

Intelligence Quotient among Epileptic and Non-epileptic Children

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Abstract

Original Research Article

The comparative cross sectional study was conducted to compare the level of intelligence quotient among epileptic and non-epileptic children. The study was conducted in the Department of Child Development and Neurology of Dhaka Shishu Hospital, Dhaka, Bangladesh during the period from January 2010 to June 2010. The sample size was 110 children; among them 55 were epileptic and 55 were non-epileptic. A semi-structured questionnaire and a checklist were used to collect data through face to face interview and reviewing medical documents using convenient type of non-probable sampling technique. Intelligence quotient of the children was assessed by using Wechsler Intelligence Scale (WISC-R). Mean age of the epileptic children was 7.92 (± 2.18) years while mean age of non-epileptic children was 7.95 (± 2.17) years. Majority (61.8%) of the epileptic children was male and 38.2% was female, while among the non-epileptic children majority (58.2%) was female and 41.8% was male and the differences by sex was statistically significant [$\chi^2_{(1)}=4.4$, $P<0.05$]. Among the epileptic children 47.3% lived in urban area while 76.4% non-epileptic lived in urban and this variation was statistically significant [$\chi^2=11.31$, $P<0.01$]. By education 45.5% of epileptic children were educated up to class 1–5 while most 80.0% of non-epileptic children were educated upto class 1–5 and this variation of education was statistically significant [$\chi^2_{(4)}=28.52$, $P<0.01$]. According to family income Maximum (87.3%) of the epileptic children had monthly family income below Tk. 10,000 while 34.5% of the non-epileptic children had monthly family income Tk. >10,001 which was significantly associated with epilepsy [$\chi^2_{(3)}=3.79$, $P<0.01$]. By place of delivery 45.5% epileptic children was delivered at home while maximum 52.7% non-epileptic children was delivered at private clinic and this variation was statistically significant [$\chi^2_{(3)}=26.43$, $P<0.01$]. Majority (67.3%) of the epileptic children delivered normally while 56.4% non-epileptic children were delivered through caesarean section which was statistically significant [$\chi^2_{(1)}=6.22$, $P<0.01$]. Majority 43.6% mothers of epileptic children faced long duration labor (10-14 hours) while 52.7% mothers of non-epileptic children faced short duration labor (2– 5) hours which was statistically significant with epilepsy [$\chi^2_{(2)}=16.111$, $P<0.001$]. Majority 63.6% of the epileptic children faced convulsion during early neonatal period and majority (70.9%) of non-epileptic children did not face any problem during early neonatal period. Intelligence quotient of the majority (60.0%) of the epileptic children were below normal (moron) while majority (76.4%) of the non-epileptic children were found normal which was statistically significant [$\chi^2_{(7)}=94.43$, $P<0.01$]. In respect of clinical manifestation majority (65.5 %) of the epileptic children suffered from febrile convulsion and the main reason of epilepsy was birth trauma (43.6%). The study recommended for specific measure to raise intelligence quotient of epileptic children and to reduce the prevalence of epilepsy by overcoming the relevant risk factors in context of Bangladesh.

Keywords: Intelligence, Epileptic, Non-epileptic.

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INTRODUCTION

Epilepsy is one of the emerging public health problems in developing as well as developed countries. The problem of epilepsy is worldwide and intractable. Epilepsy is one of the most common neurological disorders and has no age, racial, social, sexual or

geographical boundaries; it is a common health problem, which carries with it a variety of medical, social, psychological and economic burdens. Studies in developed countries shows prevalence rate of about 5 per 1000 populations whereas in developing countries it is higher. Men are often more effected 5than female. And rural populations are effected more than the urban

population. Based on the prevalence rate of 10 per 1000 population. The number of epilepsy patient in Bangladesh is about 1.3 million. The common ages of epileptic patients in Bangladesh are between 16 to 31 years. The etiology varies with age. Birth trauma, birth asphyxia, central nerves infections are common in neonate and infancy. Whereas head trauma, brain tumor, stroke, and infections are common caused in middle age and elderly [1]. Epilepsy consists of various types of clinical seizures and epileptic syndromes. Therefore, epidemiological findings are important not only for the public health but also clinical practice. However, the appearance rate or distribution of various types of epilepsies and epileptic syndromes has not been clarified. We carried out a population-based survey of childhood epilepsy within a large population in Okayama Prefecture, Japan. A total of 2,220 cases were identified from a background population of 250,997. The prevalence rate was 8.8 per 1,000[2]. Cerebral disease or injury, including birth trauma, may lead to epilepsy either by damaging a hitherto brain or, perhaps by less severe lesion, by reducing the convulsive threshold in a predisposed individual [3]. Epilepsy is a frequent condition subsequent to cerebral injury from birth trauma. It usually occurs together with other defects or essential disease such as idiocy or imbecility, spastic paralysis, disturbances affecting the neuromuscular apparatus of the eyes [4].

Children with epilepsy usually are of normal intelligence, but some do not do well academically. When this happens, it is important to find out why. Neurological impairment, frequent seizures, or adverse effects of seizure medicines can affect school performance [5]. Research on children with epilepsy indicates that family factors contribute to child psychopathology. Because child developmental research demonstrated that different types of family factors play different roles in relation to child outcome, the aim of this study was to examine the simultaneous contribution of distinct family factors to child psychopathology. These distinct family factors were differentiated according to their level of proximity to the child's everyday life [6].

Vast majority of the people in Bangladesh does have superstitious belief about epilepsy. This belief usually is a strong barrier for total care of patients with epilepsy. Misunderstanding and negative attitude of the parents, family members and society towards epilepsy are still prevalent. Thus, many patients with epilepsy are still neglected in diagnosis, treatment, education, rehabilitation and other social needs. The epilepsy are often reluctant to seek advice from physician. Rather they believe epilepsy has no cure and they seek advice from indigenous medicine practitioners 'kaboraj' snake charmer, 'ojha' and spiritual healers¹. Epilepsy constitutes special problem in Bangladesh. Poverty, malnutrition, child mortality, inadequate preventive and curative health services all

influence the incidence and prevalence of epilepsy. Some steps have been taken by NGOs to make the public aware of the situation. Unfortunately, the policy makers were still apathetic towards the problem. Very few studies have been done to find out the epidemiological factors associated with epilepsy in children, to estimate the IQ of epileptic children and to assess the relationship of IQ with epilepsy.

OBJECTIVES

a) General objective

- To compare the level of IQ between epileptic and non-epileptic children

b) Specific Objectives

- To estimate IQ among epileptic and non-epileptic children
- To assess the relationship between IQ and epilepsy

METHODOLOGY & MATERIALS

This was a cross-sectional study and it was conducted in the Department of Child Development and Neurology of Dhaka Shishu Hospital, Dhaka, Bangladesh during the period from January 2010 to June 2010. Data were collected from a register book of the medical. Name, age, sex, provisional diagnosis of the disease were noted and by interview. All necessary data were extracted and noted. A total of 110 patients were selected as study participants. The monthly patient profile was compiled, and data were presented in tables with the use of Microsoft Excel.

RESULT

It was found that that among 55 epileptic children 9 (16.4%) represented the age group of 4-6 years, 33 (60.0%) represented the age group of 7-9 years, 8 (14.5%) represented the age group of 10-12 years and 5 (9.1%) represented the age group of 13-14 years. So majority of the epileptic children 33 (60.0%) belongs to age group of 7-9 years. Among 55 non-epileptic children 13 (23.7%) represented the age group of 4-6 years, 34 (61.8%) represented the age group of 7-9 years, 7 (12.7%) represented the age group of 10-12 years and 1 (1.8%) represented the age group of 13-14 years. So majority of the non-epileptic children 35 (61.8%) belongs to age group of 7-9 years. Among the 55 children those who suffered from epilepsy 34 were male and 21 were female. Those who do not have epilepsy 23 were male and 32 were female. Male are more prone for development of epilepsy which is statistically significant ($\chi^2=4.4$, $df=1$, $P=0.028$). From the table below this is found that 55 children those who have suffering from epilepsy majority (26) lived in urban area, 20 in rural area, 8 at semi-urban area and 1 in slum. Those who didn't have epilepsy 7 from rural population, 42 lived in urban areas, 6 in semi-urban areas. The relationship between place of residence and

epilepsy is found to be statistically significant ($\chi^2=11.31.426$, $df=3$, $P=0.01$). The following table shows the association between mother's education and epilepsy. Among the 55 epileptic children 2 of their parents were found educated at masters level, 6 were graduate, 09 were educated at the level of HSC, 7 passed SSC, 2 at the level of secondary, 7 educated at the level of primary (I-V) and most of them 22 were illiterate. In the other hand children those who didn't have epilepsy 8 of their mother were found educated at masters level, 12 were graduate, 14 were educated at the level of HSC, 4 passed SSC, 1 at the level of secondary, 4 educated at the level of primary (I-V) and 12 were illiterate. There is no significant association between maternal educational status and development of epilepsy in children ($\chi^2=11.598$, $df=6$, $P=0.072$). Among the epileptic children 14 studied in nursery, 2 in KG, 30 were in between class I-V and 9 had no formal education. And children those who didn't have epilepsy 1 studied in nursery, 8 in KG, 44 in between class I-V, 2 between class VI-X and none had no formal education. There is a strong association between educational qualification of the children and epilepsy ($\chi^2=28.515$, $df=4$, $P=0.001$). It was found that among 55 epileptic children most of the parents 44 (80.0%) were housewife, 9 (16.4%) were service holders, 1 (1.8%) was involved in business and only 1 (1.8%) was day-labor. Among 55 non-epileptic children most of the mothers 41 (74.6%) were housewife, 13 (23.6%) were service holders and only 1 (1.8%) was day-labor. The table below shows the association between monthly family income and epilepsy. Children those who had epilepsy majority 48 had monthly income was less than 10,000 TK. 6 had monthly income 10001 to 20000tk. and 1 had monthly income above 30000 TK. Among the non-epileptic children 17 had monthly income less than 10000 tk. 19 had monthly income 10001 to 20000tk. 11 had monthly income between 20001-30000 tk. and 8 had monthly income of above 30000 Tk. The association between monthly family income and children suffer from epilepsy is statistically significant ($\chi^2=37.989$, $df=3$, $P=0.0001$). There shows the association between family history of epilepsy and children suffer from epilepsy. Among 55 epileptic children 19 children have family members who suffered from epilepsy and rest 36 children do not have any family member who suffered from epilepsy. Whereas none of the family members of 55 non-epileptic children suffered from epilepsy. The association between family history of epilepsy and children suffer from epilepsy is statistically significant ($\chi^2=22.967$, $df=1$, $P=0.001$) {table-I}.

Frequency of epileptic attack among the epileptic children found that 13 (23.6%) daily attacked by epilepsy, 18 (32.8%) got attacked yearly, 17 (31%) monthly and 7 (12.8%) weekly. It was found that majority (32.8%) children attacked by epilepsy yearly which are focused by the following bar diagram.{Figure-I}. Mothers those who received. ANC

39 developed epilepsy and 50 did not. Mother those who didn't received ANC 16 developed epilepsy and 5 didn't had epilepsy. There is a strong association between use of ANC and children suffer from epilepsy ($\chi^2 = 7.121$, $df=1$, $P<0.008$). It was found that among the mothers of 55 epileptic children 25 (45.5%) mothers were of age group 20-25 years at child birth, 29 (52.7%) were of age group 26-30 years and 1 (1.8%) were of age group 31-35 years. Among the mothers of 55 non-epileptic children 18 (32.7%) mothers were of age group 20-25 years at child birth, 30 (54.5%) were of age group 26-30 years and 7 (12.7%) were of age group 31-35 years.

It was revealed that among mothers of 55 epileptic children 16 (29.1%) suffered from mental stress during pregnancy and 39 (70.9%) did not. Among mothers of 55 non-epileptic children 1 (1.8 %) suffered from mental stress during pregnancy and 54 (98.2%) did not. There is strong association between mothers suffered from mental stress during pregnancy and children suffer from epilepsy. It was found that among mothers of 55 epileptic children 15 (27.3%) suffered did hard work during pregnancy and 40 (72.7%) did not. Among mothers of 55 non-epileptic children none performed hard work during pregnancy. There is strong association between mothers performed hard work during pregnancy and children suffer from epilepsy. It has been found that out of 55 mothers of epileptic children only 6 (10.9%) suffered from diabetes mellitus, 2 (3.6%) from coronary heart disease, 13 (23.6%) from hypertension, 16 (29.1%) from anemia, 1 (1.8%) from eclampsia, 23 (41.8%) from high fever and 17 (30.9%) suffered from trauma during pregnancy. 6 (10.9%) of these mothers did not suffer from any disease. At the same time out of 55 mothers of non-epileptic children only 2 (3.6%) suffered from diabetes mellitus, 2 (3.6%) from coronary heart disease, 1 (1.8%) from hypertension, 10 (18.2%) from anemia, 2 (3.6%) from high fever and 2 (3.6%) suffered from trauma during pregnancy. 41 (74.5%) of these mothers did not suffer from any disease. From this analysis it has been found that majority 23 (41.8%) of the mothers of epileptic children suffered from high fever during their pregnancy. It was found that among the 55 epileptic children, i.e., majority 25 (45.5%) delivered at home, 10 (18.2%) delivered at govt. hospitals, 6 (10.9%) delivered at private hospitals, 14 (25.5%) delivered at private clinics. Among 55 non-epileptic children majority 29 (52.7%) delivered at private clinics, 15 (27.3%) delivered at government hospitals, 9 (16.4%) at private hospitals, 2 (3.6%) delivered at home. This is very significant. It was found that among 55 epileptic children majority 37 (67.3%) were delivered normally and 18 (32.7%) were delivered by cesarean section. At the same time among 55 non-epileptic children 24 (43.6%) were delivered normally and majority 31 (56.4%) were delivered by cesarean section. Among the 55 children those who had developed epilepsy majority 24 had face prolong labour which is 10-14 hours, 22

had delivery hours between 6-9 hours and 9 had labour hour between 2-5 hours. Among the non-epileptic children 29 had labour hour between 2-5 hours, 13 had labor hour between 6-9 hours and rest 13 had a prolong labour which is 10-14 hours. From this table these found that among the 55 children those who had epilepsy 1 idiot was found, 7 were imbecile, 33 were moron, 6 had border line IQ, 7 had low normal IQ and only 1 had normal IQ. Those who don't suffered from epilepsy majority 45 had normal IQ 6 had superior and 2 had very superior IQ. None of them were idiot, imbecile, moron or border Line IQ. The IQ level of the epileptic child were significantly low which is statistically proved ($\chi^2=94.426$, $df=7$, $P=0.001$) which has been shown in {table-3}.

These were found from the table below that in the age group between 4-6 years 1 idiot is seen, Imbecile found 3 in 7-9 years of age and 2 each in both 10-12 and 13-14 years age group. Majority (21) of moron were present in 7-9 years of age group and 6 each in both 4-6 and 10-12 years age group. Border line IQ was seen 1 in 4-6 years, 4 in 7-9 years and only 1 in 13-14 years of age group. Normal IQ found 11 in 4-6 years, 27 in 7-9 year's age group, 4 in 10 -12 age group and 1 in 13-14years of age group. Superior IQ was found 1 in 4-6 years of age, 2 in 7-9years and 3 in 10-12 years of age group. The difference of IQ of the children by age is statistically significant. ($P=0.044$, $\chi^2=33.244$, $df=21$) which has been shown in{table-4}.

Table-I: Distribute the study people depending on Socio demographic Structure. (n=110)

Socio demographic structure		whether the child suffer from epilepsy			
		yes	%	No	%
Age	4-9	42	76.36	47	85.45
	10-14	13	23.64	12	21.82
Sex of child	Male	34	61.82	23	41.82
	Female	21	38.18	32	58.18
Place of residence of children	Rural	20	36.36	7	12.73
	Urban	26	47.27	42	76.36
	Semi-urban	8	14.55	6	10.91
	Slum	1	1.82	0	0.00
Educational status of parents	Masters	2	3.64	8	14.55
	Graduate	6	10.91	12	21.82
	HSC	9	16.36	14	25.45
	SSC	7	12.73	4	7.27
	Class VI-X	2	3.64	1	1.82
	Class V-I	7	12.73	4	7.27
	Illiterate	22	40.00	12	21.82
Educational Qualification of the child	Nursery	14	25.45	1	1.82
	KG	2	3.64	8	14.55
	Class I-V	30	54.55	44	80.00
	Class VI-X	0	0.00	2	3.64
	None	9	16.36	0	0.00
Occupational Status of parents	Housewife	44	80.00	41	74.55
	Service	9	16.36	13	23.64
	Business	1	1.82	0	0.00
	Day Labor	1	1.82	1	1.82
Family Income	<10000	48	87.27	17	30.91
	10000-20000	6	10.91	19	34.55
	21000-30000	0	0.00	11	20.00
	>30000	1	1.82	8	14.55
Family Member Suffer epilepsy	Yes	19	34.55	0	0.00
	No	36	65.45	55	100.00

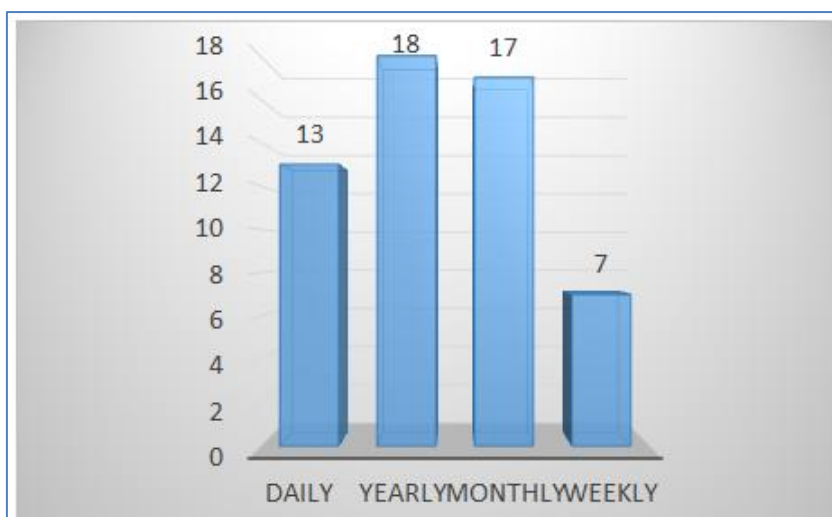


Fig-1: Frequency of epileptic attack in children (N=55)

Table-II: Test of epilepsy according to the pregnancy related factors. (n=55)

Pregnancy related factors		Whether the child suffer from epilepsy				χ ² Test		
		Yes	%	No	%	χ ² value	df	p value
Mothers' had ANC	Yes	39	70.91	50	90.91	7.121	1	0.0008
	No	16	29.09	5	9.09			
Mother's age at child birth	20-25	25	45.45	18	32.73			
	26-30	29	52.73	30	54.55			
	31-35	1	1.82	7	12.73			
Mother's mental stress during pregnancy	Yes	16	29.09	1	1.82	15.55	1	0.0001
	No	39	70.91	54	98.18			
Hard work during pregnancy	Yes	15	27.27	0	0.00	17.368	1	0.0001
	No	40	72.73	55	100.00			
Diseases of mother during pregnancy	Diabetes Mellitus	6	10.91	2	3.64			
	Coronary Disease	2	3.64	2	3.64			
	Hypertension	13	23.64	1	1.82			
	Anaemia	16	29.09	10	18.18			
	Eclampsia	1	1.82	0	0.00			
	High fever	23	41.82	2	3.64			
	Trauma	17	30.91	2	3.64			
Place of delivery of children	Home	25	45.45	2	3.64			
	Govt. Hospital	6	10.91	15	27.27			
	Pvt. Hospital	10	18.18	9	16.36			
	Pvt. Clinic	14	25.45	29	52.73			
	None	6	10.91	41	74.55			
Mode of delivery of children	Normal	37	67.27	24	43.64			
	Cesarean section	18	32.73	38	69.09			
Duration of delivery of child (Hour)	2-5	9	16.36	29	52.73			
	6-9	22	40.00	13	23.64			
	10-14	24	43.64	13	23.64			

Table-3: Distribution of the IQ level between epileptic and non-epileptic children. (n=55)

Level of IQ of the children	Whether the child suffer from epilepsy			χ^2 Test		
	Yes	No	Total	χ^2 value	df	P value
Idiot	1	0	1	94.426	7	0.001
Imbecile	7	0	7			
Moron	33	0	33			
Border Line	6	0	6			
Low Normal	7	5	12			
Normal	1	42	43			
Superior	0	6	6			
Very Superior	0	2	2			
Total	55	55	110			

Table-4: Relationship between level of IQ and age of the children. (n=110)

Level of IQ of the children	Age distribution of the child (Years)					χ^2 Test		
	4-6 yrs	7-9yrs	10-12yrs	13-14yrs	Total	χ^2 value	df	P-value
Idiot	1	0	0	0	1	33.244	21	.044
Imbecile	0	3	2	2	7			
Moron	6	21	6	0	33			
Border Line	1	4	0	1	6			
Low Normal	2	8	0	2	12			
Normal	11	27	4	1	43			
Superior	1	2	3	0	6			
Very Superior	0	2	0	0	2			
Total	22	67	15	6	110			

DISCUSSION

The comparative cross-sectional study was carried out among epileptic and non-epileptic children at the department of Child development and Neurology Unit of Dhaka Shishu Hospital, Bangladesh, with a view to compare the level of IQ among epileptic and non-epileptic children and to estimate IQ among epileptic and non-epileptic children. Attempts were also made to determine the socio-demographic characters of both epileptic and non-epileptic children. Epileptic and non-epileptic children attending at Child development and Neurology Unit of Dhaka Shishu Hospital were taken as study population in this study from which 110 children were interviewed purposively and necessary information were collected. Out of 110 children 55 (50%) were epileptic and 55 (50%) were non-epileptic. Among 55 epileptic children 34 (62%) children were male and 21 (38%) children were female which was representative to the findings- 98 males and 53 females of the study conducted by Dr. Selina H. Banu, Dr. Naila Z. Khan, Dr. Mahmuda Hossain, *et al.* [7]. The mean age of the children in this study was 7.94 years (\pm SD 2.18) and the highest frequency occurred in the age group of 7-9 years (60.9%) for both male and female. Among 55 epileptic children 26 (47%) were from urban area and 20 (26%) from rural area which figure was different from the findings – higher prevalence was found in rural population in Pakistan, a literature review conducted by Dr. I. A. Khatri, M. Abdullah, *et al.*, August 2003[8]. The average family income of the respondents' family was TK 13,818 with S.D. \pm 11,100. The highest income group of the study (TK 31,000-40,000) contained 9 (8.2%) respondents while the

lowest income group (TK 2,000 – 10,000) contained 65 (59.1%). It was seen that 25 (22.7%) children were in the income group of TK 11,000-20,000 and 11 (10%) were in the income group of TK 21,000[-30,000. Among 55 epileptic children majority 48 (87%) had monthly family income between 2000 – 10000 taka, 6 (11%) monthly income 11000 – 30000 taka and 1 (2%) had monthly income of 31000 – 40000 taka. These findings were closely related to the findings of the study conducted by Dr. Selina H. Banu, Dr. Naila Z. Khan, Dr. Mahmuda Hossain, *et al.* in 2003, which was- 68.3% of epileptic children from middle-income and lower-income groups[7]. Frequency of epileptic attack among the epileptic children found that 13 (23.6%) often attacked by epilepsy, 18 (32.8%) got attacked yearly, 17 (31%) monthly and 7 (12.8%) weekly. It was found that majority (32.8%) children attacked by epilepsy yearly. Among 55 epileptic children 19 children have family members who suffered from epilepsy and rest 36 children do not have any family member who suffered from epilepsy. These findings were closely related to the findings of the study conducted by M. J. Hussen, Saleh El-Quader[9]. Whereas none of the family members of 55 non-epileptic children suffered from epilepsy. Among the family members of 19 epileptic children those who had family history of epilepsy 2 (3.6%) were fathers, 5 (9.1%) were brothers, 3 (5.5%) were sisters and 9 (16.4%) were cousins. Among the 55 children with epilepsy 5% suffered from mentally retardation, 10% from cerebral palsy, 60% had febrile convulsion, 15% suffered from psychiatric illness and 8.3% suffered from meningitis. Majority 36 (60%) of the children

suffered from febrile convulsion. Mothers those who received ANC 39 developed epilepsy and 50 did not. Mother those who didn't received ANC 16 developed epilepsy and 5 didn't had epilepsy. There is a strong association between ANC of mother and child from epilepsy ($\chi^2 = 7.121$, $P < 0.008$). Association was found to exist between these variables. Among the 55 children those who had developed epilepsy majority 24 had face prolong labour which is 10-14 hours, 22 had delivery hours between 6-9 hours and 9 had labour hour between 2-5 hours. Among the non-epileptic children 29 had labour hour between 2-5 hours, 13 had labour hour between 6-9 hours and rest 13 had a prolong labour which is 10-14 hours. There is significant association between duration of labour and development of epilepsy. Among the 55 epileptic children, i.e., majority 25 (45.5%) delivered at home, 10 (18.2%) delivered at govt. hospitals, 6 (10.9%) delivered at private hospitals, 14 (25.5%) delivered at private clinics. Among 55 non-epileptic children majority 29 (52.7%) delivered at private clinics, 15 (27.3%) delivered at government hospitals, 9 (16.4%) at private hospitals, 2 (3.6%) delivered at home. There is significant association between place of delivery of the children and epilepsy. It has been found that out of 55 mothers of epileptic children only 6 (10.9%) suffered from diabetes mellitus, 2 (3.6%) from coronary heart disease, 13 (23.6%) from hypertension, 16 (29.1%) from anemia, 1 (1.8%) from eclampsia, 23 (41.8%) from high fever and 17 (30.9%) suffered from trauma during pregnancy. 6 (10.9%) of these mothers did not suffer from any disease. At the same time out of 55 mothers of non-epileptic children only 2 (3.6%) suffered from diabetes mellitus, 2 (3.6%) from coronary heart disease, 1 (1.8%) from hypertension, 10 (18.2%) from anemia, 2 (3.6%) from high fever and 2 (3.6%) suffered from trauma during pregnancy. 41 (74.5%) of these mothers did not suffer from any disease. From this analysis it has been found that majority 23 (41.8%) of the mothers of epileptic children suffered from high fever during their pregnancy.

Among the 55 epileptic children 1 idiot was found, 7 were imbecile, 33 were moron, 6 had border line IQ, 7 had low normal IQ and only 1 had normal IQ. Those who don't suffered from epilepsy majority 45 had normal IQ 6 had superior and 2 had very superior IQ. None of them were idiot, imbecile, moron or border Line IQ. The IQ level of the epileptic child was significantly low which is statistically proved. These findings were closely related to the findings of the study conducted by O'Leary SD [10] and Pestana E M [11].

LIMITATIONS OF THE STUDY

The study was conducted in a selected hospital so the study findings might not represent the true picture of IQ in respect of epilepsy. The study findings may lack external validity. Due to resource constrains the sample size was relatively small and data was collected within a very short period of time. So the

study may not be a representative sample for generalization

CONCLUSION AND RECOMMENDATIONS

This specific study was a comparative cross sectional study to compare the level of intelligence quotient between epileptic and non-epileptic children. The study was conducted among 110 children at Dhaka Shishu Hospital in Dhaka, Bangladesh during the period of January to June 2010. The study result revealed that the intelligence quotient of the epileptic children is below normal in comparison to non-epileptic children. The study also found among the epileptic children male are predominant. Majority of both epileptic and non-epileptic children were aged were 7 – 9 years, Majority of non-epileptic children were from family with low income group. It was also evident that maximum epileptic children were delivered at home and their mother experienced prolonged labor. Most of the epileptic children faced febrile convulsion during early neonatal period. It was found that Epilepsy was caused by birth trauma in majority cases. It was also found that both epileptic and non-epileptic children were educated upto class 1 – 5 and were lived in urban area. Findings might be more reliable with a better study design and large sample. Future research work could evaluate the effect of epilepsy on intelligence quotient of children and also find out the risk factors of epilepsy to reduce the burden of the disease and restoration of intelligence quotients of the victim children.

On the basis of the findings of this particular study following recommendations are forwarded:

- As the intelligence quotient of the epileptic children was lower (moron) in comparison to epileptic children. So appropriate intervention like speech therapy, memory therapy should be taken to raise intelligence quotient among epileptic children.
- Among epileptic children male children are predominant, so special attention should be taken to the male children.
- The study result showed that the risk factors of epilepsy are birth trauma, home delivery, prolonged labor and fever. So, intervention, like antenatal care, hospital delivery etc. should be taken to avoid cause of risk factors.

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