CHAPTER VI
SUMMARY AND CONCLUSIONS
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Anxiety disorders on the whole impose a heavy burden on health care services. For generalized anxiety, an economic and effective approach remains to be demonstrated.

Relaxation training, one of the therapeutic strategies in behaviour therapy, targets the physiological or somatic manifestation of anxiety. It has been proved to be a useful treatment technique. Systematic work done in evaluating relaxation training has focused on enhancing its effectiveness through the use of biofeedback procedures especially electromyograph or EMG biofeedback with the use of the frontalis as the target muscle.

However, relaxation based treatments themselves may be insufficient in the management of chronic anxiety. The evidence and acknowledgement of the cognitive dimension of anxiety in recent years, bring sharply into focus the meaning of anxiety - something that was essentially ignored in early behaviour therapy.

The cognitive and/or cognitive behavioural interventions have generated much enthusiasm since the mid 1970's. But it is only recently that researchers have turned their attention to the development of a cognitive therapy for anxiety. Stress inoculation training (SIT) is a cognitive behavioural treatment method pioneered by the work of Meichenbaum and his
colleagues in the early and middle 1970’s that paved the way for the development of this cognitive behavioural treatment method.

A two pronged approach in the treatment of generalized anxiety - relaxation therapy for the physiological component and a cognitive therapy for the subjective component could prove more beneficial than either alone. Biofeedback may well be the optimal approach to treating the physiological component. SIT can be used in treating the subjective component. But sufficient research has not gone into the efficacy of SIT in generalized anxiety. The present study is an effort in this direction.

The main objective of the present study was to find out the combined effect of EMG feedback assisted relaxation and SIT in anxiety neurosis on several dependent measures - both psychological and physiological. One of the problems investigated was to examine the effect of only EMG feedback assisted relaxation in anxiety neurosis on the dependent measures. The other was to examine the additive effect of SIT with EMG feedback assisted relaxation in anxiety neurosis on these dependent measures.

It is important to study the relationship of some of the sociodemographic parameters and clinical characteristics of clients with the therapeutic outcome so that therapy
resources can be used more efficiently. Hence the subsidiary objective of the present study was to understand the relationship of some of the sociodemographic parameters and clinical characteristics with therapeutic outcome.

The sample for the study was selected from among those clients who were referred to the Behaviour Therapy and Biofeedback Unit, NIMHANS, from the Out-Patient Centre of NIMHANS. Clients were included in the sample if they had a diagnosis of anxiety neurosis, according to ICD - 9, (WHO, 1978); were literate in either English, Kannada or Tamil languages; and were of age ranging from 20 - 45 years. Those clients who had a medical illness; who had other psychiatric features where a primary diagnosis of anxiety neurosis was difficult to make; who had anxiety symptoms accompanying marked physical exertion or life threatening situations; or whose duration of anxiety symptoms was more than 10 years were excluded from the sample. The main study was conducted after a pilot study was completed. The data for the main study was collected from 22 clients, over a period of 1 year and 6 months.

Each client was first taught to relax using frontalis EMG feedback assisted relaxation. Ten sessions of therapy were spaced over 10 days. Following this, the duration of EMG feedback assisted relaxation was reduced and SIT was incorporated into the treatment protocol. 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 mid-therapy assessment was conducted after the
initial 10 sessions of EMG feedback assisted relaxation. A
follow-up assessment was conducted wherever possible 1
month after termination of therapy to assess the maintenance
of improvement. Subsequent to the first follow-up assessment
the others that were conducted were mainly in the form of
clinical interviews.

The data of the 22 clients who completed therapy were
analysed across the pre-, mid-, and post-therapy assessments
in order to evaluate the effects of therapy. The sample was
subdivided into 'adequate responder' and 'inadequate
responder' groups on the basis of the median score on the
post-therapy scores of the symptom rating scale (SRS) and the
groups were compared on some of the sociodemographic
parameters and clinical characteristics so as to isolate
differences between them and identify the characteristics of
clients who responded adequately to therapy. The clients who
came for the first follow-up assessment and who were
originally classified as either an 'adequate responder' or
'inadequate responder' were compared on the dependent
measures obtained at the post-therapy and first follow-up
assessments in order to isolate differences between them and
understand the trends seen at these assessments.
A qualitative analysis of the follow-up data obtained after the first follow-up assessment, and the dropout data was also done.

Medication as a variable was not found to confound the therapeutic outcome.

EMG feedback assisted relaxation alone could bring about significant decreases in the symptom scores and anxiety as seen on the self-report measures. The therapist rated the clients as being less anxious on the HARS. Clients could acquire feedback control and self-control with EMG feedback assisted relaxation. Though there was a significant decrease in the resting EMG levels, there was no significant decrease in the GSR of the clients. The findings demonstrate an association between muscular relaxation and subjective relaxation with no cross-modality generalization effects.

The additive effect of SIT with EMG feedback assisted relaxation should have brought about significant decreases in symptom scores and anxiety on the self-report measures and the therapist's report measure. It had no significant effect on the electrodermal activity although a trend towards improvement was evident. There was no significant effect on the resting EMG levels nor on the EMG level during therapy when feedback was given. However, the clients experienced a significant reduction in frontalis muscle tension when
feedback was not given to them before the session demonstrating that the additive effect of SIT with EMG feedback assisted relaxation could significantly help in ensuring more self control in the clients.

Using a repeated measures analysis of variance (ANOVA-R), the combined effect of EMG feedback assisted relaxation and SIT resulted in significant decreases in the symptom scores, and anxiety on the self-report measures and as rated by the therapist. Clients demonstrated feedback control, and extra-feedback control or self control. Though there was a significant decrease in resting EMG levels, there was no concommitant change in the electrodermal activity of the clients.

The stress profile obtained from the physiological stress procedure indicated that the cognitive stressor was adequately stressful and that both Galvanic Skin Reflex (GSR) and the EMG were reactive to stress conditions. Clients manifested a mean baseline GSR value lower than the one maintained at the pre-therapy assessment and a diminished reactivity to stress only at the first follow-up assessment. The combined effect of EMG feedback assisted relaxation and SIT should have contributed to this. With regard to the EMG, clients were able to manifest a mean baseline EMG value lower than the one maintained at the pre-therapy assessment and a diminished reactivity to stress at the mid-therapy assessment itself following EMG feedback assisted relaxation only. With the addition of SIT with EMG feedback assisted relaxation,
More improvement was seen and at the first follow-up assessment there was still further improvement demonstrating the beneficial effect of combining EMG feedback assisted relaxation and SIT.

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.

The first follow-up assessment revealed that the 'adequate responders' could maintain improvement and that the 'inadequate responders' could continue to improve. The follow-up assessments subsequent to the first follow-up assessment strengthen the claim that cognitive behavioural treatment methods can result in powerful changes which are general across situations and stable over time. The dropout rate was as low as 8% and the follow-up rate as high as 82%.

The main conclusion of the present study is that a combination of EMG feedback assisted relaxation and SIT is beneficial in the treatment of anxiety neurosis. This finding will be useful in the management of anxiety neurosis. As pointed out earlier, the efficacy of SIT in generalized anxiety has not been researched sufficiently and the present investigation provides strong evidence to its usefulness in the management of the same.
The following are some of the suggestions for future research.

1) Careful specification and separation of both generalized anxiety disorder and panic disorder are essential in order to examine the effects of different treatment components.

2) The relative effectiveness and interaction of both EMG feedback assisted relaxation and SIT can be tested.

3) The relative effectiveness and/or interaction of pharmacological treatments with EMG feedback assisted relaxation and SIT can be systematically researched.

4) The contribution of relaxation induced anxiety to therapeutic outcome can be taken up by future research.

5) The influence of personality characteristics on therapeutic outcome can be examined.