



TO FIND OUT THE DIFFERENCE IN AGE, GENDER and EDUCATIONAL STATUS OF PEOPLE WITH TEMPORAL LOBE EPILEPSY IN ANXIETY

Dr. Manish Kumar Meel

Assistant Professor, Department of Psychiatry Saraswati Medical College Unnao (U.P.)

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Corresponding author: Dr. Manish Kumar Meel

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Abstract

Background: Neurological diseases in India contribute to the huge morbidity rate and prevalence of epilepsy among adults from 1.2 to 11.9 per 1000 population and the reported incidence of epilepsy in India vary from 0.2 to 0.6per population. Epilepsy is one among the disorders which is significantly associated to have psychological and social consequences for everyday living. Hence there is a huge need for research in exploring mental health management strategies. Epilepsy affects biological, psychological and cognitive features and influences the quality of life. Epilepsy is a syndrome with complex and multiple components involved. People with any age can be affected with epilepsy.

Material and methods: This study was conducted in the dept. of Psychiatry. People diagnosed with epilepsy after a clinical examination by the Neurologist after confirmatory diagnostic investigations for temporal lobe epilepsy were selected for the study. People with temporal lobe epilepsy are screened to assess the level of memory, anger, anxiety and quality of life. Sample size is determined assuming 95 % confidence interval and margin of error (E =1)1%. Literature revealed high effect size for psychotherapy with cognitive behaviour therapy and memory training in people with epilepsy.

Result: The mean value of people with temporal lobe epilepsy in overall anxiety before and after anxiety management training is 48.63 and 37.75 respectively and SD is 11.03 and 8.62 respectively. The t - value is 6.16 is found to be significant. This shows that there is significant reduction in overall anxiety after the memory training program.

Conclusion: The data of this study suggest that there may be no gender difference in the prevalence of epilepsy comorbidity of anxiety and depression, but gender discrepancy plays a significant role in the incidence of psychiatric comorbidities in epilepsy. There is a significant increase in memory and quality of life after memory training and quality of life enhancement program; significant decrease in anger and anxiety after anger and anxiety management program for people with temporal lobe epilepsy.

Keywords: Temporal Lobe, Epilepsy, Anxiety and Educational status

Introduction

Neurological diseases in India contribute to the huge morbidity rate and prevalence of epilepsy among adults from 1.2 to 11.9 per 1000 population and the reported incidence of epilepsy in India vary from 0.2 to 0.6per population. Epilepsy is one among the disorders which is significantly associated to

have psychological and social consequences for everyday living. Hence there is a huge need for research in exploring mental health management strategies. Epilepsy affects biological, psychological and cognitive features and influences the quality of life. Epilepsy is a syndrome with complex and multiple

components involved. People with any age can be affected with epilepsy. There is also genetic component involved. People with history of childhood seizures are under higher risk of developing seizure during adulthood. Sleep deprivation, injury, alcohol are well known causes of epilepsy sometimes the etiology is unknown.¹

Epilepsy is defined as an intermittent derangement of the nervous system due to “an excessive and disorderly discharge of cerebral nervous tissue on muscles.” The history of defining epilepsy goes way back from 400 B.C. Jackson (1870) quoted Epilepsy as recurrent seizures. It is an automatic repeated action due to increased electrical potential in brain.² International league against epilepsy (2014) developed an operational definition as it confirms the diagnosis of epilepsy if a person has to meet the following conditions: a) at least two unprovoked (reflex) seizures occurring greater than 24 hours apart, b) One unprovoked seizure (reflex) and a probability of further general seizure recurrence after two unprovoked seizures, occurring over next 10 years. c) Epilepsy is considered to be resolved for individuals who had age dependent epilepsy syndrome but are now past the applicable age or those who have remained seizure free for the last 10 years or with no seizure medicines for the last 5 years. Classification based on the international classification, seizure is of two types namely generalized and partial unclassified. Simple partial seizures occur with impaired consciousness. Complex partial seizures occur with intact awareness and absence status with stupor with minor myoclonic manifestations. Types of epilepsy can also be classified based on the origin of seizures. Temporal lobe epilepsy is a type of epilepsy originating from the temporal lobe. Most common type of epilepsy is originating from temporal lobe is of complex partial seizures.³

Characteristics of Epilepsy

International League Association for Epilepsy classification indicates following clinical features as symptoms of seizure: Altered awareness, confusion, disorientation, memory disturbances, anxiety, dysphoria, hallucinations and paranoid syndromes. The physiological causes of epilepsy are head injury or surgery, Psychiatric drugs, Multiple sclerosis, Infections, Stroke and Developmental disorders.

Krishnamoorthy (2007)² found that people with seizure disorder may also have psychiatric disorders, cognitive dysfunctions, behavioural problems and anxiety. Blumer (2000) coined a term Interictal dysphoric disorder characterized by eight key symptoms. They are as follows: a) Depressive symptoms – Depressed mood, anergia, pain and insomnia, b) Affective symptoms – Fear and anxiety, c) Specific symptoms – Euphoric moods and paroxysmal irritability. Dysphoria is described as periodicity of mood changes, irritability, aggressive behaviour outbursts.³

The physiological causes of epilepsy are head injury or surgery, Psychiatric drugs, Multiple sclerosis, Infections, Stroke and Developmental disorders. Most often it can be idiopathic. Physiological factors include weakness of the limbs, motor retardation, delayed milestones, hemiplegia, nystagmus, difficulty in speech, writing and movement. Psychological factors include altered emotional state, personality disorders, depression, anger and anxiety associated symptoms, poor cognition. Stigma and low self-esteem have shown to be low in people with epilepsy. Sleep deprivation also influences quality of life of people with epilepsy. Socio-cultural factors include reduced social activity, increased dependency, increased expenses towards medications and seizure management. Mood swings, depression, aggression and irritability are also involved in epilepsy due to the involvement of amygdale and hippocampus in this type of epilepsy. Anticonvulsant is also with the effects of anxiety and insomnia. Stress, marital

conflicts and financial dependency were added factors of epilepsy.⁴

MATERIAL AND METHODS

This study was conducted in the dept. of Psychiatry. People diagnosed with epilepsy after a clinical examination by the Neurologist after confirmatory diagnostic investigations for temporal lobe epilepsy were selected for the study. People with temporal lobe epilepsy are screened to assess the level of memory, anger, anxiety and quality of life. Sample size is determined assuming 95 % confidence interval

and margin of error ($E = 1$)1%. Literature revealed high effect size for psychotherapy with cognitive behaviour therapy and memory training in people with epilepsy. Total sample size was 50. Samples were chosen such that odd number as experimental and even number as control groups of each 25. The samples are grouped in to two groups in seven demographic dimensions namely age, gender, education, employment, marital status, income group and geographical location.

RESULTS:

Table 1: shows the Mean, SD and t - value and the level of significance between 21 to 30 years and 31to 40 years people with temporal lobe epilepsy in Anxiety.

Dimensions	Age group	N	Mean	SD	t-value
State Anxiety	21-30	28	24.55	6.12	0.47 N.S
	31-40	22	23.98	4.92	
Trait Anxiety	21-30	28	24.32	5.73	0.54 N.S
	31-40	22	23.48	5.87	
Overall Anxiety	21-30	28	45.99	10.48	0.31 N.S
	31-40	22	50.12	11.99	

Table - 1 shows the mean difference, standard deviation, t - value and the level of significance. In overall anxiety, the mean value of 21-30 years and 31-40 years people with temporal lobe epilepsy is 45.99 and 50.12 respectively. The standard deviation between 21-30 years and 31-40 years people with temporal lobe epilepsy is 10.48 and 11.99 respectively. The t - value is 0.31 is not significant. This shows that there is no significant difference between 21-30 years and 31-40 years people with temporal lobe epilepsy in overall anxiety.

Table 2: shows the Mean, SD and t - value and the level of significance between Men and Women with temporal lobe epilepsy in Anxiety.

Dimensions	Gender	N	Mean	SD	t-value
State Anxiety	Men	24	23.16	7.12	0.42 N.S
	Women	26	23.73	5.73	
Trait Anxiety	Men	24	24.84	5.92	1.12 N.S
	Women	26	22.48	6.87	
Overall Anxiety	Men	24	47.63	11.48	1.26 N.S
	Women	26	48.12	11.66	

Table - 20 shows the mean difference, standard deviation, t - value and the level of significance. In overall anxiety, the mean value of Men and Women with temporal lobe epilepsy is 47.63 and 48.12 respectively. The standard deviation between Men and Women with temporal lobe epilepsy is 11.48 and 11.66 respectively. The t - value is 1.26 is not significant. This shows that there is no significant difference between Men and Women with temporal lobe epilepsy in overall anxiety.

Table 3: shows the Mean, SD and t - value and the level of significance between Non-Graduates and Graduates with epilepsy in Anxiety.

Dimensions	Qualification	N	Mean	SD	t-value
State Anxiety	Non-Graduate	38	24.28	5.12	0.28 N.S
	Graduate	12	24.96	5.73	
Trait Anxiety	Non-Graduate	38	23.14	5.42	0.18 N.S
	Graduate	12	23.92	6.27	
Overall Anxiety	Non-Graduate	38	48.63	11.03	0.16N.S
	Graduate	12	47.50	11.62	

Table – 3 shows the mean difference, standard deviation, t - value and the level of significance. In overall anxiety, the mean value of Non-Graduates and Graduates with epilepsy is 48.63 and 47.50 respectively. The standard deviation between Non-Graduates and Graduates with epilepsy is 11.03 and 11.62 respectively. The t - value is 0.16 is not significant. This shows that there is no significant difference between Non-Graduates and Graduates with epilepsy in overall anxiety.

Table 4: showing the Mean, SD and t - value with anxiety management training program for people with temporal lobe epilepsy in Anxiety.

Dimensions	Intervention	Mean	SD	t-value
State Anxiety	Before	24.28	5.12	6.09**
	After	18.27	5.63	
Trait Anxiety	Before	23.14	5.42	5.78**
	After	16.98	5.27	
Overall Anxiety	Before	48.63	11.03	6.16**
	After	37.75	8.62	

Table – 4 shows the mean difference, standard deviation, and t - value before and after anxiety management training program for people with temporal lobe epilepsy in anxiety. The mean value of people with temporal lobe epilepsy in overall anxiety before and after anxiety management training is 48.63 and 37.75 respectively and SD is 11.03 and 8.62 respectively. The t - value is 6.16 is found to be significant. This shows that there is significant reduction in overall anxiety after the memory training program.

DISCUSSION:

Epilepsy is a complex syndrome with multiple disorders involved in it. It is a combination of neurological and mental health problems as a result of involuntary jerks, automatisms, movement and altered consciousness resulting from an abnormal wave pattern from the

brain. Though the medications can support the reduction of frequency sometimes it remains uncontrolled. The seizure attacks influence the cognition, psychological and social wellbeing of the individual. The role of psychological interventions like psychotherapy can supplement the management of epilepsy.

Anxiety prevalence was more among men than women and between the average age group 21 and 35; there were no differences between anxious and non-anxious patients with epilepsy, regarding gender, marital status, or economical activity but a significant relationship with educational degree.⁴ Rijckevorsel (2008)⁵ explored the cognitive problems related to epilepsy syndromes. It was observed that the complaints predominant were mental slowness, attention and memory deficits.

Anxiety and depression had found to influence memory in other studies by Hermes et al., (2008).⁶ Cognitive rehabilitation enhances memory especially in verbal learning and naming tasks post-surgery among people with temporal lobe epilepsy (Christoph (2013) and Helmstaedter (2008)).^{7,8} Behavioural treatment approach and Electroencephalogram biofeedback when combined with medical approach helps in evidence based epilepsy management.

Cognitive rehabilitation and enhancement of psychological wellbeing needs more scientific studies.⁹ Reyner et al., (2010) found anxiety related to memory problems. Herfuth (2010)¹⁰ studied the impact of hippocampal and temporal cortical lesions on remote autobiographical memories in temporal lobe epilepsy.

Maccallum (2011)¹¹ studied about the effect of cognitive behaviour therapy on memory. He found that after a 10 week cognitive behaviour therapy program there was a reduction in symptoms and increase in specific retrieval cues. Rehabilitation of epilepsy includes memory training program, cognitive behaviour therapy, rational emotive therapy, relaxation techniques and counselling.

Educational status correlates with level of cognition showing better memory among educated people with epilepsy, especially memory at the level of primary education.¹² Hence the present study population was categorized as graduates above 12 years of education and non-graduates below the level of 12 years but completed 10 years of education.

CONCLUSION:

The data of this study suggest that there may be no gender difference in the prevalence of epilepsy comorbidity of anxiety and depression, but gender discrepancy plays a significant role in the incidence of psychiatric comorbidities in epilepsy. There is a significant increase in memory and quality of life after memory training and quality of life

enhancement program; significant decrease in anger and anxiety after anger and anxiety management program for people with temporal lobe epilepsy.

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