Effect of cognitive behaviour therapy on adjustment, intensity of symptoms and automatic thoughts in schizophrenia

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ABSTRACT

Aim: This study was undertaken with the objective of assessing the effect of Cognitive Behaviour therapy (CBT) on subjects suffering from schizophrenia or schizoaffective disorder and to observe the sustainability of its effects over a longest period of time. A brief study was also undertaken about changes in career attitudes after psycho education about their wards' illness.

Method: Fifty-one subjects participated in the study and completed the required numbers of sessions of CBT. Evaluation was carried out before and immediately after CBT. Twenty-four subjects were followed up again after nine months to perceive sustainability of CBT effects. One family member for each subject was administered an attitude questionnaire before and after psycho education about schizophrenia.

Results: CBT sessions resulted in marked improvement in overall adjustment. Intensity of symptoms decreased from high to moderate or high to low intensity immediately after CBT. At follow-up nine months later, intensity of symptoms increased from low to moderate in most of the subjects in comparison to immediate post CBT evaluation but was still less than baseline. There was marked decrease in negative thoughts and feelings immediately after CBT. During follow-up after nine months 60% subjects showed more improvement marked in negative thoughts than immediate post CBT while 40% showed less improvement than immediately after CBT. Negative feelings increased after nine months in most of the subjects, but not to pre-treatment levels. Family members also experienced more positive feelings about their sick wards after psycho education.

Conclusion: Positive effects of CBT may not be sustained over a longer period of time and may need repeated sessions.

Key words: CBT, Schizophrenia, Psychosis

Cognitive behaviour therapy (CBT) like behaviour therapy is problem oriented, structured and time limited. It aims at correcting psychological problems (emotional, cognitive and behavioural) and improving coping skills (dealing with problem situations, alleviating distress). It follows an explicit agenda, deals with the 'here and now' and adopts a learning rather than psychodynamic approach (Freeman, 1998). Participants in CBT may benefit from learning specific strategies for coping with psychotic symptoms, being involved in goal setting and treatment planning.

Behaviour modification techniques had been used to control psychotic symptoms before 1990s also. Although these techniques were not expected to produce enduring, fundamental changes in the illness, yet they could help reduce subjective distress associated with chronic psychotic symptoms (Bisbee and Lee, 1988; Bellack, 1986; Pilsecker, 1981). Studies show that persons suffering from schizophrenia may benefit from interventions such as training in problem solving skills, relaxation and stress management (Norman et al, 2002; Starkey et al., 1995; Bellack et al., 1989). In a number of large scale outcome studies on schizophrenia, CBT affected significant gains for those sufferers who were not helped with medication, and may have prevented consolidation of the illness if provided in early stages (Beck and Rector, 2000). Sufferers with chronic schizophrenia showed reduction in severity of symptoms and lower relapse rate after CBT (Dickerson et al., 2000; Vellegan et al., 2000; Jones et al., 2000; Tarrier, 1993).

When added to their routine clinical management, persons suffering from schizophrenia benefited from CBT with improvement in positive and negative symptoms (Rector and Beck, 2001; Jenner, 2001, 1998, 1995; Dickerson et al., 2000; Sensky et al, 2000, Tarrier, 1999, 1998, 1993, 1992; Haddock et al 1998; Mc Gorry et al, 1996; Garety et al, 1994; Kingdom and Turkington, 1994, 1991; Perris, 1992). Cognitive interventions have also been shown to reduce convictions in beliefs about hallucinations and delusions, in management of amount of time spent hallucinating and disruption due to illness (Turkington and Siddle, 1998; Haddock, 1996; Chadwick and Birchwood, 1994; Garety et. al., 1994; Scott et. al., 1992; Chadwick and Lowe, 1990; Fouler and Morely, 1989). A systematic incentive programme can motivate even extremely withdrawn chronic schizophrenic subjects (Dyek 2000; Paul and Lentz, 1977). Wielisma et al 2001 described the durability of positive effects of CBT with coping training over four years on psychotic symptoms and social functioning.

The above studies were conducted in European countries. Since, to our knowledge, no similar studies have been carried out in India, it was considered worthwhile to examine the effect of CBT on Indians suffering from schizophrenia or schizoaffective disorder and to observe the sustainability of its effects over a longer period of time.

Along with psychotherapy of persons suffering from schizophrenia, psycho education for their caregivers may be of benefit to reduce levels of emotional
involvement and frustration, to manage negative symptoms of sufferers and to effect a positive change in attitude within families. (Dixon et al, 2000; Sehoolet et, at, 1997; Mc Fatlane et al, 1995, Leff et al., 1990; Hogarry et al, 1986). Hence as a small subpart of our study, an effort was made to examine the effect of psycho education on attitude of caregivers of persons suffering from schizophrenia.

METHODOLOGY

The study was carried out at the Department of Psychiatry, Dr. Ram Manohar Lohia Hospital (RML), a publicly funded tertiary care center providing inpatient and outpatient care. A sub-sample of willing subjects and caregivers was drawn from our ongoing Indo-US Project on “Genetics of Schizophrenia”, in which subjects suffering from schizophrenia or schizoaffective disorder (DSM IV criteria) were recruited from different psychiatric facilities in Delhi. The English or validated Hindi version of the ‘Diagnostic interview for Genetic Studies’ (DIGS) is (Nurnberger et al, 1994) was the primary source of clinical information (Deshpande et al. 1998). Family history was obtained by means of the ‘Family Interview for Genetic Studies’ (FIGS) (NIMH, 1992). Additional information was obtained from available medical records. Consensus diagnosis was established using DSM-IV criteria.

The initial sample consisted of 55 proband subjects suffering from schizophrenia or schizoaffective disorder. Four proband subjects were excluded from the study: two were actively psychotic and the other two had strong negative thoughts, feelings of guilt and were not ready to participate in the required number of therapeutic sessions. Finally a total of 51 subjects (29 males and 22 females; 35 suffering from schizophrenia and 16 from schizoaffective disorder; 7 of low, 41 of middle and 3 of high economic status) within the ages 17 to 60 years participated in the study and completed the required number of sessions. For A sub-sample were followed-up nine months later. Twenty four, subjects (13 males and 11 females; 17 suffering from schizophrenia and 7 from schizoaffective disorder, 2 of low of middle and 2 of high economic status) participated in the long term followup.

TOOLS

The following tools were administered just before beginning CBT sessions (baseline), immediately after the last session (immediate post CBT) and nine months later (in a sub sample) (follow-up).

(a) Bell's Adjustment Inventory (Hindi adaptation by Mohsin and Shamsad 1981): This inventory measures adjustment in various areas namely: home, health, emotional and social with 135 yes/ no items. Scores are as follows: poor and very poor (219 and above), average (191 to 218), good (163 to 190), and very good adjustment (135 to 162).

(b) Rating on Perceived Intensity of Symptoms: The examined scored frequency of symptoms in terms of number of times the person experienced the symptoms: occurring very frequency (1, at least once daily), moderately (3, at least once a week), occasionally (2, once a month) and not at all (1). Severity of symptoms was defined in terms of the degree to which symptoms were experienced as incapacitating and so reported by the subjects. They were categorized as very highly incapacitating (4), highly incapacitating (3), somewhat incapacitating (2) and not incapacitating (1). Perceived Intensity of symptoms was calculated after combining scores of Frequency and Intensity of symptoms, thus the highest score was 8 and the lowest 2.

(c) Automatic thought record: Based on Bullock and Hersen (1988), this record consisted of: Automatic thoughts, feelings induced by these thoughts and Alternative or Balanced thoughts. These were scored by the examined on a scale between 0-100% with 100% indicating the thought / Mood being present all the time and 0% indicating the thought/mood being present none of the time.

PROCEDURE

After written informed consent from subjects and their caregivers, Bell's adjustment inventory, rating on perceived intensity of symptoms and automatic thought record were administered before beginning CBT, which consisted of twenty sessions over ten weeks, each session lasting for one and a half hours at the rate of two sessions per week. All the 51 proband subjects completed all sessions of CBT. After the last session immediate post CBT evaluation was carried out using the same tools administered before CBT. These evaluations were repeated nine months later among all proband subjects available and willing to participate in follow up.

The main strategies employed for CBT were as follows:

Step I : Intensive Psychoeducation

This involved explaining the disorder of schizophrenia and its symptoms, emphasizing that this was not a shame or weakness but instead was an illness that required careful medical attention and treatment. The therapist also emphasized the role of homework assignments, pointing out that the major part of the therapy would take place in everyday life, with subject putting into practice what had been discussed in the sessions. The approach was thus largely of self help in nature. Information about the structure of therapy was also given.

Step II : Behavioural Analysis.

Detailed information regarding the subject and her/his environment was collected under the ten categories namely: Behavior analysis of problem situation, Classification of behavior situation, Behavioral analysis of conditions maintaining problem, Motivational analysis, Developmental analysis, Sociological analysis, Behavioral changes, Analysis of self-control, Analysis of social relationships and Analysis of social and cultural factors.

Step III: Activity Monitoring and Scheduling.

The subject was explained how to maintain an activity chart. Once information was available about what the subject was doing, a schedule was used to plan activities for the next week. The goal was to increase
activity level so as to maximize mastery and pleasure. Homework formed an important part as for example, when a schizophrenic subject dealt with negative automatic thoughts at home and tried to prevent preoccupation with such thoughts.

Step IV: Assertiveness Training.

The subject began to redefine her/his problem, so that she/he could learn to execute complex new behaviors in novel situations. For example after careful behavioural analysis the subject was helped to realize that there were situations in which she/he was required to act in a positively assertive manner. She/he was taught these skills by the therapist, rehearsed them in therapy sessions and then utilized them in real life situations, she/he recorded these behaviors in a chart regularly.

Step V: Relaxation

The subject reclined comfortably and relaxed, tried to induce a peaceful frame of mind and was taught not to allow any extraneous thoughts to bother him/her. While breathing in and out she/he focused and concentrated on the breathing process itself and was encouraged to feel totally relaxed and comfortable. This procedure took 20 to 30 minutes.

Step VI: Distraction Techniques

As part of mental relaxation exercises, the subject was trained to imagine the most pleasant environment while reclining and was then asked to take a deep breath, hold for a couple of seconds, and then slowly breathe out. This helped subject to relax as well as distracted his/her mind from current problems. Each situation continued for 30-15 minutes and then the next situation was taken up. Subjects were encouraged to practice the same technique at home.

Step VII: Systematic Desensitization in Vitro

From a graded hierarchy of imagined scenes from most disturbing to the least disturbing events/objects, the psychotherapist described the least disturbing event/object while subject relaxed. The subject was encouraged to produce its mental image without getting disturbed and remain relaxed. As soon as subject felt discomfort, she/he was trained to relax. This exercise continued until the subject was able to remain relaxed for 15 minutes while imagining the situation of least discomfort. The same procedure of imagery producing and relaxing continued until the most disturbing event/object was taken up for such exercises. When the subject was confident of doing these all by herself/himself, imagery rehearsals were carried out at home.

Step VIII: Exposure and Response Prevention.

The subject and therapist listed the symptoms interfering most with life and from this list, the one that was easiest to tackle, was taken first. Exposure and response prevention was practiced at the scene alone by the subject till she/he could remain relaxed in the least disturbing situation even when alone. Graded exposure was continued till the most disturbing situation in the hierarchy did not induce tension.

Step IX: Stress Inoculation and Skills Training.

Stress inoculation training included the practice and use of 'coping' self-statements while under stress. The other features of the training included:

i. Helping subjects discover that others often had similar stressful reactions and what they did to get over them.

ii. Teaching the role that their cognitions and emotions played in engendering and potentiating increasing stress, and that they were not mere victims of stress but instead they exacerbated their own stress reactions.

iii. Training subjects in self-monitoring of stress engendering thoughts, feelings and behaviours.

iv. Training subjects to approach problems in a step-wise manner in order to avoid feelings of being overwhelmed.

v. Ensuring that subjects had adequate coping skills such as problem solving, relaxation, time management, use of social support and skills to change environmental demands.

STEP X : Cognitive Restructuring (Termination)

In the last stage of the therapy, the therapist worked with subject to consolidate changes, promote generalizations, and maintain the treatment effects and lessen the likelihood of relapse. By encouraging the subject to discuss how he/she brought about a change within self, the subject was helped to develop a sense of responsibility, confidence and awareness of the possibility of bringing about such positive changes in future. The subject's confidence was reinforced and made stronger in dealing with future problems and difficulties in newly learned and more adaptive ways of functioning.

After nine months, an attempt was made to re-contact all subjects for follow-up to perceive sustainability of effects of CBT. Only 24 could be commerce as the rest had shifted or could not come for follow up. They were re-administered the same instruments as described above, and the results compared to scores immediately after immediate post CBT scores.

T-test was applied to check for significance of difference on measures of adjustment and perceived intensity, between baseline scores versus those immediately after CBT, baseline versus follow up after nine months, and immediately after CBT versus follow up after nine months. Regression analysis was carried out with adjustment scores as the dependent variable comparing scores at baseline and immediately after the last CBT session. Certain demographic and clinical items from the DIGS namely: age at onset (item 64 psychosis in section K), sex, diagnosis, global assessment functioning at worst point of current episode (GAS 1 in section T) and during past month (GAS 2 in section T), longitudinal course of illness (item 101 of psychosis in section K) and pattern of severity of symptoms (item 102 of psychosis in section K) were taken as independent variables.

FAMILY ATTITUDES

Since all subjects were usually accompanied by a relative, it was thought worthwhile to examine their attitude to the subject before and after improving their knowledge about schizophrenia as an illness.

A short attitude scale was developed by
devising 60 statements related to parental attitudes towards their sick children. These were tested by administration to 70 people (mental health workers and lay public), shortened to 16 "most representative" statements, re-administered to a smaller group and finally to 25 parents of schizophrenic children. This scale was finally administered as part of this study. A total of statements consisted of 16 statements about schizophrenia with "Yes" and "No" answers which were rated as highly representative of parental attitudes and were used to assess attitude of these caregivers before and after psychoeducation. Statements showing positive attitude were given 'score 2' to "Yes" and 'score 1' to "No". Negative items were scored exactly reverse. T-test was carried out on attitude scores before and after psychoeducation, which consisted of factual data about schizophrenia coupled with answering questions and doubts about subjects negative behavior over as many sessions as desired by the caret.

RESULTS

Cognitive behaviour therapy (CBT) sessions resulted in marked improvement in scores on the Bell's adjustment inventory at baseline and immediately after CBT: from 2 with "very good adjustment" scores at baseline to 24 after. While five subjects had poor adjustment scores" before CBT at baseline, there were none after CBT (Table I, N=51). Those with average and good improvement shifted "upwards" to the next highest adjustment category. Calculating the percentage of improvement, immediately after CBT, 9 subjects showed improvement to above 20% in their adjustment, 20 showed 11-20% improvement and the rest showed less than 10% improvement. Only one subject out of 51 deteriorated immediately after CBT (Graph 1). Differences in scores of adjustment at baseline and immediately after CBT were found highly significant indicating marked improvement in adjustment due to CBT (t value = 10.374, p<0.01).

Considering only those who participated in follow up after nine months (n=24), at baseline one proband had very good adjustment before CBT and immediately after CBT this number increased to 12. Three of 24 subjects scored poorly on Bell's Adjustment inventory before CBT. While there was no subject proband in the immediate post CBT group showing "poor adjustment" score, during follow-up nine months later this number increased to two. However, since these two were different from the three who scored poorly at baseline, there could be other reasons for their deterioration in adjustment scores. While at baseline only one subject had "very good adjustment" score, immediately after CBT this number increased to twelve. Nine months later four of twelve with very "good adjustment" scores worsened to the next lower adjustment category. Subjects who showed "good adjustment" score immediately after CBT, had "average adjustment" score after nine months during follow-up. These results indicate that CBT has a positive effect on adjustment but this improvement may not be sustained for a longer period of time (Table I, N=24).

Nearly (10 of 24) of subjects remained in the some persistently improved category on Bell's Adjustment Inventory from immediately after to nine months after CBT: four of nine subjects remained between 11-20% improve five remained between 1-10% improved. Ten subjects showed better improvement than pre CBT at baseline but worse than immediately, after immediate post CBT evaluations. Out of these one showed 20% improvement, two showed 11-20% improvement and seven showed less than 10% improvement in comparison to pre CBT baseline evaluation. Only one subject remained at the same level of adjustment in immediate post CBT as in follow-up CB evaluations. Four subjects showed poorer adjustment at nine-month follow-up as compared to their pre CBT baseline scores. One of them had suffered from a heart attack a few months ago and had negative thoughts because of ill healths. Two relapsed because of poor medicine compliance and one had lost his job. This deteriorations in adjustment might be related to these recent adverse circumstances. These results indicate that CBT has a positive effect on adjustment but this improvement may not be sustained for a longest period of time (Graph 2). Differences in scores of adjustment at baseline and follow-up were found significant (t value = 3.424, p<0.05). However differences in scores between immediately after CBT and follow-up were not significant. This indicated that however there was a deterioration in scores of adjustment after nine months (t value = 1.676, p<0.05), it was still better than baseline. On ratings of perceived intensity, intensity of symptoms decreased from high to moderate intensity or from high to low intensity in 43 proband subjects immediately after CBT. Seven proband subjects shifted from moderate intensity to low intensity, only one proband subject showed no change in his intensity of symptoms (he had high intensity scores in pre CBT baseline evaluation). Results show a decrease in intensity of symptoms due to CBT. (Table II, N = 51). Differences in ratings of intensity between baseline and immediately after CBT were found highly significant (t value = 27.519, p<0.01).

After nine months, in 17 subjects intensity of symptoms increased from low to moderate in comparison to immediately after CBT. But it is still very low in comparison to baseline. In 6 subjects low intensity persisted immediately after CBT to follow-up. In only one subject intensity of symptoms decreased after nine months pre CBT evaluation. Subjects have shown intensity of symptoms in follow-up evaluation in between pre and post CBT evaluation. Results indicate that after longer period, effect of CBT starts decreasing (Table II, N=51). Differences in ratings of intensity at baseline and follow-up were found significant as also differences in ratings of intensity immediately after CBT and at follow-up after nine months (t = 3.737, p<.000). Subjects deteriorated in the perceived intensity of their symptoms after nine months from immediately after CBT but were still better than baseline. Since adjustment scores did not change significantly, there was increase in intensity of symptoms after nine months but adjustment was not affected to the same extent.

There were equally marked improvements in Automatic thoughts, during evaluations immediately after CBT (N=51). Thoughts such as worthlessness, no good, less capability, fearfulness, lack of confidence
The purpose of the study was to examine the effect of CBT on persons suffering from schizophrenia or schizotypal disorder and to observe the sustainability of the effect of CBT over a longer period of time. A majority of subjects benefited from Cognitive Behaviour Therapy. While almost all subjects showed marked improvement immediately after CBT, forty two percent maintained this improvement over nine months.

Results indicated that CBT had a positive effect on adjustment in day-to-day life of subjects suffering from these disorders who also had good medical compliance. CBT not only reduced intensity of symptoms but also improved their day-to-day adjustment. Negative symptoms also decreased from 100-80% to 40-0% immediately after CBT. There was marked decrease in negative feelings induced by the negative thoughts. Seniky et al. (2000) described significant reduction in positive and negative symptoms as well as in depression after nine months follow-up in a study where schizophrenic subjects participated in CBT. Wietima et al. (2001) investigated the durability of positive effects on psychotic symptoms and social functioning in a naturalistic study of forty subjects with schizophrenia or related psychotic disorders given CBT and coping training. There was improvement in overall daily functioning at follow up after two and
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four years. Improvement with regard to fear, loss of control, disturbance of thought and interference with thinking was sustained by 60% of his subject. Gould et al. (2001) conducted meta analysis using all available controlled treatment outcome studies of cognitive therapy (CT) for psychotic symptoms in schizophrenia.

The findings suggested that cognitive therapy is an effective treatment for persons suffering with schizophrenia who have persistent psychotic symptoms.

In our study, follow-up analysis indicated that persons receiving CT continued to make gains over time. CBT also reduced intensity of symptoms (in terms of severity and frequency) immediately after CBT in most of the subjects. Dickerson et al. (2000) indicated that CBT intervention appears to be beneficial in reducing overall symptom levels, especially the severity of delusions. Tarrier (1993) in a randomized controlled trial of intensive CBT of subjects with chronic schizophrenia found significant reduction in the severity and number of symptoms in those treated with CBT.

Follow-up nine months later of a subsection of subjects showed individual differences in terms of adjustment score in nearly 42% improvement persisted at the same level from immediately after to nine months follow-up, in another 42%, it decreased from immediately after CBT, from immediate post CBT evaluation but remained still better than at pre CBT baseline. Those subjects (16%) who deteriorated below baseline had relapsed due to poor medical compliance or unfavorable circumstances. Wiersma et al. (2001) concluded in his study that naturalistic follow-up study of sufferers persisted psychotic symptoms shows a remarkable improved subjective quality of life due to CBT interventions and coping training. Negative thoughts were reduced in 60% of the subjects. Intensity of symptoms and feelings induced by negative thoughts also increased after nine months in most of the subjects from immediately after CBT but were still better than baseline evaluation. Only those probands deteriorated who relapsed due to poor medical compliance or who had faced sudden unfavorable circumstances. These findings are contrary to those of Sensky et al. (2000) who administered CBT in schizophrenic subjects for 18 months. At follow-up nine months after the last CBT session, subjects who had received CBT continued to improve.

Some results of the Wiersma et al. (2001) study support our findings. In this study 41% subjects demonstrated substantial improvement in daily activities after two years. At second follow-up four years later improvement in functioning was to a large extent sustained (67%) or even further improved (26%). However while more than half (59%) of Wiersma's subjects experienced improvement, 31% showed deterioration in social functioning in at least one area. The authors also found that percentage of subjects that suffered from anxiety, loss of control and interference with thinking and daily activities due to psychosis dropped from 80% to an average of 20% at first follow-up (after two years) and rose again to 30% at second follow-up (after four years). At the second follow-up the outcome was less favorable but no subject returned to pretreatment level in their study, it was concluded that CBT with coping training can improve both overall symptomatology and quality of life, even over longer periods.

### TABLE I. PRE-Baseline, immediately after CBT and follow-up scores on bell's adjustment inventory

| Evaluation/Adjustment | Verygood | Good | Average | Poor |
|-----------------------|----------|------|---------|------|
| N=51 PRE-BASELINE IMMEDIATELY | 2 | 19 | 25 | 5 |
| AFTER CBT IMMEDIATELY | 24 | 19 | 8 | - |
| N=24 PRE-BASELINE IMMEDIATELY | 1 | 9 | 11 | 3 |
| AFTER CBT IMMEDIATELY | 12 | 9 | 3 | - |
| FOLLOW-UP | 8 | 9 | 5 | 2 |

### TABLE II. PRE-Baseline, immediately after CBT and follow up CBT scores for intensity of symptoms

| Evaluation/Adjustment | High | Moderate | Low |
|-----------------------|------|----------|-----|
| N=51 PRE-BASELINE IMMEDIATELY | 44 | 7 | - |
| AFTER CBT IMMEDIATELY | 1 | 11 | 39 |
| n=24 PRE-BASELINE IMMEDIATELY | 22 | 2 | 0 |
| IMMEDIATELY | 1 | 3 | 20 |
| AFTER CBT IMMEDIATELY | 1 | 14 | 9 |

Graph 2: Percentage of improvement in adjustment from immediately after CBT to follow-up and from baseline to follow-up (N=54)

* Administered CBT in schizophrenic subjects for 18 months. At follow-up nine months after the last CBT session, subjects who had received CBT continued to improve.

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of time. But a status of persistent disablers indicates a continuing need for mental health care and possibly for a kind of ‘booster session’ to refresh ways of coping and to strengthen skills to handle difficult social situations (Wiersma et al, 2001). Similar observations may be applicable to our own study, where subjects began to deteriorate gradually over a period of time but did not drop to baseline levels. “Booster” sessions of CBT may be necessary to prevent decline in adjustment if medical compliance is assured alongside.

In conclusion, cognitive therapy is an effective treatment for suffering with schizophrenia who have persistent psychotic symptoms, as demonstrated in the meta-analysis by Gould et al (2001), but results may not persist unless therapy sessions are repeated from time to time.

On regression analysis adjustment was affected negatively by age at onset and by episodic course of illness, later age of onset an episodic course resulted in better response to CBT. Although interesting, these results need to be replicated in target samples and over a longer period of time.

The attitude of carers improved after psychoeducation. These caregivers were generally not aware of the symptomatology of the illness and could not tolerate the behaviour of their wards. Their expectations were too high for the sufferers to comply. Lack of understanding and stress made them irritable and was expressed as anger and distress towards the affected person. Psychoeducation increased their knowledge about illness and improved acceptance of affected person as she was. This also helped the carer to learn about their management. As a result the relationship between carer and affected person improved and attitudes changed for the better.

Arthur et al (2002) compared scores on family attitude scale to expressed emotions ratings after a brief interview of family members of persons with schizophrenia. Significant correlation between family attitude scale and the brief interview was found. Mbanga et al (2002) developed an effective psychoeducation programme for the management of schizophrenia which required an understanding of attitude towards and beliefs about the disorder in families of the affected probands. They took 100 Xhosa speaking family members for this study. They concluded that an understanding of local attitudes and brief is crucial for the successful development of local psychoeducational programmes. Fujita et al, (2002) investigated the validity of family scale and concluded that FAS scores reflected the state of psychological health of family.

Since CBT effect started decreasing after a longer period of time it is important to note that time to time CBT sessions must be given to the sufferers for the persistence of their improved day-to-day life functioning. It is suggested that there should be some arrangements in hospital for CBT in managing persons suffering from psychosis besides neurotics along with medication. Wiersma et al, (2001) that a more objective assessment of psychopathology and disability revealed the persistent of a substantial numbers of symptoms and social disabilities indicating a need for continuing mental health care and possibly for a kind of ‘booster session’ to refresh ways of coping.

Although interesting, these results need to be replicated in largest samples and over a longer period of time, Subjects also need to be randomly selected and a no-CBT sample be kept as controls, and assessment be made blindly. Due to shortage of time and funds, this could not be carried out in the present study. The persistence of changed family attitude over time also needs to be assessed repeatedly.

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