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## EFFICACY OF COGNITIVE BEHAVIOUR THERAPY REGARDING ATTITUDE TOWARDS HALLUCINATORY VOICES IN PATIENTS WITH SCHIZOPHRENIA

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**Abstract:** Schizophrenia is still considered to be chronic and debilitating illness. **Aim:** The aim of the present study is to see the changes in attitude towards hallucinatory voices in patients with schizophrenia. **Method:** Twenty four patients diagnosed with schizophrenia according to ICD-10 DCR were chosen from different inpatient department of RINPAS, Kanke using the simple random sampling technique. After taking informed consent from the patients, socio-demographic and clinical data sheet and BAVQ were administered and they were randomly assigned to CBT+TAU and TAU group. Cognitive behaviour therapy was given to CBT+TAU group, total 17-20 sessions of 45 minutes each with a frequency of thrice a week. After completion of the therapy sessions, post assessment was done and follow up assessment was done after six months of post assessment. Data was analyzed with the help of Mann-Whitney U test and Chi-square Test was used for statistical analysis. **Result:** Significant reduction was found in the attitude towards hallucinatory voices and improvement was found in the post intervention phase which was maintained at follow up. **Conclusion:** Cognitive behaviour therapy was found to be effective in changing attitude towards hallucinatory voices.

**Key Words:** Schizophrenia, Attitude, Hallucinatory Voices and Cognitive behaviour Therapy

### INTRODUCTION

Schizophrenia is associated with positive symptoms such as auditory hallucinations and delusions (Frith, 1992), as well as a wide variety of cognitive impairments (Bozikas, Andreou, Giannakou et al., 2005). Cognitive impairment, especially attentional dysfunction, is often so severe that it interferes with activities such as personal care skills, work and interacting with others (Kern, Green & Satz, 1992), despite the advances in pharmacological treatments (Pratt & Mueser, 2002). Research suggests that between 25 to 60 percent of the patients continue to experience psychotic symptoms even after satisfactory drug adherence (Curson et al., 1998). Despite the effectiveness of anti-psychotic pharmacotherapy, residual hallucinations and delusions do not completely resolve in some medicated patients. Additional cognitive behavioral therapy (CBT) seems to improve the management of positive symptoms. Even with the use of optimal doses of clozapine, 40% of patients with treatment-resistant schizophrenia do not respond. An effective psychological treatment is currently the only option for such patients to ameliorate disabling symptoms.

Approximately 70% of individuals diagnosed with schizophrenia experience auditory hallucinations (Nayani & David, 1996). Most of them find the experience of auditory hallucinations distressing, annoying, disabling, and incriminating (Chadwick & Birchwood, 1994; Leudar, Thomas, McNally & Glinski, 1997). For some patients auditory hallucinations may be experienced as positive, giving them strength and enhancing their self-esteem (Romme & Escher, 1989).

Cognitive behavioural therapy has been established as an effective treatment for residual psychotic symptoms but a substantial proportion of people do not benefit from this treatment. There has been little direct study of predictors of outcome, particularly in treatment targeting auditory hallucinations. A study done by Neil Thomas et al. (2010) in which Psychotic Symptom Rating Scales (PSYRATS) and Positive and Negative Syndrome Scale (PANSS) were administered pre- and post-therapy to 33 people with schizophrenia-related disorders receiving CBT for auditory hallucinations in a specialist clinic. Outcome was compared with pre-therapy measures of insight, beliefs about the origin of hallucinations, negative symptoms and cognitive disorganization. Results showed significant improvements on post-treatment on the PSYRATS and PANSS Positive and General Scales. Improvement on the PSYRATS was associated with lower levels of negative symptoms, but was unrelated to overall insight, delusional conviction regarding the origins of hallucinations, or levels of cognitive disorganization. Based on their study Neil Thomas et al. (2010) concluded that Lack of insight and presence of formal thought disorders do not prohibit effective cognitive-behavioural treatment of auditory hallucinations.

In a study with the topic 'Effectiveness of brief cognitive behavioral therapy for auditory hallucination in schizophrenia' done by Rizk et al. (2016), he found that, brief CBT for auditory hallucination was effective in reducing symptom severity in schizophrenia. He took total of 40 patients diagnosed with schizophrenia referred from outpatient clinic, who were randomly assigned into two groups: group 1 received brief CBT for auditory hallucination combined with treatment as usual, and group 2 received treatment as usual only. Brief CBT for auditory hallucination was delivered on eight session of 45 min each with a frequency of once per week. A significant symptom reduction on PANSS positive, and general symptoms scores were seen in results when pre-assessment scores were compared with post assessment scores of group 1 after 8 weeks of brief CBT for auditory hallucination.

## METHOD

### Participants

In this study initially 24 schizophrenic patients meeting various inclusion and exclusion criteria were selected from different inpatient wards of RINPAS, Kanke, Ranchi, Jharkhand through simple random sampling. In due course of study eight patients (2 from control and 2 from experimental group) dropped out from the study as two were prematurely discharged from the hospital on care giver request and four did not turned up for follow up assessment. Hence, final analysis was done only for 20 patients. Both groups were comparable in socio-demographic characteristic and clinical variables. Hence, possible effects of these were controlled prior to the intervention. Patients were in the age range of 20-40 years. Most of them were educated up to at least 8<sup>th</sup> std. To control confounding variable patients with history suggesting –mental retardation, general medical condition, substance abuse and having acute medical conditions or other co-morbid psychiatric condition at the time of selection were excluded.

### Instruments

Socio-Demographic and Clinical Data sheet: It consisted of all areas of socio-demographic details like age, domicile, education, employment, marital status etc. and question related to nature of illness, substance dependence and comorbid psychiatric disorder, duration of illness and severe physical illness in the near past and both group were matched on all above mentioned variables.

### Belief about Voices Questionnaire (Chadwick & Birchwood, 1995)

It consists of 30 items. The questionnaire measure four significant classes of phenomena: Malevolence, Benevolence, Resistance and Engagement related to feeling and behaviour.

There are six items for malevolence, six for benevolence, eight for engagement, and nine for resistance and power. Items require "YES" or "NO" answer. The BAVQ requires about 5 minutes to complete and is well tolerated by clients.

Test – Retest reliability of scale Malevolence is 0.92, Benevolence is 0.88, Resistance is 0.93, and Engagement is 0.85. For validity, scores on BAVQ were compared with the result of a structured interview. This result was highly significant.

## PROCEDURE

In this study patients diagnosed with schizophrenia as per ICD-10 (DCR) and meeting the inclusion and exclusion criteria were selected from different units of Ranchi Institute of Neuro-Psychiatry and Allied Sciences. Potential and interested candidates were approached. Once patients agreed to participate, informed consent was taken and demographic and clinical information was collected by using socio-demographic and clinical data sheet. Immediately after obtaining consent and collecting socio-demographic and clinical data BAVQ was administered to collect baseline data. After this they were randomly assigned to TAU+CBT and TAU group. Patients in the TAU condition received standard treatment on the unit, which includes psycho-education, supportive therapy and pharmacotherapy. Patients in the TAU+CBT conditions received approximately 17-20 one hour long sessions of individual CBT thrice in a week during their stay in the hospital. Initially, 2-3 sessions a good rapport was developed with patients and then the patients were allowed to discuss about their hallucinations. A core set of cognitive behaviour therapy technique were used. Cognitive behaviour therapy technique for hallucinations such as distractions technique (i.e. reading books, listening song, gardening etc.) were used according to the patients interest and availability in the hospital as well as at home. Prior to discharge, participants were evaluated again on the same measure as it was on baseline. At a 6-month follow-up, participants were again evaluated on the same measures as it was when study completed.

## RESEARCH DESIGN

A pre-test and post test with control design was used in this study. Equal number of patients was randomly assigned to cognitive behaviour therapy (CBT+TAU) and treatment as usual group (TAU).

## STATISTICAL ANALYSIS:

As sample size in this study was small, hence obtained data was analyzed by using non-parametric statistics, namely, chi-square test, Wilcoxon Sign Rank Test and Mann Whitney U test (for between group comparison).

## RESULTS

Table 1 is showing the comparison between patients with schizophrenia in treatment as usual and patients in treatment as usual plus cognitive behaviour therapy (TAU+CBT) at baseline, regarding attitude towards hallucinatory voices. To compare both groups at baseline and post assessment scores Mann Whitney 'U' test was calculated.

By observing Table 1 it is evident that there was no significant difference between both groups in terms of attitude towards hallucinatory voices. This suggests that both groups were similar on different elements of hallucinatory voices. No significant difference was found on any element of hallucinatory voices such as Malevolence ( $U=97.50, Z=0.64, p>0.05$ ), Benevolence ( $U=108, Z=0.81, p>0.05$ ), Resistance feeling ( $U=91.50, Z=0.90, p>0.05$ ), Resistance behavior ( $U=105.00, Z=-0.34, p>0.05$ ) Engagement feeling ( $U=105.00, Z=0.36, p>0.05$ ) and engagement behavior ( $U=110.00, Z=0.12, p>0.05$ ).

**Table-1: Comparison of auditory hallucination on Belief About Voices questionnaire between Experimental Group and Control Group at Baseline**

Area of Assessment	Experimental group Mean $\pm$ SD	Control group Mean $\pm$ SD	Mann Whitney Test			
			Mean Rank		U Value	Z Score
			Experimental Group	Control Group		
Malevolence	3.60 $\pm$ 2.47	3.33 $\pm$ 2.25	16.50	14.50	97.50	0.64 NS
Benevolence	1.46 $\pm$ 1.88	1.40 $\pm$ 1.72	15.77	15.23	108.50	0.18 NS
Resistance feeling	2.53 $\pm$ 1.76	2.26 $\pm$ 1.53	16.90	14.10	91.50	0.90 NS
Resistance behaviour	1.00 $\pm$ 1.06	0.86 $\pm$ 0.99	16.00	15.00	105.00	0.34 NS
Engagement feeling	1.20 $\pm$ 1.78	1.40 $\pm$ 1.84	15.00	16.00	105.00	0.36 NS
Engagement behaviour	1.20 $\pm$ 1.78	1.26 $\pm$ 1.86	15.33	15.67	110.00	0.12 NS

NS- Not Significant

Table 2 shows the comparison between pre and post intervention in experimental group towards attitude towards hallucinatory voices. Results reveal that after intervention the significant improvement was seen on all domain of hallucinatory voices such as malevolence ( $Z=2.99$ ,  $p<0.01$ ), benevolence ( $Z=2.30$ ,  $p<0.05$ ), resistance feeling ( $Z=3.00$ ,  $p<0.01$ ), resistance behaviour ( $Z=2.59$ ,  $p<0.05$ ), engagement feeling ( $Z=2.07$ ,  $p<0.05$ ) and engagement behaviour ( $Z=2.07$ ,  $p<0.05$ ).

**Table-2: Showing Status of Auditory Hallucination on Scale of Belief About Voices Questionnaire in the Experimental Group on Baseline Assessment Scores and on After Intervention Scores.**

Area of Assessment	Baseline Assessment Mean $\pm$ SD	Post Intervention Mean $\pm$ SD	Wilcoxon Sign Rank Test		
			Sign	Mean rank	Z Score
Malevolence	3.60 $\pm$ 2.47	0.93 $\pm$ 0.79	-	6.00	2.99**
			+	0.00	
Benevolence	1.46 $\pm$ 1.88	0.40 $\pm$ 0.50	-	4.86	2.30*
			+	2.00	
Resistance feeling	2.53 $\pm$ 1.76	0.73 $\pm$ 0.59	-	6.00	3.00**
			+	0.00	
Resistance behaviour	1.00 $\pm$ 1.06	0.13 $\pm$ 0.35	-	4.50	2.59*
			+	0.00	
Engagement feeling	1.20 $\pm$ 1.78	0.33 $\pm$ 0.61	-	3.00	2.07*
			+	0.00	
Engagement behaviour	1.20 $\pm$ 1.78	0.33 $\pm$ 0.61	-	3.00	2.07*
			+	0.00	

\*\*- Significant at 0.01 level, \*- Significant at 0.05 level

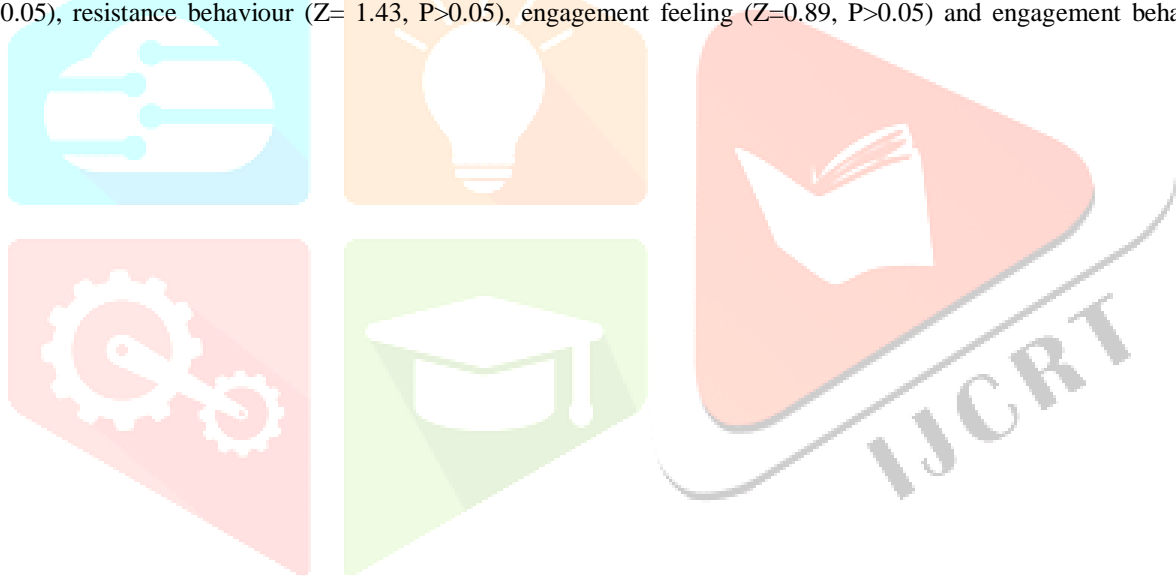
Table 3 shows the comparison of control group between baseline and post assessment score on different domains of hallucinatory voices. There are some domains where significant improvement were found as malevolence ( $Z= 2.31$ ,  $P<0.05$ ) resistance behaviour ( $Z= 2.12$ ,  $P<0.05$ ) and engagement feeling ( $Z= 2.00$ ,  $P<0.05$ ).

**Table-3: Showing Status of Auditory Hallucination on Scale of Belief About Voices Questionnaire in the Control Group on Baseline Assessment Scores and on After Intervention Scores.**

Area of Assessment	Baseline Assessment Mean $\pm$ SD	Post Intervention Mean $\pm$ SD	Wilcoxon Sign Rank Test		
			Sign	Mean Rank	Z Score
Malevolence	3.33 $\pm$ 2.25	2.73 $\pm$ 2.01	-	5.13	2.31*
			+	4.00	
Benevolence	1.40 $\pm$ 1.72	1.20 $\pm$ 1.61	-	3.00	1.34 NS
			+	3.00	
Resistance feeling	2.26 $\pm$ 1.53	1.86 $\pm$ 1.55	-	4.80	0.84 NS
			+	4.00	
Resistance behaviour	0.86 $\pm$ 0.99	0.46 $\pm$ 0.63	-	3.00	2.12*
			+	0.00	
Engagement feeling	1.40 $\pm$ 1.84	1.33 $\pm$ 1.55	-	2.50	2.00*
			+	0.00	
Engagement behaviour	1.26 $\pm$ 1.86	1.06 $\pm$ 1.57	-	2.00	1.73 NS
			+	0.00	

NS- Not Significant, \* - Significant at 0.05 level

Table 4 shows the comparison of experimental and control group on different elements of Belief about voices questionnaire. Mann Whitney U value of the result reveals that after intervention the significant improvement was found on malevolence ( $Z= 2.87$ ,  $P<0.01$ ) and resisting feeling ( $Z= 2.38$ ,  $P<0.01$ ). The pre and post mean scores show that there is improvement after intervention on experimental group in comparison to control group. However no statistically significant improvement was found on benevolence ( $Z=-1.43$ ,  $P>0.05$ ), resistance behaviour ( $Z= 1.43$ ,  $P>0.05$ ), engagement feeling ( $Z=0.89$ ,  $P>0.05$ ) and engagement behaviour ( $Z=1.20$ ,  $P>0.05$ ).



**Table-4: Showing after Intervention Status of Auditory Hallucination of the Experimental and Group Control Group on Belief About Voices Questionnaire (BAVQ)**

Area of Assessment	Experimental Group M±SD			Control Group M±SD			Mann Whitney Test			
	Pre	Post	Difference (Pre-Post)	Pre	Post	Difference (Pre-Post)	Mean Rank		U Value	Z Score
							Experimental Group	Control Group		
Malevolence	3.60±2.47	0.93±0.79	2.66±1.79	3.33±2.25	2.73±2.01	0.60±0.82	20.00	11.00	45.00	2.87**
Benevolence	1.46±1.88	0.40±0.50	1.06±1.48	1.40±1.72	1.20±1.61	0.20±0.56	17.57	13.43	81.50	1.43NS
Resistance feeling	2.53±1.76	0.73±0.59	1.80±1.26	2.26±1.53	1.86±1.55	0.40±1.63	19.20	11.80	57.00	2.38*
Resistance behaviour	1.00±1.06	0.13±0.35	0.86±0.91	0.86±0.99	0.46±0.63	0.40±0.63	17.57	13.43	81.50	1.43NS
Engagement feeling	1.20±1.78	0.33±0.61	0.86±1.30	1.40±1.84	1.33±1.55	0.26±0.45	16.67	14.33	95.00	0.89NS
Engagement behaviour	1.20±1.78	0.33±0.61	0.86±1.30	1.26±1.86	1.06±1.57	0.20±0.41	17.00	14.00	90.00	1.20NS

NS- Not Significant, \*- Significant at 0.05 level, \*\*- Significant at 0.01 level

**Table-5: Showing Follow-up Status of Attitude towards Hallucinatory Voices of the Experimental Group and Control Group on Belief about Voices Questionnaire (BAVQ)**

Area of Assessment	Experimental Group M±SD			Control Group M±SD			Mann Whitney Test			
	Post	Follow up	Difference (Pre-Post)	Post	Follow up	Difference (Pre-Post)	Mean Rank		U Value	Z Score
							Experimental Group	Control Group		
Malevolence	0.93±0.79	0.86±0.35	0.07±0.70	2.73±2.01	3.46±2.44	0.73±1.09	18.33	12.67	70.00	1.99*
Benevolence	0.40±0.50	0.33±0.48	0.07±0.45	1.20±1.61	1.40±1.84	0.20±0.56	16.90	14.10	91.50	1.34 NS
Resistance feeling	0.73±0.59	0.66±0.48	0.07±0.45	1.86±1.55	2.20±1.69	0.33±0.61	16.93	14.07	91.00	1.20 NS
Resistance behaviour	0.13±0.35	0.06±0.25	0.07±0.25	0.46±0.63	0.66±0.81	0.20±0.41	17.40	13.60	84.00	2.00*
Engagement feeling	0.33±0.61	0.26±0.45	0.07±0.59	1.33±1.55	1.33±1.71	0.20±0.41	16.90	14.10	91.50	1.34 NS
Engagement behaviour	0.33±0.61	0.26±0.59	0.07±0.45	1.06±1.57	1.26±1.75	0.20±0.41	17.30	13.70	85.50	1.60 NS

NS- Not Significant, \*- Significant at 0.05

Table 5 shows the comparison of different dimensions of auditory hallucination between post assessment and follow-up scores of the experimental and control group on belief about voices questionnaire. Table 5 reveals that after intervention, there were no significant difference on any of the dimension of auditory hallucination between post assessment and follow-up score of the experimental and control group. Mann Whitney U test was calculated to see the difference between post assessments and follow up scores. No statistically significant difference was found on most of the dimension of the hallucinations such as benevolence ( $Z=1.64$ ,  $P>0.05$ ), resistance feeling ( $Z=1.34$ ,  $P>0.05$ ), engagement feeling ( $Z=0.98$ ,  $P>0.05$ ) and engagement behaviour ( $Z=1.33$ ,  $P>0.05$ ). It means that after intervention the therapeutic gain are maintained till follow up. There are some areas where further significant improvement was seen such as malevolence ( $Z=1.16$ ,  $P>0.05$ ), and resistance behaviour ( $Z=2.00$ ,  $p<0.05$ ).

## DISCUSSION

Present study was conducted to evaluate the significance of cognitive behaviour therapy in reducing the belief about auditory hallucination in persons with schizophrenia. In this study it was found that CBT group improved significantly on all of the elements of auditory hallucinations of BAVQ such as malevolence, benevolence, resistance feelings, resistance behavior, engagement feelings and engagement behavior. This proves that CBT is effective in reducing the auditory hallucinations in the patients. In the control group some significant improvement was also found such as malevolence, resistance behavior and engagement feeling. Significant difference was found between both groups on malevolence and resistance behaviour of auditory hallucination at post assessment. Where, CBT group scored significantly lower in comparison to TAU group. The malevolent and benevolent groups experienced the most and least amount of distress, respectively. The study demonstrated that persons who had malevolent beliefs about their voices had a statistically significant greater chance of having at least moderate depressive symptoms, in comparison to persons who had benevolent beliefs. Participants with malevolent beliefs about voices had significantly more positive symptoms than participants with benign beliefs about voices. This finding again supports the significance of CBT in reducing auditory hallucination in patient with schizophrenia. Moreover, after post assessment the significant improvement was found between experimental and control group on malevolence and resistance feelings. This is consistent with the study by (Birchwood & Chadwick, 1997) who showed that level of distress for the three different belief systems, there were statistically significant differences. The literature suggests that drug plus CBT combine treatment is more effective than drug treatment alone in decreasing positive symptoms (England, 2007, 2008). However, two studies reported that both treatment modalities are similarly effective in treating schizophrenia (Barrowclough et al., 2006; Samarasekera et al., 2007). The findings of present study are supported by Penn et al. (2009). The therapy program was considered effective in increasing the ability to cope with auditory hallucinations and delusions. It also increases the level of insight and ability to cope with stress caused by delusion, which ultimately reduce the severity of psychotic symptoms like hallucination, and delusions (Oya et al., 2011). In a study, Rizk et al. (2016) also found that brief CBT for auditory hallucination is effective in reducing symptom severity in schizophrenia, which supports the present study findings.

Comparison between both groups on follow up assessment revealed that on follow up also CBT group scored significantly lower on hallucination in comparison to TAU group. This finding suggest that CBT was effective in reducing hallucinations. The present findings is consistent with the findings of Pilling et al. (2002) who conducted study on schizophrenic patients and given them cognitive behaviour therapy and significant improvement was found on experimental group in comparison to control group and gain improvement was maintained after 9-12 month follow up and other studies such as (Sensky et al., 2000) also supported the present findings.

Comparison between both groups on difference (baseline -post) scores suggests that on post assessment CBT group showed significantly sharp decline in hallucinations as compared to TAU group. Further no significant difference was found between both groups on difference scores of post-follow up assessment. CBT group maintained the therapeutic gains that were achieved during post assessment on follow-up. Similarly, TAU group also maintained the post assessment status on follow up assessment.

Findings of present study support the use of cognitive behaviour therapy in reducing the hallucinations in patients with schizophrenia; however, the study has certain limitations. The sample was small due to which parametric analysis was not done despite randomized control design and only male patients were selected which limits its generalization for female group. Further research is required on larger sample so that generalization could be done. There are various studies which have been conducted and is found that CBT is effective in reducing hallucinations when it is given with pharmacotherapy.

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