

Efficacy of Cognitive Behavior Therapy in Managing Delusion in Patients with Schizophrenia

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Abstract

The cognitive-behavioral therapy (CBT) approach to psychosis is a relatively recent development and focuses directly on the core psychotic symptoms of hallucinations and delusions. Hallucination and delusion are common symptoms in most psychotic disorders especially, schizophrenia. The clinical features of schizophrenia hold a diverse range of disturbances of perception, thought, emotion, motivation, and motor activity. The principal aim of CBT in schizophrenia is to lessen the distress experienced due to delusions and hallucinations and to enable the patients to cope with these symptoms. Present study was conducted to see the efficacy of CBT in managing delusions with schizophrenia.

Keywords: Cognitive behavior therapy, Schizophrenia, Hallucination, Delusion

Cognitive therapy, a system developed by Aaron T. Beck (1952), stresses the importance of belief system and thinking in determining behaviour and feelings. The focus of cognitive therapy is on understanding distorted beliefs and using techniques to change maladaptive thinking, while also incorporating affective and behavioral methods. In the therapeutic process, attention is paid to thoughts that individuals may be unaware of and to important belief systems. CBT is an approach designed to change mental images, thoughts and thought patterns to help patients to overcome emotional and behavioral problems. It is based on the theory that behaviors and emotions are the resultants part of cognitions and cognitive processes that one can learn to change.

Schizophrenia is stress-related, neurobiological disorder resulting in disturbances, in form and content of an individual's thought, perceptual processes, affect and social and instrumental role behaviour (Liberman et al., 1994). The clinical features of schizophrenia embrace a diverse range of disturbances such as perception, thought, emotion, motivation, and motor activity. The most important features of schizophrenia are- Hallucinations and Delusion. The present study dealt with delusions.

Methodology:

Aim: The aim of the study was to find out the efficacy of cognitive behaviour therapy in managing delusion in patients with schizophrenia.

Objectives:

- To find out the efficacy of cognitive behaviour therapy in patients with schizophrenia having delusions.
- To find out generalizability of gains from cognitive behaviour therapy to global functioning of patients with schizophrenia.

Hypotheses:

1. There will be no significant effect of cognitive behaviour therapy in managing delusions of patients with schizophrenia.
2. There will be no significant effect of cognitive behaviour therapy on global functioning of patients with schizophrenia having hallucinations and delusions.

Study Design: This study was a centre based confirmatory study using the pre-and-post treatment with control group design.

Venue of the study: This study was carried out at in-patient department of Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS), Kanke, Ranchi.

Sample size: Based on purposive sampling technique a sample consisting of 40 (20 for experimental and the other 20 for control group) male patients having schizophrenia with core symptoms of hallucination and delusions under treatment as usual were selected from different wards of Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS) Kanke, Ranchi. Patients of both the groups were matched on socio-demographic and clinical variables.

Participant's Inclusion and Exclusion Criteria:-

Inclusion criterion:-

- Patients diagnosed as schizophrenia (as per ICD-10- DCR criteria (WHO, 1992)) having auditory hallucination and delusion.
- Patients between the age range of 20-50 years.
- Male patients were selected.
- Patients who gave informed consent to participate in the study.
- Patients who were cooperative.
- Patients with minimum primary level of education.

Exclusion Criteria

- Patients with co-morbid psychiatric, neurological and other physical illness.
- Patients with mental retardation.
- Patients who are uncooperative.
- Patients below primary level of education.

Tools for Pre-Test and Post-Test Assessment of the Patient:-

Socio-Demographic and Clinical Data Sheet: It is a semi-structured proforma especially designed for this study. It contains information about socio-demographic variables like age, sex, religion, education, marital status and occupation including other clinical details like relevant past and family history, presence of co-morbid conditions, mental status examination and diagnosis.

Scales to Measure Dimension of Hallucinations and Delusions: The Psychotic Symptom Rating Scale (PSYRATS):- PSYRATS is a rating scale developed by Haddock et al. (1999). This scale was developed to recognize the complexity of hallucination and delusions. It also measures the severity of these symptoms. It consists of two sets of scales, one for the auditory hallucinations and second for the delusions. The subscale of auditory hallucination has 11 items and to the scale for delusion has six items. Severity is rated using 5-point scale. Inter

Scale for the Assessment of Positive Symptoms (SAPS): SAPS is a 34-item scale, developed by Andreasen (1984), for the assessment of positive symptoms in individuals with schizophrenia. This scale is designed to assess positive symptoms, principally those that occur in schizophrenia. These positive symptoms include hallucinations, delusions, bizarre behavior and positive formal thought disorder. SAPS is administered via a general clinical interview, plus a series of standardized questions. It's a six point rating scale.

Global Assessment of Functioning (GAF): The GAF scale is a worldwide used scale to assess overall level of functioning during a particular time. Functioning is considered a composite of three major areas: occupational functioning, social functioning and psychological functioning. GAF scale is divided into 10 ranges of functioning, based on a continuum of mental health and mental illness maximum score is 100 which represent highest level of functioning in all area.

The Cognitive Behaviour Therapy Package for Intervention:-

The intervention took place in two stages. The first stage was assessment phase and informative. The second stage was the modification of patient's maladaptive belief regarding delusions and hallucinations and applying appropriate techniques to reduce these symptoms, depending on the suitability of the patient. Approximately 16-20 sessions were required.

Assessment Phase- It took between 1-3 sessions, it included-

- Detailed mental status examination and rating scales.
- A cognitive behaviour assessment of the delusions.

Eight basic steps from assessment to intervention-

- Focus on a Problem
- Assessment of the C (Consequence)
- Assessment of the A (Antecedents)
- Confirm A-C is the Problem
- Assessment of B (Beliefs)
- Formulation: (a) show the B-C connection, and (b) offer a developmental formulation
- Setting the goal and establishing the options
- Challenging Beliefs

Treatment – Stage 2:- Intervention with Delusion-

- Psycho-education and Normalization
- Socializing the patient to the cognitive model
- Applying cognitive and behavioural approaches
- Questioning evidence in support of delusional beliefs and building alternative beliefs
- Consolidating alternative beliefs
- Reformulating delusions as reactions to, and attempts to make sense of, specific experience
- Assessing the delusion and alternative
- Using behavioural experiments and empirical testing

Procedure: - Information about socio-demographic variables and clinical details were collected using the socio-demographic and clinical data sheet from the drawn sample selected according to the inclusion and exclusion criteria. PSYRATS and SAPS were administered to assess the severity of the delusion. The GAF scale was administered to assess the overall level of functioning at the time of assessment. The drawn samples of 40 patients were further subdivided randomly into two groups of 20 patients each. First group, i.e. experimental group, was given cognitive behaviour treatment with treatment as usual and the second group, i.e. control group, was only on treatment as usual, waitlisted. The techniques for cognitive behaviour therapy were used which consisted 25-30 sessions lasted approximately one hour each. The cognitive behavioral program was tailored according to the need of the patients. Patients of both the group were re-assessed after completion of twelve weeks of training.

Result: - After the evaluation on different phase, the scoring was done and data was encoded, processed and presented in the tables of the result sections.

Sample Characteristics: Mean age of the participants from *Experimental group* and control group was 33.05 ± 1.45 and 29.45 ± 1.77 years respectively. There was no significant difference found between Experimental and control group regarding age (u value=148; z value= 1.41). All of the participants were male. Mean education of the participants from Experimental group and control group was $9.25 \pm .42$ and $8.95 \pm .35$ years respectively. There was no significant difference found between Experimental and control group regarding education (u value=189; z value= .31).

Table-1: Showing Socio-Demographic Characteristics of the Experimental group and Control Group.

S. NO.	Variables		Control Group	Experimental group	Chi Value (df=1)
1	Marital Status	Married	8	10	0.404 ^{NS}
		Unmarried	12	10	
2	Occupation	Unemployed	0	9	11.61 ^{**}
		Employed	20	11	
3	Residence	Rural	14	15	0.125 ^{NS}
		Semi Urban	6	5	

4	Family Type	Nuclear	5	6	0.125 ^{NS}
		Joint	15	14	
5	SES	Lower	9	13	1.61 ^{NS}
		Lower Middle	11	7	
6	Income	>5000	15	14	0.125 ^{NS}
		<5000	5	6	

NS=Not significant, **= Significant at .01 levels

Table-1 shows comparison between experimental and control group on other socio-demographic variables. It shows that in both groups majority of the patients were from rural background, of lower socio-economic status and were residing in joint family. Most of the participants' income was less than 5000 rupees per month. Regarding marital status, participants were approximately equally divided. No significant difference was found between the Experimental and control groups in the socio demographic characteristics of marital status, residence, family type, socio-economic status and income. Only significant difference was found between the Experimental and control groups in occupation (at point .01 levels) that might be during illness period but before become sick they were participating in work. Otherwise, the experimental and control groups were matched to each other with respect to their socio-demographic characteristics.

Table-2: Showing Clinical Characteristics of the Experimental group and Control Group

S. NO.	VARIABLES		Control Group	Experimental group	Chi Value (df=1)
1.	Past history of major medical illness	Present	1	2	.360 ^{NS}
		Absent	19	18	
2.	Past history of psychiatric illness	Present	8	9	.102 ^{NS}
		Absent	12	11	
3.	Family history of psychiatric illness	Present	2	3	.229 ^{NS}
		Absent	18	17	

NS=Not significant

Table-2 shows clinical characteristics of the experimental and control groups. It shows that majority of the patients had no history of major medical illness and no family history of psychiatric illness. Regarding history of psychiatric illness, patients were approximately equally divided. Both the group was on treatment as usual. Hence, the experimental and control groups were matched to each other with respect to their clinical characteristics.

Table:3- Showing Baseline Status of Clinical Symptoms of the Experimental and Control Group on Scale for the Assessment of Positive Symptom (SAPS)'s Dimension of Delusion.

Areas of Assessment	Control Group Mean \pm SD	Experimental group Mean \pm SD	Mann Whitney U Test			
			Mean Rank		U value	z-score
			Control Group	Experimental group		
Persecutory Delusion	3.30 \pm 1.08	3.95 \pm 0.94	16.95	24.05	129	2.03 ^{NS}
Delusion of Jealousy	1.10 \pm 1.44	0.70 \pm 1.26	21.92	19.08	171	0.93 ^{NS}
Delusion of Guilt or Sin	1.90 \pm 1.74	1.20 \pm 1.23	22.80	18.20	154	1.31 ^{NS}
Grandiose Delusion	0.10 \pm 0.44	0.20 \pm 0.89	22.48	20.52	199	0.03 ^{NS}
Religious Delusion	1.05 \pm 1.09	0.40 \pm 1.09	23.78	17.22	134	2.14 ^{NS}
Somatic Delusion	1.05 \pm 1.09	0.40 \pm 0.94	18.00	23.00	150	2.35 ^{NS}
Delusion of Reference	3.50 \pm 1.27	4.30 \pm 0.73	16.58	24.42	121	2.28 ^{NS}
Delusion of Being Controlled	0(Not Present)	0(Not Present)	-	-	-	-
Delusion of Mind Reading	0(Not Present)	0(Not Present)	-	-	-	-
Thought Broadcasting	0(Not Present)	0(Not Present)	-	-	-	-
Thought Insertion	0(Not Present)	0(Not Present)	-	-	-	-
Thought Withdrawal	0(Not Present)	0(Not Present)	-	-	-	-
Global Rating of Delusion	3.45 \pm 0.68	4.10 \pm 0.44	15.62	25.38	102	3.18 ^{NS}

NS=Not Significant

Table-3 shows comparison on the area of delusions of the scale for the assessment of positive symptoms (SAPS) between experimental and control group at baseline. In the present table baseline scores of both the group in the areas of persecutory delusion, delusion of jealousy, delusion of guilt or sin, grandiose delusion, religious delusion, somatic delusion and delusion of references have been presented. It reveals that there was no significant difference on baseline scores of both the group. While symptoms presented in the table like; thought insertion, thought broadcasting, mind reading, being controlled and thought withdrawal were not found in patients of both the group.

Table:4 - Showing Baseline Status of Clinical Symptoms of the Experimental and Control Group on Psychotic Symptom Rating Scale (PSYRATS)'s Dimension of Delusion.

Areas of Assessment	Control Group Mean \pm SD	Experimental group Mean \pm SD	Mann Whitney U Test			
			Mean Rank		U value	z-score
			Control Group	Experimental group		
Preoccupations from Delusions	3.05 \pm 0.99	3.40 \pm 0.68	18.75	22.25	165	1.02 ^{NS}
Duration of Preoccupations	2.90 \pm 1.11	2.95 \pm 0.88	20.52	20.48	199	0.01 ^{NS}
Conviction	3.25 \pm 0.71	3.20 \pm 0.69	20.92	20.08	191	0.25 ^{NS}

Amount of Distress	3.15±0.98	3.25±0.71	20.48	20.52	199	0.15 ^{NS}
Intensity of Distress	2.90±1.02	3.30±0.65	18.45	22.55	159	1.18 ^{NS}
Disruption to Life	2.75±0.63	3.20±0.41	17.30	23.70	136	2.61 ^{NS}

NS=Not Significant

Table-4 shows comparison on subareas of delusion of PSYRATS between experimental and control group at baseline. It shows that there was no significant difference between the experimental and control group on any of the area of delusion. Mean scores of experimental and control group suggests that both groups' were similar with regard to their symptomatology.

Table: 5 - Showing Baseline Status of the Experimental and Control Group on Global Assessment of Functioning.

Global Assessment of Functioning	Control Group Mean ± SD	Experimental group Mean ± SD	Mann Whitney U Test			
			Mean Rank		U value	z-score
			Control Group	Experimental Group		
	50.50±9.98	49.25 ±8.92	22.20	18.80	166	1.08 ^{NS}

NS=Not Significant

Table-5 shows comparison between experimental group and control group at baseline on the scale of global assessment of functioning. It shows that there was no significant difference between the experimental group and control group in their global functioning.

Table-6 shows comparison of differences on scale for the assessment of positive symptom (SAPS)'s dimension of delusions between experimental and control group due to intervention. It shows there were significant differences on the areas of persecutory delusion, delusion of references and global rating of delusions. On above-mentioned areas, the significant difference was at .01 levels. While on the area of delusion of guilt or sin, difference was at .05 levels.

Table-7 shows comparison of differences on PSYRATS's dimension of delusion between experimental and control group due to intervention. The table reveals that significant difference was found in all the areas of delusion of PSYRATS like; preoccupation from delusions and its duration, conviction, amount and intensity of distress, disruption to life at .01 levels. Significant differences suggest a definite improvement in the symptomatology of the experimental groups in comparison of control group. It was due to the intervention programme.

Table 8 shows comparison of differences in global assessment of functioning between experimental and control group due to intervention. It shows that there was significant difference in global assessment of functioning between both the groups. Findings suggesting that experimental group improved significantly in comparison to control group. The significant difference was at .01 levels.

Discussion and Conclusion:

Over the last two decades, researchers have made progress in identifying and using effective treatments, including psychotherapy, pharmacotherapy, and combined treatments. Evidence is clear that

psychotherapies and pharmacological treatments can be very helpful to reduce the symptomatology of the patients having delusions in schizophrenia.

CBT for psychosis is an evidence-based treatment primarily designed to target psychotic symptoms such as hallucinations and delusions that persists despite appropriate treatment with antipsychotic medication. Meta analysis suggests that CBT improves psychotic symptoms, negative symptoms and functional outcome (Wykes et al., 2008).

The comparison of differences in the dimension of delusion of the SAPS between experimental and control groups after intervention (table-6) shows that, statistically significant difference was at 0.01 level in the areas of persecutory delusion, delusion of reference and global rating of delusion. Whereas in the area of delusion of guilt or sin, significant difference was at 0.05 level. These findings indicate towards the good generalizability of the cognitive behaviour intervention. On the other hand, in few areas there was no significant difference found, such as; in the areas of somatic delusion, religious delusion, grandiose delusion and delusion of jealousy. Although analysis of mean scores suggests, scores of experimental group was less in comparison to control group which indicate improvement in psychopathology of experimental group.

Whereas, comparison of differences in the dimension of delusion of the PSYRATS between intervention and control groups after intervention (table-7) shows that, statistically significant difference was at 0.01 level in all subareas of the delusion. These findings indicate towards the excellent generalizability of the cognitive behaviour intervention program used with treatment as usual in the management of patients having positive symptoms with schizophrenia.

Positive symptoms are core features of schizophrenia generally targeted by antipsychotic medicine while many patients targeted by antipsychotic medication still continue experience positive symptoms such as delusion and hallucination (Turkington et al., 2008), these persisting positive symptoms can be extremely distressing and negatively affect daily functioning. The result of the present study supports the view that treatment of the positive symptoms such as delusion and hallucination can be managed successfully by antipsychotic along with CBT. Combined mode of therapy is also helpful to reduce the distress level and improve the functioning of the individual, it also helped to build up the insight in person suffering with positive symptoms of schizophrenia which ultimately heighten the level of coping.

There is growing evidence that CBT and addition to pharmacotherapy may be very helpful in the reduction of symptomatology. In the present study, we have tried to assess the efficacy of cognitive-behavioral therapy in patients having delusions in schizophrenia. The intervention program used combine cognitive and behavioural components. The primary aim of the treatment was helping the patient to cope with delusions. The package used for the treatment was found significantly effective to improve the cases. Our findings support the feasibility of implementing cognitive-behavioral intervention with the pharmacological treatment may be beneficial for patients with significant functional and symptomatic impairments.

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