

Differential efficacy of two psychosocial therapies in the treatment of psychopathology associated with epilepsy among selected patients at federal medical centre, Owo, Nigeria

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Abstract

Introduction: Epilepsy is a common medical and social disorder or group of disorders with unique characteristics. It has been postulated that there is a relationship between behavioral, physiological and psychological states and probability of seizure occurrence. Therefore, this study examined the efficacy of Rational Emotive Therapy and cognitive restructuring on the reduction of psychopathology associated with Epilepsy. **Methodology:** A 3 x 2 factorial experimental design was adopted in testing two (2) null hypotheses. Ninety (90) Epileptic patients were randomly selected and administered with the therapeutic packages for a period of 7 weeks. The respondents were divided into 2 experimental and one control groups. Washington Psychosocial seizure inventory (WPSI) was the only instrument used. **Results:** Results indicated that subjects exposed to treatment performed significantly better than control group on the reduction of Psychopathology associated with Epilepsy. The two treatment strategies were equally effective in fostering the reduction of Psychopathology associated with epilepsy. Female subjects in the two treatment condition excelled better than their male counterparts on the reduction of psychopathology of Epilepsy. **Conclusion:** It was concluded that mental health/psychiatric nurses should always remember to accompany the use of drugs with psychotherapy so that the patient will be aware of psychopathology associated with the illness. This will prevent them from developing serious psychopathology.

Key words: Psychosocial Therapy, Rational-Emotive Therapy, Cognitive-Restructuring, Psychopathology.

Introduction

Epilepsy is a common medical and social disorder or group of disorders with unique characteristics. Epilepsy is usually defined as a tendency to recurrent seizures. The word "Epilepsy" is derived from Latin and Greek words for "seizure" or "to seize upon" this implies that epilepsy is an ancient disorder, indeed, in all civilizations it can be traced as far back as medical records exist. In fact, epilepsy is a disorder that can occur in all mammalian species, probably more frequently as brains have become more complex. Epilepsy is also remarkably uniformly distributed around the world. There are no racial, geographical or social class boundaries. It occurs in both sexes, all ages,

especially in childhood, adolescence and increasingly in ageing populations [1].

It has been postulated that there is a relationship between behavioural, physiological and psychological states and the probability of seizure occurrence. Epilepsy is often associated with anxiety, depression, behavioural problems and cognitive dysfunctions [2 & 3]. These co-morbidities may reflect a common single cause or be due to the stigma and social handicaps associated with epilepsy, or a combination of the both psychological interventions such as psychotherapy, individual, group or family counseling; progressive relaxation therapy, and cognitive behavior therapy have been used to treat psychopathology associated with epilepsy. According to anecdotal reports, such

Manuscript received: 20th Oct 2015
Reviewed: 4th Nov 2015
Author Corrected: 10th Nov 2015
Accepted for Publication: 22nd Nov 2015

treatments not only alleviate anxiety, depression and behavioural problems but also reduce the frequency of seizures. Epileptic seizures have been known to be precipitated by psychological triggers (internal precipitants) such as stress, anxiety, anger and emotions, as well as by mental tasks and thought [4]. In reflex epilepsies such as musicogenic, photogenic, movement induced, eating or reading epilepsy, external factors may precipitate a seizure. Self-induction of seizures by some people with epilepsy (waving a hand in front of the eyes or blinking to induce photosensitive seizure) provide evidence that some people are aware of stimuli that precipitate their seizures. There are anecdotal reports of people with epilepsy using behavioural methods to avoid seizures for example an individual may recognize precipitating factors or prodromal symptoms of a seizure and initiate countermeasures. Hence, the question arises as whether psychological and behavioural methods can be used to treat epilepsy [5,6,7,8].

The broad aims of psychological approaches for treating epilepsy include; (1) increasing the seizure threshold by modulating electroencephalographic (EEG) activity or altering the level of arousal; (2) modulating seizure precipitating factors and (3) preventing the spread of epileptic activity and thus the generalization of the seizure. The psychological methods of treatment of epilepsy that have been experimentally studied included firstly, reward management consisting of overt reward, covert reward, denial of reward, punishment programmes and relief avoidance; secondly, self-control strategies that allow the individual to gain control of seizures activity by using cognitive processes comprise of [11-15].

- (a) Self (patient) identified strategies to inhibit seizure activity.
- (b) Relaxation (progressive muscle relaxation).
- (c) Desensitization to the occurrence of a seizure by exposure to seizure provoking situations
- (d) Avoidance of seizure precipitating stimuli
- (e) Psychotherapy individual group or family and
- (f) Autohypnosis.

Thirdly, psychophysiological approaches have been attempted and include:

- (a) Classical conditioning, habituation and extinction of seizure precipitating factors.
- (b) EEG bio feedback training to modulate 12 to 16 hz sensorimotor rhythm or alpha activity or slow cortical potentials and;

- (c) Diaphragmatic breathing with end-tidal percent carbon dioxide (CO₂) bio-Feed-back.

Fourthly, are miscellaneous approaches such as stress-management programs, physical training neck or body massage, assertive? Therapy, rational emotive therapy, psychotherapy, and counseling pertaining to the vocational, educational genetic and marital problems of the individual. A fifth approach is a combination of the above measures individualized to a particular individual. Helgester found significant differences between the treatment groups for the three (3) major subscales of the 50 items Sepulveda epilepsy educational (see) true-false list. The treatment group demonstrated a significant increase in overall understanding of epilepsy a significant decrease in fear of seizures and significant decreases in hazardous medical self-management practices. Serum antiepileptic drug levels indicated better drug compliance in the treatment group. There was no statistically significant difference between treatment and control groups for the WPSI, except that control groups level of adjustment appeared to decrease over the course of the trial. Lewis found statistically significant improvements in the treatment group for participants' knowledge about epilepsy, specifically regarding what not to do during a seizure.

Dahl [12] found a sustained remission in the median seizure index for the behavioural modification group at the end of one year and at eight year follow up while in the two control groups there was an increase in seizure index at the end of one year [15,16,17]. It was reported that at the end of one year, five of the 10 participants in the acceptance concomitant therapy (ACT) group and four of the eight in the yoga group were seizure free at the end of trial. A 50% or greater reduction in seizure frequency was found in nine 9, 10 participants in the ACT group and seven or eight participants in the yoga group. In a study of the use of CBT in people with epilepsy and a depressed effect, Davis 1984 found significantly greater reduction in dysphonia and depression in the treatment group compared to controls. There was also significant decrease in self-reported anxiety, stress and anger. There was increased involvement in social activities for individuals in the treatment group as measured community adjustment questionnaire. Some researchers while using relaxation therapy on seizures, found that only one participant in the relaxation therapy group and none among the control were seizure free [16,17-24].

Objectives

To examine the differential effectiveness of cognitive behavioural and rational emotive therapies on the treatments of psychopathology associated with epilepsy.

Hypothesis: Two null hypotheses were tested which were:-

1. There is no significant difference in the therapeutic efficacy a treatments on the subject in the experimental conditions and the control.
2. There is no significant difference in the therapeutic efficacy of rational emotive therapy and cognitive behavioural therapy.

Methodology

Design: The study was a 3 x 2 experimental design. The experimental groups and control constituted the row and the sex of the subject (male and female) formed the column.

Research Setting: The research study was carried out at the Neuropsychiatric unit 9 Federal Medical Centre Owo, Ondo State, Nigeria. The hospital is one of a Federal Government's Tertiary Health institutions. It has two hundred severity beds space with all cadres of health workers.

Study Population: The study population consists of patients receiving treatment on epileptic seizure. Those were attending the Outpatient Clinic.

Inclusion Criteria: Those patients that were attending Outpatient Clinics. No serious mental illness that warranted being admitted.

Exclusion Criteria: Patients with serious mental illness associated with epilepsy. Patients those were currently admitted in hospital.

Instrumentation: the only instrument use for this study was Washington psychosocial inventory (WPSI). This is a standardized battery of tests to assess the adjustment on various spheres (measure of psychosocial difficulties) in persons with epilepsy, internal consistency, evaluated by split-half reliability shared 0.68 to 0.95 (1980). Test-retest correlations ranged from 0.58 to 0.84 [15].

Sample Size/Sampling Techniques:- In determining the sample size two Yamane formula was used. The

total population of the epilepsy patients that attended Outpatients Clinic between March and August, 2015 was used as the universe which was 153 patients.

$$nf = \frac{N}{1+N(e)}$$
 where

nf= expected population

n= the universe/total population = 153

e= level of precision = 0.05

$$\frac{153}{1+153(e)^2} = 110.6 = 111.$$

Simple random sampling technique was used to select one hundred and eleven (111) respondents however only ninety (90) finally reported for initial meeting. This population consisted of forty five (45) males and forty five (45) females.

Treatment programme: Rational emotive therapy and cognitive restructuring were employed to treat the subjects. The treatment programme lasted for seven weeks (7). The first week was devoted to subject's selection and pre-testing and the subsequent six (6) weeks were devoted to treatment and post testing. Each of the sessions has sessional objectives.

In the second week of the treatment programme, attention was focused on problem solving. The following areas of the problem solving were identified and treated.

1. Awareness that there is problem
2. Problem definition
3. Identification of alternatives
4. Evaluation and choosing of the appropriate alternatives
5. Implementation of the decision
6. Monitoring of the decision outcome.

In the third week of the programme, goal setting was treated. Goal setting involves the following:

- When to set goals operationally
- Stating the focus of goal setting
- Teaching measurement of compliance
- Incorporation of a correction factor

The forth week was devoted to self-appraisal or self-analysis, self- appraisal involves :-

- Identification of psychopathology associated with epilepsy
- Identification of meaning attached to the psychopathology

The fifth week emphasized on sensitization of subject to practice the therapeutic they are exposed to at home.

In the 6th week, subjects were requested to explain any shortcoming from the therapeutic package. This was done in order to disabuse their minds on the use of therapeutic packages.

7th weeks were the administration of post-test and to encourage the subjects to make the therapeutic package their watch words.

The control group- subjects in this group were exposed to any treatment. They were however subjected to pre and post-treatment assessments just live their treatment group counterparts. To compensate this group, there were counselled after the study had been concluded.

Method of Data Analysis: The analysis of covariance (ANCOVA) and “t”-test statistics were employed to analyze the data collected for the study.

Ethical Consideration: The ethical approval was received from the research ethical committee of the institution after the chairman had dialogued with the researchers.

Results

The first hypothesis stated that “there is no significant difference in therapeutic efficacy of treatment on the subjects in the experimented conditions and the control. Tables 1-4 showed the analysis.

Table 1: Unadjustment X-means and adjustment Y-means of subjects psychopathology scores based on treatment (row) and sex (columns).

Treatment package programme	Male n	x - \bar{x}	y- \bar{y}	n	Female x- \bar{x}	y- \bar{y}
Rational Emotive Therapy	15	17.4	136.41	15	82.87	144.47
Cognitive Restructuring	15	81.8	133.75	15	83.07	143.07
Control Group	15	77.0	97.29	15	81.13	95.51

Table 2: Analysis of covariance on subjects psychopathology scores based on treatment (rows) and sex (columns).

Variable	Sources	SS	DF	MS	F	P
Psychopathology associated with Epilepsy	Rows	2471.196	2	1235.598	70.03	0.02
	Columns	40.346	1	40.346	2.29	NS
	Interaction	36.853	2	18.427	1.04	NS
	Within	22230.496	84	17.643		

NS= Not significant

Table 3: Rows and Columns of adjusted-means compared

Rows	Columns 1	2
1	(a) 136.405	(d) 144.469
2	(b) 133.754	(e)
3	(c) 97.29	(f) 95.307

Table 4: comparison of row and columns. Adjusted Y-X's pooled SE computed from least mean square and t-values

Cell	N	LMS	Pooled	SE t values	P
Avsb	30	17.64	1.54	1.72	NS
Avsc	30	17.64	1.54	25.43	< 0.001
Avsd	30	17.64	1.54	5.24	< 0.01
Avse	30	17.64	1.54	4.31	< 0.01
Avsf	30	17.64	1.54	26.56	< 0.001
Bvsc	30	17.64	1.54	23.67	< 0.001
Bvsd	30	17.64	1.54	6.96	< 0.01
Bvse	30	17.64	1.54	6.03	< 0.01
Bvsf	30	17.64	1.54	24.84	< 0.001
Cvsc	30	17.64	1.54	30.63	< 0.001
Cvse	30	17.64	1.54	29.70	< 0.001
Cvsf	30	17.64	1.54	1.16	NS
Dvse	30	17.64	1.54	0.96	NS
Dvsf	30	17.64	1.54	31.79	< 0.001
Evsf	30	17.64	1.54	30.86	< 0.001

In the hypothesis 1, table 1 depicted the analysis showing that hypothesis was rejected because there was a significant difference in the psychopathology score of subjects in the intervention conditions and the subjects in the control group ($f= 70.03, df= 2/84, p< 0.02$).

Further analysis of the data revealed the following results :-

- There was no significant difference in psychopathology scores of male subjects exposed to rational emotive therapy and cognitive restructuring ($t= 1.72, df= 28, p=ns$).
- There was significant difference in the psychopathology scores of male subjects exposed to rational emotive therapy and male subjects in the control group ($t=25.43, df=28, p<0.001$).
- There was significant difference in the psychopathology scores of male and female subjects treated with rational emotive therapy and females subjects exposed to cognitive restructuring ($t=4.31, df=28, p<0.01$).
- Male subjects exposed to rational emotive therapy performed significantly better than female subjects in the control group the measure of psychopathology scores ($t= 26.56, df= 28, p< 0.001$).
- Male subjects treated with cognitive restricting performed significantly better than their male counterparts in the control group on measure of psychopathology scores ($t=23.67, df=28, p<0.001$).
- There was a significant difference in the psychopathology scores of male subjects treated with cognitive restructuring and female subjects exposed to rational emotive therapy ($t= 6.96, df= 28, p< 0.001$).
- There was a significant difference in the psychopathology scores of male and female subjects exposed to cognitive restructuring ($t=6.03, df=28, p< 0.01$).
- Significant difference noticed in the psychopathology scores of male subjects exposed to cognitive restructuring and female subject in the control group ($t= 24.84, df= 28, p< 0.001$).
- There was a significant difference in psychopathology scores of the male subjects in the control group and female subjects to rational emotive therapy ($t=30.63, df=28, p<0.001$).
- Significant difference existed in the psychopathology scores of male subjects in the control group and female subject exposed to cognitive restructuring ($t=29.70, df=28, p<0.001$).
- There was no significant difference in the psychopathology scores of male and female subjects in the control group ($t=1.16, df= 28, p<ns$).
- There was no significant difference in the psychopathology scores of female subjects exposed to rational emotive therapy and cognitive restructuring ($t=0.93, df= 28, p< ns$).

- Female subjects exposed to rational emotive therapy scored higher on measure of psychopathology associated with epilepsy than their counterparts in the control group ($t=31.79$, $df=28$, $p<0.001$).

Hypothesis 2: The second hypothesis stated that “there is no significant difference in the therapeutic efficacy of rational emotive therapy and cognitive restructuring. In testing the hypothesis, the data collected was analysed with four statistical methods (Tables 5-8).

Table 5: Unadjusted X-means and adjusted Y-means of subjects psychopathology scores based on treatment (rows) and sex (columns).

Rows	Male N	$x - \bar{x}$	$y - \bar{y}$	N	Female $x - \bar{x}$	$y - \bar{y}$
Rational emotive therapy	15	79.40	136.23	15	82.87	145.21
Cognitive Restructuring	15	81.88	134.32	15	83.07	143.81

Table 6: Analysis of covariance of subjects psychopathology scores based on treatment (rows) and sex (columns).

Variables	Sources	SS	DF	MS	F	P
Psychopathology associated with Epilepsy	Rows	2.798	1	2.798	12	NS <0.05
	Columns	84.884	1	84.884	3.62	
	Interaction	.074	1	.074		
	Within	19695.119	56	23.447		

NS= Not significant

Table 7: Rows and Columns of Adjusted Y-means compared.

Row	Columns 1	2
1	(a) 136.27	(c) 145.21
2	(b) 134.32	(d) 143.81

Table 8: Comparison of Row and Column Adjusted Y-X's pooled SE computed from least mean square and t values.

Cell	N	LMS	Pooled SE	t value	P
avsb	30	.074	0.099	1.85	NS
avsc	30	.074	0.099	8.84	<0.01
avsd	30	.074	0.099	7.44	<0.01
bvsc	30	.074	0.099	10.79	<0.01
bvsd	30	.074	0.099	9.59	<0.01
cvsd	30	.074	0.099	1.49	NS

NS= Not significant

The result of the second hypothesis indicated that there was no significant difference in the psychopathology scores of subjects exposed to rational emotive therapy and those treated with cognitive restructuring ($f=12$, $df=1/56$, $p=ns$).

Further analysis of data yielded the following results:-

- There was no significant difference in the psychopathology scores of male subjects exposed to rational emotive therapy and those treated with cognitive restructuring ($t=1.85$, $df=28$, $p= ns$).
- There was significant difference in the psychopathology scores of male and female subjects treated with rational emotive therapy ($t=8.84$, $df=28$, $p< 0.01$).
- There was significant difference in the psychopathology scores of male subjects exposed to rational emotive therapy and female subjects treated with cognitive restructuring ($t=7.44$, $df=28$, $p< 0.01$).
- Significant difference existed in the psychopathology scores of male subjects exposed to cognitive restructuring programme and female subjects underwent rational emotive therapy ($t=10.99$, $df=28$, $p<0.01$).
- There was no significant difference in the psychopathology scores of male subjects treated with cognitive restructuring and female subject expose to rational emotive therapy ($t=9.95$, $df=28$, $p<0.01$).
- There was no significant difference in the psychopathology scores of female subjects exposed to rational emotive therapy and cognitive restructuring ($t=1.47$, $df=28$, $p= ns$).

Discussion

This study has established the efficacy of the two therapeutic packages (rational emotive therapy and cognitive restricting programme in enhancing the reduction of psychopathology associated with epilepsy. Subjects in the therapeutic programmes clearly demonstrated the reduction in the manifestation of psychopathology assessed. The finding thus corroborated was posited that there is a relationship between behavioural, physiological and psychological states and the probability of seizure occurrence. Davis laid credence to this finding when he asserted that psychotherapy, progressive relaxation therapy and cognitive behavioural therapy have been used to treat psychopathology associated with epilepsy [15,16,17].

The second hypothesis confirmed that both cognitive restructuring and rational emotive therapy are equally effective in the reduction of psychopathology the finding a miller which stated that cognitive behavioural therapy, family counseling, individual and group psychotherapy have been used to treat psychotherapy associated with epilepsy. This find was corroborated by some authors when they said that there were anecdotal reports of people with epilepsy using behavioural methods to avoid seizures pitchard and wolf opined that an individual may recognize precipitating factors or prodromal symptoms of a seizure and initiate countermeasures inform of behavioural therapy [20,21,23,25].

Implication of The Study for Mental Health/Psychiatric Nursing Practice

Changes in the health care delivery now place psychiatric nurses in a position to provide a broader array of service, drawing on their skills in assessing common medical problems and capability in making

referrals for specialist consultations and where applicable they must apply their knowledge of psychotherapy. They must be flexible in the sense that only those professional that are flexible, able and willing to competently perform a variety of tasks are going to thrive in a managed care environment. Psychiatric nurses are certainly in a position to demonstrate that flexibility if we choose to do so. Psychiatric nurses need to address physical health needs of the chronically mentally ill patients. Psychiatric nurses need to polish their experience and knowledge to be sensitive to their skill in conducting physical assessment as to determine when they must use psychotherapy.

Conclusion

It is concluded that mental health should be involved in making use of eclectic approach towards maintaining health environment teaches others to succeed by mentioning other strategies, exhibit creativity and flexibility through time of change and demonstrate a commitment to continuitylifelong learning for self and others.

Acknowledgement: We appreciate the approval granted to the researchers for making use of the hospital and the patients used for the research. The patients used for the study were highly appreciated.

Funding: Nil. **Conflict of interest:** Nil.

Permission for IRB: Yes.

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How to cite this article?

Bayo L. AJIBADE, Patience, O. AMOO, Zacheus O. OYEWUMI , Wale AKINPELU , Raphael A. AYENI . Differential efficacy of two psychosocial therapies in the treatment of psychopathology associated with epilepsy among selected patients at federal medical centre, Owo, Nigeria. *Int J Med Res Rev* 2015;3(10):1209-1217. doi: 10.17511/ijmrr.2015.i10.220.

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