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Pattern of Cerebral Palsy among Different Income Groups

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Abstract:

The aim of this research was to explore pattern of cerebral palsy among different income groups. This study was a cross-sectional study. 100 samples were taken conveniently and interviewed with pretested structured questionnaire. The socio-economic classification in this study was made according to 2006 Gross National Income (GNI) per capita and using the calculation of World Bank (WB). Pattern of cerebral palsy was diagnosed by physical examination, medical records. The mean age of respondents was 27±7 years. Most of the respondents completed HSC and graduation level education. About 79% was housewife. Mean income of respondents was 14007.44 (±400) Taka per month. About 79% cerebral palsy children were spastic. About 60% and 13% spastic were seen among lower middle income group. Five percent athetoid was found among upper middle income group. More extensive research is needed to find out more precise result.

Key words: Pattern, Cerebral Palsy, Income groups

INTRODUCTION

Cerebral palsy (CP) is the most common cause of motor disability in childhood. Most previous population-based studies

reported the prevalence of CP to range from 1.5 to 3.0 cases per 1000 live births or 1000 children (Paneth et al. 2006, p. 251–267; SCPE 2000; Bhasin et al. 2006, p. 1-9). The estimated lifetime cost of CP in the United States is nearly $1 million per person (2003 dollars) (Honeycutt et al. 2006, p. 57-59). Although recent improvements in rehabilitation and surgical care can improve functional outcomes and quality of life for individuals with CP, researchers have made relatively little progress in understanding the pattern of CP and in developing strategies for primary prevention. There is some evidence of an association between improved rates of survival of infants born prematurely and/or at very low birth weight and increasing prevalence of CP (Bhushan 1993; Topp 1997 & Pharoah 1990) but this finding has not been consistent (Meberg & Nroch 1995; Hagberg 1996; Pharoah 1998) and recent data from Europe indicated a decline between the birth years 1980 and 1996 in the prevalence of CP among survivors of preterm birth (Platt et al. 2007, p.43-50). A study showed that the average prevalence of cerebral palsy across the 3 sites was 3.6 cases per 1000, with notably similar site-specific prevalence estimates (3.3 cases per 1000 in Wisconsin, 3.7 cases per 1000 in Alabama, and 3.8 cases per 1000 in Georgia). At all sites, prevalence was higher in boys than girls (overall boy/girl ratio: 1.4:1). Also, at all sites, the prevalence of cerebral palsy was highest in black non-Hispanic children and lowest in Hispanic children. At all sites, the prevalence among children living in low- and middle-income neighborhoods was higher than that among children living in high-income neighborhoods. Spastic cerebral palsy was the most common subtype (77% of all cases), with bilateral spastic cerebral palsy dominating the spastic group (70%) (Yeargin-Allsopp et al. 2008, p. 547 -554). But this type of study in our country is rare. The present study was an attempt to contribute new knowledge to the epidemiology of cerebral palsy in Bangladesh.

METHODS

This was a cross sectional observational study conducted at different physiotherapy center attending for treatment purpose for a period of 6 month started from December 2014 to May 2015. All cerebral palsy patients willing to participate and also signed the informed consent were included in the study. Non probability convenient sampling method was used to select sample population. Total 100 subjects were studied. Data were collected from the respondents through face-to-face interview. The questionnaire was used after verbal consent of the respondents. Socio-demographic characteristics were obtained from caregivers or mothers. The socio-economic classification in this study was made according to 2006 Gross National Income (GNI) per capita and using the calculation of World Bank (WB) ((Haque ANMN 2007, p.18). The groups were: low-income $75.41 or less (BDT ≤ 5360), lower middle-income $75.5 - $299.58 (BDT 5361-21270), upper middle-income $299.68 - $926.25 (BDT 21271-65761) and high-income $926.33 or more (BDT ≥ 65762). Pattern of cerebral palsy was diagnosed by physical examination, medical records. The collected data were analyzed by using SPSS 16.0 version of computer technology. However, no sample determining formula was applied to determine the size of the sample. After data collection, data were sent to the researcher, which was sorted, scrutinized by the researcher by the selection criteria and then data were analyzed by personal computer.

RESULTS

The mean age of respondents was 27±7 years. Most of the respondents completed HSC and graduation level education. About 79% was housewife. Mean income of respondents was 14007.44 (±400) Taka per month (Table 1). About 79%, 7%, 9% and 5% cerebral palsy children were spastic, ataxic, dyskinetic

and athetoid (Figure 1). About 60% and 13% spastic were seen among lower middle income group. Five percent athetoid was found among upper middle income group (Figure 2).

Table 1: Socio-demographic characteristics (n=100)

Items	**Frequency (%)**	**Mean (±SD)**
Age in years		27±7
Education		
Illiterate	2(2)	
SSC	19(19)	
HSC	42(42)	
Graduation	28(28)	
Post-graduation	9(9)	
Occupation		
Housewife	79(79)	
Service	9(9)	
Business	12(12)	
Monthly Income in Taka		14007.44 (±400)
≤ 5360 (low)	4(4)	
5361-21270 (lower middle)	67(67)	
21271-65761 (upper middle)	22(22)	
≥ 65762 (high income)	7(7)	

Figure 1: Type of cerebral palsy (n=100)

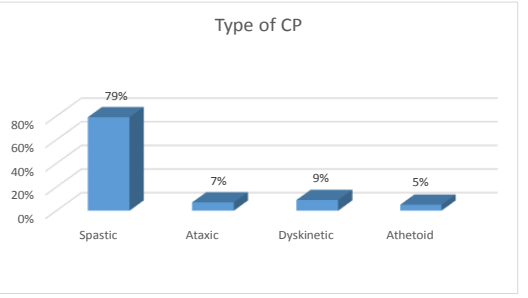
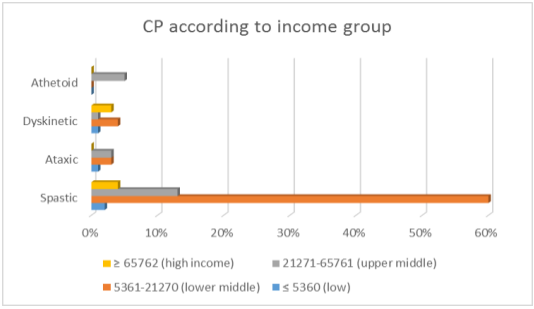


Figure 2: Pattern of cerebral palsy according to different income groups



DISCUSSION

Numerous studies have analyzed the relationship between income and children's health. They have examined a variety of health measures, ranging from health status broadly defined to very specific health conditions experienced by children of different ages. A general conclusion is that lower-income children are more likely to be in poor health than are children from higher income groups. The National Health Interview Survey (NHIS), a nationally representative annual survey of U.S. families, asks respondents (or, for children, their adult caregivers) whether they are in excellent, very good, good, fair, or poor health. The resulting summary measure of health, called global health status, although crude, is highly correlated with specific types of illnesses and health conditions in childhood. Adults who report poorer global health status are more likely than others to become ill and to die sooner rather than later (Ellen 1995). Using the NHIS surveys conducted from 1997 to 2003, we estimate how parents' reports of their children's health vary with family income (Fan 1992). This finding inspires me to conduct research on pattern of cerebral palsy among different income groups. The present study found that about 79% cerebral palsy children were spastic. About 60% spastic were seen among lower middle income group. Five percent athetoid was found among upper middle income group.

Income-related disparities in childhood health are evident at birth or even before. Much research on this topic focuses on low birth weight, which provides a measure of the quality of both the intrauterine environment and the medical care received during pregnancy. Low birth weight is associated with a variety of neurodevelopmental problems, including cerebral palsy, blindness, impaired lung function, and mental retardation.

CONCLUSION:

It is concluded from the study that income is an important determinants in terms of pattern of cerebral palsy. Spastic cerebral palsy was more seen among lower middle income group. Large scale study is needed to explore real scenario.

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