percentage of total

Table 3: Distribution of family size, income and occupations of Chakma

Household members		Monthly income		Profession of household head	Frequency	
Members	Frequency	Income (in Tk.)	Frequency	Profession	Present	Past
2	2 (1.0)	1000-2000	6 (3.0)	Agriculture	155 (85.0)	170 (77.5)
3	10 (5.0)	2000-3000	91 (45.5)			
4	37 (18.5)	3000-4000	39 (19.5)	Business	21 (4.0)	8 (10.5)
5	69 (34.5)	4000-5000	25 (12.5)			
6	46 (23.0)	5000-6000	13 (6.5)	Job	19 (10.5)	21 (9.5)
7	29 (14.5)	6000-7000	9 (4.5)			
8	3 (1.5)	7000-8000	9 (4.5)	Agriculture and Business	5 (0.5)	1 (2.5)
9	3 (1.5)	8000-9000	2 (1.0)			
11	1 (0.5)	9000-10000	6 (3.0)			
Total	200 (100)		200 (100)		200 (100)	

Average family size is 5.34   Average per head income is 709 taka (computed from raw data)
Note: The values in parentheses indicate percentage of total

Table 4: Distribution of fertility and child mortality of Chakma

Earning members		Death of child before 5 years		Fertility of rural Chakma		
Members	Family	Death of child	Frequency	CEB	Frequency	Average
1	77 (38.5)	0	169 (84.5)	0	1 (0.5)	
2	94 (47.0)	1	25 (12.5)	1	16 (8.0)	
3	29 (14.5)	2	6 (3.0)	2	92 (46.0)	
				3	65 (32.5)	
				4	21 (10.5)	
				5	4 (2.0)	
				6	1 (0.5)	2.5
Total	200 (100)		200 (100)			

Note: The values in parentheses indicate percentage of total

Thus, every earnest person shares his income with other,

$$\frac{ISR}{REP} = 2.034$$

that is, an earnest person has to bear the living expenses of more than other two.

In regard of fertility of rural Chakma community we have represented the number of Children Ever Born (CEB) because we cannot compute fertility rate from the survey data. That is why CEB can be an alternative measure of fertility. The average CEB for this rural minor community is 2.5 that is lower than the total fertility rate (3.0) at the national level of Bangladesh (BDHS, 2004). A similar problem is also depicted whenever, we are dealing with the child mortality of this minor community. Thus we have accounted the number of child died before 5 years of age only and have found that there are 37 child deaths for 200 mothers.

Drop-out from primary education means to leave the school before completing 5 years of study. Ratio of drop-out from education and household number can be computed as:

$$RDH = \frac{Total\ drop-out\ from\ primary\ education}{Number\ of\ household}$$
$$= \frac{96}{200} = 0.48$$

Thus we can say that 48% Chakma household in rural areas have at least one child drop-out from education at primary level. Again this drop-out from primary education may be a cause of several factors such as economic crisis, unawareness of the head of the family, profession of the family's head, distance of educational institution from home and so on. We would like to strike out a set of most influential factors those affect the drop-out from primary education. Our other aim is to identify some influential factors those affect child mortality. Logistic regression model has been used in this recognition. To fit logistic regression model we dichotomize some factors given:

$$Y_{1i} = \begin{cases} 0, \text{if no child drop-out from education} \\ 1, \text{otherwise} \end{cases}$$

$$Y_{2i} = \begin{cases} 0, \text{if no child death is observed} \\ 1, \text{if death of a child is observed} \end{cases}$$

$$X_{1i} = \begin{cases} 0, \text{if per head monthly income of the} \\ \quad\ family\ is\ less\ than\ Tk.7091, \text{otherwise} \end{cases}$$

$$X_{2i} = \begin{cases} 0, \text{if the profession of family's} \\ \quad\ head\ is\ agriculture1, \text{otherwise} \end{cases}$$

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Table 5: Coefficients of logistic regression model for

Dependent variable	Explanatory variables	Coefficients (B)	S.E.	Wald	d .f	p-value
Drop-out from	X_{1i}	-1.071	0.362	8.738	1	0.003
primary education	X_{2i}	-1.181	0.486	5.919	1	0.015
Y_{1i}	Constant	0.452	0.180	6.289	1	0.012
Death of child	X_{1i}	-1.291	0.380	11.53	1	0.001
(under five years)	X_{2i}	-1.263	0.585	4.662	1	0.031
	X_{3i}	1.975	0.852	5.373	1	0.0214

$$X_{3i} = \begin{cases} 0, \text{ if household head has no addiction or} \\ \text{tolerable or social smoking habit} \\ \text{(biri and cigerate) only1, if the household} \\ \text{head has both smoking and drinking habit} \end{cases}$$

We found no significant effect of distance of educational institutions from home on drop-out from education. However, monthly income and profession of family's head play significant role on drop-out of children from primary education (Table 5). Both of these two factors bear negative impact on drop-out from education, that is, with the increase of family income and occupational status drop-out of children from primary education substantially decreases. A similar impact of per head family income and occupation of household head are also depicted for child mortality. The most rigorous finding is that addiction bear positive impact on child mortality, that is, addiction of household head (habit of both smoking and drinking wine) increases the risk of child death (Table 5).

CONCLUSION

The tribal community Chakma is far away from the modern life with poor literacy rate, unhygienic sanitation system, very low per head family income, frequent drug addiction and schooling deficiency of children. The drop-out of children from primary education depicts higher for those families with lower level of job for household heads and lower per head family income. Furthermore the child mortality is more frequent in those families where household head is engaged in agricultural works with lower level of family income and involved in drug addiction.

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