Electromyograph Feedback and Stress Inoculation: Responders and Dropouts

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Abstract

A median split of a sample of 22 clients with anxiety neurosis resulted in 11 'adequate responders' and 11 'inadequate responders' to therapy. Data analysis revealed that those clients who reported less number of initial symptoms were significantly more responsive to the therapeutic programme.

Out of the 25 clients who participated in the therapeutic programme, 2 dropped out. The authors report their observations and offer certain speculations.

Key words -
 EMG feedback,
 Stress inoculation,
 Responders,
 Dropouts

An important aspect of therapeutic research is to study the relationship of socio demographic parameters and clinical characteristics with outcome. If it is possible to predict response to a management programme even before treatment has started, and to define subgroups of clients who respond well or less well, then therapy resources can be used more efficiently and attention can be focussed more productively on the relatively poor responders to therapy. This is an area of more research effort. For this purpose, the authors as part of a study on the efficacy of electromyograph (EMG) feedback and stress inoculation in the management of anxiety neurosis, studied the characteristics of clients who responded adequately to the therapeutic programme.

Analysis of dropouts is a relatively neglected aspect of therapeutic outcome research. Hence the authors chose to report some observations on the phenomenon and offer certain speculations.

Materials and Methods

Sample:

A sample of 25 clients participated in the study. They were selected from among those clients who were referred to the Behaviour Therapy and Biofeedback Unit, National Institute of Mental Health & Neuro Sciences (NIMHANS), from the Out-Patient Centre of NIMHANS.

The criteria for inclusion were as follows:

1. A diagnosis of anxiety state - 300.0, ICD-9 [1].
2. Literacy in either English, Kannada or Tamil languages.
3. Age between 20 - 45 years.

   The criteria for exclusion were as follows:

1. Presence of an additional psychiatric diagnosis.
2. Presence of any medical illness.
3. Presence of anxiety symptoms during marked physical exertion or life threatening situations.
4. Duration of anxiety neurosis of more than 10 years.

Tools

1. Personal Data Sheet (PDS) [2]
2. Symptom Rating Scale (SRS) [2]

Procedure

Each client was first taught to relax using frontalis EMG feedback assisted relaxation [2], [3]. Ten sessions of therapy were spaced over 10 days. Following this, the duration of EMG feedback assisted relaxation was reduced and stress inoculation training (SIT) was incorporated into the treatment protocol. SIT was carried out along the lines of those given by Meichenbaum [4] and Meichenbaum and Deffenbacher [5]. Ten sessions of therapy were spaced over 20 days. The duration of each of the 20 therapy sessions was for about one hour. There were pre-, mid-, and post-therapy assessments to monitor the effects of therapy.

The post-therapy scores of the 22 clients on the SRS was chosen as an index of improvement, based on the empirical evidence that the scores on the scale reflected clients' perception of the degree of distress caused by the anxiety symptoms. The group was divided according to whether each clients score fell above or below the median score. Those clients with scores below the median were designated as 'adequate responders' to therapy and those with scores above the median as 'inadequate responders' to therapy.

The PDS was used to record the demographic data for information on variables such as marital status, age and education. It was also used to record information on symptom duration, number of symptoms reported before commencement of therapy, associated psychiatric features, precipitating factor and prior treatment experience. The groups were compared on these sociodemographic parameters and clinical characteristics so as to isolate differences between them and identify the characteristics of clients who responded adequately to therapy.

Analysis

The data of the 2 groups were compared using student's * test for independent means and Fisher's exact probability test.

Results

The results are shown in Tables I - IV.

Table I depicts the differences between the two groups of adequate and inadequate responders on the variable of marital status.

From Table I, 8 of ;the 'adequate responders' were married and 3 were unmarried. Seven of the 'inadequate responders' were married and 4 were not. Fisher's exact probability test done (P=0.50), revealed no significant differences between the 2 groups on the variable of marital status.

Table I - Comparison of the adequate and inadequate responders on marital status

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Table II depicts the mean differences between the two groups of adequate and inadequate responders on the variables of age and education in years.

From Table II, the mean age of the 'adequate responders' was 34.91 ± 8.58 years and that of the 'inadequate responders' was 31.09 ± 9.30 years. The mean education of the 'adequate responders' was 13.00 ± 3.58 years and that of the 'inadequate responders' was 12.73 ± 4.00 years.

The t values obtained from student's t test for independent means for the variable of age, t=1.01, NS, and for the variable of education, t=0.27, NS, were not significant. The 2 groups were not found to be significantly different from each other on these 2 variables. There was, however, a trend favouring the older and more educated clients towards adequate response to therapy.

Table II - Means and standard deviations of the adequate and inadequate responders on age and education

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Table III depicts mean difference between the 2 groups of adequate and inadequate responders on the clinical variable of duration of symptoms.

Table III - Means and standard deviations of the adequate and inadequate responders on symptom duration

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From Table III, the mean duration of symptoms for the group of 'adequate responders' was 59.18 ± 42.34 months and for the group of 'inadequate responders' was 42.27 ± 34.84 months.

The t value obtained from student's t test for independent means for the variable of duration of symptoms, t=1.03, NS, was not significant. The result indicates that the 2 groups were not significantly different from each other on this variable.

Table IV illustrates the differences between the 2 groups of 'adequate responders' and 'inadequate responders' on the clinical variables of number of symptoms reported at the pre-therapy assessment,

associated psychiatric features, precipitating factor and prior treatment experience.

Table IV - Comparison of the adequate and inadequate responders on initial number of symptoms, associated psychiatric features, precipitating factor and prior treatment experience

NS=Not significant
M.=Mean
SD=Standard deviation
N=Sample size
df=degrees of freedom
S=Significant.

From Table IV, we learn that 8 'adequate responders' reported symptoms in the range of 1-3 and that 3 'adequate responders' reported symptoms in the range of 4-7. Two inadequate responders' reported symptoms in the range of 1-3 and 9 'inadequate responders' reported symptoms in the range of 4-7. Fisher's exact probability test done (P=0.01), revealed a statistically significant difference between these two groups indicating that clients with less number of symptoms at the pretherapy assessment showed adequate response to therapy.

We also see that 2 'adequate responders' reported presence of associated psychiatric features and 9 did not. Three 'inadequate responders' reported presence of associated psychiatric features and 8 did not. Fisher's exact probability test done (P=0.50), revealed no statistically significant difference between these 2 groups implying that these two groups were not significantly different on this variable.

From the table we also learn that 3 'adequate responders' reported presence of precipitating factors and 8 did not. Two 'inadequate responders' reported presence of precipitating factors and 9 did not. Fisher's exact probability test done (P=0.50), revealed no statistically significant difference between these 2 groups implying that these 2 groups were not statistically different on this variable.

Ten 'adequate responders' reported that they had had prior treatment experience (medication) and one reported that he had not. Nine 'inadequate responders' reported that they had had prior treatment experience and 2 reported that they had not. Fisher's exact probability test done (P=0.50) revealed no statistically significant difference between these 2 groups indicating that these two groups were not significantly different from each other on the variable of prior treatment experience.

Discussion

The only variable that had a significant relationship with outcome was the number of symptoms reported before the commencement of therapy. It was found that clients who reported less number of initial symptoms, were significantly more responsive to therapy. Butler and Anastasiades [6], Borkovec and Mathews [7], and Shear et al [8] support the above finding. More research work, is however, needed in order to understand the relationship of sociodemographic parameters and clinical characteristics with therapeutic outcome.

Out of the 25 clients who participated in the therapeutic programme, 2 dropped out. One of them was on a dose of medication and the other was not. The former was a 22 year old male, unmarried Hindu whose mother tongue was Telugu with 5 years of education and working as a tailor. The latter was a 20 year old male, unmarried Hindu, whose mother tongue was Kannada with 10 years of education and working in a small shop.

Both the above clients dropped out of the therapeutic programme during the first phase of therapy much before the inclusion of SIT - one after the ninth session and the other after the sixth session. The former client discontinued because he found no significant improvement in his clinical condition. His expectations of treatment were found to be discrepant with that of the therapist considering that he wanted an immediate and dramatic cure. Pekarik [9] after selectively perceiving the dropout literature concluded that discrepant expectations of clients and therapists regarding the duration and goals of treatment could account for much of the dropout rate and associated problems. In the present study we can infer that there was low discrepant expectations of clients and therapist, considering that the number of dropouts was low. The information provided to the client by the therapist prior to treatment could possibly account for it. The reasons for the dropout of the latter client were not known as he did not report to the unit even on request through a letter.

In an earlier study by Sargunaraj and Kumaraiah [10] on EMG feedback assisted relaxation in anxiety neurosis, the dropout rate was found to be much higher, i.e., 38% against (8%) in the present study. In another study by Barlow et al [11] relaxation training was found to effect greater reductions in generalized anxiety but was also associated with high dropout rates.

Considering that the dropout rate has been low in this study in comparison to those of Sargunaraj and Kumaraiah [10] and dropouts having occurred during the early phase of therapy, one can speculate whether the information provided by the therapist to the clients prior to commencing treatment could have contributed to this. Absence of dropouts after the incorporation of the cognitive behaviural treatment could possibility be due to the additive effect of SIT with EMG feedback assisted relaxation.

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