Impact of Socio Economic Status and Cultural Factors on the Prevalence of Epilepsy: Study in Kashmir

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ABSTRACT

Introduction: The social and economic problems cuased by epilepsy are offen under appricaiated. The message should reach the broadest population of effected individuals, many of whom are in low socio economic groups and are at higher risk for development of epilepsy. Study aimed to asess the impact of socio economic status and cultural factors on the prevalence of Epilepsy in school going Children (6-16 years) in Kashmir.
Material and methods: This was a population based study conducted in school children. The selection of school was done by using PPS Method (Proportionate to Population Size) used in cluster surveys. The Pretexed Questionnaire was administered to 60 randomly selected children from each selected school, the positive responders were examined by the neurologist and psychologist
Results: The crude Prevelance of epilepsy in school going children was 3.8/1000 for males which was higher than females 2.77. The Govt schools had higher prevalence 3.81/1000 as compared to private schools 2.79/1000 reflecting higher prevalence in economically weaker section. Children from lower middle class had highest prevalence 3.56/1000.
Conclusion: The prevelance of Epilepsy seems to increase with socio economic deprivation though the association may be compounded by other factors. The over all prevelance was comparable to other studies. However there is significant improvement about the awareness of epilepsy in Kashmir valley over the past decades.

Keywords: Impact of Socio Economic Status, Impact of Cultural Factors, Prevalence of Epilepsy

INTRODUCTION

Socio economic status (SES) encompasses not just income but also educational attainment, occupation prestige and subjective perception of social status and social class.[1]
Epilepsy is associated with wide range of markers of social and economic disadvantage including poor academic achievement, unemployment, under employment and low income.[2]
The people who are socially and economically deprived are more likely to develop epilepsy. This hypothesis is supported to some extent by the observation that the incidence of epilepsy is higher in developing countries than the developed countries.[3]
The NHS and WHO organization aim to reduce inequalities in health.[4] This can be achieved by concentrating resources on conditions that effect socially and economically deprived people. The prevelance of epilepsy in studies to date exhibits a wide range of variation varying between 2.8 to 44 per 1000.[5]

The determination of prevalence value and epilepsy-related risk factor makes particular contribution to public health population.[6] The fact that disease is more seen in childen of families with low socio economic levels. Uncertainty as to when the epileptic Childs seizure will take place and how severe they will be, lack of sufficient knowledge regarding steps to be taken during and after epileptic episode, fact that prolonged seizure and drugs used cause brain damage and memory problems that in turn lead to learning difficultiues and attention impairment are regarded as medico social problems**.** As a result search for solutions outside modern medicine, such as visting religious figures and tombs of holy indivduals out of a belief that the patient is infected by evil spirits and dginn/genies.[7]
Socio-economic status and occupation sometmes carry a significantly increased risk of hospitalization for epilepsy.[8] Low income and low education are associated with the increased risk of epilepsy among both men and woman.[9] Stigma continues, nowadays, in both the public and private spheres but polls suggest, it is generally decreasing with time, atleast in developed world.[10] A few epidemiological studies have confirmed an association between prevalance of epilepsy and markers of social disadvantage. Over 30% of people with epilepsy do not have seizure control even with the best avaliable medications.[11] Low socio economic status is associated with higher emotional and behavioural difficulties including social problems, deliquient behavior and attention deficit, hyperactivity among adolecents
The purpose of the study was to access relation between socio economic status, cultural factors with prevalent epilepsy.

MATERIAL AND METHODS

The study was conducted in six districts of kashmir with total population of 5476970, males 2877211 and females 2519759. The population of school going children was1231139 males and1101028 females. The selection of schools was done using PPS proportionate to population size method used in cluster survey.[12] It composed of following four steps

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1. The list of schools along with their enrollment was procured from directorate of school education. The schools were serially arranged student cumalitive population was calculated.
2. Sampling interval was calculated by dividing the cumulative population by cluster number 30.
3. One school which had cumulative population between one and the sampling interval was randomly selected.
4. Next school was selected by adding sampling interval to the cumulative population of the first selected school and so on. Sixty students 30 boys and 30 girls were screened from each school. Total number of schools screened in valley was 96(16 schools in each district), the screened schools included both govt. and private schools in urban as well as rural areas. A preformed questionnaire modified from WHO questionnaire was validated by neurologist psychologist. The sensitivity and specificity of the questionnaire was100%and 78% respectively. Questionnaire was administered in local language and each child was interviewed separately. Those children who were suspected to have epilepsy, there symptoms were subsequently confirmed by interview with eye witness of the episode. A neurologist and psychologist were present at the time of final interview. A total of nine hundred and sixty children were screened in each district. THE Definitions were adopted from the guidelines for epidemiological studies on epilepsy, a document published by international league against epilepsy (ILAE) following types of seizures were excluded from study, febrile seizures, seizures with CNS infections, provoked symptomatic seizures.

Following information regarding socioeconomic status of children was sought from parents as Age, sex, family Size, Income, occupation Education, Obstetric history, Birth order Other traditional method like visiting a quack PIR . Socioeconomic status of the child was accessed on the basis of Kuppaswamy classification this scale has been widely used in India based on three variables education, occupation and income Screening questionnaire

Screening questionnaire
Table 1
Have you ever lost consciousness
Have you ever had uncontrollable shaking of your arms and legs
Have you ever had episodes in which you lost contact with the surroundings.
Have you ever had Laith/Larn/Mirgi
Have you ever visted Quack(PIR)/Saint
Do you ever sometimes have panic attacks
Do any one in your family had epilepsy
Have you ever lost control of your bowel or bladder
Have you ever injured your self (tounge bite/burn injury)
Have you ever had episodes of black spells with stairing look or strange behavior observation.
The presence study was purely a descriptive investigation, no statistical tests of significance where used in the analysis of the data, only descriptive

RESULTS

This was a population based study conducted in school children. The selection of school was done by using PPS Method (Proportionate to Population Size) used in cluster surveys.

The Pretexted Questionniare was administered to 60 randomly selected children from each selected school (30 boys and 30 girls). The schools included both urban and rural areas.

The overall prevelance of epilepsy was 3.3/1000. Highest prevelance of epilepsy 3.56/1000 was observed in the lower middle class and lowest prevelance of epilepsy in the upper class 3.26/1000 (table 1).

According to gender, the prevelance rate was slightly higher

Socio economic status	No. of positive cases	Percentage (%)	Population rate	Percentage/1000
Upper class	1	5.2%	306	3.26
Upper middle class	5	26.3%	1538	3.25
Average middle class	6	31.57%	1791	3.35
Lower middle class	4	21.0%	1123	3.56
Lower class	3	15.7%	912	3.28
Total	19			
Table-1: Impact of Socio-Economic Status on the prevelance of epilepsy				

Sex	No. of Positive Cases (n)	Percentage (%)	Population at risk	Prevalence / 1000
Males	11	57.9%	2880	3.81
Females	8	42.1%	2880	2.77
Total	19			
Table-2: Gender specific prevelance rate of prevelance of epilepsy in school going children in Kashmir valley				

Types of School	No. of Positive Cases (n)	Percentage (%)	Population at risk	Prevalence / 1000
Government	11	57.9%	2880	3.81
Private	8	42.1%	2880	2.77
Total	19			
Table-3: Prevelance of epilypsy in school going childrens in Kashmir Valley according to their schooling status				

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Mother's Occupation	Generalized tonic clonic (GTC)	Partial	Absence	Un-classified/mixed	Total Percentage
Skilled	2 (100.0)	-	-	-	2 (10.5)
Un Skilled	13 (76.5)	2 (11.8)	1 (5.9)	1 (5.9)	17 (89.5)
Table-4: Impact of mothers skill on the percentage of epilepsy in school children (6-16 years) in Kashmir valley					

Fathers Occupation	Generalized tonic clonic (GTC)	Partial	Absence	Un-classified/mixed	Total Percentage
Skilled	6 (100.0)	-	-	-	6 (31.6)
Semi Skilled	5 (100.0)				5(26.5)
Un Skilled	4(50.0)	2 (25.0)	1 (12.5)	1 (12.5)	8(42.1)
Table-5: Impact of fathers occupation on the percentage of epilepsy in school children (6-16 years) in Kashmir valley					

in males (3.81/1000) then females 2.77/1000 (table 2). Out of 19 cases of epilepsy 11 (57.9%) were from Government run schools and 8 cases (42.1%) were from private educational instiutions table 3. In our study 89.5% of children whoses mothers were unskilled had epilypsy while as the children of skilled mothers the percentage of epilypsy was 10.5% (table 4). In our study the fathers occupation had an impact on prevalence of epilypsy. The percentage of epilyspy in children whose fathers were unskilled was 42.1% while as the children whose fathers were semi skilled the percentage of epilepsy was 26.3% (table 5).

DISSCUSSION

The determination of prevalence value and epilepsy-related risk factors make a particular contribution to public health planning.[13] Tellez Zemterno et al determined significant higher prevalence of epilepsy in families with low monthly income, low education levels and facing the problem of unemployment in the research they conducted in Canada.[14] In this study in agreement with the literature, while the prevalence of epilepsy was 13 per 1000 in those with poor economic level, the figures were 7 per 1000 and 3 per 1000 in those with average and good economic level respectively. In our study highest prevalence rate of epilepsy was in lower middle class 3.56 per 1000 we attributed these findings to epilepsy being frequently seen in low Socio Economic group. Soco Economic Status which is associated with several individual risk factors for cardiovascular disease and Alzheimer's disease, many of which like low education and socioeconomic deprivation are risk factors for epilepsy.[15] Holing sherd in USA implied three variables ie education, occupation and residential address for measuring socio ecoonomic status.[16] In our study children of skilled educated mothers, prevalence of epilepsy was 10.5% as compared to children of unskilledmothers 89.3%. In our study mothers education was important risk factor for epilepsy. As socioeconomic status is associated with several individual risk factors, low education and socioeconomic deprivation is also a risk factor for epilepsy. In our study higher prevalance rate of epilepsy 3.81per 1000 was found in govt schools as compared to private schools 2.77per1000. As most of govt schools are located in rural areas reflecting lower income and belong to low socio economic group. Children of females with average income level had 3.3 fold risk of developing epilepsy than those with good income level, those with poor family income level had a 1.6 fold greater risk of developing epilepsy than those with good income level. Guvenes et al found higher prevalance of epilepsy in rural areas as compared to urban areas.[17] Aziz H etal found higher prevalence of epilepsy in rural areas as compared to urban areas.[18] These findings are consistent with our study. Low Socio economic status is a risk factor for development of epilepsy. Low Socio economic status is associated with social and economic deprivation, unemployment and low income which inturn is associated with risk factors like incidence of birth defects,infection and poor nutrition.[19] The true prevalance rates need to be determined with studies involving different socioeconomic stratiam. Maintaining a strong parent child bond helps to promote healthy child development for the children of low Socio Economic Status.

CONCLUSION

The highest prevelance of epilepsy was found in the lower middle class 3.56/1000. The higher percentage of epilepsy was found in children of unskilled mothers 89.5% as compared to skilled mothers (10.5%). In our Study the prevalnence of epilepsy was higher in government run schools 3.81/1000 as compared to the private schools 2.77/1000.

Significant association was found between low socio economic status and prevalence of epilepsy.

Further research is needed to better understand the intricate relationship among socio cultural, demographic risk factors and epilepsy in order to ensure the best possible outcome for individuals with epilepsy.

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