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A COMPREHENSIVE COGNITIVE BEHAVIORAL INTERVENTION IN GENERALIZED ANXIETY DISORDER

Harprit Kaur                         P.S.D.V. Prasada Rao and V. Kumaraiah
Punjabi University, Patiala, India                           NIMHANS, Bangalore, India

In the present study, a Comprehensive Cognitive Behavioral Model for Generalized Anxiety Disorder (GAD) is proposed and a cognitive behavioral intervention program based on it is developed. The efficacy of CBT in reducing anxiety, in modifying negative cognitions, in controlling worry and in enhancing subjective-wellbeing has been studied on six male clients within the age range 25-40 years, suffering from GAD (ICD=10, F41.1). A single group design with pre, mid and post assessments was adopted; the post-assessment was done by a blind rater. The measures used were (i) Hamilton's Anxiety Rating Scale (ii) Cognitive Somatic Anxiety Questionnaire (iii) Dysfunctional Attitude Scale (iv) Penn State Worry Questionnaire and (v) Subjective-Wellbeing Inventory. CBT was conducted over 25 individual sessions (60-75 minutes duration) spread over 4-6 weeks of which 20 were for therapy and the rest for assessment. Phase-I of therapy consisted of relaxation, while in Phase-II the cognitive components were added. The results of the study showed the efficacy of the intervention program in bringing significant decrease in anxiety, negative cognitions, worry and significant increase in subjective-wellbeing. The cognitive component of therapy was responsible for the statistically significant improvement on specific domains of worry and negative cognitions.

Generalised Anxiety Disorder (GAD) was first introduced in DSM-III (APA, 1980) and has since been recognized as one of the most prevalent and debilitating mental disorders. DSM-IV (APA, 1994) describes GAD as characterised by excessive worry and anxiety, which is difficult to control; physical symptoms like restlessness, fatigability, irritability, muscle tension; all being significantly distressing and causing impairment in normal functioning. Also associated with GAD are distractibility and chronic vigilance to threat cues (Mathews, 1990) and frequent aversive images and thoughts with a marked predominance of chronic verbal linguistic and worrisome activity (Borkovec & Inz, 1990). The spontaneous thoughts involve themes of danger, threat and vulnerability, and are generated by underlying schema or assumptions of a dysfunctional nature (Freeman, Simon, Beutler, & Arkowitz, 1989). The distortions involve overestimation of probability and severity of feared event; and underestimation of coping resources and rescue factors (Shaw & Segal, 1988).
Beck and Clark (1997) have proposed a 3-stage schema-based information processing model of anxiety. Stage I is that of 'initial registration' of threat stimulus, the processing being perceptual, resulting in an attentional priority to incoming information. Stage II is of 'immediate preparation' involving a mixture of automatic and strategic processing. The results are automatic anxious thoughts and biased cognitive processing. Stage III is that of 'secondary elaboration' in which processing is slow, effortful, schema driven and fully conscious, involving the metacognitive mode. Worry and search for safety signals are the important outcomes here. Earlier, it has been viewed as a generalized secondary drive (Dollard & Miller, 1950); as physiological arousal (Schachter & Singer, 1962); as learned helplessness (Seligman, 1972); as lowered hope of success and heightened fear of failure (Heckhausen, 1977); as inability of self growth (May, 1977); as a cognitive hypersensitivity and vigilance (Beck & Emery, 1985). These cognitive-behavioral conceptualizations have culminated into cognitive therapy (Beck & Emery, 1985), Rational Emotive Therapy (Ellis, 1962); Stress Inoculation Training (Meichenbaum, 1985). Behavioral adjuncts like relaxation training and exposure have been incorporated (Chambless & Gillis, 1993).

These therapies have shown moderate improvement with GAD patients. However, they do not contain components tailored to address disorder-specific key features like excessive worry (Brown, Barlow, & Liebowitz, 1994). Borkovec and Costella (1993) conclude that integrative therapy that incorporates techniques targeting each system would enhance efficacy.

In India there are few intervention studies reported and there is a tendency to use cognitive therapy based on the Beckian model. (Biswa, Biswas, & Chattopadhyay, 1995; Pathak, 1999). It is also popular to use Jacobson’s progressive muscular relaxation training for management of GAD (Amruthraj, 1989; Biswas et al., 1995). This makes the current work highly relevant.

A comprehensive, although hypothetical, model of GAD is proposed. This is based on evidence available in the literature, and on the insights gained and observations made during clinical practice. The proposed model is presented diagrammatically (Figure 1).

The core tenant of a cognitive basis of anxiety is that the type of emotional information and the manner in which it is processed are crucial factors in the aetiology, maintenance and treatment of anxiety disorders.

The model recognizes that anxiety consists of a complex pattern of cognitive, affective, physiological and behavioral aspects. At the physiological level, there is autonomic hyperarousal. At the behavioral level, there is a tendency to escape or defend oneself against the perceived danger, an inhibition of risk taking behavior in an attempt to maximize safety, and an effort at avoidance. At the subjective or affective level, the individual feels frightened or apprehensive. At the cognitive level, anxiety involves, (a) sensory-perceptual symptoms (e.g. hyper-vigilance, self-consciousness), (b) thinking difficulties (e.g. poor
concentration, difficulty in reasoning, inability to control thinking), and (c) conceptual symptoms (e.g. cognitive distortions, negative automatic thou-

Figure 1

Generalized Anxiety: A Cognitive Behavioral Model
ghts, worry).

Their interactive processes are as follows:

The internal vulnerability (trait anxiety) of an individual manifests in two ways. There is high autonomic arousability, and there is an acquisition of certain cognitive schemata through early learning experiences with the major socializing agents. This vulnerability is reinforced and maintained from the environmental factors of high expectations and high criticality from the significant others.

The cognitive schemata may be active or dormant, the latter getting activated when faced with a stimulus (internal or external). The cognitive schemata have a two-fold impact on the cognitive processes of the individuals. Firstly, the cognitive appraisal of events is marked by hyper-vigilance and self consciousness. Secondly, certain information processing proclivities in the form of negative automatic thoughts and cognitive distortions emerge. Both of these processes result in the perception of the environment as threatening. This stage is reinforced by the increased physiological arousal.

As a consequence, in anticipation of future traumatic events, the individual indulges in negatively affect laden, uncontrollable mental problem solving and becomes a worrier.

The high physiological arousal, the information processing proclivities, the perception of threat from the environment, and the worry process, all intensify a fight or flight reaction i.e. an avoidance or escape response to the environmental events. Further, internal attribution of failure and an external attribution of success at this stage culminate in high anxiety.

Anxiety is enhanced by the worry process per se because this compelling problem solving process although may prepare an individual for effective coping, but also maintains a negative affect for greater duration of time in anticipation of the event. Also, the autonomic sensations are interpreted as catastrophic leading to high anxiety levels. The chronic vigilance and consequent perception of threat also maintain high levels of anxiety.

A feedback loop of mutual enhancement comes in play between anxiety and physiological arousal; anxiety and flight-fight reaction which is mediated by the internal attributions; anxiety and worry; and anxiety and perception of threat.

Hence the management of anxiety must focus on resolution of these loops. In other words, the intervention should be focused on (a) the physiological arousal; (b) worry process; (c) cognitive schemata: through the management of negative automatic thoughts, cognitive distortions and cognitive appraisal, and the internal attributions; (d) the environmental factors of high expectations and hyper-criticality from significant others, and the avoidance and escape responses of the individuals.

**Rationale**

A comprehensive intervention program was developed based on the proposed model and an attempt was made to evaluate its efficacy in the Indian context. Further, an attempt was made to find the impact of behavioral and cognitive components of intervention on various aspects of
anxiety as exhibited especially in GAD is the impact on autonomic arousal, worry, as well as negative automatic thoughts, and cognitive distortions. There was absence of such comprehensive and specific intervention package, especially in the Indian context. The interventions reviewed were also lacking an attempt to study the relative impact of behavioral and cognitive components of therapeutic interventions. By proving the relevance of the model, GAD specific therapy would be propagated. The impact of overall intervention on clients' subjective-wellbeing was also evaluated so that the aim is not just the management of symptoms but also its generalization to positivity in overall life perceptions. The general aim of the current study was, thus, to study the efficacy of proposed cognitive behavioral therapy (CBT) in the management of generalized anxiety disorder (GAD).

Objectives

To study the efficacy of CBT in (i) reducing anxiety, (ii) modifying the negative cognitions, (iii) controlling worry, and (iv) enhancing the subjective-wellbeing in individuals with GAD.

Further, the additive effect of cognitive components of intervention on measures of anxiety was also explored.

Hypotheses

1. It is expected that CBT would significantly reduce anxiety in individuals with GAD.
2. It is expected that CBT would significantly modify the negative cognitions in individuals with GAD.
3. It is expected that CBT would significantly control worry in individuals with GAD.
4. It is expected that CBT would significantly enhance the subjective-wellbeing in individuals with GAD.
5. It is expected that the addition of cognitive components of CBT would have significant additive impact on anxiety, modifying the negative cognitions, controlling worry, enhancing subjective-wellbeing in individuals with GAD.

Method

Sample

The clients for the study were referred to the Behavioral Medicine Unit, Department of Clinical Psychology, National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore. From the psychiatry out-patient department of NIMHANS, six clients with GAD (ICD-10: F41.1; WHO, 1992b) meeting the following inclusion and exclusion criteria were included in the sample.

Inclusion Criteria

1. Age between 16-50 years.
2. Ability to understand English.

Exclusion Criteria

1. A concurrent clinical diagnosis of
psychosis, organic brain syndrome, or mental retardation.
2. History of major medical disorders.
3. Previous exposure to psychological intervention.

The final sample consisted of six males with a mean age of 33 years (SD = 5.6 years). All of them belonged to middle class with three of them bachelors. Sample had a mean of 3.2 years of illness with SD of 1.5 years. Two of them had concurrent drug therapy. Three of the patients were engineers and two others were graduates. The range in case of age was 25-40 years while illness range was 2-5 years.

**Design**

In the present study, a single group outcome design with pre, mid, and post therapy assessments was adopted. The post-assessment was conducted by a blind rater.

**Table 1**

*Effect of CBT on Measures of Anxiety, Cognition, Worry and Subjective-Wellbeing (N=6)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>34.2</td>
<td>6.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>9.3</td>
<td>6.8</td>
<td>6.68</td>
<td>.001</td>
</tr>
<tr>
<td>CSAQ-Cognitive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>26.8</td>
<td>2.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>15.2</td>
<td>6.2</td>
<td>5.59</td>
<td>.01</td>
</tr>
<tr>
<td>CSAQ-Somatic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>20.5</td>
<td>5.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>11.8</td>
<td>2.9</td>
<td>3.94</td>
<td>.01</td>
</tr>
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<td>DAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>147.6</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>103.4</td>
<td>16.3</td>
<td>5.10</td>
<td>.007</td>
</tr>
<tr>
<td>PSWQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>62.8</td>
<td>4.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>42.8</td>
<td>5.8</td>
<td>5.49</td>
<td>.003</td>
</tr>
<tr>
<td>SWB (n=5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>75.2</td>
<td>9.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>93.0</td>
<td>7.7</td>
<td>3.15</td>
<td>.03</td>
</tr>
</tbody>
</table>

$df = 5$. 

KAUR, RAO, & KUMARIAH
The experimental design used is illustrated in Figure 2 (Flow chart).
Instruments

The following tools were used to evaluate the impact of the intervention:

1. Hamilton's Anxiety Rating Scale (Hamilton, 1959)

HARS is a five point rating scale consisting of 13 variables providing an anxiety score. It distinguishes between normal scores, and those indicative of minor and major anxiety. It has an inter-rater reliability of .89.

2. Cognitive Somatic Anxiety Questionnaire (Schwartz, Davidson, & Goleman, 1978)

CSAQ is a 14 item, 5-point questionnaire on anxiety symptoms with randomly ordered cognitive and somatic subscales. Cronbach alpha coefficient is .85 and .81 for the two subscales, respectively. The correlation between subscales is .42; and they exhibit adequate construct and discriminant validity.

3. Dysfunctional Attitude Scale (Weissman & Beck, 1978)

DAS is a 40 item, 7-point self-administered scale that assesses cognitive distortions with items representing 7 major value systems; namely, approval, love, achievement, perfectionism, entitlement, omnipotence and autonomy. It provides the cut-off score indicating significant dysfunctional attitudes. Its Cronbach alpha is .86 and test-retest reliability is .84.

4. Penn State Worry Questionnaire (Meyer, Miller, Metze, & Borkovec, 1990)

PSWQ is a 15 item, 5-point scale to identify frequency and intensity of worrying. It assesses for establishing clinical worry or trait of worry. Its internal consistency ranges between .91 and .95 and has test-retest reliability of .93. It has good construct and discriminant validity.

5. Subjective-Wellbeing Inventory (WHO, 1992a)

SWB is a 40 item self-report questionnaire designed to measure feelings of well-being or the lack of it as experienced in day-to-day concerns. The items represent 11 factors including positive and negative affect; confidence in coping; transcendence; family and social support; mental imagery; perceived ill health; and expectation-achievement congruence. The Cronbach alpha is .88 and has good construct and discriminant validity.

The scales were in simple language and had been used with Indian population in earlier studies and no difficulties had been reported.

Procedure

Process of Therapy

The treatment was given over about 25 sessions which extended over a period of 4-6 weeks, each session lasting for about 60-75 min-
utes. Of these 20 sessions were of therapy while rest was for assessment purposes.

**Intake Interview**

The purpose of this interview was to establish rapport with the clients as well as to assess the suitability for inclusion in the study. The clients found unsuitable were either re-referred to the referral source or were treated by the team at the behavioral medicine unit. In all 23 clients were screened. Of these 4 were not willing to undergo CBT but chose pure pharmacotherapy, 6 clients could not come due to long distance and economic constraints, 7 clients had co-morbid conditions, 6 clients could be included in the study. The client considered suitable for the study was told that the entire program involved 20 sessions of therapy with assessment sessions before, during, and after therapy to monitor progress. The first 10 sessions would be daily and that would constitute the phase-I of therapy and the next 10 sessions would comprise the phase-II of therapy. The clients’ cooperation and active participation in the program would determine the success of the treatment. The written informed consent for therapy was obtained.

The next session was spent on pre-assessment. The 2nd session comprised of a brief explanation to the client, about the nature of anxiety and its manifestations. The diagnosis of GAD, and the rationale for the present treatment was briefly described. In the next session patients were explained the rationale for Jacobson's Progressive Muscular Relaxation (JPMR) and it was demonstrated to them. Over the next 9 sessions clients learned to use it.

This was followed by the mid-assessment by the therapist.

In the phase-II of therapy, the focus was on identifying and dealing with the cognitive components of anxiety, while patients continued to practice relaxation at home. The clients’ active participation in making attempts at applying the relaxation skills and the cognitive coping skills, in order to overcome daily stressful situations was ensured. Compliance to homework assignments was ensured. The first session was spent in a detailed explanation of anxiety and its cause and GAD. The handout was also given to the clients.

The next two sessions of this phase were spent on identification and handling of negative automatic thoughts. These sessions had components of rapport building, ventilation, emphasizing and consolidation of the therapeutic alliance.

The 4th and 5th sessions were spent on identifying and dealing with worry.

The 6th and 7th sessions were spent on dealing with cognitive distortions.

The 8th and 9th sessions were spent in discussing specific problems of the patient in light of skills acquired in the earlier sessions. Problem solving, role-play and behavioral rehearsal were incorporated here, as per individual needs.

10th session comprised of a discussion on some of the dysfunctional attitudes identified on DAS.
Further, the session was utilized for any clarifications that the patient may need.

This was followed by a post-assessment done by a blind rater.

Ethical Issues

1. Patients were explained about the current study.
2. Written informed consent was taken.
3. Confidentiality was ensured.
4. Patients had the freedom to drop out of the intervention program.

Results

Pre- and post-assessment scores were compared for statistical significance in the group outcome analysis. Pre, mid and post assessment scores were compared to identify the changes brought about by the addition of the cognitive component to the treatment. Clients’ self report about the changes in their symptoms, and generalization to different spheres in life were analyzed. For the above analysis, statistical significance was computed using the paired t-test.

As shown in Table 1, there was statistically significant decline noted on measures of anxiety, negative cognitions and worry; and statistically significant increase of scores on the measure of subjective-wellbeing. The improvement on cognitive functions was evident only after the addition of cognitive component of therapy (Table 1).

Anxiety

The results showed statistically significant improvement on the measures of anxiety, namely, HARS, CSAQ-cognitive and CSAQ-somatic at post-therapy assessment. This is in accordance with the results of Muthana (1994) on similar measures of anxiety, using JPMR and stress inoculation training, on Indian population. Lang (2004), Borkovec and Mathews (1998), and Barlow, Rapee, and Brown (1992) also reported similar findings.

These results may be explained by the fact that all the response channels of anxiety, namely, the affective autonomic, somatic behavioral and cognitive (Suinn, 1984) were targeted in the treatment program. JPMR resulted in controlling the physiological symptoms through the recognition and release of minute amounts of tension, utilizing the feedback loop between skeleton muscles and the central nervous system through progressive muscular relaxation (Jacobson, 1938 as cited in Keable, 1989). The heightened arousal of sympathetic nervous system was replaced by the relaxation sensation of the parasympathetic nervous system. The cognitive restructuring resulted in modification of dysfunctional attitudes, which maintain anxiety (Beck & Emery, 1985) through misperception of threat (Barlow & Rapee, 1991).
Table 2

Additive Effects of Cognitive Component of Therapy

<table>
<thead>
<tr>
<th>Variables</th>
<th>Phase-I (Pre vs. Mid)</th>
<th>Phase-II (Mid vs. Post)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>HARS</td>
<td>8.41</td>
<td>.0001</td>
</tr>
<tr>
<td>CSAQ-C</td>
<td>1.32</td>
<td>.24</td>
</tr>
<tr>
<td>CSAQ-S</td>
<td>2.70</td>
<td>.04</td>
</tr>
<tr>
<td>PSWQ</td>
<td>1.36</td>
<td>.23</td>
</tr>
<tr>
<td>DAS</td>
<td>1.99</td>
<td>.10</td>
</tr>
<tr>
<td>SWB</td>
<td>2.43</td>
<td>.59</td>
</tr>
</tbody>
</table>

Further, worry maintains anxiety through the inhibition of the emotional processing (Borkovec, Abel, & Newman, 1995). Thus, handling of worry dealt with another maintaining factor.

Cognitions

Following the intervention, there was statistically significant reduction in negative cognitions. Arntz, Hildebrand, and Vanden Hout (1994) reported decrease in dysfunctional beliefs after the cognitive treatment in GAD clients. These findings are similar to the results of the study by Butler, Fennell, Robson, and Gelder (1991), and those of Dugas, Marchand, and Ladouceur (2005).

Negative cognitions are perceptions based on beliefs and assumptions which are dysfunctional. The basic distortions involve overestimation of feared event and underestimation of coping resources (Shaw & Segal, 1988). The biased cognitive processing, resulting in negative cognitions is based on both automatic and strategic processing (Beck & Clark, 1997), and on intolerance of uncertainty and cognitive avoidance (Dugas, Marchand, & Ladouceur, 2005). The therapy, thus, must aim at deactivation of the primal threat mode and the strengthening of a more reflective, constructive elaborative processing (Beck & Clark, 1997), which was achieved in the present study through teaching the client to identify and handle negative automatic thoughts, cognitive distortions and schema. Further, it was strengthened through role play and homework assignments.

Worry

The results of the present study also show statistically significant control in worry at post-assessment. These results are similar to the findings of Borkovec and Costello (1993) who reported reduction in worry after CBT in GAD clients. Barlow, Rapee, and Brown (1992) had also reported similar results using self-monitored measure of worry. Worry management
was the significant goal in treatment in the meta-cognitive therapy for GAD recommended by Wells and King (2006).

Worry is the final stage of information processing involving schema-driven, effortful and conscious, meta-cognitive process. It is the search for safety signals (Beck & Clark, 1997) which is similar to those of non-anxious subjects in its content, but differs in its controllability (Borkovec, 1992). Thus, the program helped the clients to develop control over these cognitive intrusions, by methods like worry-period, which incubates these negative cognitive intrusions (Borkovec, 1992). Further, problem solving techniques, role-playing and homework assignments, and continued positive reinforcements, helped the clients overcome the inherent poor problem solving confidence and poor perceived control over the problem solving process which is a characteristic of the worriers (Davey, 1994). It also dealt with the positive beliefs about worry which is one of the main features of GAD (Dugas, Marchand, & Ladouceur, 2005).

Subjective-Wellbeing

In the present study, statistically significant improvement in the subjective-wellbeing was reported at post-therapy assessment. Butler et al. (1991) have shown improvement in confidence and demoralization treatment with CBT. With a view to restore normal functioning and achieve sustained recovery in GAD clients, Fava et al., (2005) have used Wellbeing Therapy for four sessions in their CBT of 12 sessions in treating GAD. However, while highlighting its significance, Allgulander et al., (2003) take it as inherent part of any CBT treatments.

While handling the specific domains of GAD, such components of subjective-wellbeing, like confidence in coping, inadequate mental mastery, perceived ill-health and deficiency in social contracts were automatically being handled. The perception of social and primary group concern and support also improved through handling of dysfunctional attitudes. As the sense of self-control and sense of mastery over the cognitions and worry was acquired, the expectation-achievement congruence also improved. Borkovec, Abel, and Newman (1995) reported that elimination of worry allows for the natural emergence of adaptive new learning, not only in therapy, but also in daily living experience. This would indicate improved subjective-wellbeing.

Thus, the findings of the present study indicate the efficacy of CBT in the treatment of clients with GAD. The intervention package formulated dealt with the specific components of GAD, namely, anxiety, negative cognitions and worry. The study, therefore, overcame a major drawback of earlier studies which had failed to address disorder specific key features like worry (Brown, Barlow & Liebowitz, 1994). The study also highlighted low levels of subjective-wellbeing in clients with GAD; and the enhancing effect of the intervention program on the same. This aspect has not received adequate attention in the earlier studies, although WHO (1992a) has proclaimed it as an essential component of health.
Additive effect of cognitive component of therapy

An important consideration in the study was to assess the effect of cognitive component of therapy. The phase-I of therapy, comprising of pure relaxation training (JPMR), lead to a decrease primarily in the somatic symptoms. This is in accordance with the results of numerous studies in the 1980's (cited from Zinbarg, Barlow, Brown, Brown, & Hertz, 1992). Significant improvement in modifying negative cognitions and worry could be accorded only in the phase-II of therapy where the cognitive component was added in the therapy, although the improvement made in phase-I was continued in phase-II on the physiological and somatic aspects.

These findings are in accordance with the study done using biofeedback relaxation and stress inoculation training paradigm by Abraham and Kumaraih (1993) on the Indian population. Biswas and Chattopadhyay (2000) found cognitive therapy effective in improving patients suffering from GAD on psychological as well as psycho-physiological measures of anxiety. Butler et al. (1991) have reported superiority of pure cognitive therapy over a behavior therapy package. Borkovec and Costello (1993) have reported better improvement in GAD clients with CBT than with applied relaxation alone.

However, Borkovec and Mathews (1988) and Barlow, Rapee, and Brown (1992) found no significant difference between relaxation, and its combination with cognitive therapy, nondirective counseling, or coping desensitization. The importance of cognitive component in CBT with GAD has been observed but differences have been inconsistently reported (Harvey & Rapee, 1995).

The inconsistency in the literature regarding the relative efficacy of behavior therapy and CBT may be considered in the light of the results of the present study. The study shows that significant improvement of all the specific domains of GAD can be accorded only through a CBT paradigm. Relaxation brings down the physiological symptoms, and increases the accessibility of positive information in memory which facilitates the generation of alternatives to the negative thoughts (Peveler & Johnston, 1986). However, as evident in the study, relaxation alone is not sufficient for the management of all domains of GAD.

The clients also need to acquire methods to generate positive alternative thoughts (Freeman, Simon, Beutler, & Arkawitz, 1989) through cognitive restructuring. Thus, the most efficacious treatment may be a combination of the two, i.e., a cognitive behavioral program. Further, it lays to rest the doubts by researchers like Haby, Donnelly, Corry, and Vos (2006) that CBT may not be effective for non-English speaking patient groups. The package used for our clients was in Hindi and the illustrations used in therapy were culture specific while the cognitive paradigm was naturally universal.

Discussion

Subjective Experiences of the Clients

The clients' perception of their
problem for which they had sought the treatment was varied. Although the major manifestation was predominately that of physiological arousal and somatic complaints, their explanations varied from brain tumor and brain damage to an inability to name the cause. One client's primary concern was the erectile dysfunction which was secondary to GAD, while another client had severe insomnia and disrupted occupational functioning.

At termination, the symptoms of primary concern had disappeared. The physiological symptoms ranging from dryness of mouth to tremors, stammering to lack of concentration and “loss of memory”, had all improved markedly. Fear of death; fear of abnormality in wife's pregnancy; fear of never clearing the exams; shame and guilt associated with broken engagement, shame and guilt associated with inadequate sexual performance; and anger and frustration towards the family, are some of the important cognitions, successfully dealt through cognitive restructuring during the course of therapy. At termination, all clients reported marked improvement in their symptomatology, the symptoms no longer being disruptive and distressing. On the visual analogue scale, the reported improvement ranged between 70-90% for four clients, 60-70% for one and 40-50% in another. In four of the clients it was confirmed by the family while the families of two could not be contacted.

There was marked generalizability in the improvement. The socio-occupational functioning improved markedly, with three clients resuming their higher educational pursuits and three were planning on newer, more productive occupations. These were realistic and practical plans reached through good problem solving skills. One client, whose occupational functioning was impaired, resumed work and performed adequately. The frequency and degree of involvement in interpersonal contacts was reported to be markedly improved, as also was the personal sense of satisfaction from it. There was marked improvement in the reported sense of control and ability to cope with ongoing chronic stressors. Five of the six clients reported high self confidence and a positive view of future, at termination.

At follow-up of 3-8 weeks, there was enhancement in the reported improvement, with two clients reported 95% improvement, while the others reported upto 70-80% improvement.

Thus, the client's subjective reports also indicate the efficacy of the treatment program in the management of GAD.

**Individual Differences**

Although fairly homogenous data trends were observed in the group, some individual differences emerged.

Client 1 showed a slight increase in the scores of worry and cognitive anxiety at the end of the phase-I of therapy. This is attributable to the fact that the rapport had improved over the first few sessions, and hence the client was more forthcoming about his symptoms.

Client 5 had a strong denial for his negative cognitions and believed in the medical model of his problems. Thus, after phase-II of therapy, when he gained insight into the psychologi-
cal nature of his symptoms, there was a mild increase in the cognitive and somatic anxiety, and worry from mid-to post-therapy assessment. However, there was significant improvement from pre to post therapy assessment. A mild decrease in subjective-wellbeing also occurred, although it remained in the normal range. The negative cognitions improved significantly but were above the cut-off. He reported 60% improvement at termination, which had increased to 80% at 7-week follow-up.

Client 6 had a strong denial for his problems, there were fluctuations in the level of motivation, and he was irregular for the sessions and for home-work assignments. He also had tinnitus with which he was preoccupied. Further, there were significant psychosocial problems which affected his active participation in the therapeutic program. He showed significant improvement on all measures except cognitive anxiety. He reported 40-50% improvement at 8-week follow-up. However, he expressed dissatisfaction with the therapy, as he continued to be preoccupied with tinnitus; and refused to complete the post-assessment as an expression of dissatisfaction. This is in accordance with the conclusions given by Borkovec, Abel, and Newman (1995). They state that individuals with GAD, who are currently experiencing a significant stressor, or those with characteristic features of anger and entitlement, respond poorly to cognitive behavior therapy. Also, the efforts towards defocusing on and adaptation to tinnitus were taken as being critical towards his area of primary concern. Consultation with ENT department was perceived as efforts towards warding off the responsibility of his problem. It may be seen in context of Steketee, Lam, Chambless, Rodebaugh, and McCullough (2007) when they state that patients being treated for anxiety and depression, when perceive criticism in managing the symptoms, it gets related to negative affect and discomfort during behavioral treatment through exposure. Further, Zinbarg, Eun Lee, and Lira Yoon (2006) reported that in GAD patients’ pretreatment partner hostility and hostile criticism had statistically and clinically significant impact on outcome in CBT. In the present client, his reporting regarding his wife fitted well into the above criteria.

Thus the present study showed the efficacy of CBT in treatment of GAD clients. There was statistically significant improvement on all the components of GAD, namely, anxiety, negative cognitions and worry. Further, there is an enhancement in the reported subjective-wellbeing. The study also highlights the importance of the addition of a cognitive component in therapy for best outcome. There is an indication that the degree of improvement may be affected by client’s perception of the therapeutic program, and consequently, his degree of involvement. The gains were reported to have generalized and improved at follow-up.

Limitations and Recommendations

Generalizability of the results is limited as the sample size was small and the follow-up was limited. The intervention was highly effective, and
being based on the proposed model, provides it with preliminary validation. The model may now be used on a representative large sample and its generalizability can be established. In the present study, the clients were educated and hence the scales in English could be used. However, they will need to be modified before using in the clinic. Moreover, there is a strong need to develop Indian scales, especially those evaluating cognitive distortions and worry.

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Received December, 2007
Revision Received May, 2008
IDENTITY DEVELOPMENT: AN OVERVIEW OF ADOLESCENTS

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The present study explored the identity development process of adolescents in a collectivistic cultural background of Pakistan. The sample consisted of 80 boys and girls, 40 each from urban and rural settings. A convenient sample was selected from 10 different colleges and higher secondary schools of Multan and its suburbs. Ego-Identity Interview was used to assess the identity level of adolescents. It was a semi-structured interview (Marcia, 1966) and assesses identity in six domains on the basis of the level of exploration and commitment of individuals. Four statuses were assigned after careful analysis of the data including identity achieved, moratorium, foreclosed, and diffused. An open-ended questionnaire was also used to see the orientation of adolescents towards individualism or collectivism at personal level. Results indicated that majority of adolescents were foreclosed in the domains of occupation (31%), religion (81%), politics (47%), and sex roles (64%). Large numbers of adolescents were identity achieved in the domain of friendship (65%) whereas a large number of adolescents were diffused in the domain of dating (77%). Results also showed that adolescents had collectivistic orientation at personal level. Data were analyzed on the basis of the cultural variability dimensions of individualism/collectivism.

Identity gives a sense of knowing, who we are and how we fit into the rest of the society. It includes the impact of early childhood identification with important individuals in our lives as well as our personal experience regarding the development of self. Thus, the construct of identity stands at the interface of individual personality, social relationships, and external context, and has major implications for optimal adolescent development. Development of identity is a life-long process, characterized by cycle of exploration and consolidation as well as experiences of competence and vulnerability.

Erikson (1968) has written comprehensively about the search for identity as a primary task, and the crisis that adolescents face. He emphasize that the young persons try to integrate a quest for a conscious sense of individual uniqueness with an unconscious striving for a continuity of experience and solidarity with the group’s ideals (Berger, 1983).

Erikson (1968) viewed life as a series of stages, each having a particular developmental task of a psychological nature associated with it. Erikson (1968) emphasized the importance of the socio-cultural context as a determining factor in the process of ego identity formation. He also stressed the importance of adapting to one’s society, of conforming to social expectations as indicative of optimal functioning. He believed that societal
expectations require a selection from available choices, with the individual, in turn, needing confirmation of choices and community acceptance. Marcia (1980) construes identity as a reflective self-structure. He states that identity is an internal, self-constructed organization of drives, abilities, beliefs, and individual history. He conceptualized identity formation in terms of two orthogonal dimensions including self exploration and commitment. Commitment refers to the possession of a firm and stable set of convictions, values and goals. Self-exploration refers to the level of deliberate effort and self-examination one has expended in an attempt to determine these commitments. Within the Marcia paradigm, levels of self-reported commitment and personal exploration are used to operationally define four identity classifications: identity achievement, moratorium, foreclosure, and diffusion. Individuals who have resolved an active period of self-exploration by forming personal commitments are classified as identity achieved. The moratorium category includes individuals who also lack stable commitments, but who are currently in the process of attempting to formulate them. Foreclosed individuals hold firm conviction, but those ones which they have prematurely co-opted from significant others without personal self-exploration. In contrast, diffused individuals lack firm convictions and are not inclined to engage in a process of self-exploration. Working on the same lines, Marcia (1966) developed an interview schedule to measure level of identity of an individual.

Erikson (1968) stated that socio-cultural context is very important in ones’ identity formation. Pakistani culture is a collectivistic culture (Hofstede, 1980) where people have very strong bonds with their families or in-groups. There are different types of cultures. Hofstede (1980) is most well known for his work on the dimensions of cultural variability, commonly referred to as Hofstede's Dimensions. These include: Uncertainty/Avoidance, Power/Distance, Masculinity/Femininity and Individualism/Collectivism.

According to Hofstede (1991), individualism pertains to societies in which the ties between individuals are loose; everyone is expected to look after himself or herself and his or her immediate family. Collectivism, on the other hand, pertains to societies in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty.

In Hofstede’s (1980) opinion, individualist societies emphasize “I” consciousness, autonomy, emotional independence, individual initiative, right to privacy, pleasure seeking, financial security, need for specific friendship and universalism. Collectivist societies, on the other hand, stress solidarity, sharing, duties and obligation, need for stable and pre-determined friendship, group decision and particularism. Similar definitions are given by Hui and Triandis (1986) and Sinha and Verma (1987).

In the present research, it is intended to explore the identity development process among the adoles-
Method

Sample

The sample for this study was taken from Multan city and its suburbs. Eighty individuals were interviewed including 40 from rural and 40 from urban areas. Both of these groups were further divided into two subgroups on the basis of gender. The sample of the rural area was chosen from four rural areas. Sample included 50% adolescent boys and 50% girls from different colleges from Multan and its surrounding areas. These rural areas were selected on the basis of union councils, which were demarcated by Election Commission of Pakistan for recent elections. About half an hour was required for rapport development. Average interview took about 90 to 100 minutes.

Instrument

In this study, two instruments were used, namely, Ego-Identity Interview and an Open-ended Questionnaire to assess individualism/collectivism at personal level.

1. Ego-Identity Interview

The Ego-Identity Interview is a semi-structured interview and was first developed by Marcia (1966). It is congruent with Erikson’s (1968) idea of the identity crisis as a psychosocial task during adolescence. This interview schedule is based on the same principles of identity formation i.e., exploration and commitment in specific domains of life. The way adolescents integrate elements of exploration and commitment in responding to the interview determines their identity status. Marcia (1966) suggested four clearly differentiated identity statuses in the three domains of ‘Occupation’, ‘Politics’ and ‘Religion’. Four statuses of identity development were given by Marcia (1966); these are identity achievement, foreclosure, moratorium and diffusion. This interview was later on modified and extended by Grotevant and Cooper (1981). They added three more domains to Marcia’s (1966) original interview that were ‘Occupation’, ‘Politics’ and ‘Religion’. The three additional domains were related to the interpersonal or relational components of identity that included ‘Friendship’ ‘Dating’ and ‘Sex-Roles’. In the present research, the modified version of the interview (Grotevant & Cooper, 1981) was used. In addition, four concentrating points along a continuum of identity achievement were proposed.

2. Open-ended Questionnaire

This open-ended questionnaire developed by Gillani (1994) was used to assess the individualism / collectivism at personal level. The purpose of using this questionnaire was to assess the orientation of each individual at personal level. This questionnaire consisted of twelve open-ended questions.

Procedure

A pilot study was done to refine interview skills and gain experience in analyzing the data. Before starting the
In the pilot project, the researchers were trained by the supervisor to conduct a semi-structured interview from both urban and rural respondents. The pilot study was conducted with 20 individuals from urban and rural settings. The sample consisted of 80 individuals for the main study. Forty boys and girls were selected from Multan city and forty from its suburbs. On the basis of the findings of the pilot study the demographic variable of education was controlled and all the respondents were taken from intermediate levels. Interviews were recorded for which a tape recorder was set beforehand. All adolescents were interviewed following basically the same standardized outline, though some of them needed more probing and exploration. In the interview, questions were asked relating to the six domains, i.e., occupation, religion, politics, friendship, dating and gender-roles. Each of these domains or sections was rated separately to determine adolescents’ amount of exploration and commitment in that area. Exploration and commitment scales were designed to capture two types of information only; first, how much exploration has the adolescent made into each domain, and second, what is the strength of his/her commitment to any decision made regarding that domain. Four basic questions underlay the rating scale: first, has the adolescent actively considered any options in the domain being discussed, and if so, how many? This question applies to exploration, and indicates breadth, or lack of breadth, of exploration. Second, to what degree has he or she considered each of the options discussed? This question also applies to exploration and will give indications of depth. Third, has he or she decided which option is best? This applies to commitment, and will indicate the strength of the commitment. Finally, how open he or she is to alternatives for the future? This question also applies to the commitment and suggests that rigidity or dogmatism is not necessary for the commitment. Adolescents have to be prepared to take other options into consideration. Every adolescent was rated accordingly on a separate identity interview note sheet, which comes with the manual.

Strong exploration and strong commitment was given the status of ‘identity achieved’, weak exploration and strong commitment was assigned the ‘foreclosed’ status, strong exploration and weak commitment was rated as ‘moratorium’ and weak exploration and weak commitment was given the status of ‘diffused’ identity. After completion of the interviews, authorities were thanked in writing. It was a time consuming task to record eighty interviews. It took approximately three months to complete the data collection.

*Inter-Rater Reliability*

Twenty of the interviews (10 from each group) were chosen randomly for the purpose of obtaining inter-rater reliability between the ratings by the researchers and an independent judge. A judge, who was Ph.D. in Psychology, rated these interviews independently which was matched with the ratings done by the researchers to establish the inter-rater reliability procedure. He was familiar with the identity interview schedule. After a prelimi-
nary discussion about the scoring procedure with the researchers, he rated the selected interviews, which was again followed by a discussion with researchers.

Content Analysis

Content analysis of answers of open-ended questions was done. As already stated, the main aim of using an open-ended questionnaire was to determine the individualistic / collectivist orientation of the sample. After careful analysis of text/content of the interviews, two broad categories were developed:

a. Statements directed towards self.
b. Statements directed towards family/in-groups.

It was decided that response or answer to each item of open-ended questionnaire would serve as a unit of analysis. To be more specific, each individual response to the twelve items was divided into twelve units for analysis.

After analyzing responses of the whole sample, two kinds of statements were derived / separated from the content/data as categorized earlier. Following the enumeration system, frequencies of the statements indicating self/family orientation was noted.

Results

Interviews data were analyzed on the basis of objectives of the study to get the percentage values and to see the difference (if any). The perspective through which the results were analyzed was to see the percentage values of the whole sample in six domains on identity status. It was to assess the overall picture of adolescents regarding their identity status.

Table 1 indicates the percentage values of the whole sample on identity status in six domains. The percentage values of identity achievement, foreclosed and diffused are very close to each other in the domain of occupation, which shows that overall around 27% of adolescents explored different fields and chose the one that they felt was most suitable for them. While around 31% of the adolescents did not explore the domain and followed the wishes of their elders. Whereas, overall 32% adolescents have left their self to the circumstances and did not explore the domain of occupation.

The results in Table 1 show that in the domain of religion, the foreclosed status of adolescents has been seen. It indicates that the large numbers of adolescents (81%) were following religion as their parents or elders did. They did not explore it by themselves. Similar results are in the domain of politics. Around 47% of adolescents are foreclosed. Their political interests are similar to their parents or elders.

Interestingly, 65% of the whole sample is identity achieved in friendship, which is a relationship domain. This shows that most of our adolescents have the freedom of making friends and they exercise their own will in this regard.

Dating is a phenomenon that is common in Western culture. But in our culture it is not encouraged by other people. Results show that our adolescents did not explore this domain properly and 77% of the whole sample was diffused in it. They showed a lack of exploration and commitment in this domain. Though a
small number of adolescents (13%) did have some experience but they are still exploring it and did not show any commitment.

It is interesting to note that most

<table>
<thead>
<tr>
<th>Table 1</th>
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<tr>
<td><strong>Percentages of the Participants on Identity Status in Six Domains</strong></td>
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<td></td>
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<tr>
<td>Occupation</td>
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<tr>
<td>Identity Achievement</td>
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<td>Moratorium</td>
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<td>Foreclosure</td>
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<tr>
<td>Diffusion</td>
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<td>Religion</td>
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<td>Identity Achievement</td>
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<td>Diffusion</td>
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<td>Politics</td>
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<td>Identity Achievement</td>
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<td>Foreclosure</td>
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<td>Diffusion</td>
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<td>Friendship</td>
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<td>Identity Achievement</td>
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<td>Moratorium</td>
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<td>Foreclosure</td>
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<td>Diffusion</td>
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<td>Dating</td>
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<td>Identity Achievement</td>
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<td>Foreclosure</td>
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<td>Diffusion</td>
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<td>Sex-Role</td>
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<td>Identity Achievement</td>
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<td>Moratorium</td>
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<td>Foreclosure</td>
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<td>Diffusion</td>
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</table>
**Table 2**

*Statements Directed towards Self*

<table>
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<tr>
<th>S.No.</th>
<th>Statements</th>
<th>$f$</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>It is my life.</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>My choice is important for me.</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>I don’t think I can exercise my choice.</td>
<td>6</td>
</tr>
<tr>
<td>4.</td>
<td>One should have freedom to do the things one wants to do.</td>
<td>9</td>
</tr>
<tr>
<td>5.</td>
<td>Me as a youngster knows more about the outside world as compared to my parents/elders.</td>
<td>11</td>
</tr>
<tr>
<td>6.</td>
<td>I have more advanced/latest knowledge of the world around us.</td>
<td>11</td>
</tr>
<tr>
<td>7.</td>
<td>I can’t bear interference in my life.</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>One knows what is best for one’s self.</td>
<td>9</td>
</tr>
<tr>
<td>9.</td>
<td>Most of the important decisions regarding my life are taken by myself.</td>
<td>8</td>
</tr>
<tr>
<td>10.</td>
<td>It’s difficult for me to comply with what my family members say or want me to do.</td>
<td>7</td>
</tr>
<tr>
<td>11.</td>
<td>It’s not necessary for one to abide by the rules/norm of the society.</td>
<td>7</td>
</tr>
<tr>
<td>12.</td>
<td>People who are independent in their affairs are more successful.</td>
<td>5</td>
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</tbody>
</table>

**Table 3**

*Statements Directed towards Family/In-group*

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Statements</th>
<th>$f$</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>It is our duty to obey our parents.</td>
<td>45</td>
</tr>
<tr>
<td>2.</td>
<td>I will choose my family over my personal interest/gains.</td>
<td>33</td>
</tr>
<tr>
<td>3.</td>
<td>Parents’ decision should be final.</td>
<td>27</td>
</tr>
<tr>
<td>4.</td>
<td>Parents know what is best for their children.</td>
<td>45</td>
</tr>
<tr>
<td>5.</td>
<td>Most of the important decisions regarding my life are taken by my parents.</td>
<td>29</td>
</tr>
<tr>
<td>6.</td>
<td>In the end, their (parents) decision proves to be the right one.</td>
<td>30</td>
</tr>
<tr>
<td>7.</td>
<td>Parents are older and are more experienced than us.</td>
<td>31</td>
</tr>
<tr>
<td>8.</td>
<td>Families that are together in thick and thin are happy families.</td>
<td>35</td>
</tr>
<tr>
<td>9.</td>
<td>We must follow the norms/values of our society to survive.</td>
<td>33</td>
</tr>
<tr>
<td>10.</td>
<td>We should take into account our elders’ opinions while taking decisions.</td>
<td>37</td>
</tr>
<tr>
<td>11.</td>
<td>We should explore the world, within the limits of family rules.</td>
<td>40</td>
</tr>
<tr>
<td>12.</td>
<td>I tried my best to fulfill the expectations of my elders.</td>
<td>29</td>
</tr>
</tbody>
</table>
of the adolescents, around 64% in our sample, expressed a foreclosed attitude in the domain of sex role. They expressed lack of exploration but strong commitment towards traditional family structure of our culture.

Content Analysis

A content analysis of the responses to those questions was conducted separately. Two groups of statements were categorized, i.e., (a) statements directed towards the self, (b) statements directed towards the family or in-group. Twelve statements falling into each category were identified from the interviews of the whole sample. Frequencies on each category were obtained (Tables 2 & 3).

Discussion

If we look at the frequencies of both statements, results show that the frequencies of respondents’ statements directed towards family/in-group are more in number than the statements directed towards self. It shows that most of respondents are more concerned about their families than their personal wishes and opinions, and have collectivistic approach. These results indicate that most of adolescents included in this study have collectivistic orientation at their personal level.

The results of open-ended questionnaire that was developed to see the individual’s orientations towards individualism / collectivism at personal level supported that most of the adolescents in our sample had collectivistic orientations. These results indicate that most of the adolescents scored more on the statements directed towards their family and in-group compared with the statements directed towards the self (83 vs 414, respectively). Adolescents of our sample preferred their family/in-group’s opinion on their personal matters. They gave ample importance to close relationships especially to their parents and used statements like “My family is everything for me”, and “I can sacrifice my personal desires for my family”. The results clearly show that adolescents of our sample had collectivistic orientation in their personal lives.

Achieving a suitable occupation is considered an important task for the youth of today. It is a platform for the utilization of one’s potentials. In the present research, it is noticed that 32% adolescents from the total sample were diffused in this domain. Apparently these adolescents did not explore this domain properly. They were not clear about their future occupation. They did not explore their inner abilities, interests and potentials in this regard. The possibility could be that their home environment is such that it does not encourage exploration in this regard. Generally speaking, lack of resources and exposure could also be possible reason for this diffusion. Youngsters generally have very few sources of information about the job market and available opportunities. It is either by word of mouth or personal contacts that persons know about the available opportunities. This situation can be a contributing factor for their disinterest in knowing about the occupation that they can get into in future.
It is interesting to note that 31% of adolescents in our sample were at foreclosure in the same domain, meaning that they had decided to go in the profession wished or chosen by their elders. They did not explore their areas of interest properly and focused their attentions and potentials to achieve that goal which is wished by their significant others. They did not have the courage to deviate from their familial orientation or directions because of the fear of family’s rejection or disappointment. It is noticed that these adolescents have decided to go in the professions chosen by their parents. They gave importance to the wishes of their parents over their own. They did not have the courage to deviate from their familial orientation or directions because of the fear of family’s rejection or disappointment. It is a sign of family cohesion that they did not want to do anything without their family’s support. Most of these adolescents stated that parents have rights to guide their children, because parents are well wishers of their children. They felt that it’s their duty to fulfill their parents’ wishes. Adolescents on foreclosure status believed that by adopting the profession chosen by their parents, and conforming to the family’s desires, they are proving to be good and obedient children. As is evident from the previous researches that children of a collectivistic culture are taught from the beginning to respect and obey their parents and elders (Mills & Clark, 1982), they concluded in their study that in the collectivistic culture people are interdependent with their in-groups (family, tribe, nation, etc.), give priority to the goals of their in-groups, shape their behavior primarily on the basis of in-group norms, and behave in a communal way. It seems that adolescents in our sample had also internalized such ideas.

In the same domain, i.e., occupation, a small number (27%) of adolescents were identity achieved. These teenagers knew what their interests are and how to go about it. They analyzed different aspects and alternatives regarding their future profession and took a firm decision for it. They also expressed that their parents gave them freedom to choose for whatever they want to do in future. They also supported and encouraged them to explore the domain on their own.

As mentioned above, those who were at the level of identity achievement were small in number. Only very few who have opportunities, exposure and resources explored this domain properly. Majority of the adolescents were either diffused or foreclosure. A common theme in all the interviews of these adolescents was (no matter what their level of identity was) the recognition of parental support. The probable explanation of these results could be that in Pakistani culture, which is a collectivistic culture, family and family opinion is very important regarding the future of their children. Profession of the youngsters is not their personal matter like the West. Rather it usually is a matter of family tradition, pride and/or desires of the elders in the family.

Very interesting results were seen in the domain of religion. Eighty one percent of the adolescents were foreclosed in this domain. This suggests that the majority of the adolescents
were very committed to the religion of their forefathers i.e., Islam, without exploring it or studying it in depth. A common observation is that people adopt the religion of their parents and keep it as an unchangeable thing. Another factor in this regard could be that from the very beginning child is not encouraged to question religious teachings and ideas. That could be the reason that youngsters in our culture usually suppress the curiosities about religion and take it for granted. They are born in a Muslim family so they are Muslims, no need to explore their own or others’ religion deeply. It was apparent from the interviews of the adolescents that they are rigid Muslims but do not know the basics of their religion. They do not explore it by themselves (except very few).

Another ideological domain i.e., politics also showed similar results. There were 47% of the adolescents who were foreclosed and 30% had diffused identities. This was a sign that large number of adolescents had either the same political preferences as their parents’ or did not have any preference at all. They expressed lack of exploration as well as lack of commitment in this domain. The possibility is that because of the system of hierarchy and strong in-group bonding, adolescents may not feel the need to go through the process of analyzing each and every party’s manifesto, observing the leaders and then making up their minds about it. It was observed in most of the interviews that they did not invest their energies in this domain.

It was interesting to observe that in both the ideological domains i.e., religion and politics, most of our adolescents were at foreclosure. However, if we take the relationship domain i.e., friendship, it shows that 65% of adolescents were identity achieved. This is the only domain in which most of the adolescents are at the identity-achieved level. It shows that in our culture ample importance is given to relationships rather than ideologies and occupations. There seems to be a freedom to explore and invest in close relationships and commitment to different in-groups.

Another domain in which most of our adolescents foreclosed was “dating”. Results showed that on the whole 77% adolescents were diffused in this domain. Dating is a cultural phenomena, which is very common in the Western countries. It is the relationship between male and female members of a society before marriage. The purpose is to understand the person of the opposite gender and after exploration choose a life partner. In Pakistani cultural context, it is something that is considered as taboo. Despite that there are youngsters who date, owing to lack of social acceptance they don’t share it with their parents.

As mentioned earlier, people from collectivistic cultures are more concerned about social acceptance and conformity compared with the people from individualistic cultures. Adolescents are usually not encouraged to date. A common observation is that family/parents are given importance in choosing the life partner. Most adolescents in our sample stated that their parents will select life partner for them and that is why they do not feel the need to explore this domain.
Regarding the domain of sex-roles, 64% of adolescents were foreclosed. We understand that societies generally assign gender specific roles to both men and women and expect them to perform those roles accordingly. Some societies are more specific about it and are also quite rigid in this regard. In our culture, a common observation is that typical roles are assigned to men and women and it is expected from them to behave accordingly. It is observed that most men and women have accepted and adopted those role assignments.

The results of the present study revealed that a large number of adolescents in our sample did not explore this domain and had accepted the typical family system. They saw their parents to behave in a specific way and they also adopted, learned and accepted that. We are the members of a patriarchal society where men are considered as superior than women and their decisions are considered as significant and ultimate. The youngsters of this environment seem to have internalized that hierarchy within the family system.

The results mentioned above were of the total sample that gave us an overall picture of adolescents’ identity development in six domains belonging to both urban and rural areas. Overall, the results of the present research indicate that both boys and girls were not encouraged to explore the important domains of life. Their identity process is mainly associated with their family and in-groups’ understanding and belongingness. It is the larger cultural surroundings that influence the youngsters’ personality and thereby influence their process of identity development.

**Conclusions**

Hofstede (1980) examined people in a large variety of different cultures and found that there are different dimensions of cultures. One important dimension from his given dimensions is individualism-collectivism. According to the findings of his study, Pakistanis scored high on the scale of collectivism.

On the basis of the findings of the present research, we could conclude that the large number of adolescents included in the sample were on the status of foreclosure in all domains except for one i.e. Friendship. It means that large number of adolescents did not explore the important domains of life themselves. They showed strong commitment but very weak exploration in all the domains. On the basis of these results, it was concluded that most adolescents of our sample were foreclosed in these domains. These findings are similar to the findings of Gillani (1994) in which there were more identity achieved girls in the sample of British (white) females as compared to Pakistani girls. It was found that there was a need to explore some of the domains which are more appropriate to our cultural and societal norms. In the present research, it is noticed that most of the adolescents scored high on foreclosure that could be an indication that we might include those domains in which our adolescents like to investigate/explore. Their results on friendship were different than the other domains, which is purely a rela-
tionship domain. Therefore, it was felt that more research is needed to assess the significant domains, which are specific to our culture only.

Another conclusion drawn from the present research is that adolescents of collectivistic cultures have different definition of identity achievement. What is unhealthy for Western adolescents might be considered healthy for our adolescents. There is a possibility that our teenagers had explored the domain of family hierarchy and had committed themselves to the family values. So what is considered foreclosed by the Western standards might be identity achieved for our standards. The results also indicated a significant difference between the urban and rural adolescents on identity achievement. It showed that urban group was more identity achieved than the rural group. So it was concluded that rural adolescents need more exposure and awareness. It was also observed that there was no significant difference between boys and girls on the levels of identity achievement. It shows that both boys and girls are equally influenced by the norms and values of our society. Relationship is important for both of them and that influenced their process of identity development.

Limitations and Suggestions of the Study

This study was a baseline study. Like all other studies this also had some limitations. The construct of identity is a very complex phenomenon. As interview technique was used in this study to assess the identity level of adolescents. It was a time consuming task because of which a large sample could not be taken.

Instrument used in this study had some specific domains in which identity achievement was assessed. These domains were more suitable for educated adolescents so we had to ignore the uneducated adolescents. It was also considered the limitation of the instrument.

This study was the first study of its kind in Pakistan. Before starting this study, researchers had a lot of questions in their mind. Though this study answered some questions but it raised many more. A lot of work is yet needed to understand the construct of identity in our culture. This is suggested that future researches should explore more domains of identity, which are more suitable for adolescents of collectivistic culture. Our socialization process emphasizes collectivity and respect for authority very strongly. The domains given by the Western researchers may not be suitable for the adolescents of our culture if we talk about personal identity then we need to explore it in our own cultural context. We have to develop our own definitions of identity and self to get our own identity.

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published Doctoral Dissertation, University of Sussex, Brighton, UK.


Received June, 2006

Revision received March, 2007
THE COMPARATIVE EFFICACY OF TWO BIOFEEDBACK TECHNIQUES IN THE TREATMENT OF GENERALIZED ANXIETY DISORDER

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The present study compared the efficacy of two most commonly used biofeedback relaxation techniques in the treatment of Generalized Anxiety Disorder (GAD). Forty five individuals, recruited on the basis of Diagnostic and Statistical Manual of Mental Disorders-IV Text Revision criteria (DSM-IVTR - APA, 2000) were randomly assigned to three groups: Group I (n = 15) received Electromyographic (EMG) biofeedback relaxation training; Group II (n = 15) received Alpha–Electroencephalographic (EEG) biofeedback relaxation training; and Group III (n = 15) was a control group. Both EMG and EEG groups resulted in more consistent pattern of generalized relaxation changes reflected in alpha-EEG activity, frontalis-EMG activity, systolic blood pressure and Comprehensive Anxiety Test (CAT) score as compared to control group. Significant changes were also observed on comparing EMG and EEG groups. At follow-up, maintenance of effects was observed in both treatment groups.

Generalized Anxiety Disorder (GAD) is a prototypical anxiety disorder twice more common in women than in men (Hidalgo & Davidson, 2001). Criteria for the diagnosis of GAD emphasize the presence of unrealistic or excessive worry and apprehension (DSM IVTR - APA, 2000). The symptoms of GAD are commonly found in a primary care setting with associated somatic symptoms; including restlessness, fatigability, difficulty in concentrating, irritability, muscle tension and sleep disturbances. Patients of GAD generally experience great impairment in their social and physical functioning; therefore, it is imperative to search for an effective modality for its treatment (Culpepper, 2002).

Psychotherapy has shown long term benefits in the treatment of GAD and may be useful approach alone and as an adjunct to pharmacotherapeutic options (Allgulander et al., 2003; Durham, 2007; Falsetti & Davis, 2001; Gorman, 2002; Siev & Chamber, 2007). The current treatment models of GAD focus on several related cognitive behavioral treatments.

EMG biofeedback mediated relaxation is an extension of progressive relaxation and autogenic training (Townsend, House, John, & Addorio, 1975). On the other hand, EEG biofeedback or Neuro-feedback training is an encouraging development that holds promise as a method for modifying biological brain patterns associated with a variety of psychological
and physical disorders particularly because it is non-invasive and seldom associated with even mild side effects (Hammond, 2005).

An ample volume of literature shows a particularly positive research support for EMG biofeedback (Raskin, Bali, & Peeke, 1980; Rice & Blanchard, 1982) as well as EEG biofeedback relaxation trainings in the treatment of anxiety disorders (Hardt & Kamiya, 1978; Moore, 2000; Moore, 2005; Vanathy, Sharma, & Kumar, 1998). In the past few decades, research has compared the effectiveness of various biofeedback trainings to other conventional methods of relaxation. However, very little research has compared the effectiveness of various biofeedback techniques in the treatment of anxiety disorders. Moreover, much of the research work in this arena has occurred before 1990’s, with practically very few published studies in the intervening years (Moore et al., 2000; Rice, Blanchard, & Purcell, 1993; Thomas & Sattleberger, 1997). The ongoing research, thereafter, has shifted its focus on investigating the application of biofeedback in the treatment of other disorders.

The literature documents EMG biofeedback training is more effective method of relaxation than EEG biofeedback training for drug users as well as normal subjects (DeGood & Chisholm, 1977; DeGood & Edward, 1981; Lamontagne, Hand, Annable, & Gagnon 1977; Rice & Blanchard, 1982). An eminent work in this field has been done by Rice, Blanchard, & Purcell (1993) who compared the efficacy of EMG biofeedback and EEG increase and decrease biofeedback treatments in generalized anxiety patients. Significant decrease in anxiety as given in self report was observed in all treatments groups. However, no significant results were yielded in between group comparisons. The reason for such findings can be attributed to the small sample size and shorter treatment duration. Moreover, all subjects did not have diagnosable level of GAD. Furthermore, most of the research on biofeedback treatment of GAD has been done prior to publication of DSM–IV TR (APA, 2000).

In the light of above review, the present study was undertaken to compare the efficacy of 12 sessions (25 minutes daily) of alpha-EEG increase biofeedback and frontalis-EMG decrease biofeedback trainings each on alpha-EEG activity, frontalis-EMG activity, blood pressure and CAT score in the patients of GAD as defined by DSM-IV TR criteria. The following hypotheses were sought to be tested: First, both training groups will show decreased level of anxiety post training as compared to the control group. Second, any of the two training groups may be better in reduction of anxiety levels.

**Method**

**Sample**

Announcements in the community were made about the availability of relaxation therapy for generalized anxiety problems of 18-30 years age group. Out of 45 individuals (24 females and 21 males), 15 each were randomly assigned to (a) Group-I: EMG biofeedback group; (b) Group-II: EEG group and (c) Group-III: control group.
Inclusion Criteria

Inclusion Criteria was based on a semi-structured interview conducted to screen out the patients of GAD using DSM-IV\textsuperscript{TR} criteria.

Exclusion Criteria

Subjects already practicing any form of relaxation technique or depending on anxiolytics were excluded.

Instruments

The following parameters were assessed at pre- and post-treatment.

1. Comprehensive Anxiety Test (CAT) Questionnaire (Sharma, Bhardwaj, & Bhargava, 1992)

   CAT score was calculated using a self-report measure. Anxiety of both the covert and overt type and state and trait type is measured by this test. Reliability coefficient of test is found to be .83 by test-retest method and .94 by split half method. Validity of the test is determined by computing the correlation scores of the present test and other tests like STAI (r = .82) and anxiety dimension of eight state questionnaire ‘form A’ (r = .74). The chosen test is particularly useful and administration age range is 18-50 years for males and females, which covers the age limit selected for the study.

2. Alpha-EEG activity was measured in micro-volts with Medicaid system Alpha-EEG Biofeedback Biotrainer EBF-5000.

3. EMG activity of frontalis muscle was recorded in micro-volts with Medicaid system EMG biofeedback Biotrainer MBF-4000.

4. Systolic blood pressure was measured with sphygmomanometer.

Procedure

The study was approved by Institutional Medical Ethics Committee of Guru Nanak Dev University, Amritsar, prior to the start of data collection. Patients were explained about the training and previous research supporting the effectiveness of biofeedback training in causing relaxation. Only subjects who volunteered to participate in the study were recruited. A written informed consent was taken from each subject prior to the beginning of the training. Patients in two experimental groups were treated individually for 12 successive days at Sports Psychology Laboratory, Department of Sports Medicine and Physiotherapy, Guru Nanak Dev University, Amritsar. The treatment was given under controlled conditions. All treatment sessions, except the first and last, lasted approximately for 35 minutes as the assessment was done on day 1 as well as day 12. After the application of electrodes, the patient was asked to sit comfortably for a 5 minute baseline period. Then, followed a 25 minute phase of either of two biofeedback trainings. All the patients were asked to practice relaxation at home once a day for 25 minutes. It was determined by the therapist whether each patient regularly practiced at home throughout the treatment period. The patients in the control group were
given no treatment. All the parameters were measured on day 1 and day 12. However, the participants were taught Jacobson’s Progressive Muscle Relaxation after the completion of study on ethical grounds.

**Frontalis EMG Biofeedback Training**

A Medicaid system EMG Biofeedback Biotrainer MBF-4000 device was used. The feedback was a visual display with 17 bars (11 green on left, 1 yellow in middle, and 5 red at right). The display showed green bars with decrease and red with increase in tension of frontalis muscle, respectively. The patient was instructed to glow the green bars and not let the red bars to glow. Intermittent positive verbal reinforcement was provided every few minutes by the therapist.

**Alpha – EEG Biofeedback Training**

Visual alpha enhancement biofeedback training was given to the subject. A Medicaid Alpha-EEG Biofeedback Biotrainer EBF-5000 device was used. The feedback display was similar to EMG feedback. The display showed green bars with increase and red with decrease in amounts of alpha activity, respectively. Similar positive intermittent instructions as for EMG group were given every few minutes by the therapist.

**Follow-up**

Two weeks after the completion of training all the patients of both treatment groups were again called for measurement of all the parameters.

**Results**

Intra-group comparisons were analyzed using paired t-test. Multivariate ANOVA and Post Hoc Multiple Scheffe Tests were done pre- and post-treatment to find changes between the groups.

**CAT Score**

Table 1 shows MANOVA comparison at pre-treatment \( F = 2.70, p > .05 \) which yielded non significant differences between the groups. Intra group comparison of all three groups are shown in Figure 1, which revealed statistically significant decrease in CAT score in EMG \( (t = 9.12, p < .001) \) and EEG \( (t = 7.46, p < .001) \) groups, while, control group did not change significantly. MANOVA followed by Post Hoc Multiple Scheffe Range Test at post-treatment in Table 1 yielded \( (F = 26.25, p < .05) \) EMG group to be at statistically most significant level of relaxation followed by EEG group.

**Alpha-EEG activity**

Table 1 shows that the three groups did not differ statistically \( (p > .05) \) at pre-treatment.

MANOVA at post-treatment with Post Hoc Multiple Scheffe Range Test \( (F = 153.37, p < .001) \) indicated EEG group to be at most significant level of relaxation followed by EMG group as shown in Table 1. Pre- to post-treatment comparison for EMG \( (t = 15.81, p < .001) \) and EEG \( (t = 13.73, p < .001) \) groups revealed statistically significant increase in alpha-EEG
Table 1

**MANOVA between All Groups at Pre and Post Treatment**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>181.64</td>
<td>90.82</td>
<td>0.50</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>80.36</td>
<td>40178.87</td>
<td>153.37**</td>
</tr>
<tr>
<td>EMG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>22.71</td>
<td>11.35</td>
<td>2.15</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>485.96</td>
<td>242.98</td>
<td>56.18**</td>
</tr>
<tr>
<td>Systolic Blood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>70.93</td>
<td>35.47</td>
<td>0.25</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>13333.51</td>
<td>666.76</td>
<td>4.05*</td>
</tr>
<tr>
<td>Diastolic blood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>236.98</td>
<td>118.49</td>
<td>1.10</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>526.80</td>
<td>263.40</td>
<td>2.67</td>
</tr>
<tr>
<td>CAT Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>212.13</td>
<td>106.07</td>
<td>2.70</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>2730.53</td>
<td>1365.27</td>
<td>26.25**</td>
</tr>
</tbody>
</table>

*p < .05. **p < .001.

Figure 1

*Intra Group Comparisons of Three Groups for Alpha-EEG Activity*
Figure 2
Intra Group Comparisons of All Three Groups for Frontalis-EMG Activity

Figure 3
Intra Group Comparisons of All Three Groups for CAT Score
activity (micro-volts), while control group \((t = 1.41, p > .05)\) showed non-significant changes as shown in Figure 2.

**Frontalis EMG Activity**

MANOVA comparison of all three groups showed non-significant differences \((p > .05)\) at pre-treatment. Intra group comparison showed statistically significant reduction in frontalis-EMG activity (micro-volts) in EMG \((t = 19.37, p < .001)\) and EEG \((t = 9.39, p < .001)\) groups while control group did not show statistically significant changes. The results are depicted in Figure 3. MANOVA with Post Hoc Multiple Scheffe Range Test at post-treatment \((F = 56.18, p < .001)\) showed most significant reduction in frontalis-EMG activity in EMG group followed by EEG group.

**Systolic Blood Pressure**

Table 1 further shows MANOVA comparison at pre-treatment \((F = 0.25, p > .05)\) yielded non-significant differences between and within groups whereas at post-treatment showed \((F = 3.55, p < .05)\) EMG group to be at statistically most significant level of relaxation followed by EEG group.

**Diastolic Blood Pressure**

MANOVA comparison of all three groups showed non-significant differences \((p > .05)\) at pre-treatment, indicated in Table 1. Intra group comparison of all three groups revealed statistically significant reduction in diastolic blood pressure in both EMG \((t = 7.94, p < .001)\) and EEG \((t = 7.31, p < .001)\) groups, while control group \((t = .47, p > .05)\) did not show any statistically significant changes. MANOVA comparison at post treatment with Post Hoc Multiple Scheffe Range Test \((F = 2.67, p > .05)\) did not show statistically significant differences between the groups.

**Follow-Up**

At two weeks follow-up, EMG group was at statistically higher level of relaxation for frontalis-EMG activity \((t = 3.20, p < .05)\) as compared to EEG group while EEG group was found to be at higher level of relaxation for alpha-EEG activity \((t = 3.79, p = .001)\) as compared to EMG group; results are summarized in Table 2.

**Discussion**

The between group comparisons depicted that EMG group (47.30%) was most effective in reducing CAT score as compared to EEG (44.86%) and control (0.89%) groups. These percentages were computed separately. A positive correlation is believed to exist between changes in muscle tension and self reported anxiety symptoms. Rice et al. (1993) observed significant reductions in self reported anxiety measures in all biofeedback treatment groups. Ossebaard (2000) observed a significant immediate decrease in state anxiety with alpha feedback training. Wenck et al. (1996) observed analogous results in state and trait anxiety with EMG and thermal biofeedback.

Percentages were computed separately. EEG group (217.95%) was most effective in enhancing alpha-EEG activity followed by EMG.
Table 2

Inter Group Comparison for Alpha-EEG, Frontalis-EMG, Blood Pressure and CAT Score at Follow-up between EMG and EEG Groups

<table>
<thead>
<tr>
<th>Parameters</th>
<th>EMG Group M</th>
<th>SD</th>
<th>EEG Group M</th>
<th>SD</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha-EEG (micro-volts)</td>
<td>110.93</td>
<td>12.15</td>
<td>137.33</td>
<td>24.13</td>
<td>3.79**</td>
</tr>
<tr>
<td>Frontalis-EMG (micro-volts)</td>
<td>2.77</td>
<td>1.13</td>
<td>4.70</td>
<td>2.05</td>
<td>3.20*</td>
</tr>
<tr>
<td>Systolic blood pressure (mmHg)</td>
<td>118</td>
<td>12.56</td>
<td>117.20</td>
<td>6.75</td>
<td>0.22</td>
</tr>
<tr>
<td>Diastolic blood pressure (mmHg)</td>
<td>74.80</td>
<td>9.56</td>
<td>77.20</td>
<td>4.95</td>
<td>0.86</td>
</tr>
<tr>
<td>CAT score</td>
<td>22.73</td>
<td>7.28</td>
<td>26.27</td>
<td>8.41</td>
<td>1.23</td>
</tr>
</tbody>
</table>

*p < .05.  **p < .001.

A significant reduction in systolic blood pressure occurred in both EMG (10.18%) and EEG (10.13%) groups as shown through percentages calculated separately while control group showed a change of 1.20% only. For diastolic blood pressure, percentage decreased from pre- to post-treatment for EMG, EEG and control groups was found to be 14.40%, 11.45% and 1.20%, respectively. According to Singh and Sahni (2000), an increase in sympathetic activity increases heart rate, stroke volume and peripheral blood flow. One can monitor and through relaxation, control the effects of stress, tension or anxiety. The extensive research work done in past on the impact of biofeedback training on hypertensives provides sufficient evidence to support these results (Blanchard, Haynes, Kallman, & Louis 1976; Datey, 1980; Jacob, Kraemer, & Agras, 1977; Najafian, & Hashemi, 2006; Taylor, Farquhar, Nelson, & Agras, 1977).

At follow-up, EMG group showed a change of 1.54% in alpha-EEG activity, 6.94% in frontalis-EMG activ-
ity, 5.61% in systolic blood pressure, 4.36% in diastolic blood pressure and 9.27% in CAT score while EEG group showed a change of 4.71% in alpha-EEG activity, 25.66% in frontalis-EMG activity, 4.27% in systolic blood pressure, 3.95% in diastolic blood pressure and 9.78% in CAT score. Lamontagne et al. (1977) observed analogous findings. The reason for slight decrement at follow-up may be that the patients did not practice at home post-treatment. However, mean values indicated a significant level of relaxation as compared to pre-treatment values. Therefore, willingness on the part of the patient to participate in the treatment process, including compliance with home practice, has a specific impact on the treatment efficacy of these techniques.

Decreased muscle tension through EMG biofeedback training leads to generalization of relaxation by decreasing the signs of sympathetic and increasing the parasympathetic tone as well as by deactivation of hormonal signs of hypothalamic-pituitary adrenal axis. A similar belief was proposed by Khanna, Paul, and Sandhu (2007) for progressive muscle relaxation training. Sahni (2005) suggested that achievement of deep muscle relaxation with electromyographic feedback can contribute to overall level of relaxation and have significant clinical impact on stress related disorders.

EEG biofeedback training leads to operant conditioning and has been found to be effective in modifying brain functions associated with mental health and medical disorders (Hammond, 2005).

Conclusions

From the present study, it can be concluded that biofeedback treatment demonstrably leads to reduction in the anxiety levels. However, biofeedback training should be used in a manner specific to the individual patient's psychophysiological profile, i.e., patients experiencing symptoms of muscle tension should be treated with EMG biofeedback to reduce their muscle tension. An EEG component should be added, if assessment documents cerebellar dysfunction. Therefore, a thorough evaluation of each patient is mandatory before deciding the appropriate biofeedback treatment for him. An attempt was made to address the methodological limitations of previous research on biofeedback treatment of anxiety disorders.

Limitations

Nonetheless, the present study has certain limitations. The future research should focus on a longer treatment duration as well as follow-up. The comparative efficacy of alpha decrease and EMG decrease biofeedback relaxation trainings in the treatment of GAD also needs to be investigated. One avenue of additional investigation may be to assess whether serial application of EMG and EEG biofeedback relaxation trainings has any substantial effect on GAD patients.

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Received March, 2008

Revision received April, 2008
SELF-ESTEEM AND MENTAL HEALTH IN A FORENSIC LEARNING DISABILITIES SETTING

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The research project examined the relationship between mental health and self-esteem in a forensic learning disabilities setting in the UK. Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used as a measure of self-esteem. Global Severity Index (GSI) obtained from the Brief Symptom Inventory (Derogatis, 1975) was used as a measure of mental health. Correlation coefficient was computed for both scales in a forensic learning disabilities sample to measure the extent of relationship between self-esteem and mental health. RSES scores in forensic sample were compared with scores in the community group to assess if there was a greater need for self-esteem intervention in the forensic group. A correlation was also computed for GSI and RSES scores of the clients∗ in the community. The results confirmed the expectation that self-esteem and mental health would be related. The prediction that self-esteem needs of forensic patients would be greater than those in the community was not confirmed. Implications of these findings are discussed in the context of service development.

A few studies have looked at self-esteem in people with learning disabilities (Glenn & Cunningham, 2001; Kreshner, 1990). This is probably due to paucity of adequate measures (Beail, 2002). A forensic setting is defined as a rehabilitation setting where people who have gotten in trouble with the law and have some learning disability or mental incapacity and are referred to a forensic clinical psychologist for rehabilitation purposes. In forensic settings self-esteem is considered an important risk factor and is also explicitly used as a target for intervention (Donnelley & Scott, 1999; Martin, 2002). In forensic learning disabilities, however, no such interventions are available. A literature search revealed that to date no studies have been conducted to examine the relationship between self-esteem and mental health in learning disabilities. This is true for both clients in the community and patients detained in forensic settings.

Self-esteem may be defined as evaluation of oneself in the light of the belief one holds about oneself in a social context (Leary, Tambor, Terdal, & Downs, 1995). Surveys of self-esteem especially with regards to its implications for mental health suggest themes of competence and worthiness as central to the concept of self-esteem (Bednar & Peterson, 1995; Mruk, 1999).

∗ In this study, people in the community are referred to as clients. People detained in a forensic setting are not referred to as clients but as patients. The word client implies choice to access services; the word patient does not.
Historically, theoretical models of self-esteem owe much to William James’ work on the conceptualisation of the ‘self’ (James, 1890). He proposed a multidimensional and hierarchical model of the self. His suggestion, that differing degrees of self-esteem serve as either vulnerability or as protective factors for success and failure experiences, has influenced subsequent clinical thinking on the issue.

Rosenberg (1965) and Coopersmith (1967) regard self-esteem as attitudes towards the self largely shaped by an individual’s social environment. Self-esteem is viewed as open to change since it can be influenced by the social environment. This makes it possible to change self-esteem through intervention in a clinical context. Coopersmith (1967) linked parental behavior with self-esteem in children. He argued that children’s conceptualisation of themselves had its origins in parental affection. He was among the first to point out the links between low self-esteem and vulnerability to mental health problems. His contributions are clinically important for their focus on assessment of antecedents of self-esteem, focused and structured therapeutic sessions, and the use of modelling.

Branden (1969) proposed a humanistic approach to self-esteem which viewed self-esteem as having two main dimensions: worthiness and competence. He later developed his model further, according to which self-esteem is regarded as an existential drive mediated by reason, choice and responsibility and developed through trial and error, success and failure, and as an ongoing development issue across the lifespan (Branden, 1983).

A cognitive-experiential model of self-esteem has been proposed by Epstein (1980). Self-esteem is best understood in terms of a social information processing model emphasizing our experience, concept formation and hierarchical representations of these concepts. His work on self theories has influenced research on schemas. Epstein (1980) puts self-esteem at the centre of human motivation because of its impact on emotion and behavior.

Most theoretical models suggest that self-esteem is primarily shaped by social processes, particularly parenting. However, these models also acknowledge the role of subsequent social information processing. Adhering to these assumptions in a clinical setting will help identify the reasons for low self-esteem and also highlight potential intervention points and strategies.


Bednar and Peterson (1995) propose a model of self-esteem in which an increase in self-esteem increases the probability of a coping response to conflict, in turn generating favorable self-evaluations. They argue that psychological interventions should, in
general, focus on enhancing self-esteem, which should have a global effect on the client’s overall well-being. Roberts, Shapiro, and Gamble (1999) have shown that level and perceived stability of self-esteem are good predictors of depressive symptoms. Bagley and Mallick (2001) studied different factors impacting mental health and found low self-esteem to be a useful predictor of mental illness. Beail and Warden (1996) have shown that psychotherapy with clients with a learning disability caused substantial improvement in self-esteem and mental health.

In the forensic realm as well, self-esteem has been shown to be an important factor (Donnelly & Scott, 1999; Gudjonsson, 1999; Hilgers, 1995; Martin, 2002; McGee & DeBernardo, 1999; Snyder, 1986). A detailed study of psychological factors responsible for violence among male forensic patients revealed that low self-esteem and external locus of control were relevant self-concepts (Donnelly & Scott, 1999). Donnelly and Scott (1999) also evaluated a treatment program for violent offenders and concluded that improvement in self-esteem coincided with overall improvement in behavior.

Gudjonsson (1999) describes the case of H. L. Lucas, a serial false confessor, who was estimated to have confessed to over 600 murders in the early 1980s. Among other significant psychological factors, low self-esteem was shown to be relevant. He argued that low self-esteem combined with personality disorder could lead to such bizarre and self-destructive behavior.

In a study examining the role of shame and pride in rapists and other sex offenders, Hilgers (1995) found that rape and other forms of sexual violence were responses to internal psychological states in many of her patients. Hilgers (1995) argues that destructive acting out of severely disturbed patients can often be interpreted as a defense against the feelings triggered by low self-esteem. McGee and DeBernardo (1999) examined the behavioral profiles of 12 adolescents responsible for school shootings. Low self-esteem was found to be a common element of their psychological profiles. McGee and DeBernardo (1999) argue that low self-esteem can be a good predictor of dangerousness due to mental problems, provided it is used in conjunction with other measures.

Snyder (1986) describes 4 cases of pathological lying that were associated with borderline personality disorder (BPD) in 3 females and one male. All the cases illustrate the association between pathological lying and narcissistic gratification, poor self-esteem, and a fragile sense of self in BPD patients. Martin (2002) studied a variety of factors used to predict short-term violence among forensic inpatients. Low self-esteem was found to be an important predictor of violent recidivism.

It would, however, be erroneous to consider the relationship between self-esteem and mental health as unidirectional in which changes in self-esteem cause changes in mental health. The current consensus about the link between self-esteem and behavior is that it is a reciprocal relationship (Bednar & Peterson, 1995;
Self-esteem influences behavior and is influenced by evaluations of that behavior. This has implications for clinical practice as an intervention at the right point can trigger a spiral of positive self-esteem and affirmative mental health, each factor pushing the other upwards. The main aim of this investigation was to assess whether self-esteem-related interventions constituted a treatment need for patients in a forensic learning disabilities setting. A strong relationship between self-esteem and mental health is almost universally accepted. If the relationship between self-esteem and mental health is also present in learning disabled patients in forensic settings, one can demonstrate the need for self-esteem based interventions. So the research question was: Is there a relationship between self-esteem and mental health in a forensic learning disabilities setting? In order to determine the treatment needs of the patients in a forensic learning disabilities setting, it is important to assess which factors have an impact on their mental health. Self-esteem has been shown to be an important factor in preserving mental health.

Another objective was to determine whether among people with a learning disability, forensic patients suffer from a lower self-esteem than learning disabled clients in the community. One can argue that forensic patients with a learning disability are likely to score lower on self-esteem measures than the clients in the community, as forensic patients are likely to have experienced a greater degree of humiliation, and dehumanization. So it was examined that is self-esteem among patients in forensic learning disabilities setting significantly lower than clients with a learning disability in a community setting? The typical experience of a forensic placement is likely to have an adverse effect on one’s self-esteem. On the other hand, those in the community are also subjected to considerable discrimination and dehumanisation. So the second research question was Is the need for self-esteem interventions greater in forensic settings than in the community?

The third aim was to assess if the community sample would also show a relationship between self-esteem and mental health. While this question did not concern us directly in the forensic settings, it would be useful to know whether this pattern of relationship was also evident in the community. This could facilitate meaningful exchange of information across settings. Another research question was Is there a relationship between self-esteem and mental health in clients with a learning disability in community settings? It would be useful to know if in a community sample self-esteem and mental health show a relationship similar to that found in forensic samples. This would imply that role of self-esteem in mental health remains constant across settings.

Hypotheses

1. The forensic patients’ scores on RSES and GSI would be negatively correlated (The correlation would be negative because GSI is essentially a measure of psychopathology; the higher the GSI, the lower the mental health).
2. The RSES scores for the forensic patients with a learning disability would be significantly lower as compared with non-forensic learning-disabled clients in the community.

3. The clients in the community sample would also show a negative correlation between RSES scores and GSI.

Method

Sample

Data were collected from 79 male patients with a learning disability detained under the British Mental Health Act. This group of patients is referred to as the forensic sample in this study. All participants had been assessed and found to meet the American Association on Mental Retardation (AAMR) (1992) criteria for mild intellectual disability. This sample was also used to examine the difference in self-esteem between the forensic sample and a community sample.

Additional data were obtained from 30 male clients in the community who had also met the AAMR (1992) criteria for mild learning disability. These 30 men constituted our community sample. The sample size depended on the availability of patients in the groups defined above due to which the number of participants in both groups were unequal.

Instruments

1. Rosenberg Self-Esteem Scale (1965)

   Rosenberg Self-Esteem Scale (RSES) is a widely used measure where participants are presented with 10 statements describing themselves. There are many ways of scoring the scales. In this study, the participants had to decide whether they agreed with the statements or not. A low score implies low self-esteem while a high score indicates high self-esteem. The scale generally has high reliability: test-retest correlations are typically in the range of .82 to .88, and Cronbach's alpha for various samples are in the range of .77 to .88. Studies have demonstrated both a unidimensional and a two-factor (self-confidence and self-deprecation) structure to the scale.

2. Brief Symptom Inventory (Derogatis, 1975)

   The Brief Symptom Inventory (BSI) is a 53 item self-report inventory designed to reflect the typical symptomatology of people experiencing psychiatric problems. Each item is scored on a five point Likert scale ranging from not at all to extremely. The BSI is a shortened version of the Symptom Checklist 90-Revised (SCL-90-R). In addition to providing nine symptom dimensions, the BSI also provides three global indices of psychopathology. Of these only the Global Severity Index (GSI) was used. The GSI combines data on the number of symptoms and the intensity of distress and represents an effective single summary indicator of psychopathology. Therefore, a high GSI indicates poor mental health and a low GSI implies better mental health. The
reliability for the BSI was .71-.85 using Cronbach’s alpha.

Procedure

For the forensic sample, permission was obtained from the Special Hospital Authority. Consent was also obtained from each individual patient. The patients who could not consent were excluded from the sample. The scales were administered individually by 10 trained psychiatric nurses who were given detailed information and instructions with regard to the purpose of the study and administration of the scales.

For the community sample, the clients accessing the service voluntarily were contacted by their community psychiatric nurses. Those who could not consent were excluded from the study. After obtaining their consent the five nurses who had volunteered for the study, administered the scales. They were also given detailed information about the purpose of the study and instructions on how to administer the scales.

Results

A correlation coefficient was computed for the GSI and RSES scores for the forensic sample to see if there was a relationship between self-esteem and mental health.

The results are summarized in Table 1. As predicted, the RSES scores are negatively correlated ($r = -.361; p < .01$) with the GSI in the forensic sample. The correlation coefficient is statistically significant, indicating that self-esteem and mental health are related.

The RSES mean for the forensic sample was compared with the RSES mean for the community sample using t-test. These results are summarized in Table 2. The forensic sample does not have a lower RSES score but in fact has a higher self-esteem score ($t = 2.25, p < .05$) as compared with the community sample. This result was quite surprising and contrary to expectations. Prediction 2 was not fulfilled, even though a statistically significant difference was found. The direction of the difference was the opposite of that predicted: the forensic sample displayed a higher self-esteem score.

The correlation coefficient was computed for GSI and RSES in the community sample as well. The results are summarized in Table 1. The community sample not only showed a relationship between GSI and RSES ($r = -.367, p < .05$), but also displayed a striking similarity to the correlation found between self-esteem and mental health.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Correlation coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forensic (n = 79)</td>
<td>0.361**</td>
</tr>
<tr>
<td>Community (n = 30)</td>
<td>0.367*</td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01.
### Table 2

*Difference between RSES Means for Forensic and Community Samples (N = 109)*

<table>
<thead>
<tr>
<th>Setting</th>
<th>$M$</th>
<th>$M_{diff}$</th>
<th>df</th>
<th>$SE_{diff}$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forensic ($n = 79$)</td>
<td>3.81</td>
<td>0.78</td>
<td>107</td>
<td>0.075</td>
<td>2.25*</td>
</tr>
<tr>
<td>Community ($n = 30$)</td>
<td>3.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.

The relationship between self-esteem and mental health in people with learning disabilities appears to hold true, regardless of the setting.

**Discussion**

Forensic patients have to go through a wide variety of treatments and interventions before they can be discharged. Many of these are offence related interventions that do not seem to have a clear evidence base. It is probably truer for people with a learning disability who are detained under the Mental Health Act. There is very little psychotherapy input offered to patients and most of the resources are directed towards offence-related work, which, at times, can be quite dehumanising. It was, therefore, quite intriguing that the self-esteem scores for the patients detained in a forensic setting were higher than their community controls.

Are clients with a learning disability subjected to similar humiliation and discrimination in the community? Sinason (1986) argues that rejection typically begins right from birth or from the time the child’s disability is discovered. This rejection is usually so intense that he uses the term death wish to describe how the parents feel about the child. This death wish is again experienced by the child at the hands of society that emphasizes intellectual ability and competence and has very little tolerance for differences.

A likely explanation, however, appears to be the difference in social context between the forensic and the community settings. Self-esteem has been defined as evaluation of oneself in a social context. In the community, the clients with a learning disability are surrounded by those whom they perceive as more competent and intellectually able. This probably damages their self-esteem as they see themselves as relatively incompetent and disabled. In the forensic context, the patient is surrounded by others of equal or even lower intellectual abilities. Is it possible that patients in the forensic settings see themselves as relatively competent and intellectually more capable because of the presence of a large number of people with similar or lower ability? This would probably offset the negative effects of being in a restrictive and oppressive environment.

This apparent anomaly could be due also to the fact that forensic services for users with a learning disabil-
ity have been changing and becoming more and more humane in the recent past. There is a considerable increase in the number of new staff members who are opposed to inhumane and abusive practices in learning disabilities institutions.

Regardless of the causes of this difference, the need for self-esteem related interventions is borne out by the results of the first study where RSES scores were shown to be negatively correlated with the GSI.

This finding is the most important one from the point of view of patient needs. Fulfilling the self-esteem needs of the patients is likely to have a positive effect on their mental health. This, in turn, should boost their self-esteem further. This spiral of improvement can be triggered by a few well-designed interventions that seek to reinforce a positive sense of self-worth. There is a need to boost the patients’ sense of self-efficacy by providing them with an empowering and enabling environment that protects their human rights and preserves their dignity.

The third prediction that clients in the community would also demonstrate a negative correlation between the GSI and RSES was also confirmed. Not only was self-esteem shown to be related to mental health, the coefficient of correlation was almost identical, implying that at least on the quantitative dimension, the relation between the two factors was identical to the one found in the forensic setting. This also has implications for service development. Those providing services in the community should not feel complacent; they should not assume that their clients don’t have self-esteem needs just because they are supposedly leading normal lives in the community. Not meeting these needs is likely to impact their mental health adversely.

Based on the findings, the following recommendations can be made for service development:

Self-esteem based interventions should be provided to patients with a learning disability in forensic settings. There are many such treatments available to non-disabled clients. These can be adapted for use in forensic learning disabilities settings.

Self-esteem related interventions should be adapted for community clients as well. These can be compared with those developed for forensic settings. These comparative evaluations can help professionals in both kinds of settings understand the issues better.

All staff dealing with patients with learning disabilities should be provided with training on the importance of self-esteem as well as on self-esteem enhancement interventions for patients.

**Conclusion**

The widely witnessed relationship between self-esteem and mental health in the mainstream population was also found in a forensic learning disabilities setting. Self-esteem needs are important in forensic as well as in non-forensic settings. Services should try and meet these needs to help boost not only the patients’ mental health but also their quality of life. There is a need to better understand the concept of self-esteem and what sorts of factors are involved in development of a self-concept among people with learn-
ing disabilities. This research project only scratches the surface of what is an extremely complicated issue. Hopefully, it would help heighten the awareness of mental health professionals regarding the self-esteem needs of the service users.

**Limitations and Suggestions**

All the participants in this project were men. The reason for this was relative accessibility of male data. The number of female patients in forensic settings tends to be quite small; and those with a learning disability make up an even smaller proportion of women detained under the British Mental Health Act. The quantitative measures used in this research project provide an easy way to compare self-esteem and the global severity index. Still the fact remains that while the RSES scores measure aspects of self-esteem, they are not self-esteem. A lot of information is lost when a complex and multi-dimensional concept such as self-esteem is represented with only a number. The same can be said of the Global Severity Index, even though the GSI is a much more thorough instrument as compared with the RSES. The GSI is also just a number representing overall psychopathology and it serves as a measure of mental health, only indirectly. There is a need for better measures of mental well being so that one does not have to rely on measures of psychopathology as measures of mental health. This research project used data that were routinely collected by the services. This caused the research to limit itself to asking a particular kind of question.

There are several questions that arise directly out of this research project. Would a negative correlation between RSES and GSI also be obtained for women with a learning disability? Would the relationship also hold true in forensic settings for women? Research that seeks to answer these questions would be useful for settings where women are detained. An important area to study would be the design and contents of self-esteem related interventions currently in use in the community with non-disabled clients. Outcome evaluation of self-esteem based studies can be compared with offence-related interventions that do not explicitly take into account self-esteem related issues. These studies can help the services identify treatment needs further and thus improve the quality of care provided to service users in forensic learning disabilities settings.

**References**


Derogatis, L. R. (1975). *Brief Symptom Inventory.* Baltimore: Clinical Psychometric Research


Received March, 2007
Revision received January, 2008
RELATIONSHIP BETWEEN SHYNESS AND ADJUSTMENT AMONG COLLEGE STUDENTS

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The present study reports relationship between shyness and various areas of adjustment of college students. A total of 160 subjects were selected through stratified random sampling from the various degree classes of different faculties of Maharaja's College of Mysore city. Out of 160 subjects 126 were men and 34 were women. They were assessed using Shyness Questionnaire (Crozier, 1995) and Adjustment Inventory for College Students (Sinha & Singh, 1995). One-way ANOVA was employed to find out the significance of difference between students belonging to low, medium and high levels of shyness in different areas of adjustment and total adjustment. Results revealed that shyness has got no differential effect on educational adjustment of the students. There is a significant linear increase in the home, health, social, emotional and total maladjustment as the level of shyness increased. Higher the shyness more was the maladjustment in home, health, social and emotional adjustments in the college students. In addition, treatment aspects of shyness are discussed.

Shyness may be defined experientially as excessive self-focus marked by negative self-evaluation which creates discomfort and/or inhibition in social situations and interferes with pursuing one's interpersonal or professional goals. Many pre-school, school going children and adolescents, show initial wariness on meeting a stranger, have doubts about one's ability to contribute effectively to social encounters and the belief that others will negatively evaluate one's action/behavior may contribute to the withdrawal behavior and social anxieties that characterize shyness or social phobia (Crozier, 1995). About 13% of the general population actually withdraws from daily life experiences in order to avoid the social interactions they dread (Anonymous, 2000). The steadily increasing percentage of children and young adults, who report being shy is at alarming rate i.e., 53.5% from moderate to severe levels of shyness (Natesha & D'Souza, 2007), in South India, may be analyzed as negative acculturation to a confluence of social forces operating. The rise in shyness is accompanied by spreading social isolation within a cultural context of indifference to others and a lowered priority given to being sociable, or in learning the complex network of skills necessary
to be socially competent.

A common observation in most of the shyness research on adolescents and college students is that the consequences of shyness are deeply troubling. Shyness leads to higher levels of anxiety (D’Souza, 2003), decreased levels of happiness (Sreeshakumar, D’Souza, & Nagalakshmi, 2007), neurotic tendency and lower academic performance (D’Souza, Urs, & James, 2000), lowered self-esteem and decreased self concept (D’Souza, 2005; D’Souza, Urs, & Ramaswamy, 2003), increased fear reactions (D’Souza, Gowda, & Gowda, 2006) and social and emotional maladjustment (D’Souza & Urs, 2001). A degree of shyness is normal whenever social expectations are new or ambiguous. Shyness begins to emerge as a problem if it becomes not merely situational but dispositional, so that the child / adolescent is labeled as shy.

From the preceding review it is evident that shyness affects the individual in various domains. Studies related to shyness and adjustment among college students is insufficient in India, even a thorough search did not yield fruitful results. The college students in India are undergoing a rapid transformation (culture shock) due to globalization. They are not in a position to adapt to the changes happening due to various phenomenon which leads to inferior and insecure feelings, which further leads to shyness. In the present study, an attempt is made to find out the influence of shyness on various areas of adjustment: home, health, social, emotional, educational and total adjustment.

**Hypothesis**

It was hypothesized that shyness will affect adjustment negatively.

**Method**

**Sample**

A total of 160 (126 boys & 34 girls) students served as subjects for the present study. The sample was selected from various degree classes of different faculties (B.A./B.Com./BM) of Maharaja’s College of Mysore city, Mysore. The students were selected both from English and Kannada medium classes. Stratified random sampling technique was used to select the sample. Their age varied from 17 to 22 years.

**Instruments**

1. **Shyness Questionnaire**

This questionnaire was developed by Crozier (1995) of University College of Cardiff. It consists of 26 items and requires the subject to indicate his/her response by ticking “YES”, “NO” OR “DON'T KNOW”. The items of the questionnaire are based on situations or interactions like performing in front of the class, being made fun of, being told off, having one's photograph taken, novel situations involving teachers, school-friends’ interaction and so on. Of the 26 items, shyness is indicated by a 'YES' response for 21 items and a 'NO' response for 5 items. The analysis of the scale using SPSS program resulted in Cronbach's alpha coefficient of .82. Shyness question-
naire developed by Crozier (1995) is widely accepted internationally and the author has used it widely in various situations to assess shyness in India.

2. Adjustment Inventory for College Students (AICS)

AICS developed by Sinha and Singh (1995), consists of 102 items. These 102 items measure adjustment of the college student in five areas - Home (16 items), Health (15 items), Social (19 items), Emotional (31 items), Educational (21 items) and Total adjustment (102 items). The subject has to answer each question by ticking either YES or NO in the appropriate box. Co-efficient of reliability for the inventory was determined by split-half (.83-.97 for various areas), and test-retest (.82-.96 for various areas), Hoyt's method (.85-.95 for various areas) and lastly K-R formula 20 (.82-.93 for various areas). In item analysis validity coefficients were determined for each item by bi-serial correlation method and only such items were retained which yielded bi-serial correlation with both the criteria (a) Total score and (b) Area score, significant at .001.

Scoring

For the shyness questionnaire, items worded in the direction of shyness, responses were scored 2 for “YES”, 1 for “DONT KNOW”, and 0 for “NO”. Scores were reversed for the items worded in the opposite direction. High scores indicate high level of shyness and low scores indicate low level of shyness. Depending on the scores, the subjects were classified into three levels of shyness high, medium and low.

For Adjustment Inventory for College Students, using the transparent scoring keys, responses were scored (responses marked under circle were considered and each was assigned a weightage of one score) and classified into five areas of adjustment: Home, Health, Social, Emotional, Educational and total Adjustment. As per manual, high scores on home and health adjustment indicated unsatisfactory adjustment; in social adjustment high score indicated aggressive behavior and low
scores indicated submissive and retiring; in emotional adjustment high scores indicated unstable emotion and low scores emotionally stable and, lastly, in educational adjustment high score indicated poor adjustment towards their curricular and co-curricular programs and persons with low scores tended to have interest in educational activities.

Statistical Analysis

Using SPSS (Windows Version 10.0) Statistical Package, One-way Analysis of Variance (ANOVA) was employed to find out the difference in various areas of adjustment including total adjustment among different shyness groups (Low, Medium, and High) of students. Also Duncan’s Multiple Range Test (DMRT) was applied as a post hoc test whenever F value was found to be significant.

Results

Table 1 presents results of One-Way ANOVA for mean adjustment scores in different areas of students having low, medium and high levels of shyness.

Home Adjustment: In this area, students with different levels of shyness differed significantly in their mean scores, $F(2, 157) = 6.50, p < .01$. The mean values for students with low, medium and high levels of shyness were 5.76, 6.43 and 7.23, respectively. We find a linear increase in the home adjustment scores of students as the shyness level increased, indicating that higher the shyness more is the maladjustment. Further, DMRT revealed that only students with low levels of shyness differed significantly from students with high level of shyness ($p < .05$).

Health Adjustment: In this area also students with different levels of shyness differed in their mean scores, $F(2, 157) = 7.42, p < .001$. The mean values for students with low, medium and high levels of shyness are 4.24, 4.65 and 5.74, respectively. We find a linear increase in the health adjustment scores of students as the shyness level increased, indicating that higher the shyness more is the maladjustment. However, DMRT revealed that only students with high levels of shyness differed significantly from low and medium levels of shyness ($p < .05$).

Social Adjustment: Students with different levels of shyness differed significantly in their mean scores, $F(2, 157) = 15.40, p < .001$. The respective mean values for low, medium and high levels of shyness are 8.98, 8.88 and 6.58, as high score indicates aggressiveness and low scores indicate submissiveness. We could find a linear increase in the submissiveness in this area as the level of shyness increased. However, DMRT revealed that only students with low levels of shyness differed significantly from medium and high levels of shyness ($p < .05$).

Emotional Adjustment: In this area, students with different levels of shyness differed significantly in their mean scores, $F(2, 157) = 8.30, p < .001$. The respective mean values for low, medium and high levels of shyness were 12.31, 14.05 and 15.18. We could find a linear increase in the
Table 1

Results of One-Way ANOVA for Mean Scores of Various Sub-Areas of Adjustment of Students Belonging to Low, Medium and High Levels of Shyness

<table>
<thead>
<tr>
<th>Variables</th>
<th>Shyness</th>
<th>M</th>
<th>SD</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>Low</td>
<td>5.76</td>
<td>2.25</td>
<td>6.50*</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>6.43</td>
<td>2.51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>7.23</td>
<td>2.02</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>Low</td>
<td>4.24</td>
<td>2.46</td>
<td>7.42**</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>4.65</td>
<td>2.52</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5.94</td>
<td>2.57</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Low</td>
<td>8.98</td>
<td>2.75</td>
<td>15.40**</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>8.88</td>
<td>2.27</td>
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</tr>
<tr>
<td></td>
<td>High</td>
<td>6.58</td>
<td>2.56</td>
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<tr>
<td>Emotional</td>
<td>Low</td>
<td>12.31</td>
<td>4.14</td>
<td>8.30**</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>14.05</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>15.18</td>
<td>3.76</td>
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<tr>
<td>Educational</td>
<td>Low</td>
<td>10.47</td>
<td>2.59</td>
<td>1.99</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>11.10</td>
<td>2.92</td>
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</tr>
<tr>
<td></td>
<td>High</td>
<td>11.40</td>
<td>2.28</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Low</td>
<td>39.36</td>
<td>9.51</td>
<td>16.17**</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>45.10</td>
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</tr>
<tr>
<td></td>
<td>High</td>
<td>48.74</td>
<td>8.44</td>
<td></td>
</tr>
</tbody>
</table>

$df = 2, 157$; * $p < .01$. ** $p < .001$.

mal-adjustment in this area as the level of shyness increased. However, DMRT revealed that only students with low levels of shyness differed significantly from medium and high levels of shyness ($p < .05$).

Educational Adjustment: In this area, students with different levels of shyness did not differ in their mean scores, $F(2, 157) = 1.99$; $p = n.s$. The mean values being almost same for the levels (10.47, 11.10 and 11.40 for low, medium and high levels, respectively) contributed for the non-significant difference. In other words, shyness has got no differential effect on educational adjustment.

Total Adjustment: Students with different levels of shyness differed significantly in their mean scores, $F$
The respective mean values for low, medium and high levels of shyness are 39.36, 45.10 and 48.74. We could find a linear increase in the maladjustment in this area as the level of shyness increased. Further, Duncan’s Multiple Range Test (DMRT) revealed that each shyness group differed significantly from other group ($p < .05$).

**Discussion**

The main findings of the study indicated that there is a significant linear increase in the home, health, social, emotional and total maladjustment as the level of shyness increased. Shyness has got no differential effect on educational adjustment.

The findings of the present study are not completely in agreement with the studies conducted earlier. Studies have shown that shy students are considered less competent. Although shyness is not related to intelligence, shyness affects students overall educational experience negatively (D’Souza, 2005). In the present study, shyness did not influence educational adjustment. Shyness becomes an important issue in the classroom when students are evaluated, in part, on their classroom participation. In fact, research indicates that shy students who attend college will have significantly lower grade-point averages than students who do not suffer from shyness.

In the present study, high shyness leads to decreased social and emotional adjustment among college students. As a practical matter, shy adolescents obtain less practice of social skills and develop fewer friends. They tend to avoid activities, such as sports, drama, and debates that would put them in the limelight. Also, studies in general revealed that shy children tend to become anxious teens and shy adults tend to have smaller social networks and to feel less satisfied than others with their social support networks. Shyness seems to be a form of social anxiety where the individual may experience a range of feelings from mild anxiety in the presence of others to actual fear to a pronounced anxiety disorder. For a person experiencing shyness, it is often anxiety-producing to have to interact with others and, at the same time, the loneliness of limited relationships is profoundly painful. Sometimes not only adolescents’ bodies change but their social and emotional playing fields are redefining them.

Most of the respondents studied in the present investigation were from rural area, where they are fluent with only one language i.e., Kannada. The students have to adjust with at least one more language i.e., English, where they find it difficult to communicate and write. This is a major setback for them in social interactions, including classroom environment, which obviously make them withdrawn from such situations, where they find it difficult to adapt, which, in turn, further complicates emotional complexes for the students. This could be one of the reasons where shyness negatively affected their adjustment in various areas, which is quite expected.

Since shyness is now being recognized as a major social problem in our society, social scientists are devoting considerable resources towards
identifying ways to help shy people. Treatment for shyness is multifold, ranging from psychological to biological. Psychologists may apply procedures such as videotaping the child/adult speaking at school/college (e.g., with only a parent present) and having the child/adult to view the tapes related to programs overcoming shyness daily before going to their institutes. Cognitive therapies aimed at treating shyness were found to be very effective than traditional therapies (Shariatnia & D'Souza, 2007). Some physicians will prescribe a selective serotonin reuptake inhibitor, like Prozac, for cases of severe shyness characterized as selective mutism or social anxiety disorder, but medication should be a last resort because of the unknowns about long-term side effects. If something is not worked out for shyness, one may want to take note of increasing levels of shyness as a warning signal of a public health danger that appears to be heading toward epidemic proportions. To conclude, therapists and mental health professionals should recognize the serious need for treatment of shy people, and should develop appropriate treatment approaches to liberate millions of people who are trapped in their silent prisons of shyness.

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Received April, 2006

Revision received August, 2007
REVIEW ARTICLE

SIGHING HEIGHTS: AN ETHNOGRAPHIC REPORT ON SUSUM VALLEY IN NORTHERN PAKISTAN

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This ethnographic report is about the social condition of a deprived population struggling in the Susum Valley in the Northern Areas of Pakistan. These people belong to the Shia Imami Ismaili Muslim community. Though few initiatives have been taken to rule out and minimize the environmental, social, and health care problems with the collaboration of Aga Khan Rural Support Programs along with other Governmental bodies, however, a lot has to be done yet. This report highlights certain alarming health care needs which require immediate social and environmental planning to fulfil them.

Approximately 9,500 feet high, surrounded by snowy mountainous chain of Tirch-Meer with its connecting borders to Afghanistan, and Tajikistan, Susum Valley is situated in the Chitral region of Northern Pakistan. Due to high altitude, a tough geographical makeup, and highly adverse climatic conditions, the local community is faced with some major life threatening concerns. Being a nurse and as a social scientist, I believe that it is important to bring these issues to the attention of concerned authorities such as Government of Islamic Republic of Pakistan and The Aga Khan Foundation so that together a difference could be created in those deprived human lives.

Let me begin with the basic existential need. Nobody can deny the fact that oxygen is the vital need for human survival. However, for the inmates of these mountainous areas like Susum even breathing is a major concern. At this height hypoxia (oxygen deficiency) is a key problem. It is causing other physiological ailments like: cardio-vascular diseases including hypertension, cardio-megaly, cerebro-vascular accident (stroke) and angina; musclo-skeletal malformation, e.g., arthritis; and respiratory disorders like asthma. Respiratory infections, especially tuberculosis, are some common health problems identified. Due to snowfall and high cold (-0 °C) poor families consisting of 7-10 members per household are left with no option than to protect themselves by burning wood and get heated, and remain confined in the same room. Cooking, breeding hens, infant care and whole livelihood is carried out within four walls with slightly opened roof. A typical feature of their traditional houses is shown in Figure 1.

It is important, therefore, to identify the consequences of such environmental factors on the lives of...
people living in Susum Valley. Not only the burning wood, ash and smoke adversely affect their respiratory system but also they affect eye-sight which is a leading factor in causing blindness. Twenty seven years old Afza Bibi developed aging signs and her features were as if she was 35 years old. She mentioned with great sorrow while coughing in between so many times, “I have to run this household by cutting wood and burning it for cooking in this typical set up. This is our traditional house, no ventilation, just heat and smoke with tears and cough and we are used to it.”

In addition, deterioration of hand dexterity is commonly found especially in females since early age, as they have multiple roles to perform including the labour outside the home like cattle caring and harvesting along with the household management to support their families. This deformation becomes increasingly painful with aging and becomes unbearable as reported by some elderly women. A 60 years old, Bibi Ara said, “For a woman there is very challenging life in these mountains. We just have to
survive in these critical conditions for our family and have to bear all the miseries. We don’t have any choice left. My fingers and wrists are aching since I was 14 years old. But it is a common thing here, who bothers!” (Figure 2)

**Figure 2**

*Deteriorated hand dexterity*

Women also get victimized when they do not find local health facilities for maternity and neonatal adversities. At present high mortality rate has been identified due to limited care giving measures and professional health care providers. When Ashraf, a community health worker, was asked about the services provided, she mentioned, “We do have a dispensary with maternity ward now in Susum Karimabad but just one midwife is there, and no registered nurse or a doctor is available here. In the trainings we are taught that according to the community needs, we should provide them primary care to take preventive measures as well but, unfortunately, we don’t have resources for all this and even for curative purposes just limited facilities are available here. Hence, for critical conditions one has to go downtown which has often worsened the case. Qualified health professionals don’t want to be here because from communication to transportation, every thing is challenging. Who wants to be here and work for us? This is our fate, how we can prevent the community from T.B. or cardiomegaly when oxygen is a major problem”.

Realizing all these hardships, one of the local inmates Mubarak Khan working as a local teacher said, “Living with these chronic health maladjustments has given us nothing but suffering and a life full of agony. In the past, just to practice our faith, our ancestors had to protect themselves, hence, they decided to seek shelter in these mountainous peaks, but now we need some help and consideration to live with dignity and honour as humans”.

As the United Nation Universal Declaration of Human Rights (10 December, 1948), Articles 1 and 25 say,

1. All human beings are born free and equal in dignity and rights.
25. Every one has the right to a standard of living adequate for the health and well being of himself and of his family.

Considering these facts stated above, there is an immediate need to develop some strategic plans and monitor the existing services provided by our health, education, and rural development programs. Although the process of awareness and to bring the desirable changes, a few initial steps have been taken by the mutual col-
laboration of Government of Pakistan and The Aga Khan Developmental Network institutions but certainly a lot more has to be done to appreciate the courage and sacrifice of this deprived community and help them to live quality life. Since generations they are in a cage of geographical barriers. If all humans are born free then why this freedom of getting the basic survival

**Figure 3**

*Pan Chakki*
need is beyond their access. Although there are some irresolvable human paradoxes due to which one has to bear some natural challenges but what about the controllable factors? Can we take some effective measures to mobilize the whole population so that, at least, they can breathe easily?

Although various rural, education and health development programs have helped them to improve their quality of life and to promote their living standards, such as the direct access to a water plant is provided but the question is whether it is still drinkable? One can easily witness in that mountainous area that lakes and rivers are naturally full of stones with algae, other growths and even animal wastes. Therefore, monitoring and education is urgently required to create awareness among local people regarding ways to ensure consumption of safe water. Eventually, it would be a preventive measure for the water-borne disease which has affected this area of Susam Karimabad.

Due to the harsh cold weather, people do not take bath regularly and also do not drink enough water as per their body need, leading to chronic renal problems, hence, some basic health education programs such as importance of personal hygiene and importance of ensuring intake of enough fluids must be organized and conducted.

In addition, educational programs teaching safety measures for food intake are also needed. The locally designed typical Pan Chakki for grinding wheat to produce flour is worth observing. It could be observed from Figure 3 as well that it is full of spider webs. In a nutshell, the sick people seek psychosomatic consultation ranging from the treatment of scorpion venom to the specially paid visits to Pari Khans (it’s a local belief that those people are possessed with some supernatural powers to heal the sufferers). With regard to the treatment of psychosomatic conditions, this region needs ample attention.

Now the onus is upon the institutional leadership, local authorities, including governmental and non-governmental organizations, to join hands together for implementing the social vision of Islam by promoting physical wellbeing of this deprived and ignorant population. This would not only be the milestone in the history of Chitral but could also be a major step in fostering self actualization by making a difference for the common good in response to God’s mercy upon us, those who can sensitize and are ready to CARE!

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Received August, 2007
Revision received January, 2008
CASE STUDY

A CASE STUDY OF SOCIAL PHOBIA: SELF-PERCEPTION OF BEING UGLY

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This case study discusses the case of a 21 years old young man referred because of his problem of social anxiety and strong feelings of ugliness. The client fulfilled the DSM IV criteria of Social Phobia. His family background and academic history showed gradual development of his problem. The informal assessment (A-B-C chart, Mental Status Examination, categorizing the distortions in thinking and subjective ratings) and formal assessment (Rotter’s Incomplete Sentence Blank, Beck Depression Inventory and Manifest Anxiety Scale) also confirmed the diagnosis of social phobia with the presence of depression as a secondary problem. Management plan included Behavior therapy (Relaxation Training, In vivo desensitization), Rational Emotive Behavior therapy (Disputing, Rational Emotive Imagery and Bibliotherapy), Cognitive Behavior therapy (challenging automatic thoughts), Assertiveness training, social skills training and self-esteem building exercises. Thirteen therapeutic sessions were conducted. There was marked improvement in the client’s condition indicated by mid- and post-treatment assessment scores on BDI, MAS and Subjective ratings.

Our society is one of the societies which are very much governed by the rules and standards of external beauty of a person. This leads many of our youth to suffer inferiority complex. We usually believe that it is just girls who are mainly sufferer of this obsession and always want to look good but the present case study draws attention towards the young men of our society who also are the victim of this beauty syndrome. The purpose of reporting this case study is to show how the useless and illogical standards of beauty in our society bring the vulnerable youth at the edge of psychological breakdown. Especially, when they don’t find any support at home as well. If the parents and siblings are also critical then this inferiority complex gets worse by the family’s attitude along with society’s rejection. This double rejection results in double breakdown within the sensitive teenage and thus resulting in an insecure and unsure youth. In this case report the detailed formulation of the case on the basis of client’s history and psychological assessment is mentioned along with a successfully administered treatment plan.

M.Y. 21 years old male, student of B.Com., part I, was referred by his friend due to his problem of social
anxiety. Clinical interview with the client generated complaints of panic-like feeling while talking to people especially women, inability to maintain conversation, feeling that everybody is looking at him and laughing at him and a very strong belief that he is ugly. Client has had strict parenting and has a critical elder brother, who discourages him and keeps on telling him that he is young and stupid.

His school seems to have played the most crucial role in developing his present problems. According to the client his problem of social anxiety started when he was in class 6. He had difficulty in studying English due to which his class fellows laughed at him, which was very embarrassing for him. Since then he has been afraid of speaking in public. The client’s problem of feeling ugly started when he reached puberty and different physical changes occurred in him. At that point his problem of poor English was no longer there but he began to see himself as ugly. His class fellows also made fun of his dark complexion. All these factors first initiated and then exasperated his feelings of inferiority and social anxiety. Client’s problem affected his daily functioning very badly; he started to avoid socials and meeting others. He even avoided meeting his relatives.

In informal assessment A-B-C chart, Mental Status Examination, categorizing the distortions in thinking and subjective ratings of the client were used whereas for formal assessment Rotter’s Incomplete Sentence Blank (RISB; Rotter & Rafferty, 1950), Beck Depression Inventory (BDI; Beck, 1996) and Manifest Anxiety Scale (MAS; Taylor, 1953) were administered.

Client’s symptoms were initially pointing towards the social anxiety disorder. There were different antecedents to his problem at different times. He had harsh and strict parents and a critical elder brother, which seems to have obstructed the development of a positive self-image and self-esteem. According to Larson, Richards, Moneta, Hombeck, and Duckett (1996), if one is unable to develop an adequate bond with one’s primary caretaker as a child, one may lack self-regulatory skills to calm down, focus and soothe oneself in situations one perceives as stressful or chaotic. Attachment specialists attribute this as a possible cause of social anxiety disorder and other anxiety, depression and stress-related disorders.

He got transferred to an English medium school when he was in class 6, where he had to face bullying attitude of students because of his poor English. Bullying causes all sorts of damage. Field (n.d.) believes that “girls become sad and boys become mad”. The target can be affected emotionally, physically, academically and socially. They can experience poor self-esteem, physical health difficulties and anxiety disorders, including panic attacks, depression and post traumatic stress disorder. Bullying can lead to shyness, social isolation or social phobia. Later as he experienced rapid physical changes especially height burst, he began to feel ugly. This belief was facilitated by the bullying attitude of boys at school and college. According to Veale (2001), beliefs about being defective and the importance of appearance drive vary-
ing degrees of social anxiety and avoidance. Thus, depending on the nature of their beliefs, patients will tend to avoid a range of public or social situations or intimate relationships.

Clinical observations of the client supported his presenting complaints as he did not make eye contact throughout the initial sessions. His scores on MAS were also very high which supported the information provided in presenting complaints and history. His scores on RISB also indicated maladjustment in different areas of life, which was in consonance with his history. His major conflict appeared to be in social environment; this went consistent with a history of bullying and automatic thought distortion of “mind reading”. He had a generally regretful attitude towards his past and a pessimistic attitude towards the future, as indicated in RISB. This is supported by the errors of “regret orientation” and “fortune telling” in his self-assessment of automatic thoughts. Similarly, his characteristic traits on RISB showed a very self-damning attitude and self-image, which was consistent with the presenting complaints of client as well as with the automatic thought distortion of “labeling”.

In the formal assessment, the client met all the criteria of social phobia (DSM IVTR-APA, 2000). He also had a very high score on BDI, which could be due to his underlying negative beliefs about his self and resulting social skills deficits. Lewinsohn (1974) proposed a more behaviorally based model that attributes depression to a reduction in reinforcement. People at risk for depression have social skills deficits that cause them to elicit negative responses from others (and other reinforcement), which, in turn, causes them to view the world negatively and withdraw, leading to depressive cognitions and maladaptive social behavior. Although he got high scores on BDI, he did not fulfill the criteria of DSM IV Major Depressive Disorder and fell in the Not Otherwise Specified Category (DSM IVTR-APA, 2000).

The information produced by the history and psychological assessment were consistent with each other and provided a very clear picture of client’s problems. M.Y.’s prognosis was good. He was very much motivated to receive treatment. He regularly completed his homework assignments. Although his problem was chronic, he had deep insight into his problems. This was a strong factor indicating the possibility of successful therapy.

**Therapy**

The client was first educated about the vicious cycle of anxiety and its possible management. 16 Progressive muscle relaxation (Jacobsen, 1938) was used to help the client relax. This was gradually reduced to the cue word “relaxation” in the last sessions. As a next therapeutic step, in vivo desensitization (Morris, 1991) was used in which the hierarchy of anxiety provoking situations was drawn up with the help of the client. The client was gradually exposed to the anxiety provoking situations in reality. For the exposure of situations involving interaction with women, therapist took the help of her female colleagues and conducted group sessions with the client. Disputing (Ellis
& MacLaren, 1998) was used at all four levels to challenge his irrational belief “it is awful, if someone rejects me”. Rational emotive imagery (Ellis & MacLaren, 1998) was used to lower the client’s anxiety in particular anxiety provoking situations. Verbal challenging (Beck, 1970) was used to help modify client’s distorted beliefs of “regret orientation”, “fortune telling”, “labeling”, “mind reading” and “catastrophizing”. Assertiveness training (Wolpe & Lazarus, 1966) was used to teach the client to respond to other people’s bullying assertively. Social skills training (Spence, 2003) was used to teach the client to initiate and maintain conversation. Self-esteem improving exercises (Fresh, 2003) and Bibliotherapy (Ellis & MacLaren, 1998) was also used to help improve his self-esteem.

**Outcome**

In mid and post treatment assessment, BDI and MAS scores showed a gradual decline for the client, which indicated that he had been able to control his anxiety and associated depression through the course of therapy. Figure 1 shows the client’s scores on MAS which are falling in the category of severe in Pre (48) and mid (42) assessment whereas in post-treatment assessment client’s score was 26 which was falling in the moderate category.

Figure 2 is the graphical representation of client’s scores on BDI. These were representing the severe category (29) in pre-treatment assessment, moderate (22) in mid and mild (16) in post-treatment assessment. Thus it is showing a gradual transition from severe to mild category of depression through the course of therapy.

**Figure 1**

*Graph showing Pre, Mid & Post MAS Scores*
Other than psychological assessment, his behavioral observation showed that he was more confident than before. He had started to make and maintain eye contact and talk confidently not only with the therapist but also with the other members who were included in the sessions for exposure purposes. In the exposure of last step of hierarchy, the client confidently spoke for about 20 minutes in front of 6 females. This showed the extent of improvement he made if we compare it with the first session in which he was even unable to make eye contact with the therapist. Figure 3 shows the Pre, Mid and Post subjective ratings by the client on his major complaints.
This case report examined the probable etiology of social anxiety in a young man while describing the treatment plan for the client, which showed prominent improvements in the client having social phobia. The present case depicts that by using the combination of cognitive behavioral and emotive therapy, the therapeutic outcomes can be enhanced to manage the clients with social phobia.

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Received April, 2008
Revision received June, 2008