Chapter-4

The purpose of the present study was to investigate the psychosocial correlates of epilepsy and the effect of Jacobson’s Progressive Muscle Relaxation (JPMR) on intractable seizures. It was decided to administer various tools to measure psychosocial factors amongst the patients having epilepsy for varying durations. Another major objective was to study the effect of relaxation on frequency of seizures of fits and SWB of epileptic patients. Therefore, the following design was employed.

Design

The study was conducted in two phases. For first phase, a multigroup design (having 3 groups) was employed, with two groups of the patients suffering from epilepsy for two different durations, and one control group comprising of the persons having no any other disease.

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epileptic patients</td>
<td>Epileptic patients</td>
<td>Normal subjects</td>
</tr>
<tr>
<td>1-3 months</td>
<td>2-4 yrs</td>
<td>n=100</td>
</tr>
<tr>
<td>n=100</td>
<td>n=100</td>
<td>n=100</td>
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</tbody>
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For second phase, a 3x2 pre-post factorial design (having 3 groups) was employed, with three to be given a modified version of Progressive Muscle Relaxation and 3 groups not to be given relaxation. Of these two groups belonged to the patients suffering from epilepsy for two different durations, and one group was of normal subject.

<table>
<thead>
<tr>
<th>Epileptic patients duration</th>
<th>Normal subjects</th>
</tr>
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<tbody>
<tr>
<td>6-18 months</td>
<td>JPMR 25 NO JPMR 25</td>
</tr>
<tr>
<td>18-36 months</td>
<td>25 25</td>
</tr>
</tbody>
</table>

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Sample

Total Ss studied in this piece of research were 450. For first phase, a total of 300 subjects were selected. 200 subjects were medically diagnosed subjects, having epilepsy of any type e.g grand mal epilepsy, myoclonic epilepsy, grand tonic-clonic epilepsy, temporal lobe epilepsy, and preferably having no any other psychiatric disorder. Each group comprised of 100 patients. The duration of suffering varied for two groups. Group 1 had epilepsy for 1-3 months and Group-2 had epilepsy for 2-4 yrs. These Ss were selected on the basis of availability and readiness to participate in the study from PGIMS Rohtak, and other neurology clinics at Rohtak and various other places. Another group i.e Group-3 was a control group having 100 subjects. All groups were the mixed gender groups with both rural and urban, background having 16 to 40 yrs of age, working and non working patients from various socioeconomic status. The Ss having poor SES or very high SES (as reported by the Ss) were not included in the study. An effort was made to equalize the groups on above mentioned socio demographic variables. Those who were completely unmanageable were not included in this phase. Similarly, only those who volunteered, were taken so as to get a good and complete co-operation while getting the performa's filled. However, even those who were illiterate, but ready to co-operate were included. So the sample was selected on the basis of availability and an effort was made to equalize the socio-demographic variables as much as possible.

For second phase, a total of 150 subjects were selected. 100 (diagnosed) subjects having epilepsy of any type e.g. drug resistant epilepsy, medically refractory epilepsy but having uncontrolled seizures. Each group comprised of 25 patients. The duration of suffering varied for two groups. Group 1 suffered for 6-18 months duration and Group-2 had epilepsy for 18-36 months. These Ss were selected on the basis of availability and readiness to participate in the study from AIIMS, Indian Epilepsy Centre, Stephen Hospital etc. Another group i.e. Group-3 was a control group having 50 subjects. All groups were the mixed gender groups with both rural and urban, background having 16 to 40 yrs of age, working and non working patients from various socioeconomic status. These were be further assigned randomly to form two groups, one for JPMR and another not to be given JPMR. The other 50 Ss were normal healthy controls, put
randomly to form two groups comprising of 25 Ss each to expose or not expose to the modified version of Progressive Muscle Relaxation.

**Measures**

1. Sociodemographic Information.
7. Subjective well being Inventory by Sell and Nagpal, 1992.
8. A pre-record cassette of a modified version of JPMR by Prof. Promila Batra for relaxation therapy

**Description of Measures**

**Negative Affectivity Scale** - has been prepared by Stokes and Levin, (1990). Negative Affectivity is a dispositional trait characterized by a tendency to experience aversive emotional state. According to them high and low negative affectivity individual have quiet dissimilar orientation to themselves others and the world around them. People with high negative affectivity are more likely to report distress, discomfort and dissatisfaction overtime and regardless of the situation, even in the absence of any objective source of stress. Watson and Clark suggested that people low in NA may tend to distort information, fail to recognize negative affect or dissociate themselves from its experience. Although, such defensiveness or responsiveness may be functional in that it allows on to maintain a favorable mood in the face of life’s inevitable frustration, disappointment and problem. The scale is used to tap broadband disposition of negative affectivity, which includes several aspects of negative affective states such as feeling nervousness and tension, negative attitudes towards oneself and low self esteem, negative attitude about others and the world in general. Each of these aspects of negative affectivity can be conceived as bipolar continuum, nervous/ calm; satisfied/dissatisfied with oneself, cynical/trusting of others and pessimistic about the future. Using these four aspects of NA as a conceptual base they have developed a measure of broader construct, although no single existing instruments taps all four aspects which is easy to administer.
upon subjects. The scale has 21 items. Each item has six alternatives such as, disagree strongly to agree strongly. The scores are obtained by reversing the scores on the eight negative items, e.g. 6=1, 5=2, 4=3 etc. and then summing across all 21 items. Items 2, 3, s7, 9, 11, 13, 14 and 16 are the negative stated items. The reliability of the scale was ascertained by the authors. Coefficient alphas, a measure of internal consistency, were .87 and .84 for the 21-item scale for sample 1 and 2, respectively. Eight-five subjects from Sample 2 completed the 21-item scale six week after their original testing. The test-retest correlation was .88, the mean scores for the 21-item NA Scale for the two development sample were 63.15 and 62.81; standard deviations were 17.12 and 15.96; range were 25-104 and 34-107. In the present study Hindi version was used. Hence the reliability of the Indian population was also established on graduate and post-graduate students of college. Test-retest correlation after a gap of testing two weeks were .76 for graduates (a sample of 86 Ss) and .81 for post graduates (a sample of 30 Ss) convergent and discriminate validity are investigated by authors by correlating NA scale with measures of constructs of hypothesized to be related or unrelated to NA based for prior research. The NA scale correlated significantly wath the Taylor Manifest anxiety scale (.64), Eysenck, Neuroticism scale (.60) the Rosenberg self esteem scale (-.74) and the Extraversion scale (.38). NA scale was not found to be related to Remotes Associates Test (.001) and the Shipley Vocabulary Test (-.30).

**Perceived Stress scale** has been developed by Cohen, Kamarck and Mermelstein, 1983. It has been designed to tap the degree to which the respondent found their lives unpredictable, uncontrollable and overloading (Cohen et. al, 1983). It consists 10 items. Each item has five alternatives, e.g. never, almost never, sometimes, fairly often and very often. This scale scores are obtained by reversing the scores on the seven positive items e.g. 0=4, 1=3, 2=2, etc. and then summing across all 10 items. Item 4,5,6,7,9,10 are positively stated items. Adequate reliability and validity for the global measure of Perceived stress scale have been reported by Cohen, Kamarck and Mermelstein, (1983). This scale has correlated in expected directions with a range of self-report and behavioural criteria. The coefficient alpha reliability for the PSS was .84, .85 and .86 in sample 1, 11 and 111.
Learned Helplessness scale - In order to measure general learned helplessness feelings in the present endeavor 15 items learned helplessness scale by Dhar, Kohli and Dhar, (1987) was administered to the sample. Each item was checked as 'right', 'wrong' or 'uncertain. Responses were scored as 3,2,1 respectively. The reliability of the scale was determined by two methods. (a) The dependability coefficient (test-retest) with 7 to 10 days interval on a sample of 100 subjects (16-47 years) is .77. (b) the split-half reliability coefficient, correlated for full length, on a sample of 100 subjects (16-47 years), is .46. Though significant at .01 level, it is low in comparison to the test-retest coefficient, probably because of an unequal number of items in the two halves (number of odd items=8 and number of even items=7). Besides face validity, as all items of the scale are connected with area concerned, the scale has content validity. It is evident from the assessment and ratings of the judges experts that items of the scale are directly related to the concept of learned helplessness. In order to determine validity from the coefficient reliability (Garret, 1977), the reliability index was calculated is being .88.

Jenkins Activity Survey - It is a self reporting, multiple choice questionnaire of 52 items designed to measure the Type-A behavior pattern found to be strongly associated with the risk of coronary heart disease. Form C is the fifth edition of JAS and was published in 1979. It was developed to duplicate the clinical assessment of Type-A behavior by the use of standard psychometric procedures and to make Type-A assessment accessible both to individual practitioners and to researchers conducting large scale industrial and epidemiological studies. The JAS is recommended for the use with employed persons between the ages of 25 and 65. The JAS is scored on four scales: The Type-A scale, which assesses the multifactorial clinical construct of "the coronary prone behavior pattern, Type A." and three factorially independent components of the broad constructs Speed and Impatience; Job involvement; Hard Driving and Competitiveness. For each item that contributes to a scaled score, each response alternative is assigned numerical points based on the product of the item regression weight and the optional scaling weight for that response.

Family Relationship Inventory - has been prepared by Sharry and Sinha, (1977). This inventory discriminates the individuals who feel emotionally accepted, over protected or rejected by their parents. It is especially helpful in studying the types of parenting the Ss
have e.g. accepting, concentrating and neglecting. It contains 150 items classified into three patterns of parent’s behavior including both the parents. Response is given in ‘True’ or ‘False’ whatever is applicable to the subjects. The test-retest reliability was determined on a sample of 100 intermediate students. Its intercorrelation of F.R.I.scales for three sample N=100, criterion-oriented validity and group comparison was done. Its stanine, percentile norms are also available. There is no fixed time limit for the response. Usually 40-50 minutes are taken by the subjects.

Subjective well being Scale- has been prepared by Sell and Nagpal (1992). This inventory contains closed ended 40 items having three alternate choices. It is both in English and Hindi version and measures 11 factors i.e. general well-being positive affect, expectation-achievement congruence, confidence in coping, transcendence, family group support, social support, primary group concern, inadequate mental mastery, perceived ill health, deficiencies in social contact, general well-being negative affect. The test-retest reliability of the inventory is .79 and the validity is .86. A Hindi version of this is already available, which was used by the investigators.

Jacobson's Progressive Muscle Relaxation: - Jacobson’s Progressive muscle relaxation is a technique for reducing anxiety by alternately tensing and relaxing the muscles. It was developed by American physician Edmund Jacobson in the early 1920s. (Jacobson,1938). Jacobson argued that since muscular tension accompanies anxiety, one can reduce anxiety by learning how to relax the muscular tension. PMR entails a physical and mental component. The physical component involves the tensing and relaxing of muscle groups over the arms, legs, face, abdomen and chest. With the eyes closed and in a sequential pattern, a tension in a given muscle group is purposefully done for approximately 10 seconds and then released for 20 seconds before continuing with the next muscle group. The mental component focuses on the difference between the feelings of the tension and relaxation. Because the eyes are closed, one is forced to concentrate on the sensation of tension and relaxation. In patients with anxiety, the mind often wonders with thoughts such as "I don't know if this will work" or "Am I feeling it yet." If such is the case, the patient is told to simply focus on the feelings of the tensed muscle. Because of the feelings of warmth and heaviness are felt in the relaxed muscle after it is tensed, a mental relaxation is felt as a result. With practice, the patient learns how to effectively relax and
EPILEPTIC PATIENTS UNDER RELAXATION THERAPY
EPILEPTIC PATIENTS UNDER RELAXATION THERAPY
deter anxiety when it becomes at an unhealthy level where an anxiety attack would otherwise occur Craske and Barlow (2006). Jacobson trained his patients to voluntarily relax certain muscles in their body in order to reduce anxiety symptoms. He also found that the relaxation procedure is effective against ulcers, insomnia, and hypertension. There are many parallels with autogenic training, which was developed independently. The technique has also proven effective in reducing acute anxiety in people with Schizophrenia. (Chen et.al, 2009). Jacobson's Progressive Relaxation has remained popular with modern physical therapists. The only drawback is that it is a very long procedure of more than 45 minutes. Therefore, a pre-recorded cassette by Prof. Promila Batra (2008) which is a modified shorter version including imagery was used? It takes only 20 minutes.

Procedure

Having selected the sample from PGIMS Rohtak, AIIMS, Indian Epilepsy Centre, Stephen Hospital Delhi etc, all the patients of epilepsy were contacted individually. A rapport was established and subjects were well apprised of the purpose of the study. Those who showed interest and were ready to co-operate were asked to give a written informed consent.

Instructions

Each subject was contacted personally and rapport was established. Now the Ss were again assured of confidentiality. They were all informed about the relevance and implication of the study in very simple words. The present study intended to investigate about various psychosocial causes of epilepsy which influence the patients in different ways. Therefore Ss were told, this study has its major focus on finding out the psychosocial impacts of epilepsy. You can well imagine that any successful treatment or ways of coping can be effectively designed only when the causes and the effects are well known. This study will help us for the same. Therefore, your co-operation is highly esteemed and would help the future generation. I request you once again to be precise in your replies to each question. Please read every question carefully, ask if the meaning is not clear and then reply accurately. With many fold thank I will give you separate questionnaires and the specific instructions one by one.
First of all Ss were given the negative affectivity test.

   While giving the negative affectivity test following instructions were given. "In this booklet 21 item related to several aspects of your emotional states towards yourself, others and the world in general have been given. Every item has six alternatives such as disagree strongly to agree strongly. Please read all these questions carefully and give your appropriate answer by marking of (x) in suitable alternatives. If any question is not understood by you please take my help in understanding the question. Your answer will be kept confidential. There is no fixed time limit for the response". It took approximately 10 minutes to complete this work.

   While giving the perceived stress scale following instructions were given. "In this booklet 10 items related to tap the degree to which you feel that life is unpredictable, uncontrollable and over load etc. have been given. Each item has five alternatives, e.g. never, almost never, sometimes, fairly often and very often. Please read all these questions carefully and give your appropriate answers by marking of (x) in suitable alternatives. If any question is not understood by you please take my help in understanding the question. Your answer will be kept confidential. There is no fixed time limit for the response". Usually 5-10 minutes were taken by the subjects.

   While giving the learned helplessness scale following instructions were given. "In this booklet 15 items have been given, which are related to your reactions to various situations. Every item has four alternatives i.e. positive, negative or uncertain. Please read all these questions carefully and give your appropriate answer by marking of (x) in suitable alternatives. If any question is not understood by you please take my help in understanding the question. Your answer will be kept confidential. There is no fixed time limit for the response". Usually 10 minutes were taken by the subjects to complete this work.

   While giving the Jenkins activity survey following instructions was given. "In this booklet 52 items designed to measure the Type-A behavior pattern have been included. Please read all these questions carefully and give your appropriate answer by marking of (x) in suitable alternatives. If any question is not understood by you please take my help in understanding the question. Your answer will be kept confidential".
There is no fixed time limit for the response. 20-30 minutes were taken by the subjects to complete this work.

While giving the family relationship inventory following instructions were given. "In this booklet 150 items classified into behavior patterns of mother and father have been included. Response is given in ‘True’ or ‘False’. Please read all these questions carefully and give your appropriate answer by marking of (x) in suitable alternatives. If any question is not understood by you please ask. Your answer will be kept confidential. There is no fixed time limit for the response". 40-50 minutes were taken by the subjects to complete this work.

While giving the subjective well-being inventory following instructions were given. "In this booklet 40 questions are related to life aspects as health, family relations and daily life aspects etc. Please read all these questions carefully and give your appropriate answer by marking of (x) in suitable alternatives. If any question is not understood by you please take my help in understanding the question, Please ensure that you have fulfilled all questions. Your answer will be kept confidential". It took approximately 20 minutes to complete this work.

All the subjects were approached individually and the investigator took the personal pain to sit together and get every questionnaire filled from each subjects. The total effective time for one Ss including instructions was two and half hrs. Therefore a gap was given and the patients were already prepared for it. But the questions were filled in one day after a gap of 30 to 45 minutes. Many of the patients however, were illiterate and preferred the oral mode of filling these questionnaires. It took approximately 3 hrs.

In the second experiment experimenter wanted to study the effect of JPMR on intractable seizures. A rapport was established and subjects were well apprised of the purpose of the study. Those who showed interest and were ready to co-operate were asked to give a written informed consent.

Instructions

Each subject was contacted personally and rapport was established. Now the Ss were again assured of confidentiality. They were all informed about the relevance and implication of the study in very simple words. The present study intended to investigate the effect of Jacobson’s Progressive Muscle Relaxation on Intractable Seizures.
Therefore Ss were told. ‘This study has its major focus on finding out the effects of Jacobson’s Progressive Muscle Relaxation on Intractable Seizures in controlling the fits and changes in SWB if any. Your cooperation would help the researchers to design an effective therapy for you and the future generations. Therefore, your co-operation is highly esteemed. I request you once again to be precise in your replies to each question. Please read every question carefully, ask if the meaning is not clear and then reply accurately. Also doesn’t miss the relaxation session. I know it would be difficult to come so frequently, but your cooperation is for a social cause. So please come on each alternate day for relaxation session’.

The patients suffering only from uncontrollable seizures, clinically diagnosed by the physicians were selected, the subject were assessed on the frequency of attacks. To form a baseline (pre-treatment measure) on the basis of information taken from the patients and their relatives. They were given an inventory of subjective well-being. Then the patients were divided in two groups randomly. Group A was the experimental group. In the group relaxation therapy was given to epileptic patients. Group B was control group. This group didn’t receive any therapeutic treatment. For relaxation a wait listed subjects were called in Relaxation chamber and given the instructions related to relaxation therapy. The following instruction was given. “Now I’ll make you lie down on these matrices. You lie down comfortably with a gap of 6 to 10 inches in your feet and a straight body posture. You’ll be asked to concentrate upon your breath and then you’ll be asked to create tension in various body parts and release it. Every pause would mean to continue doing whatever you’re doing at that time. You must concentrate to notice the difference between the tense and the relaxed state. Your job is simply follow whatever you hear through the Cassette/CD. You may keep on enjoying the state of peace and relaxation for as long as you can, at the end.” Now the patients were asked to lie down on the matrices. All the steps were explained for familiarization and relaxation was given. Fifteen sessions of Relaxation were given through a pre-recorded cassette by Batra on alternate days. This training continued irrespective of the fact that whether or not the occurrence of seizure stopped. A constant record of the fits was kept, to know whether the frequency reduced in each subject or the fits stopped completely. After two months follow up, the SWB inventory was administered again to
check the impact of JPMR on the well-being of the subjects. A follow up record of the fits was kept to check whether or not the attacks start occurring again.

After completion of all the questionnaires, the scoring was done with the help of manual. Now the data were tabulated as per the objective of the study and put to analyses. The obtained data were subjected to statistically analysis by using SPSS software. Obtained results have been discussed in the next chapter.