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## Epidemiological study of epilepsy in Faisalabad.

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**ABSTRACT... Objectives:** To explore the preventable cause of epilepsy. **Study Design:** Cross Sectional study. **Setting:** Monthly Epileptic Camp, Mujahid Hospital Madina Town & Psychiatry OPD of Government General Hospital Ghulam Muhammad Abad, Faisalabad. **Period:** Jan to December 2019. **Material & Methods:** 121 epileptic patients participated. A questionnaire was developed. For the analysis of results descriptive statistics was used. **Results:** During the prenatal period 50.2% mothers of patients had checkup by doctor, 40.6% of patients exposed ultrasonic waves. Percentage of normal birth mode was 90.9 and 70.2% of participants born at home. Among patients 89.3% were vaccinated. Daily functioning was disturbed in 29.8%, academics disturbance was in 78.5% patients. Mental illness was present in 62% patients. Mental and physical illness is same in both gender but age is significant risk factor. **Conclusion:** Regarding the causes of epilepsy findings depicts that almost half of the patient's mothers had checkup during their pregnancy. A large number of participants had normal delivery at home. Three fourth of the patients were vaccinated. Around two fourth of the patients had history of physical illness during childhood, fewer patients had history of head injury and family history of epilepsy. Epileptic patient's cognitive functions and abstract thinking is impaired.

**Key words:** Epilepsy, Mental illness, Prenatal, Postnatal.

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## INTRODUCTION

Epilepsy is well known neurological disease. In all over the world between 5 and 10 cases per 1000 persons is average prevalence of epilepsy. According to recent data 1.38 million Pakistani people are suffering from epilepsy.<sup>1</sup> Short disruption in the brain's regular activity results in epilepsy. Usually onset of epilepsy is seen in child and in people older than 60 years of age but it can affect any age or gender. Seizures are more common in the neonatal period than in any other stage and affects approximately 1% of all neonates and these seizures can be epileptic seizures. Mizrah EM. Neonatal seizures and neonatal epileptic syndrome.<sup>2</sup> The visible signs of epilepsy are recognized as seizures. Types of seizures are varying from person to person which depends on the affected part of the brain. Continues and severe epileptic fits can disturb the life of sufferer, however, most people become symptom free

with antiepileptic drugs and they can spend their lives as normal. Anyone of any age gender and race can be affected by epilepsy. It can develop after birth due to complications during delivery, other childhood illnesses; it can develop at the time of puberty, pregnancy, and menopause and with other neurological diseases.<sup>3</sup> Epilepsy is one of the most common chronic conditions affecting women. Although the prevalence of epilepsy and treatment approaches are similar for women and men, women are more likely to experience seizure patterns related to hormonal cycles and are at risk of reproductive alterations and pregnancy complications.<sup>4</sup>

A study shows that, sometimes onset of epilepsy in seen among parents who have genetic or structural predisposition to epilepsy, not triggers epilepsy after vaccination, however in the children the possibility of febrile seizures is

dramatically increasing after taking vaccination.<sup>5</sup> Another study indicates that there are chances of febrile seizure on the day of DPT vaccine and 8-14 days after MMR vaccine.<sup>6</sup> Another study indicated that the etiology varies with age. Birth trauma, birth asphyxia, central nervous system infections are common in neonate and infancy whereas head trauma, brain tumor, stroke, infections are common causes in middle aged and elderly.<sup>7</sup> Birth asphyxia is one of the most important causes of neonatal brain injury whose incidence ranges from 3.7 to 9 per thousand deliveries in the west. In developing countries it is considerably higher because of negligible antenatal care and poor perinatal services.<sup>8</sup> Further studies indicated that epilepsy has various impacts on the lives of both genders but female epileptic patients are more likely to suffer from psychological and physical illness. Most epileptic females become the victim of other mental and physical illness due to ignorance, stigma, lack of awareness regarding management of seizures, and myths. Different false believes regarding cause of epilepsy have impact on the physical and mental health of individuals with epilepsy in developing countries.<sup>9</sup> One more study highlights that epileptic women have more chances to suffer from physical diseases due to epilepsy like sex steroid hormones disturbances and It may have adverse effect on their reproduction.<sup>4</sup> Epilepsy in temporal lobe origin is the main cause of premature menopause and ovarian failure. A survey results shows that 2 out of 50 epileptic women had an onset of menopause before age 40.<sup>10</sup> Thousands of studies were conducted by world health organization to find out the impact of epilepsy on mental and physical health of patients. Findings of these studies indicated that 0.5% diseases developed due to epilepsy. Epileptic patients have to face many difficulties regarding diagnosis, nature, place and time of the seizure. These factors are major contributors in the worse mental health of epileptic patients. Various researches find out that epileptic patients have poor quality of life and more psychological problems as compared to other disable persons.<sup>11</sup> A study is conducted in Saharan Africa highlights that risk of mental illness such as depression is high among epileptic patients. Findings of

this study suggested that we have to pay more attention to psycho-educate and provide proper guideline to epileptic patients regarding their diseases. It may be helpful to reduce stigma.<sup>12</sup>

The complex interrelationships among the psychological and physical variables related to living with epilepsy have not been well examined in Asian countries. Therefore, the purpose of this research is to identify the psychosocial problems commonly associated with epilepsy which allows for better identification of interventions that are more likely to improve the quality of life of such people. The present study was undertaken to examine the prenatal and postnatal causes of epilepsy, age and gender differences on mental and physical illness due to epilepsy.

## MATERIAL & METHODS

The cross-sectional study was conducted from Jan to December 2019; sample was collected at attending free epilepsy camp in Mujahid Hospital Madina Town Faisalabad and psychiatry OPD of government General hospital G.M Abad Faisalabad. The standard questionnaire was developed according to literature which assessed the possible prenatal, postnatal contributing factors of epilepsy as well as its impact on mental and physical health of epileptic patients. The data was collected from 121 epileptic patients. Participants were gender and age wise categorized. For the analysis of the data descriptive statistics, frequencies and cross tabulation was used.

### Inclusion Criteria

- Diagnostic patients of epilepsy.
- Patients between aged 12- 50 years.

### Exclusion Criteria

- Patients with any other neurological disease.

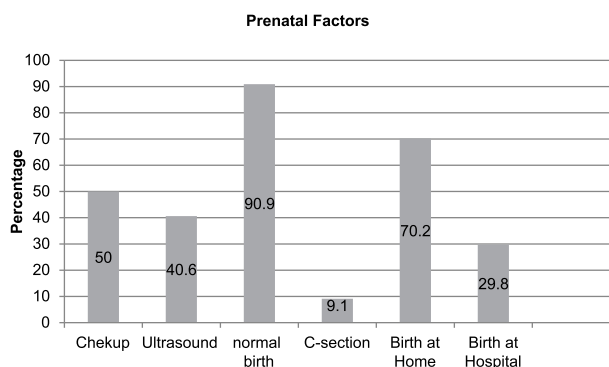
## RESULTS

Majority of participants (90.1%) were residents of Faisalabad. A total of 121, 64.5% female and 34.5% male epileptic patients participated in the study. The mean age of the participants was 23.43. Unmarried participants were 76.9%, Illiterate were 33% and 55.4% patients were unemployed.

Regarding the possible causes of the epilepsy, during the prenatal period 50.2% mothers of patients had checkup during their pregnancy, 40.6% patients exposed ultrasonic waves out of this 13.2% expose these waves single time and 27.3% had more than once. Percentage of normal birth mode was 90.9 and 70.2% participants born at home.

Prenatal Causes	Frequencies	Percentages
Check up	60	50
Ultrasound	49	40.6
Normal birth	110	90.9
C-section	11	9.1
Birth at home	85	70.2
Birth at hospital	36	29.8

**Table-I. Showing the possible prenatal causes of Epilepsy**

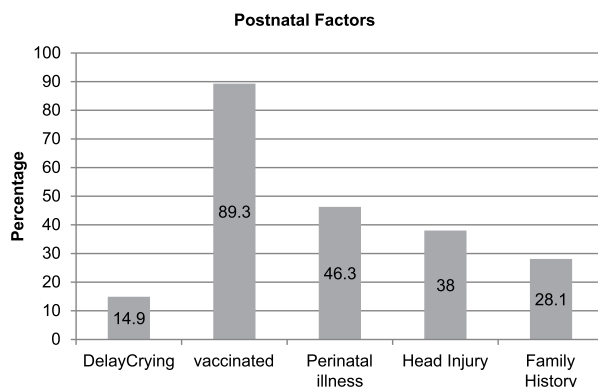


**Figure-1. Showing the possible prenatal causes of Epilepsy**

About possible postnatal contributing factors of epilepsy 14.9% respondents had delay crying, 89.3% patients' vaccinated, 46.3% and 38% participants had history of perinatal illness and head injury respectively. Moreover, 28.1% patients had family history of epilepsy.

Postnatal Causes	Frequencies	Percentages
Delay crying	18	14.9
Vaccinated	108	89.3
Perinatal illness	56	46.3
Head injury	46	38
Family history	34	28.1

**Table-II. Showing the possible postnatal causes of Epilepsy.**



**Figure-2. Showing the possible postnatal causes of Epilepsy.**

In mostly patients age of the first fit was 1 month – 5years. The percentage for this time period was 32.2% and 25% suffered from epilepsy during the age of 11-20years.19.2% patients had this illness in the age of 6-10years and 14.2% in the age of 21-30years. Only 9.2% patients had epilepsy by birth.

Findings of this study indicate that 29.8% patient's daily functioning and 78.5% patient's study disturbed due to epilepsy. Comorbidity of other physical illness was 25.6% and mental illness was 62%. Epileptic patients have great risk to suffer from mental illness as compare to physical illness.

Furthermore, there was not significant gender difference to suffer from mental illness due to epilepsy but the prevalence of physical illness due to epilepsy was 27.9% in males and 24.7%. It is slightly high in males than females.

Gender of the Participants	Mental Illness		Physical Illness	
	F	%	F	%
Male	27	62.8	12	27.9
Female	47	62.3	19	24.7

**Table-III. Showing the gender differences on mental and physical illness**

Regarding the age difference on mental and physical illness due to epilepsy, the frequency of mental and physical illness among epileptic patients was increased with the age but the young adults had less percentage 22.2% to suffer from other disease due to epilepsy as compare to

other age groups.

Age of the Participants	Mental Illness		Physical Illness	
	F	%	F	%
12-18 years	26	55.3	12	25.5
19-30 years	31	63.3	11	22.2
31-40 years	13	72.2	6	33.3
41-50 years	5	83.3	2	33.3

**Table-IV. Showing the age differences on mental and physical illness**

## DISCUSSION

The present study was conducted to explore the preventable prenatal, postnatal causes of epilepsy and highlighted its impact on the life of patients. Findings of the literature showed that during the normal delivery by unprofessional or untrained hands brain injury and birth asphyxia occurred which may become a cause of life long mental or physical disability including epilepsy.<sup>13,14,15,16</sup> According to findings of present study epilepsy may be an outcome of brain injury during normal birth because most of the respondents had normal birth at home. So health care management should provide awareness to mid wives or daie regarding the consequences of critical birth as prolonged labour, cephalopelvic disproportion, Diabetic mother and Eclampsia during birth at home. It is recommended that trained personnel and neonatal resuscitation equipment should be made mandatory in all maternity homes/hospitals. Previous studies indicated a relationship between epilepsy and vaccination<sup>17</sup>, so most of the participants of this study were vaccinated and further studies must be conducted to analyze other contributing factors including role of vaccination and ultrasound exposure. Findings of the current studies have similarity with results of previous studies which indicated that epileptic patients have more risk to suffer from mental illness<sup>18</sup> than physical diseases.<sup>19</sup> Both genders have equal risk to suffer from mental illness due to epilepsy but males have great risk to suffer from physical illnesses than females, these findings have contradiction to the literature, may be due cultural difference. A study found that chronic epilepsy also reported poor general physical health and emotional

functioning.<sup>20</sup> So, adults with epilepsy are more susceptible to develop both physical and mental illness.

Sample of the present study was selected only from the one city and two hospitals it might limit its power of generalization on the epileptic patients in all over the country. It must be conducted in other cities to explore further. Secondly, we could not verify information told by patients.

## CONCLUSION

Results of this study indicate that normal birth mode especially birth at home have great risk to suffer from epilepsy. Exposure of ultrasound and Vaccination may be risk factors of epilepsy. There is a strong need to conduct more comprehensive researches to explore the role of these factors. Epileptic patient's abstract thinking is more impaired than daily living activities. Most of the patients sufferer from mental illness as compare to physical illness due to epilepsy. Although male and female patients had equal risk to suffer from other mental and physical illness due to epilepsy and male patients are more prone to suffer from physical illness than females. More over risk of mental illness due to epilepsy increased with age.

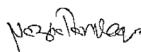




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3	Nazir Ahmad	Proof reading.	
4	M. Numan Akram	Review.	
5	Hafiz Amjad Hussain	References collection.	
6	Amna Gulam Rasool	Data collection and data analysis.	