CHAPTER V

DISCUSSION
DISCUSSION

The first consideration in data analysis was to establish the homogeneity of the sample. This was essential as 10 out of the 22 clients studied were also on a dose of medication (benzodiazepines and/or beta-blockers and/or anti-depressants). It is possible that the use of pharmacological agents could have confounded the effects of EMG feedback assisted relaxation and SIT.

In the present study, student's t statistic for independent means computed, revealed that there was no significant difference between the clients with medication and those without on any of the dependent measures at any of the therapy assessments, implying that the sample of 22 clients who completed therapy was homogeneous as regards treatment effects. Hence any significant results obtained from the data analysis of the sample are to be attributed to the effects of EMG feedback assisted relaxation and SIT alone. Considering that the duration of medication usage in clients ranged from 3 to 30 months with a mean of 12.959 months, it is unlikely that the pharmacological agent could have had a confounding effect. Moreover, clients who were using medication were stabilized on them and agreed to continue taking them during the course of therapy. Hence any further improvement should be because of the psychological intervention and not the pharmacological agent.
The literature on the interaction and/or relative effectiveness of pharmacological and psychological modes of treatment in anxiety neurosis is sparse.

Two studies, one by Lavellee et al. (1977) who examined the effects of EMG feedback, diazepam and their combination on clients with chronic free floating anxiety and a more recent one by Lindsay et al. (1987) who studied the relative effectiveness of cognitive behaviour therapy, anxiety management training and treatment by benzodiazepines against a waiting list control for generalized anxiety, revealed that medication could possibly facilitate the acquisition of the adaptive response but could interfere with its maintainence over time. Sargunaraj (1988) in her study on EMG feedback assisted relaxation in anxiety neurosis adopted a statistical control procedure to assess the effects of medication usage. The results of the covariance analysis indicated that the use of benzodiazepines/beta blockers/anti-depressants did not significantly influence the post-therapy psychological and physiological assessment measures implying that the sample of clients who completed therapy was homogeneous as regards treatment effects.

The first problem laid down by the present study was to examine the effect of EMG feedback assisted relaxation only, in anxiety neurosis on the dependent measures.
A Psychological Measures

A1 Self-Report Measures

In the present study, the clients were able to significantly reduce their anxiety symptom scores on the SRS from the pre- to the mid-therapy assessments. This can be attributed to the effect of EMG feedback assisted relaxation only. There is a consensus in the literature providing evidence for this (Raskin et al. 1973; Raskin et al. 1980; Weinman et al. 1983; Libo et al. 1983; Sargunaraj, Kumaraiah and Mishra, 1987; Sargunaraj, Kumaraiah, Mishra and Kumar, 1987; Sargunaraj et al. 1990).

Clients were successful in also significantly reducing their cognitive and somatic anxieties as seen on the CSAQ from the pre- to the mid-therapy assessments. This can also be attributed to the effect of EMG feedback assisted relaxation only.

In the present study, the clients also experienced a significant reduction in their state and trait anxieties as seen on the STAI from the pre- to the mid-therapy assessments. EMG feedback assisted relaxation only had a significant effect on the clients' state and trait anxieties. This is substantiated by the research work of Townsend et al. (1975); Lavellee et al. (1977); Leboeuf et al. (1980); Raskin et al. (1980) and Weinman et al. (1983). Studies by Rupert et al. (1981) and Sargunaraj et al. (1990) also provide
evidence for decreases in trait and state anxieties, respectively.

A2 Therapist's Report Measure

The therapist rated the clients to be less anxious on the HARS from the pre- to the mid-therapy assessments. EMG feedback assisted relaxation only, had a significant effect on the therapist's rating of client anxiety. Studies by Canter et al. (1975); Lavellee et al. (1977); Leboeuf et al. (1980); Lavellee et al. (1982); Libo et al. (1983); Sargunaraj, Kumaraiah and Mishra (1987); Sargunaraj, Kumaraiah, Mishra and Kumar (1987) and Sargunaraj et al. (1990) provide corroborative evidence for this.

B Physiological Measures

B1 GSR

In the present study, there was no significant reduction in electrodermal activity from the pre- to the mid-therapy assessments. EMG feedback assisted relaxation had no significant effect on the GSR of the clients. This finding has been substantiated by earlier work done in the Unit (Sargunaraj, Kumaraiah and Mishra 1987; Sargunaraj, Kumaraiah, Mishra and Kumar 1987; Sargunaraj et al. 1990).

Research on analogue subjects also provide corroborative evidence for the same (Alexander, White and Wallace, 1977; Gatchel, Korman, Weiss, Smith and Clarke, 1978; Fee and Girdano, 1978; Siddle and Wood, 1978; Nielson and Holmes,
In the present study, the clients could significantly reduce their frontalis muscle tension from the pre- to the mid-therapy assessments. This can be attributed to the effect of EMG feedback assisted relaxation only. Researchers like Townsend et al. (1975); Canter et al. (1975); Lavellee et al. (1977); Arnarson et al. (1980); Leboeuf et al. (1980); Raskin et al. (1980); Weinman et al. (1983); Sargunaraj, Kumaraiah and Mishra (1987); Sargunaraj, Kumaraiah, Mishra and Kumar (1987) and Sargunaraj et al. (1990) corroborate this finding. Rupert et al. (1981) on the contrary, assessed the separate and combined effects of EMG feedback and relaxation instructions and found that the 3 treatment conditions did not significantly reduce muscle tension relative to the no-treatment group.

The clients could also significantly reduce their EMG level across the therapy sessions with or without feedback as corroborated by researchers like Raskin et al. (1973); Lavellee et al. (1982) and Sargunaraj et al. (1990), supporting the fact that the clients had acquired feedback control and self control respectively, with EMG feedback assisted relaxation only.

Research on analogue subjects, however, reveal contradictory results. Ohno, Tanaka, Takeya, Matsubara, Kuniya and Komemushi (1978) found a significant reduction in frontalis muscle tension during EMG feedback assisted relaxation. Neilson et al. (1980) on the other hand found no significant reduction.

The effect of EMG feedback assisted relaxation only, gave rise to significant reductions in symptom scores and anxiety on the self-report and therapist's report measures. Research studies on EMG feedback assisted relaxation in clinical anxiety provide strong evidence for an association between muscular relaxation and subjective feeling of relaxation but very few of the analogue studies support this (Coursey, 1975; Leboeuf, 1980b; Heibert et al. 1988; Schandler et al. 1983). Most of them report independence between measures of muscular relaxation and subjective relaxation (Alexander, 1975; Shedivy et al. 1977; Alexander et al. 1977; Neilson et al. 1980; Burish et al. 1981; Shirley, Burish and Rowe, 1982).
The effect of EMG feedback assisted relaxation only, on the physiological measures strengthen the claim that the effect is specific with limited or no cross-modality generalization effects although earlier proponents like Stoyva et al. (1974) conceived of a generalized decrease in arousal.

The second problem laid down by the present study was to examine the additive effect of SIT with EMG feedback assisted relaxation in anxiety neurosis on the dependent measures.

A Psychological Measures

A1 Self-Report Measures

The clients in the present study could significantly reduce their anxiety symptom scores, cognitive and somatic anxiety scores and their state and trait anxiety scores from the mid- to the post-therapy assessments. Results revealed that there was more reduction in the scores from the mid- to the post-therapy assessments than from the pre- to the mid-therapy assessments. These findings can be attributed to the additive effect of SIT with EMG feedback assisted relaxation.

A2 Therapist's Report Measure

The clients were rated to be significantly less anxious by the therapist on the HARS from the mid- to the post-therapy assessments. This can be attributed to the additive effect of SIT with EMG feedback assisted relaxation.
Studies by Watkins et al. (1988); Sokol et al. (1989) and Salkovskis et al. (1991) lend support to the fact that cognitive treatments are efficacious in the treatment of clinical anxiety as evidenced by significant reductions in several anxiety measures. These studies were nevertheless on panic disorder clients and hence the findings have to be taken with some caution. Durham et al. (1987) on evaluating the effects of cognitive therapy versus behaviour therapy in the treatment of chronic anxiety found that though at the end of treatment there was no difference between the treatment conditions in the amount of improvement observed as seen on the psychological measures of anxiety, by the sixth month follow-up there was a trend for the cognitive therapy clients to maintain or improve upon their progress and for the behaviour therapy clients to revert toward their pre-treatment scores highlighting the enduring effects of cognitive therapy. Lindsay et al. (1987) on examining the relative effectiveness of cognitive behaviour therapy, anxiety management training and treatment by benzodiazepines against a waiting list control in generalized anxiety, found that among both the psychological treatment groups, the most significant and consistent changes seen on the psychological measures of anxiety were in the cognitive behaviour therapy group although by a 3 month follow-up, the differences were negligible. Studies by Last et al. (1983) and Ost (1985) in which SIT was used, showed significant reductions on the psychological measures of anxiety. Last et al. (1983) report
that though the measures did not indicate a differential effectiveness between the two cognitive strategies namely SIT and paradoxical intention, the client in their study found SIT more useful, a preference that continued at a 1 year follow-up. Sargunaraj et al. (1991) based on the work of Sargunaraj (1988) found that with an increasing amount of control of muscle tension, the clients can perceive change in state anxiety and in their anxiety symptoms implying that EMG feedback assisted relaxation alone can induce these psychological changes. But the fact, that in the present study there was more reduction in the scores from the mid-to the post-therapy assessments than from the pre- to the mid-therapy assessments on most of the psychological measures, favours the additive effect of SIT.

B Physiological Measures

B1 GSR

In the present study, though the mean GSR value decreased from the mid- to the post-therapy assessments to a value lower than the mean value maintained at the pre-therapy assessment, there was no significant reduction in the GSR. The additive effect of SIT with EMG feedback assisted relaxation had no significant effect on the electrodermal activity although a trend towards improvement was evident.
Studies by Lavellee et al. (1977); Sargunaraj et al. (1990) based on the work of Sargunaraj (1988), claim that there is very minimal change in the frontalis muscle tension after the tenth session of EMG feedback assisted relaxation. Hence any evidence of significant changes after the mid-therapy assessment of the present study, i.e., after 10 sessions of EMG feedback assisted relaxation has to be attributed to the additive effect of SIT with EMG feedback assisted relaxation.

In the present study, although the mean EMG value decreased from the mid- to the post therapy assessments, it was not statistically significant. Across the therapy sessions, i.e., from the eleventh to the twentieth, when feedback was given to the clients, although the mean EMG value decreased, it was not statistically significant. The additive effect of SIT with EMG feedback assisted relaxation had no significant effect on 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 across the sessions of therapy when feedback was not given to the clients before the sessions demonstrating that the additive effect of SIT with EMG feedback assisted relaxation helped in ensuring more self control in the clients. Although the post-session mean EMG values across these occasions of therapy decreased, it was
not found to be statistically significant. The present study lends only some support to the fact that maximum reduction in the EMG level is discernible within the initial 10 sessions of EMG feedback assisted relaxation.

The main objective of the present study was to find out the combined effect of a primarily somatic oriented therapy, namely, EMG feedback assisted relaxation and a cognitive oriented therapy, namely, SIT in anxiety neurosis on several dependent measures. For this purpose a repeated measures analysis of variance (ANOVA-R) across the pre-, mid-, and post-therapy assessments was done.

A Psychological Measures

A1 Self-Report Measures

In the present study, clients were able to significantly reduce their anxiety symptom scores on the SRS across the pre-, mid-, and post-therapy assessments. This can be attributed to the combined effect of EMG feedback assisted relaxation and SIT. Several studies in the literature (Waddell et al. 1984; Barlow et al. 1984; Barlow et al. 1987; Borkovec et al. 1988; Barlow et al. 1989; Michelson et al. 1990; Sheer et al. 1991), in which some form of relaxation training was combined with a cognitive behavioural treatment method substantiate this finding.

The clients were successful in also significantly reducing their cognitive and somatic anxieties on the CSAQ
across the pre-, mid-, and post-therapy assessments. This can be attributed to the combined effect of EMG feedback assisted relaxation and SIT. This has been corroborated again in the studies by Barlow et al. (1984); Borkovec et al. (1987); Borkovec et al. (1988) and Barlow et al. (1989). One isolated study by Woodward et al. (1980) in which relaxation training was combined with SIT, showed a significant reduction in the clients' cognitive anxiety.

Clients in the present study also experienced a significant reduction in their state and trait anxieties as seen on the STAI across the pre-, mid-, and post-therapy assessments. This can also be attributed to the combined effect of EMG feedback assisted relaxation and SIT. Studies by Jannoun et al. (1982); Waddell et al. (1984); Barlow et al. (1984) and Sheer et al. (1991), in which some form of relaxation training was combined with a cognitive behavioural treatment method also provide evidence for this. Studies by Borkovec et al. (1987); Borkovec et al. (1988); Barlow et al. (1989) and Michelson et al. (1990) showed significant reductions in the clients' trait anxiety.

A₂ Therapist's Report Measure

In the present study, the therapist assessed the clients to be significantly less anxious on the HARS across the pre-, mid-, and post-therapy assessments. The combined effect of EMG feedback assisted relaxation and SIT should have contributed to this. This has been substantiated in the
literature by several studies (Jannoun et al. 1982; Barlow et al. 1984; Borkovec et al. 1987; Borkovec et al. 1988; Barlow et al. 1989; Sheer et al. 1991).

B Physiological Measures

B₁ GSR

In the present study, there was no significant reduction in the electrodermal activity of the clients across the pre-, mid-, and post-therapy assessments. EMG feedback assisted relaxation and SIT had no significant effect on the GSR of the clients.

B₂ EMG

The clients however experienced a significant reduction in their frontalis muscle tension across the pre-, mid-, and post-therapy assessments and could also effectively learn to lower their frontalis muscle tension across the 20 therapy sessions when feedback was given to them. This can be due to the combined effect of EMG feedback assisted relaxation and SIT. Barlow et al. (1984) confirm this finding in their study. The present study demonstrates the acquisition of feedback control i.e., the ability to manifest the response in the desired direction during feedback sessions and extra-feedback control or self control, i.e., the ability to manifest the response in the desired direction when feedback is not given (Epstein and Blanchard, 1977).
Thus the combined effect of EMG feedback assisted relaxation and SIT showed significant reductions in symptoms and anxiety on the self-report measures. The therapist assessed the clients as being significantly less anxious on the HARS. Though there was a significant decrease in resting EMG levels across the pre-, mid-, and post-therapy assessments, there was no concomitant change in the GSR level.

Research work that has been cited in this section in order to substantiate the above findings of the present study, has been on clients with panic disorder and/or generalized anxiety disorder. It is possible that these disorders which are currently conceptualized as separate, distinct diagnostic entities can respond differently to treatment. Barlow et al. (1984) who studied the nature and treatment of panic and generalized anxiety disorders, however, conclude that although assessments revealed significant differences between them, with panic disorder clients showing higher somatic responding on both the psychological and physiological measures, they responded equally well to treatment.

The results of the physiological stress procedure substantiate some of the above observations. The physiological stress procedure was carried out to examine the effect of EMG feedback assisted relaxation and the additive effect of SIT with EMG feedback assisted relaxation on the
group's reactivity to a cognitive stressor.

In the present study, the group's mean GSR value increased during the stress phase at the pre-, mid-, post-, and first follow-up assessments from lower mean baseline levels maintained during the relaxation phase and then decreased to lower mean levels during the recovery phase demonstrating that the cognitive task was genuinely stressful and that the GSR is reactive to stress conditions. A similar trend was seen in the study by Sargunaraj et al. (1990) at the pre-, and post-therapy assessments.

Several analogue studies also provide corroborative evidence for this (Rappaport and Katkin, 1972; Gatchel et al. 1978; Neilson et al. 1980; Passchier and Helm-Hylkema, 1981).

The mean baseline GSR value at the mid-therapy assessment was higher than the mean baseline GSR value at the pre-therapy assessment and there was no diminished reactivity to stress observed. We can infer that EMG feedback assisted relaxation alone had no effect on the GSR and its reactivity to the stressor. Sargunaraj et al. (1990) substantiate this finding in their study.

The analogue studies by Gatchel et al. (1978); Neilson et al. (1980) and Passchier et al. (1981) provide corroborative evidence for the same.
In the present study, the mean baseline GSR value at the post-therapy assessment, though higher than the value maintained at the pre-therapy assessment, was lower than the value maintained at the mid-therapy assessment. The additive effect of SIT with EMG feedback assisted relaxation should have contributed to this although there was no diminished reactivity to stress observed. Clients in the present study 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. This finding can be attributed to the combined effect of EMG feedback assisted relaxation and SIT.

In the present study, the group's mean EMG value increased during the stress phase at all the assessments from lower mean baseline levels maintained during the relaxation phase and then decreased to lower mean levels during the recovery phase demonstrating again that the cognitive task was genuinely stressful and that the EMG is reactive to stress conditions. A similar trend was reported by Sargunaraj et al. (1990).

Several analogue studies corroborate this finding (Burish and Schwartz, 1980; Burish et al. 1981; Passchier et al. 1981). Nielson et al. (1980) report frontalis muscle tension increases not only under stressful conditions but also in anticipation to it. Burish and Horn (1979), however,
report a contradictory finding that frontal EMG is not sensitive to increases in arousal when a stressor is presented. This is inconsistent with what has generally been assumed.

As regards this physiological system, the 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. Sargunaraj et al. (1990) in their study report a similar finding.

Several analogue studies by Gatchel et al. (1978); McGovan et al. (1979) and Burish et al. (1980) also confirm this finding. Nielson et al. (1980), however, report that EMG feedback assisted relaxation does not reduce frontalis EMG levels while under stress but does effectively reduce frontalis EMG levels while anticipating stress.

The findings from the physiological stress procedure thus far, further strengthen the view that the effect of EMG feedback assisted relaxation is specific with no cross-system arousal reduction.

In the present study, there was further improvement in the group's reactivity as seen on the EMG by the post-therapy assessment on account of the additive effect of SIT with EMG feedback assisted relaxation. At the follow-up assessment still more improvement was seen. The combined effect of EMG
feedback assisted relaxation and SIT should have contributed to this.

The subsidiary objective of the present study was to find out the relationship of certain sociodemographic parameters and clinical characteristics with therapeutic outcome. The sociodemographic parameters selected were marital status, age and education. The clinical characteristics selected were symptom duration, number of symptoms at pre-therapy assessment, associated psychiatric features, precipitating factor and prior treatment experience. The group was divided into 2 groups of 'adequate responders' and 'inadequate responders' to therapy based on the SRS scores of the group at the post-therapy assessment.

In the present study, marital status did not significantly differentiate the 'adequate responders' from the 'inadequate responders'. This is supported by the studies on frontal EMG feedback assisted relaxation in clinical anxiety of Lavellee et al. (1982) and Sargunaraj et al. (1991a). Sargunaraj et al. (1991a), however, found that those in the adequate responder group were predominantly unmarried.

The 2 groups were not found to be significantly different from each other on the variable of age. There was, however, a trend favouring the older clients towards adequate response to therapy. Stoyva et al. (1974) observed that older
clients were likely to benefit more from EMG feedback assisted relaxation. Lavellee et al. (1982); Libo et al. (1983) and Sargunaraj et al. (1991a) in their studies on frontal EMG feedback assisted relaxation in clinical anxiety found no significant differences on the variable of age although Sargunaraj et al. (1991a) in contrast to the present study, found a trend favouring the younger clients towards adequate response to therapy.

The 2 groups were not found to be significantly different from each other on the variable of education although there was a trend favouring the more educated towards adequate response to therapy. Libo et al. (1983) in their study on frontal EMG feedback assisted relaxation in clinical anxiety corroborate this finding. Lavellee et al. (1982) and Sargunaraj et al. (1991a) in their studies on frontal EMG feedback assisted relaxation in clinical anxiety found no significant differences on the variable of education although Sargunaraj et al. (1991a) found a trend favouring the less educated to adequate response to therapy.

Symptom duration did not significantly differentiate the 'adequate responders' from the 'inadequate responders' to therapy. There was, however, a trend favouring clients with a longer duration of symptoms towards adequate response to therapy. Sargunaraj et al. (1991a) in their study on EMG feedback assisted relaxation in clinical anxiety did not find
significant differences between the groups of 'adequate responders' and 'inadequate responders' on symptom duration.

In the present study, there was found to be a significant difference between the adequate and inadequate responders to therapy on the variable of initial number of symptoms. Clients with less number of symptoms at the pre-therapy assessment showed significantly adequate response to therapy. Butler and Anastasiades (1981); Borkovec et al. (1988) and Sheer et al. (1991) support the above finding.

In the present study, there was no significant difference between the adequate and inadequate responders on the variable of associated psychiatric features such as depression and panic. There is strong evidence in the literature, however, to show that the presence of associated psychiatric features is a pointer to poor therapeutic outcome (Lavellee et al. 1982; Butler et al. 1988; Sokol et al. 1989).

The 2 groups of adequate and inadequate responders to therapy were not found to be significantly different from each other on the variable of presence of a precipitating factor. Weinman et al. (1983), however, report that clients with life stressors show better improvement in therapy (feedback).

In the present study, prior treatment experience as a variable did not differentiate the 'adequate responders' from the 'inadequate responders.'
Literature shows that relaxation-induced anxiety as a phenomenon is a variable that can significantly be related to therapeutic outcome in that the degree to which clients experience anxiety induced by relaxation training can predict poorer outcome (Borkovec et al. 1987; Borkovec et al. 1988). It would have been interesting to examine the contribution of this variable to the therapeutic outcome of the present study.

The first follow-up assessment could be conducted on 18 out of the 22 clients who were studied. Of the 18 who returned to the Unit 1 month after termination of therapy, 8 had been classified as 'adequate responders' and 10 as 'inadequate responders' to therapy at the post-therapy assessment. These 2 groups of clients were compared on the psychological and physiological measures obtained during the post-therapy and the first follow-up assessments in order to isolate differences between them and understand the trends seen at both the assessments.

In the present study, at the post-therapy assessment, 'adequate responders' had lower scores on the psychological measures than the 'inadequate responders'. However, there was a significant difference between the adequate and inadequate responders on the SRS and HARS scores implying that the 'adequate responders' had significantly less symptom scores and the therapist perceived the adequate
responders as being significantly less anxious than the inadequate responders, respectively. Interestingly by the first follow-up assessment the 'adequate responders' were seen to have still lower scores on the psychological measures. The scores of the inadequate responders had also decreased but there was no significant difference seen between the adequate and inadequate responders on any of the psychological measures. The result implies that the 'adequate responders' could maintain improvement and the 'inadequate responders' continued to improve. This is in contrast to an earlier study by Sargunaraj et al. (1991a) on EMG feedback assisted relaxation in anxiety neurosis who found that on follow-up 1-5 months after termination of therapy, the 'adequate responders' in comparison to the 'inadequate responders' continued to improve in that they reported significantly lesser number of anxiety symptoms.

One can reasonably assume that the combined effect of EMG feedback assisted relaxation and SIT could have helped the inadequate responders to continue to improve on follow-up.

As regards the physiological measures, there was no significant difference between the adequate and inadequate responders at the post-therapy nor at the first follow-up assessments.
The follow-up assessments subsequent to the first follow-up assessment were mainly in the form of clinical interviews which were conducted either in person or through a letter. Clients were also given a session of relaxation, preferably without feedback whenever possible. Follow-up was maintained over a period ranging from 1 month to as long as 26 months.

A qualitative analysis of the follow-up data revealed that all the clients could relax well even without feedback demonstrating the maintenance of self control. Some could even improve upon the gains reached. Majority of the clients on medication could maintain and even further overall improvements made during the follow-up phase unlike the clients who were not on medication. One possible reason for this could be that unlike the clients on medication, the clients without medication had nothing to fall back on if they failed to make use of their coping skills. These clients reported 'ups' and 'downs' in their subjective estimates of improvements primarily because they were not applying the coping skills regularly and adequately. Libo et al. (1983) in their long term follow-up study to find out the utilization and effectiveness of relaxation practice after feedback therapy, found that continued practice was significantly related to the maintenance of long-term improvement. It was also observed that many of the clients on medication felt a decreased need for the pharmacological
agent during various stages of the follow-up phase. They either stopped taking medication or reduced the dosage of the medication. Although some clients experienced setbacks, they could make gains subsequently. With regard to a set back, a point of difference between the clients on medication and who had stopped taking it and the clients off medication was that the former had to be started on another course of medication while the latter could manage with medication on an SOS basis or even without it.

Follow-up after termination of therapy needs to be more extensively and closely examined.

Very few of the studies on frontal EMG feedback assisted relaxation in clinical anxiety have included follow-up analysis in their methodologies. In some of these studies (Lavellee et al. 1977 and Raskin et al. 1980), follow-up data are not all available. In the study by Lavellee et al. (1982) improvement was only partly maintained over a short period of 6 months. The studies of Weinman et al. (1983) and Sargunaraj et al. (1990) report evidences for maintenance of improvement and further gains made on follow-up. However, follow-up was conducted over short periods of 6 weeks and 5 months, respectively. Only one study by Libo et al. (1983) report the findings of a long term follow-up ranging from 1 year to 5 years. 81% was the improvement reported indicating a high level of maintenance. However, one must take into
account that in this study clinical anxiety was only 1 out of the 6 diagnostic conditions that were included.

In contrast, majority of the studies on cognitive treatments in clinical anxiety (Jannoun et al. 1982; Waddell et al. 1984; Barlow et al. 1984; Clark et al. 1985; Gitlin et al. 1985; Durham et al. 1987; Lindsay et al. 1987; Borkovec et al. 1987; Borkovec et al. 1988; Sokol et al. 1989; Craske, Brown and Barlow, 1991 and even studies on SIT in clinical anxiety (Woodward et al. 1980; Last et al. 1983; Öst, 1985) have included follow-up analysis in their methodologies and these studies provide strong evidence for maintenance of improvement and further gains made on follow-up over a period ranging from 2 weeks to as long as 24 months.

The follow-up analysis of the present study has been conducted over a relatively long period of time. The results of the analysis strengthen the claim that cognitive treatments produce changes more powerfully which are general across situations and stable over time. The present study being a therapeutic one, combining a somatic oriented therapy with a cognitive oriented therapy, would have reasonably brought about significantly more changes than either one alone in isolation would have.

In the present study, there were 2 clients who dropped out of the therapeutic programme. Both clients discontinued
during the first phase of therapy much before the inclusion of SIT— one after the ninth session of EMG feedback assisted relaxation and the other after the 6th 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 (1985) 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. 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 et al. (1989) based on the work of Sargunaraj (1988) on EMG feedback assisted relaxation in anxiety neurosis, the dropout rate was found to be much higher, i.e., 38% as against 8% in this study. In another study by Barlow et al. (1989) 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 et al. (1989) and Barlow et al. (1989), and dropouts having occurred during the early phase of therapy before the incorporation of SIT, one
can speculate whether the combined effect of EMG feedback assisted relaxation and SIT could have brought about this.

Clinical research poses several problems. In the present study, all the clients did not methodically fill in their stress diaries. They had to be told time and again to do so. Some of them had to be made to fill in their diaries at the Unit before the therapeutic session commenced. With persuasion and coaxing these clients did comply.

All the clients did not maintain regular monthly follow-ups either in person or through a letter. The therapist had to send several letters to remind some of them. With persistent effort on the part of the therapist, the clients could be contacted. Only 2 clients dropped out of the study and 18 clients could be followed-up one month after termination of therapy. A follow-up rate of 81.82% should be considered adequate for a clinical investigation.

Every research study will have some limitations. It would have been better if the sample size was larger. But the sample size of 22 was adequate for the necessary statistical analyses. A no-treatment control group would have made the present study methodologically superior. At the same time one must bear in mind that getting a control group matched on several parameters would have been a difficult proposition. In the present study each subject was his own control which has got its own advantages. The present study could have been
blind. However, as far as possible it was made certain that therapist bias would not influence the results.

The findings of the present study highlight the usefulness of a combined treatment programme and the importance of a cognitive behavioural therapy for clinical change.